

iCamp

innovative, inclusive, interactive & intercultural
learning campus

iCamp pedagogical approach and theoretical background

(former: iCamp draft models for social instruction and scaffolding)

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List of Acronyms

| Acronym | Description |
|----------------|--|
| EQF | European Qualification Framework |
| ICT | Information and Communication Technology |
| NMS | New Member States |

Table of Contents

| | |
|---|-----------|
| Executive summary | 7 |
| 1. Introduction | 9 |
| 1.1. iCamp’s educational objectives in a wider European context..... | 9 |
| 1.1.1. Introduction to relevant European initiatives and policies | 9 |
| 1.1.2. Embedding iCamp settings in the EU objectives | 9 |
| 1.2. Educational design and intervention objectives in iCamp | 11 |
| 1.2.1. Areas of challenge..... | 11 |
| 2. Theoretical embedding of educational objectives | 13 |
| 2.1. Competencies acquisition and advancement..... | 13 |
| 2.1.1. Observability of competencies..... | 15 |
| 2.1.2. Advancement of competencies..... | 15 |
| 2.2. Self-direction and self-organisation of learning projects..... | 17 |
| 2.2.1. Self-direction..... | 18 |
| 2.2.2. Differentiating between self-direction and self-organisation..... | 19 |
| 2.3. Pre-requisite skills and knowledge | 21 |
| 3. Heterogeneity of human actors | 22 |
| 3.1. Factors influencing the quality of cross-cultural collaboration | 22 |
| 3.1.1. Personal factors..... | 23 |
| 3.1.2. Interpersonal factors..... | 24 |
| 3.1.3. Cultural factors | 25 |
| 3.2. Challenges of cross-cultural settings..... | 26 |
| 4. Heterogeneity of technological landscapes | 28 |
| 4.1. Introduction to iCamp landscapes | 28 |
| 4.2. Institutional landscapes..... | 28 |
| 4.3. Personal landscapes..... | 29 |
| 4.4. Augmented landscapes..... | 30 |
| 4.5. Exemplary user stories..... | 31 |
| 5. Building conceptual tools for performance support..... | 34 |
| 5.1. Self-direction (and self-organisation)..... | 34 |
| 5.1.1. Expectable impact of shifting control on instructional functions | 36 |
| 5.1.2. Challenges and difficulties from a facilitators point of view..... | 37 |
| 6. Next steps towards iCamp’s educational innovation | 39 |
| 7. References..... | 40 |

Appendixes.....43
A. Appendix.....43

Executive summary

This deliverable presents the grounding for the pedagogical work in the iCamp project. It relates the project's main motivation to the European policy context, describes some basic settings and assumptions as well as the theoretical background and the conceptual approach.

iCamp is clearly in line with some of the leading European policies towards an inclusive information society and focuses on self-directed and self-organised learning, social networking, and collaboration in a mediated and networked environment across national borders. The project focuses on the support of competence advancement in these three areas of challenge under particular contextual constraints.

One of these constraints is given by the fact that the project is embedded in a formal higher-educational setting where actors are distributed over geographical locations, language and culture communities, institutions and educational systems as well as disciplines. We are thus dealing with a quite heterogeneous set of participants. Another important constraint defining the iCamp setting is the fact that communication and interaction are technologically mediated by an increasingly diverse set of tools and services. Hence, we are also faced with a heterogeneous set of technical solutions.

In iCamp we assume that domain-specific teaching may be structured in a way that allows for competence advancement in three main areas of challenge (self-directing, collaborating and social networking) in parallel to domain specific teaching. The educational design and intervention possibilities are clearly restricted by these constraints. When shifting e.g. instructional functions towards participant control (or self-direction) empirical studies have shown that this will rarely result in measurable improvements in subject matter acquisition but rather in more personal competence gains, changes in attitudes and values (Candy, 1991). Fostering self-direction and self-organisation of learning projects thus implies for our educational design to trigger individual dispositions for action and problem solving. Based on a rather generic analytical schema iCamp will construct particular activity patterns for educational design and intervention.

The facilitators play a crucial role in this scaffolding process towards self-directing learning projects as their relationship with the participants is constantly challenged. In our research approach we are aware of the fact that this changing role needs active support and guidance. The exchange of experiences and ideas with the performing facilitators is considered vital for the projects success.

Such an active dialogue between researchers and practitioners is one of the main characteristics of design-based research. This approach combines implementation projects in naturalistic educational contexts with theoretical work and thus offers an appropriate methodological perspective for iCamp. We will elaborate on this in workpackage 4.

Finally, it should be mentioned at this point that the original title of the deliverable has been changed in order to better reflect the intensive work and discussions that fed into this document. A lot of efforts have been put into the common understanding of certain terms and concepts. Thus in the following we will not refer anymore to *social instruction*, as this term is mostly associated in the literature with direct instruction of social skills to students belonging to minority groups or to students with special needs (e.g. autistic children). We rather want to focus on the key elements of our pedagogical work, namely scaffolding for self-directed and self-organised learning, social networking and collaborating.

1. Introduction

1.1. iCamp's educational objectives in a wider European context

1.1.1. Introduction to relevant European initiatives and policies

Socio-economic change of the last years was characterized by globalisation of economy and by the arising information society. Both developments have produced new demands for European Higher Education: more and more knowledge intensive jobs require a fast and flexible adoption of new knowledge, skills and competencies and novel technologies have created new possibilities for learning, knowledge sharing and communication. Last but not least globalisation forces EU member states to co-ordinate their systems of training and education in order to make their economy competitive on the world market.

One of the main motivations for the iCamp project is to reflect on these challenges and to contribute to an inclusive information society in an enlarged Europe as proposed in the strategic framework of i2010 by the European Commission (CEC 2005). It suggests the use of latest ICT to strengthen competencies towards self-direction and self-organisation, collaboration and social networking across national borders, key competences for knowledge workers in 2010 and beyond.

At the European level, a lot of initiatives have been started after the Lisbon summit of European heads of governments in 2000, such as the Bologna Process, Copenhagen Process, as well as the European Qualification Framework (EQF). All these initiatives have the common goal of creating opportunities for setting up cross-national education, and as a consequence, support mobility of students as well as employees all over Europe. In the following we will elaborate on how the educational objectives of iCamp are embedded in the wider European policies.

1.1.2. Embedding iCamp settings in the EU objectives

Two main constraints in iCamp are very much related and driven by the current developments at the European policy level and the above-mentioned initiatives. The first constraint is defined by the goal of iCamp to support cross-cultural/cross-national collaboration.

An important goal set by the Bologna declaration is to promote European co-operation in higher education with regard to inter-institutionally integrated programmes of study, training and research.

The interactive and integrative approach of iCamp aims to foster the inter-institutional co-operations and supports the university staff in working closer on new challenges across their institutes, countries, cultures and disciplines. The infrastructure that is created by iCamp offers a medium and support structure for realizing integrated programmes of study, training and research as envisioned by the Bologna Process.

Cultural diversity is one of the main strengths in the European Union and as such it has gained special attention in the recently published i2010 goals. This highly relevant strategy paper stresses the cultural heterogeneity of Europe as a main advantage. This has been reflected in the iCamp setting, which will build its models and tools with a specific focus on supporting collaboration and social networking across the borders.

The second constraint is defined by the fact that iCamp is settled in a digital, mediated and networked environment. ICT is used for self-directed and self-organised learning, for connecting people and establishing social ties, and for collaboration. Again, various European policies, such as i2010, stress the importance of media usage and the gain of competence in these areas for the economic and social advancement of Europe.

Supporting self-directed and self-organised learning is closely related to the demand of the information society to participate in a process of life-long learning. Today's and future knowledge workers have to cope with the fast change of knowledge and thus be prepared to react fast and manage their further education and training at the workplace. In addition, they have to take responsibility for their own employability.

In this context, higher education has an important role to play. We assume that it will be easier for working citizens to react and take responsibility of personal learning if they are already prepared and provided scaffolds for this challenge during their universities enrolment. Competencies in the area of self-direction and self-organisation are an important pre-requisite for successful participation in life-long learning and competence development in information society.

Regarding the challenges of the information society and life-long learning, a growing debate over the importance of social capital has started (Field 2005). Researchers, educators and policy makers are drawing the attention to the influence that social ties may have on the learning experience. With the latest developments (e.g. Social Software) the creation and maintaining of social networks are facilitated from a technical perspective. In iCamp we want to advance the competence in social networking and to contribute to social capital building for life-long learning and knowledge sharing across Europe.

Furthermore, the creation of social networks amongst students from different countries should help especially students from the NMS to connect with their peers across Europe and to establish important networks. In the acceding countries the share of foreign students is at 1.4% currently very low. Regarding the share of students enrolled abroad, there are great differences among acceding countries. In Cyprus more than 60% of tertiary level students study abroad. This compares to below 2% in Poland. iCamp sees itself as an

important means to prepare for more mobility and to enrich different national cultures (CEC 2004).

1.2. Educational design and intervention objectives in iCamp

Overall, the research approach that we follow in iCamp is in line with the design-based research approach that started to emerge in the last decade as an attempt to bridge educational theory, design and practice (Design-Based Research Collective 2003). Compared to other lines of research that have been practiced in the field of education, the deliberate blending of theory-driven design of learning environments and interventions with empirical research has already shown some very promising results. (see e.g. Sandoval, 2003, Tabak&Reiser, 1997, Reiser et al., 2001, Baumgartner 1999).

Amongst the characteristics of this approach that are reflected in the iCamp research design is the cyclic interaction of design, enactment, analysis and redesign, the collaborative partnership between researchers and practitioners as well as the authentic settings (Design-Based Research Collective 2003). In close collaboration with workpackage 4 (validation trials) we will further elaborate on this research approach in the upcoming deliverable on the evaluation framework D4.1.

1.2.1. Areas of challenge

iCamp focuses on the support of competence advancement in three areas of challenge under particular contextual constraints.

The **areas of challenge** have been specified as

- 1) self-directing and self-organising intentional learning projects,
- 2) collaborating
- 3) social-networking.

The educational modelling workpackage of iCamp operates within a number of particular **contextual constraints**.

First of all, iCamp assumes that competence advancement in the specified areas of challenge is taking place in parallel to domain-specific teaching, or that domain-specific teaching can be (re-)organised and (re-)structured in a way that makes the intended competence advancement possible.

Furthermore, iCamp deals with formal higher-educational settings in which actors are distributed over geographic locations, institutions, disciplines, language communities, and national educational systems. This brings about a considerable heterogeneity of human actors.

Communication and (inter-)action in such a setting is inevitably technologically mediated. This technological mediation is taking place in increasingly diverse landscapes of tools and services. Thus we also deal with a considerable heterogeneity of technological landscapes.

While these specific constraints certainly restrict our educational design and intervention efforts, they should also be explored from a perspective of resource or potential within our conceptual work.

In the following section we provide an overview of the particular concept of competence we want to draw on in iCamp, and the areas of challenge where we want to support the advancement of such competencies.

2. Theoretical embedding of educational objectives

2.1. Competencies acquisition and advancement

It is important to note that the concept of competence is a theoretical construct that refers to a human potentiality for action or its underlying dispositions. Theoretical constructs of this kind can, and indeed are, used for a variety of descriptive and/or explanatory purposes. This variability is clearly reflected in the current literature on competencies and its apparent lack of coherence and precision.

That this lack of coherence and precision is acceptable and quite common in ordinary speech is well documented in any regular dictionary. Webster's dictionary, for example, defines 'competence' as "fitness or ability" with synonyms including 'capability', 'capacity', 'efficiency', 'proficiency', and 'skill'.

But even some scientific publications simply attest that "a competency may be comprised of knowledge, a single skill or ability, a personal characteristic, or a cluster of two or more of these attributes" (Marrelli, Tondora, & Hoge, 2005, p. 537), or that "competencies are not fundamentally different from traditionally defined KSAOs (i.e., knowledge, skills, abilities, and other characteristics)" (Shippmann, Ash, Battista, Carr, Eyde, Hesketh, Kehoe, Pearlman, Prien, & Sanchez, 2000, p. 704).

Thus, it is not surprising that this led to differing conceptualizations of competence among educational policy makers and researchers in the various Member States of the European Union. This was reflected in the results of a number of research projects and publications such as the Eurydice Network Survey *Key Competencies: a developing concept in general compulsory education* (Eurydice, 2002), which collected information on the definition and identification of competencies in the context of educational policy in 15 EU Member States, and the OECD Program *Definition and Selection of Competencies: Theoretical and Conceptual Foundations (DeSeCo)* (Rychen & Salganik, 2003).

In the latter project Weinert (2001) highlighted the existing range of terminological differences and offered a set of recommendations and orientations for further efforts on the clarification and elaboration of the concept. Especially Weinert's analytical work has influenced a number of national and international work groups and projects, such as the research group *Arbeitsgemeinschaft Betriebliche Weiterbildungsforschung (ABWF)* that is currently engaged in the *Forschungs- und Entwicklungsprogramm Lernkultur - Kompetenzentwicklung* (research and development program - learning culture and competence development) and that has produced a number of theoretical and empirical contributions (see e.g., Erpenbeck & Rosenstiel, 2003; Heyse & Erpenbeck, 2004).

However, any conceptualization of competence for scientific, analytical purposes cannot simply propose the synonymous use of other concepts such as skill, knowledge, and ability. Why would we want to introduce yet another term for a human potentiality that can readily be expressed with existing concepts? In other words, why would we want a new “conceptual knife,” that can only cut our experiential world into the very same slices?

Like the more traditional concept of *ability*, competence conceptualizations are generally referring to an individual’s potentiality for action in a range of challenging situations. It is thus a concept that foremost indicates a precondition for future problem solving and coping (including the use of adequate tools) in a particular area of action.

The more elaborated contemporary conceptualizations of competence are best understood as a programmatic attempt to expand older notions of what constitutes the necessary dispositions for successful problem solving and coping in a given area of action. In general what used to be emphasized was the role of well trained, standardized, and largely automated procedural skills and of factual knowledge for successful problem solving and coping. Now, this emphasis is increasingly coming under scrutiny, since situational challenges in many work and life contexts cannot be mastered by applying routine procedural skills and knowledge anymore. Instead, the changing conditions for life and work produce situations that can be described as dynamic, complex, open-ended, and ambiguous, and that regularly require novel, creative and sometimes surprising solutions. This is where the old notion of *qualification* that is based on requirements analysis oriented in the past and on the acquisition and performance of standardized procedural skills and factual knowledge clearly shows its limits.

Erpenbeck and Heyse (1999) thus emphasize, for example, the importance of internalized orientations, values and attitudes for coping with dynamic, open-ended and complex problem situations where actors cannot exclusively rely on a stock of factual knowledge and procedural skills previously acquired. They argue that factual knowledge and procedural skills can only be viewed as necessary but not as sufficient for the execution of successful (“competent”) action in many areas of human activity.

They propose to conceptualize competence as a set of (interrelated) dispositions for the execution of self-organizing action in a particular area of challenge. This broad set of dispositions entails 1) *factual knowledge and procedural skills* previously acquired, 2) *internalized orientations, values and attitudes*, understood as “order parameters” (see for example Haken, 2004, on Synergetics) for self-organizing action that requires continuous decision making under (cognitive) uncertainty, and 3) *volitional aspects* (notions of volition, motivation, drive, etc.) that are understood as the ability to activate and realize the other personal assets.

2.1.1. Observability of competencies

Like any other theoretical construct referring to a human potentiality, a *competence*, understood as a set of dispositions, cannot directly be observed. It has to be inferred from the observation (or self-observation) of a given performance that is considered to be an indicator for the theoretical construct – in our case, competence. Based on the conceptualization of competence that we have referenced above, a person needs to perform in a situation that is complex, ambiguous and thus challenging enough to prevent a mere application of routine procedural skills and factual knowledge, when we want to accept her performance as an indicator for an underlying competence (or in other words, a set of dispositions for the execution of self-organizing action).

However, it depends entirely on the observer if she evaluates the situational constraints (degree of difficulty, ambiguity, novelty, openness, information deficits, etc.) as appropriate for an attribution of a given performance to a proposed competence. The observer determines if an actor has coped with a task or problem through the application of routine or “competent” action. This has clear implications for the validation strategies developed in workpackage 4.

2.1.2. Advancement of competencies

The general examination of the potential and the limitation of the concept of competence above, offers some indication of what seems necessary for the acquisition, advancement and development of appropriate dispositions.

The emphasis on the role of internalized orientations and values for the creative execution of self-organising action constitutes a number of interesting questions and challenges for educational design and intervention. Erpenbeck and Heyse (1999) propose the examination of opportunities for competence acquisition from different perspectives. From a retrospective point of view one can examine through biographical research what situational challenges and conditions were conducive to the development of competence in a given area of action. From an actual point of view one can examine the challenges that currently occur in a particular area of action. And from a prospective point of view one could even try to anticipate unavoidable situations of labilisation and risk in a given area of action.

The internalization of values and orientations in particular presupposes an exposure to authentic, challenging situations that offer a considerable degree of freedom for decision-making and action and that can produce a state in a given actor that has been described in various works in psychology as irritation, or labilisation, perturbation, cognitive dissonance, cognitive conflict, and so forth. In fact, radical constructivism (von Glasersfeld, 1995) emphasizes the need for *perturbation* of a cognitive *equilibrium* (Piaget, 1972) also for the acquisition and continuing refinement of all cognitive constructs. In other words, even the acquisition and internalisation of procedural skills and factual knowledge depends on perturbation of some degree. Otherwise, constructs

remain disconnected and do not integrate with the overall personal construct system (Kelly, 1955) of an individual.

Altogether, it seems pivotal for our conceptual work to examine what resources could be used in our specific settings to either construct environmental constraints and procedures that make the occurrence of authentic, challenging situations (as we have characterised them above) likely, or to construct such challenging situations through direct educational intervention strategies. As we have already indicated in an earlier section of this report, iCamp focuses on three increasingly important areas of challenge in parallel to domain specific teaching and instruction.

In the specific context of formal higher-educational settings in which actors are distributed geographically, culturally (nationally), and over disciplines, and in which communication and interaction is mediated through increasingly heterogeneous landscapes of networked tools and services, iCamp focuses on the advancement of competencies in the following areas of challenge:

1. Self-directing and self-organising intentional change (or learning) projects
2. Collaborating
3. Social-Networking

Of course, these areas of challenge are highly interconnected. Nevertheless, it is possible to accentuate them from the point of view of educational design and intervention in a particular setting.

We find it useful to distinguish between these areas of challenge from a perspective of subject-object relationships. The scope of action in the realm of self-direction and self-organisation of intentional learning projects is mostly the self (subject). For collaboration the scope of action is primarily the shared production of problem solutions and/or artefacts. Thus the actions of two or more people (subjects) are substantially oriented and structured by artefacts (objects). For social-networking the scope of action are other people (subjects) and the establishment, maintenance, and development of relationships with them. We suspect that this distinction could become useful for our ongoing attempts to model design and intervention strategies for the advancement of competencies in the specified areas of challenge.

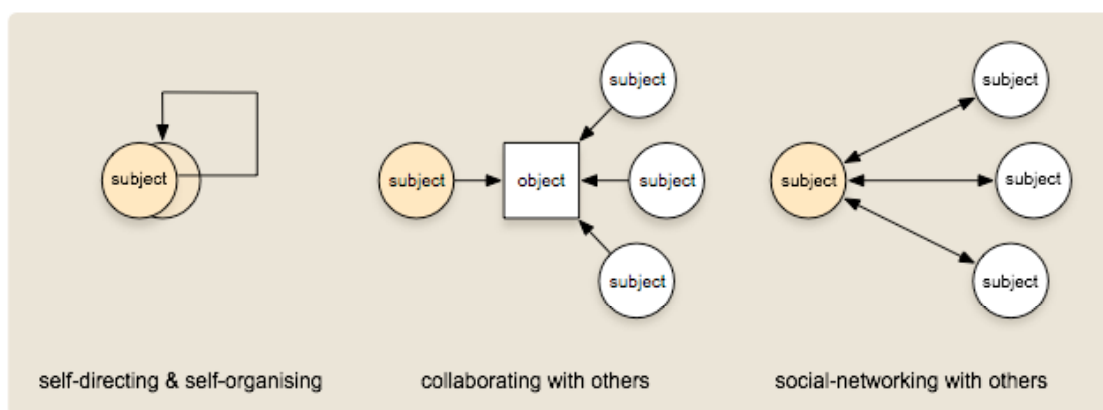


Fig.1: Subject-object relationships

It is important to note that we are mainly interested in performance support for people who try to design and manage domain-specific instructional activities in a way that opportunities for competence advancement can occur in the areas of challenge that we have specified. So, we don't attempt to construct explanatory models of why and how adults execute certain competencies under particular conditions. Instead, we want to model from an interventionist perspective. We want to offer practitioners a conceptual and technical toolbox to (re)design and (re)organise their domain-specific teaching in ways that allow for the advancement of competencies that go beyond subject matter acquisition.

The following paragraphs elaborate on the areas of challenge that define the scope and focus for our educational design efforts. In this deliverable we have been focusing on the area of self-direction and self-organisation. Initial work on the other two areas (collaboration and social networking) have also started in iCamp, but will be further elaborated and described in more detail in the upcoming deliverables.

2.2. Self-direction and self-organisation of learning projects

Since the educational research community has never produced a coherent and widely accepted conceptualization of the terms self-direction and self-organisation in formal educational settings, it is necessary to specify the particular meaning and "range of convenience" (Kelly, 1955) for these terms in the specific context of iCamp.

We want to concentrate on the advancement of competencies (in the sense of individual dispositions for action and problem-solving) that enable individuals (and groups) to master challenges that typically arise when responsibilities and instructional functions are gradually shifted away from the formal educational system and its representatives (facilitators, teachers, tutors, etc.) to the participants.

Reasons for these intended shifts of responsibilities and instructional functions may vary from institution to institution and from facilitator to facilitator. Sometimes such a move is grounded in educational philosophies or particular learning theories and sometimes it simply reflects organisational preferences or economic demands. However, there is growing evidence that in many work-(and life-) contexts individuals (and groups) cannot, and indeed do not, rely on educational authorities and formal instructional systems to structure and support their intentional learning and change projects.

Part of the rationale that guides our conceptual work in iCamp is thus based on the core assumption that adults increasingly benefit from the advancement and development of competencies that enable to execute self-direction and self-organisation of intentional learning and change projects in various contexts. We also agree with educational scholars who predict the growing importance of such competencies for coping with life in general (Rychen, 2003), and many challenging work contexts in particular (Erpenbeck and

Heyse, 1999). In addition, we assume that formal educational systems for adults can and should be designed in ways that allow all participants to actually execute and advance their competencies in this area. The educational work-package of iCamp tries to model how this can be achieved under the specific contextual constraints (cross-national, mediated, networked environments) that drive our project.

2.2.1. Self-direction

As we already indicated above, the state of the current literature base and academic discourse in general displays a lack of coherence in the area in respect to the notion of “self-direction” in learning. In his comprehensive meta-analysis of the Anglo-Saxon literature on the topic, Candy (1991), for example, offers an overview of the various strands of research and thought that can be found under the label of “self-direction” in human learning, ranging from ideas of programmed instruction, emancipation and citizenship, to autodidactic efforts of adults outside any formal educational system.

Candy proposes that work on “self-direction” in learning is done from two main perspectives.

One could be described as **activity-oriented**. The activities and strategies of actors who either want to support or execute “self-direction” are the focus of this strand of research.

It is important to note that this research perspective is only sometimes applied to actors who operate *inside a formal instructional system*.

Another important body of work focuses on actors who clearly operate *outside any formal instructional system*. While this latter research can also be found under the label of “self-direction”, it should be differentiated. Candy (1991), for example, proposes the term autodidaxy for making this necessary distinction.

The second research perspective that can be found in the literature might be described as **disposition-oriented**. Work that is done from this perspective tries to explore personal attributes and orientations that influence the readiness and ability of actors to execute self-direction in various contexts.

Especially adult education has produced a considerable number of contributions that explore “self-direction” from a philosophical or political perspective as individual freedom and individualism exhibited in a wide range of settings.

Another group of scholars tries to apply a dispositional perspective that is more influenced by psychological methods and concepts and that focuses on educational settings in particular.

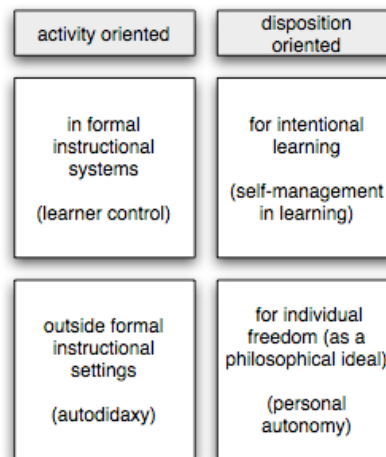


Fig.2: Research Orientation's

The graphic above in Fig.2 displays our interpretation and categorisation of the different research orientations identified by Candy (1991). Candy's original terminology is placed in brackets.

In iCamp we clearly operate in the context of formal educational systems. Thus, autodidactic efforts that are completely disconnected from formal education are not within the range of our conceptualization efforts. Nevertheless, we might benefit from studies on autodidactic activities if the contextual constraints in which these activities occur resemble those defined for iCamp (cross-national, mediated, networked environments). In general, we consider activity-oriented research on self-direction within formal educational settings to be our main source of orientation and inspiration.

Disposition-oriented research on self-direction is only of interest for iCamp as long as it is clearly connected to intentional learning in (formal) educational settings. Through our literature review we found that current conceptualizations of *competencies*, as we have referenced them above, appear to be quite compatible with disposition-oriented research on self-direction.

Since this conceptualisation of competencies includes orientations, attitudes and values, previous attempts to take stock of such dispositions from a perspective of "self-direction" are certainly of interest for our work.

One could argue that a programmatic orientation towards competencies as a complex set of individual dispositions for action in a particular area of challenge, suggest the integration of empirical and theoretical contributions from activity- *and* disposition-oriented research on self-direction in formal educational contexts.

2.2.2. Differentiating between self-direction and self-organisation

We speak of "learning" whenever we observe a change between two conditions of a (living) system, and when we attribute the observed change to a conscious selection of possible changes by the system (Jünger, 2004).

Thus, learning *explains* why a particular change occurred. We make an inference from evidence that there has been some significant change in somebody else's, or our own, way of thinking, perceiving, and doing something (Harri-Augstein and Thomas, 1991). We never directly observe "learning" but "something as learning."

From this perspective one could describe educational settings as particular configurations of observations, confirmations, and evaluations of performances that are selected as evidence of change. Particular configurations, and their history, limit the degrees of freedom for all participants in respect to decisions on time allocation, content selection, evaluation criteria, and other instructional functions. This is where issues of self-direction or external control can get in the focus of educational design and discourse (Candy, 1991). However, to speak about control and direction requires that (learning) goals are determinable in the first place.

Erpenbeck, Heyse, et. al (1999) offer an interesting analytical differentiation here. They argue that contemporary research in technological enhanced learning is still largely informed by the dominating conceptualization of "learning" as a mere linear transformation from deficits of knowing towards determined goals. Thus it assumes that relevant initial conditions and constraints are known or principally determinable. A variation of this perspective acknowledges an undetermined *range of* deficits, initial conditions and constraint, but maintains the view that all these aspects are determinable as deviations from a known medium, and thus it also suggests that a linear transformation is possible (Schäffter, 1998).

Both perspectives imply the possibility of direction and control towards known goals. Mainstream instructional and curricular design builds on these assumptions. Controllability in general, and interventions that aim for predictable outcomes in particular, require such a deterministic view on human learning. This applies equally to situations where the locus of control lies within the individual (self-direction) and to situations where direction is provided by some external source.

While much of current educational practice builds on transformational perspectives that entail ideas of strong causality, control and direction, there is a growing body of evidence that adults acquire a significant part of their competencies through transformations with open goals (Heyse, Erpenbeck and Michel, 2002). Sometimes initial conditions and constraints can be determined, but relative goals can only emerge over time. In other cases it is neither possible to determine initial conditions and constraints, nor goals. Individuals are then forced into an open search movement with continuous reflection on and ascertainment of self and process. Some researchers argue that in many (work) contexts the proportion of linear transformations needed will significantly decrease in comparison to *reflective transformations with open goals*, which cannot be adequately addressed with the traditional toolbox of instructional and curricular design (Erpenbeck and Heyse, 1999).

Erpenbeck et. al. (1999) propose that, in situations where starting conditions, constraints, and goals are either determined or determinable in a straightforward way, we can speak of “self-direction” in respect to the actions and decisions an individual can execute to reach these goals. This thinking is largely influenced by concepts that can be traced back to cybernetic theorising (Norbert Wiener, Gordon Pask, Gregory Bateson and other) of the 1960’s and 1970’s. In complex, chaotic situations on the other hand, where no optimal outcome can be determined and where people have to act and decide under uncertainty, require action and coping strategies that are more adequately described as attempts of “self-organisation.” Theoretical work in this area is heavily influenced by concepts from so called “second order cybernetics.” Erpenbeck and Heyse (1999), for example, explicitly refer to the theoretical and terminological instruments developed in theories on self-organisation in other fields, such as the work on Autopoiesis of living systems in biology (Maturana and Varela, 1980), on Synergetics in physics (Haken, 2004), and the radical constructivist conceptualization of knowing and learning in psychology (von Glasersfeld, 1995). In general, conceptualizing humans as adaptive, self-organising systems appears as an attractive and viable option in an era of increasing complexity and uncertainty and the unavoidable challenges this produces for individuals and groups.

Nevertheless, formal educational settings traditionally assume controllability. Since iCamp operates in the context of such formal educational settings, we will primarily have to model support for strategies of self-direction, in the sense described above. However, there is a growing body of empirical research on adult learning that suggests that the perspective of “self-organisation” might be better suited to describe how adults need to cope with contemporary challenges in the workplace and other areas of life. Within iCamp we thus also want to explore if we could integrate this perspective into our educational design efforts.

2.3. Pre-requisite skills and knowledge

Since iCamp is set-up in a digital and networked environment, a series of basic skills and specific knowledge regarding the use of ICT are considered as pre-requisite for iCamp participants. These include activities such as selecting and installing software for specific needs and connecting them to open (iCamp-“certified”) interfaces, setting-up and using videoconference, chat, Web forum and other communication means, designing and presenting a multimedia presentation using various information sources and knowledge visualisation methods, archiving on external media relevant content, etc.

We assume that the future iCamp participants will have the basic command of ICT, thus the acquisition of these skills will principally not be addressed by the educational objectives of iCamp. However, we are aware that especially for the facilitators it might be an issue to ensure that all the participants do fulfil these pre-requisites and give them some guidelines on how to act in case they are facing problems.

3. Heterogeneity of human actors

iCamp strives for creating an infrastructure for collaboration and social networking between academic participants from all over Europe. One of the main challenges to be met is accounting for cultural differences between the people who will be using it. Though it is true that we are living in a “global village” and contact with other cultures is nowadays easier than ever, it would be impossible to argue that culturally conditioned problems do not occur in collaboration and social interaction.

In this section we try to name the factors – both personal and social - which can hinder the successful communication and collaboration between different parties. We look at them and try to see which ones we can have influence on. Finally we sketch some ideas of how to make cross-cultural collaboration more effective and avoid all kinds of “interpersonal bottlenecks”.

One thing needs to be clarified before we venture into further deliberations. The task at hand can be approached in two ways. First, we can enumerate the characteristics of different cultures, see what distinguishes them from one another, what are the potential areas of conflict and misunderstanding, and try to counter these by giving appropriate advice on how to act when working with a person from a specific country. This is a big challenge. It would probably require setting up a special project, probably bigger than iCamp itself, to take into consideration all cultures of ever-expanding modern Europe and all the possible interconnections between them. We would also leave out anybody who, although living in Europe, comes from another continent. Such people are more and more numerous, both among students and researchers. Last, but not least, we would risk creating a heavily stereotype-driven collaboration space.

We have to go for the other solution. This one would encompass procedures which would facilitate cross-cultural communication in all its aspects – from information exchange to conflict solving. They would be applicable and helpful irrespective of where the specific individuals come from. This is obviously not an easy task either, one, however, that we can realistically expect to complete.

3.1. Factors influencing the quality of cross-cultural collaboration

There are lots of factors influencing the quality of communication in general. Describing them all would go beyond the goals of this report so we are going to concentrate on those who can be more directly applied to relations between people coming from different cultures. They can be roughly divided into following classes:

- personal (personality, knowledge, skills etc.)
- interpersonal (social roles, communication patterns, conflict resolution strategies etc.)
- cultural (culture characteristics, values etc.)

This division is obviously somewhat superficial since aforementioned factors constantly interact with one another and it is often hard to clearly say whether certain behaviour stems from individual or social causes. We adapt it though since it is useful for further discussion.

3.1.1. Personal factors

There are data showing that personality can influence the way one interacts with foreign culture. E.g. Swagler and Jome (2005) have shown that low neuroticism, high conscientiousness and agreeableness – as measured by NEO-PI (Costa, & McRae, 1992) – have positive effect on adjustment to another culture. One can expect analogous results in regard to short-term cooperation with foreigners. Still, no matter how influential personality may be in this area, we will exclude it from our more detailed considerations for a very simple reason of us being completely unable to change it.

Factor that we have to account for, however, is what individual knows or seems to know. This specifically includes knowledge and stereotypes about other cultures. Definitely, knowing about other culture in all of its variety, is helpful and helps one avoid blunders and mistakes, as well as better understand what other party means when behaving in certain ways or saying certain things. Since it cannot be expected that every individual will know a lot about different backgrounds his or her co-workers come from we have to encourage the search for appropriate information. This however, can have negative consequences as well, as it can lead one into the straits of stereotypical thinking. Stereotypes are generalized, simplified and exaggerated opinions about members of other groups. They are usually negative but not necessarily so. The problem here is that, even if one has a positive stereotype of another group he can still treat its members in the same way, neglecting their individuality. One goal of our project would then be to have the individuals using iCamp space be aware of the cultural differences between themselves, while at the same time not overestimate them and be ready to interact with another *person* rather than with a person from another *culture*.

Another aspect that has to be kept in mind is the fact that only a portion of our knowledge is explicit. There are lots of hidden assumptions that we think and act according to. There is no problem with that as long as every person interacting shares these assumptions. In cross-cultural collaboration this is rarely the case. Through cultural and social upbringing many norms, attitudes and opinions are internalised and they strongly influence our cognition and behaviour, even without us being aware of it. Therefore, within iCamp we should aim at making it easier for the users to unearth the expectations or

“axioms” they bring from their own culture. That would facilitate achieving understanding of and between partners.

Another interesting point has been made by Burkard and Knox (2004). Following the earlier research on the subject, they examined the relationship between the therapists’ colour-blindness – that is, the belief that race is not an important issue in people’s lives – and their ability to help people from other races. It turned out that colour-blind clinical psychologists were actually less empathic towards their clients. It means that raising individual’s awareness of differences between him/her and other person, with regard to their cultural background, should have a positive effect on their mutual understanding – an important conclusion in the iCamp context.

Specific skills that individuals possess can also greatly influence the way they interact and collaborate. Most obvious one is the level of command of foreign language. We often feel that this is the single most important factor which hinders our communication with others and that, had we spoke better, that would solve a lot of problems in short notice. This is a false belief. Swagler and Ellis (2003) have shown that it is not the actual proficiency in foreign language that matters most in such situations but confidence to speak and general communication skills. In other words, if one is not shy about communicating then his or hers lack of fluency in a given language will usually not be a big obstacle. Therefore, iCamp should encourage its participants to express themselves, even at cost of making mistakes.

As for the aforementioned general communication skills: being able to express clearly one’s point, understand the emotional aspect of messages (especially on the Internet) or criticize in a constructive and polite manner is essential in collaboration. We have to ask ourselves whether it is possible, or even desirable, to teach those skills within iCamp. Wouldn’t that be diverting our efforts towards matters which are already addressed elsewhere? This is not to say that nothing can be done about that. We merely suggest taking another route of approaching the problem. Our first step should be establishing procedures and scaffolds that would help participants to express themselves in an organized and effective manner and also trying to ensure the netiquette is adhered to. Hopefully, this would eventually have the sustainable effects of people improving their communication skills, especially in the areas of cross-cultural and indirect (online) contacts.

3.1.2. *Interpersonal factors*

The factors discussed in this section can obviously have both personal and cultural causes, so it would be possible to elaborate on them elsewhere. We feel though that it is important to single out and directly assess what is the essence of collaboration and social networking – the interaction with other people.

Communication patterns can vary greatly between cultures. People from different countries may disagree (even unconsciously) on what, when and how can be said. Though they share basic emotions (e.g. Ekman, 1999) they

may have different conceptions of how and when they can express them. Also, though this is less salient in online communication, their non-verbal behaviour may be quite different and, as a result, have misleading consequences. One example may be the way emotions are expressed through the use of emoticons in e-mails. It may even happen that for some it is not very acceptable to use them in formal situations. Another situation in which non-verbal signals may be influential are video- or audioconferences.

However, even though potential for communication mistakes is great, the practice shows that it should not be thought that the error-free interaction between members of various cultures is impossible. First, as has been already stated, awareness of the possible blunders resulting from cultural differences should alone facilitate more deliberate and less automatic processing of information received. It should also encourage search for alternative routes of reaching agreement if the first chosen has little effect as well as a general search for information about the culture. Second, setting a mutual agenda will lead to the more positive feelings between group members and, as a result better, more efficient collaboration. This was demonstrated in classic experiments by Sherif and Sherif (1961), who observed the boy scouts at their camp and competition leads to hostility, while cooperation breeds friendship. It is vital, therefore, that people working within iCamp settings feel that they require the help of their peers from other nations. They all have to agree on what and how they will do, as well as see who has the knowledge and skills necessary to achieve specific goals. Lack of such mutual agreement, together with motivational deficiencies, may be responsible for at least some of the failures in cross-cultural collaboration reported by Vogel, Davison and Shroff (2001).

Another essential factor to be accounted for is the preferred way of dealing with problems. E.g. Tinsley (1998) compared Japanese, German and American subjects and noticed that, when conflict arose, the Japanese were most likely to solve it by deferring to the senior, the Germans usually applied regulations introduced earlier, while the Americans most often negotiated interests. None of them were very skilled at solving interpersonal problems in a, for them, unusual way. Therefore, it would be good, if there was at least some general agreement on how to deal with that type of difficulties in the project before it started.

3.1.3. Cultural factors

Finally, we have to discuss the culture-specific factors that, though not directly related to communication and collaboration, can have a strong influence on it. Cultures are different – that is a cliché – but there were also some attempts to formalize these differences. E.g. Schwartz (1992) identified ten values which have different importance for different cultures. He believes social life is organized to a great degree by those. Similarly, Hofstede (1980) introduced the idea of five culture-defining dimensions – Power Distance, Individualism, Masculinity, Uncertainty Avoidance and Long-Term Orientation. He observed marked differences between citizens of various countries and the results these had for the working and communicational models. Without going into

details of these, and other, theories, we have to take into consideration that people working within the future iCamp settings will have different values and expectations for the task selection, ways of approaching them, solving problems etc. Their cultural background cannot be changed but, again, they can be made sensitive to those differences. Also they can be taught the value of diversity and treat it rather as an opportunity to learn than an obstacle.

We can relate here to the work of Aronson (see e.g. Aronson & Patnoe, 1997), who set up an educational programme to integrate children from minorities in the USA. These were often left outside the school-children community, and also considered less intelligent and able, which frequently had an effect of self-fulfilling prophecy. Aronson tried to overcome this by creating the environment in which minority members were required to collaborate with their peers, if the task was to be completed. Pupils worked in groups, and each of them had only part of the information that was necessary to finish the assignment, therefore everyone had to be involved in discussions and work. This was called a *jigsaw puzzle*. The project was successful – kids from minority groups became more active, self-confident and, which is essential, more accepted by the others. iCamp settings are obviously quite different, mostly because it is adults who are collaborating. Basic schema however can be applied – make people realize they *need* others to work successfully and you raise the chances of achieving just that. Obviously, this is very close to setting up a mutual agenda which was discussed earlier.

Another thing we have to bear in mind is that, as Sanchez-Burks, Lee, Choi, Nisbett, Zhao and Koo (2003) have pointed out, at least some of the differences between cultures are more pronounced in work than non-work environment. They specifically compared the attention to implicit and nonverbal cues between East Asians and Americans, and found out the latter are less sensitive to those when at work. In other words, for them the boundary between working and private situations was much more clear-cut. Similar differences can be expected also between representatives of various European cultures. Implication from this for our project is such, that we should provide the participants possibility and even encourage them to interact in less formal situations, so they can acquire a more complete picture of their counterparts.

3.2. Challenges of cross-cultural settings

All the factors discussed above can both facilitate and hinder cross-cultural communication and cooperation. To sum up, we enumerate some of the more important questions about the participants in the cross-cultural project that have to be answered in order to decide whether their collaboration and networking seems promising:

- To what degree do they share common values?
- To what degree do they share the common knowledge?
- Do they have common goals while working on a given project?

- Do they feel the *cross-cultural* collaboration is beneficial for them in this case? Do they feel both they and their peers have something to *gain* by working together?
- Are they confident they have the skills required to work in such circumstances?
- Are they consciously taking into consideration the differences between cultures while working?
- Have they agreed on the structure of leadership?
- Have they agreed on the way in which the problems would be solved?

If the answer to the above questions is “yes” (or “a lot” in the case of the first two), it can be assumed the chances that collaboration will be fruitful are big. What then can be done to raise the probability of getting such answers? At this point precise suggestions cannot be given, so here are just some rather general ones:

- Make sure the iCampers realize the specificity of cross-cultural collaboration.
- Set up the virtual means for non-formal communication and encourage using it.
- Try to ensure that the belief is shared that every person has a unique point of view, which can be helpful and beneficial for the whole group.
- Encourage activity of every person in the group. Try to assign them roles that suit not only their personality and individual skills, but also cultural background.
- Make sure that certain things are agreed upon *before* the actual project is started:
 - The goals of the project – both general and specific for each participant
 - The responsibilities
 - The way of communication and solving problems
- As the project goes, monitor whether its participants share the understanding of what is happening (e.g. through wikis)

Obviously, all these suggestions apply not only to the cross-cultural collaboration, however in such circumstances it is especially important and, often, hard, to fulfil them, since many tacit assumptions may have to be overcome.

4. Heterogeneity of technological landscapes

4.1. Introduction to iCamp landscapes

In this section we will describe the heterogeneous landscapes of networked tools and services where the actors of iCamp are embedded. Whereas a few years ago the Internet was mainly used by individuals to retrieve content and to communicate asynchronously via e-mail, a more active participation in the online world is possible now. Many people are able to author and publish their own content in different formats via weblogs, wikis, etc., to operate simultaneously with different media, to communicate synchronously and asynchronously, and to manage and create their own media and tools (Downes, 2005). In the context of iCamp, as already previously mentioned, this technology mediated and networked environment influences the way in which pedagogical action and intervention is performed.

In the following paragraphs we describe the main technological landscapes in which iCamp settings can take place. We then offer a few exemplary user stories in order to illustrate how some educational experiences may unfold from an observer's perspective.

4.2. Institutional landscapes

Currently the institutional landscapes of universities are still dominated by standard Learning Management Systems (LMSs) (see Fig.3). Some of these systems are open source, e.g. Moodle, while others are commercial products, e.g. WebCT, with more or less degree of interoperability. Regarding interoperability some of the systems currently in use already provide interfaces for system interaction and data exchange, while others are rather "closed clubs" and allow their users only to travel within their boundaries. A detailed survey on what is currently in use across Europe (with a special focus on the new member states) is currently performed in workpackage 2 and workpackage 3 of iCamp and will be available in the corresponding deliverables.

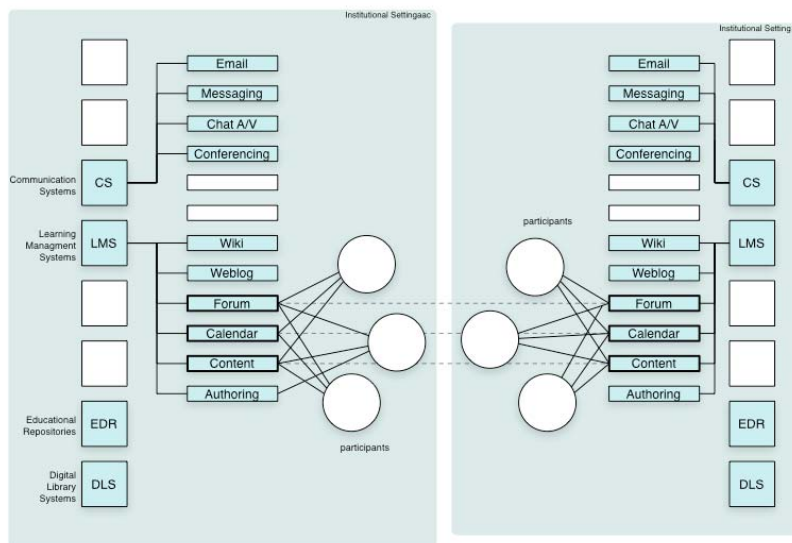


Fig.3: Institutional Landscape

Fig.3 depicts the mainstream scheme where institutionally hosted and maintained LMSs, Learning Object Repositories, Library Systems, and so forth, are considered to constitute the landscape of necessary tools and services. Various LMSs might be in use within a single institution or between different institutions. These systems might interoperate to a certain degree.

From an observer's point of view all actors appear as "residents" who perform almost (with the exception of e-mail maybe) all necessary activities within the institutional landscape. In the context of iCamp, where we focus on cross-national settings, actors are distributed over different institutional landscapes across different countries. The participants that we envision in this setting are thus rather bound to the systems and tools offered by their institutions. For the educational experience in the iCamp sense it depends thus very much on the institution to arrange interfaces for communication and collaboration.

4.3. Personal landscapes

On the other hand an "avant-garde" of Internet users have started to create their own personal learning environments that consists of preferred software tools and services (see Fig. 4). We do not have any empirical data here on the percentage of this group of users (and less within our targeted user group of university students), but there is some evidence that the way people are using the Internet has begun to change. *One trend that has captured the attention of numerous pundits is the changing nature of Internet users themselves. Sometimes called "digital natives" and sometimes called "n-gen," these new users approach work, learning and play in new ways..* (Downes, 2005).

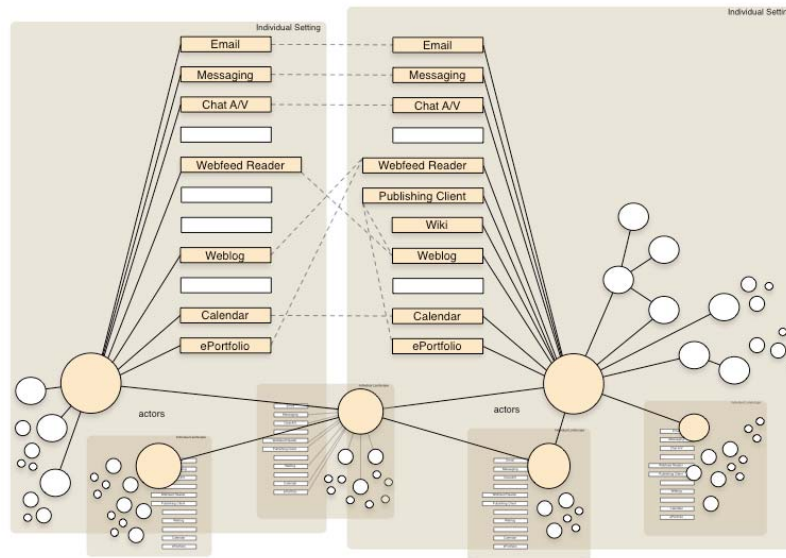


Fig.4: Individual Landscape

Individuals in Fig.4 have the means and capabilities to construct and maintain their personal landscapes of tools and services. They make use of networked tools and services to establish new relationships and to construct extended social networks to support their own educational projects. They take responsibility for all necessary instructional functions such as selecting and acquiring of material resources, pacing and monitoring themselves, establishing criteria of evaluation, generating feedback, and so forth. Their only point of connection with a formal educational institution might be the attempt to receive official accreditation of acquired skills and knowledge.

From an observers point of view these people appear as "nomads" who wander around only following their individual interests and needs. They might periodically join projects, groups and alliances but essentially they operate from a psychological perspective of autodidaxy (Candy, 1991).

In the context of iCamp we consider these actors (facilitators and participants) that live in such individual landscape as part of our setting as long as they are still bond to the formal educational context of higher education with an intentional learning (self-directed learning) project.

4.4. Augmented landscapes

A challenge for iCamp will thus be to bring these two worlds together and move towards augmented landscapes (see Fig.5).

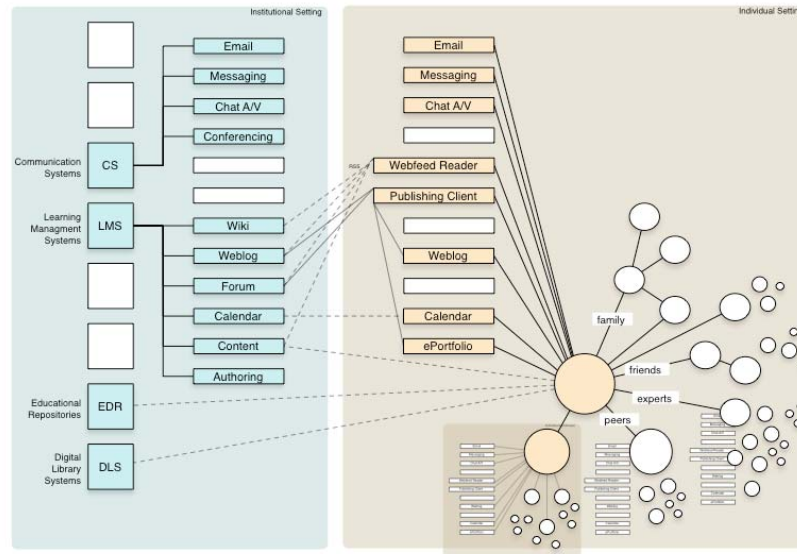


Fig.5: Augmented Landscape

Depending on their preferences, technological means, and capabilities, individuals decide to use specific subsets of tools and services from institutionally provided Learning Management Systems. While the institution might still provide core tools and services, individual actors can choose from a growing variety of options to express their preferences and to augment their personal learning environment. Thus, they gradually transcend the institutional landscape of tools and services.

From an institutional point of view these actors appear either as "emigrants or immigrants" who leave or join the institutional landscape for particular purposes. Whereas an emigrant would rather come from the institutional landscape to find out that there is something else to discover outside the "closed club" that fits his/her individual needs, the immigrants would rather take the opposite approach and would want to connect to the institutional setting for a specific learning project (and maybe some credit points).

What does this development imply for individual actors and for organisations in higher education? What competencies do students and educators need to acquire to adapt to these changing landscapes? Do we even have to distinguish between students and educators, or do these categories get entirely blurred in augmented landscapes, as we have outlined them above?

iCamp will further explore and discuss these issues and highlight educational and technological challenges (e.g. interoperability requirements) that are likely to occur in these landscapes.

4.5. Exemplary user stories

In order to exemplify these landscapes we depict them in some typical user stories that we also used for the construction and refinement of our landscape descriptions.

Travelers in institutional landscapes

Peter is a young associate professor in Vienna University of Economics who teaches research methods in social sciences, using .LRN learning environment. He attended a conference where he met Carmen from University of Madrid who happens to teach a similar course in her university – research methods in business administration. They decide to run the course simultaneously using iCamp space so that Spanish students participate through Moodle and Austrian students through .LRN. Both groups would share a part of the learning materials (that happen to be in English), some learning activities are carried out in the form of online collaboration of mixed groups. This is an advanced level compulsory course in both curricula, but cross-cultural collaborative learning has not been a regular part of this course – yet, both instructors strongly believe that cross-cultural online collaboration skills are important for a young researcher. (*Here, cross-cultural collaboration is seen as goal in itself. In other cases, it could be just means e.g. for providing courses in narrow topics that will not attract enough participants in one country*).

Peter and Carmen design the course together, agreeing upon the common learning materials, joint activities, grading criteria and deadlines. Each of them searches for digital learning materials from the repositories (EducaNext, Ariadne) using iCamp federated search tool that is an integral part of both Moodle and .LRN environment. The joint set of materials is not stored in both systems (.LRN and Moodle), the LMS only grants the rights for students to access selected learning objects that have been stored in LOR. Each instructor adds to local LMS some learning objects in his/her mother tongue and stores these objects in LOR. Peter creates a shared folder in .LRN, this can be used for writing by Carmen and for reading by both group of students. In this folder, Peter and Carmen store the assignment descriptions, study guide.

Some of course news and calendar events (the ones that address both groups and are in English) are synchronized between two LMSs. When the course ends, both teachers will archive the course content (including the joint set of materials).

Travelers in individual landscapes

John, Hans, Paolo and Lisa are „computer nerds“ from different European countries who have been working on an interesting Open Source Software development project (collaborative annotation making/sharing tool for music, videos, images etc). Now the project is in the mature stage, stable release is out and is rapidly gaining popularity. The team has been investing lots of time to the project so that John’s and Paolo’s studies in Exeter University and WUW have suffered because of this. They both study computer science and would like to receive now some credits for this project. As a course „Software project management“ is a compulsory part of study programme in both universities, but teacher who is responsible for this course in Exeter requires full participation, John and Hans reach agreement with the teacher in WUW who accepts their project documentation as a proof of their competencies if they write some additional reflections (in „theoretical language“) in their blogs and carry on some additional exercises which are required from all students in his course. As John and Hans never use the .LRN system in WUW, teacher registers both of them as „satellite students“ in .LRN. This allows John and Hans to access course materials without logging into .LRN system and share their own writings with other students in the course.

Travelers in augmented landscapes

Monika is a graduate student in social sciences in University of Science and Technology in Krakow, Poland. She would like to take a course on international relations from University of Warsaw. Monika has registered to the course in the last minute and she did not bother to apply for a Moodle account in Warsaw – she prefers to use her own (iCamp validated) e-portfolio as much as possible. When teacher has registered Monika to the Moodle course as a satellite student, Monika starts to receive course news, calendar events, forum messages and content updates automatically into her portfolio. Her own homework assignments are stored in a shared folder inside her e-portfolio, but teacher can see Monika's contribution inside of Moodle right where other students submissions are stored. Monika can participate in Moodle forum discussions from her portfolio (blog?), without logging into Moodle system. Teacher's feedback to Monika's homework assignments and grades are automatically popping into her portfolio as well.

In Appendix A we include a complete overview of user stories as we have collected them so far by various iCamp partners. The tables in the appendix also give an overview on how these user stories relate to the educational objectives of iCamp and how they are embedded in the educational journey of iCamp. It should be stated again that these stories were an important step in shaping the pedagogical vision as described in this deliverable. Thus, they represent different points of view and attitudes at certain points of time in the project and are thus not always in line with some of the constraints that we defined for and formulated within this deliverable.

5. Building conceptual tools for performance support

In search for activity patterns for educational design and intervention in the areas of challenge we will start in this deliverable by elaborating on the area of self-direction and self-organisation.

5.1. Self-direction (and self-organisation)

We have indicated in an earlier chapter of this report that any attempt to create opportunities for execution of self-directing competencies in a formal educational setting entails a shift of responsibilities and control of instructional functions towards the participants.

Over the last 30-40 years adult education has produced a rather rich analytical and empirical literature base on what this transition entails, what effects it might have on all actors involved, and what challenges and difficulties are likely to occur.

On reviewing this literature it becomes apparent that shifting the locus of control in formal instructional settings from facilitator to the participants cannot and should not be treated as a single dimension from an educational design and intervention perspective. Instead, it is more appropriate to identify critical and valuable instructional functions (sometimes also called dimensions, aspects, elements, and so forth) that could either be controlled by a facilitator (or another representative of the formal instructional system, such as instructional designers, software, and so forth) or a participant. It is important to note that in real world formal educational settings both extremes, total external-control and total self-control or self-direction cannot be achieved.

Although the descriptive terminology varies, authors who try to identify significant instructional functions on which decisive control can be devolved to participants, tend to name the following elements: objectives, content, pacing, sequence, methodology, and evaluation. Candy (1991) argues that from the perspective of locus of control and responsibility, these elements should be placed on a sliding scale or continuum and that they are closely connected with each other. In other words, in actual settings it is neither possible to shift control on one particular element completely, nor is it conducive to shift control on one element while ignoring the others.

Sometimes it is claimed that individualised or personalised programs of instruction can also achieve a shift of control toward the participant. However, individualised programs of instruction do not necessarily increase a participant's control over the instructional situation. Albeit tailored to individual needs, they can still be a rather predetermined program of instruction that doesn't allow for any change or development of interests or objectives.

The descriptive terminology that is predominantly used in adult education to address significant elements of formal instructional situations, appears to be rather restricted for our attempts to model performance support for the educational settings defined in iCamp. In these settings communication and (inter-)action is predominantly mediated by networked tools and services. Thus, we have started to construct a more generic analytical schema that allows to identify and address significant *resources* and *actions* that could be determined by either a representative of the instructional system (external control) or a participant (self-direction) in the context of intentional learning projects. In this generic, analytical schema we initially treat physical instantiations of these elements in the same way we treat digital (or virtual) instantiations. This should allow us later to model activity patterns that could include both.

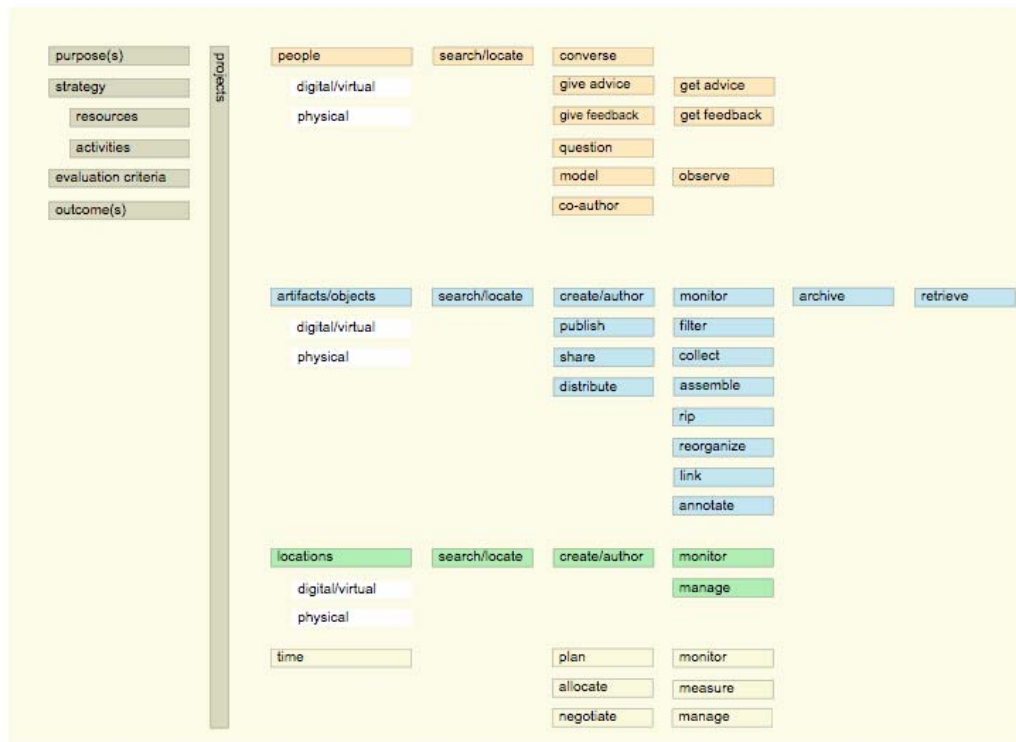


Fig.6: iCamp analytical schema

We have tried to combine this “inventory” of generic resources and actions described above with another analytical perspective. This is explicitly linked to and inspired by literature on how the intended transition toward increased participant’s control of instructional functions in intentional learning projects can be coached and scaffolded (for example, Thomas and Harri-Augstein, 185; Harri-Augstein and Thomas, 1991).

From this perspective it is argued that in order to speak about intentional learning projects someone needs to make decisions on, purposes, activities, resources, evaluation criteria, and intended outcomes. Trying to coach and scaffold individuals to take responsibility for these instructional functions then

usually entails a negotiation of needs that are translated into purposes, the development of some strategy for action that includes specific activities and resources, the identification of adequate criteria of evaluation, and a formulation of the anticipated outcomes.

Over the years adult education has produced a number of conceptual tools, such as personal learning contracts, learning biographies, and so forth, that can be used to support a process of transition toward more participant-control. In this workpackage we are currently reviewing some of these conceptual tools, while in parallel, our workpackage 2 - "iCamp building blocks" is developing a descriptive vocabulary and analytical schema for a categorisation of existing technologically tools and services.

While this is work in progress, we feel that our combined effort to deliberately abstract from existing conceptual and technological tools allows us to ask useful questions and to develop new ideas for educational design and intervention. In a next step, we want to refine our analytical schema and begin to construct a set of particular activity patterns that facilitators could apply to construct opportunities for the participant's advancement of competencies in the area of self-directing intentional learning projects.

5.1.1. Expectable impact of shifting control on instructional functions

The belief that increased participant control of instructional functions results in measurable, improved outcomes is not necessarily supported by empirical evidence. Since the 1960's numerous empirical studies (see for example Gruber and Weitman, 1963; Mager and McCann, 1961; Mager and Clark, 1963; Campbell, 1964; Dubin and Taveggia, 1968; Frey, 1972; Rosenblum and Darkenwald, 1983) tried to measure the influence of participant control of instructional functions on subject matter acquisition through attainment tests of various kind. These studies produced inconsistent and inconclusive findings and failed "to establish the superiority of learning outcomes in learner controlled situations" (Candy, 1991, p. 216).

However, another strand of research interprets "improved outcomes" as more global personal gains that are much harder to quantify. Candy (1991), for example, speaks of "collateral learning" (p. 221) and "beneficial competencies" (p. 219) and reports some empirical evidence for these kind of improvements in respect to informed and reasoned decision-making, increased willingness to accept responsibility in formal instructional settings, and a propensity to self-direct intentional learning projects outside formal educational contexts. This again points to the relevance of orientations, attitudes and values, which is well reflected in the conceptualisation of "competencies" that we proposed earlier in this report.

The literature on what kind of impact one can expect from a shift toward participant control (self-direction), seems to support our decision to concentrate our educational design and intervention efforts in iCamp on

competence advancement, and not on subject matter acquisition in specific domains.

In fact, it is not uncommon that during the transition phase, when old habits, orientations and expectations of both facilitators and participants are challenged, performance on subject matter acquisition decreases. This is a well-documented pattern in all kinds of human change processes, but often overlooked or ignored in educational design and intervention projects. Therefore, we analyse and address difficulties that are very likely to occur when a shift of control, responsibility, and thus power is under way in a given formal educational setting. It is important to explore these issues from the point of view of facilitators and participants alike.

From a pragmatic point of view, we are currently focusing on the facilitators. After all, they are the most crucial players for any attempt to change current educational practice in the field.

5.1.2. Challenges and difficulties from a facilitators point of view

Shifting control on significant instructional functions is inevitably reshaping the relationship between participants and facilitators. Wedemeyer (1981) rightfully reminds us that “the prospect of having to guide and enrich the learning of students who learn at different rates by different styles, who may be physically distant, and who exercise a degree of autonomy over their learning, can be frightening to teachers trained in traditional classroom norms, techniques and psychology” (p. 224). Geis (1976) finds even more drastic words, asserting that “the content expert who equates teaching students with telling them what he knows is not likely to have the skills of counsellor, guide, and evaluator. Depriving him of his traditional role and simultaneously requiring him to acquire sophisticated new roles will produce trauma” (p. 226). We believe that these threats can only be challenged by active support, guidance and dialogue with the performing facilitators.

Since the role of a facilitator who tries to construct opportunities for self-direction in formal educational settings differs sharply from what is often considered to be “sound” teaching practice, it is not surprising that we find many reports on difficulties that arise from the facilitators’ perspective when they engage in such activities. Again, Candy’s (1991) meta-analysis of literature on the topic offers an overview that has not lost its value for current educational settings. Among other issues, facilitators report:

- A sense of failure and lack of preparation to act as a mentor, guide, counsellor
- Feelings of frustration in watching participants struggle with problems that the facilitators could easily solve or avoid
- Inadequacy and lack of preparation to deal with the increasingly divergent demands made by participants as they pursue their individual learning projects
- Increased rather than lessened demands on their time

- Removal of the usual reward system for taking credit for student learning
- Lingering doubts about the efficacy of such an approach compared with more traditional methods
- A concern about being idle or “unprofessional”
- A fear of becoming redundant
- Viewing participant-control as just another well-intentioned but impractical fad
- A fear that their traditional authority and status is undermined

It seems inevitable that we address these issues in iCamp and start to establish a discourse between researchers and facilitators from the very beginning. A close collaboration and productive partnership between researchers and practitioners is regarded vital for successful educational innovation and is also one of the key principles of design-based research. The relation between theory and practice and the study of learning in context has been stressed by scholars of this educational inquiry such as Bell (2004) and others.

6. Next steps towards iCamp's educational innovation

Having defined some of our theoretical claims about the possible advancement of certain competencies in specific iCamp settings, our next steps towards innovative learning environments will focus on developing activity patterns of intervention for facilitators and sort out the particularities and specific constraints for the iCamp field trials in close collaboration with the participating facilitators. This work will imply some close interaction with workpackage 4 for setting the evaluation framework and preparing the trials as well as with workpackage 2 and 3 for sorting defining the needs and constraints regarding the technological means.

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Appendixes

A. Appendix

Airina Volungeviciene: The Overview of User Stories Posted by iCamp