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STEPS TO A LOCALIZATION OF A STUDENT CENTRED IS AN EXPLORATORY APPROACH

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In this exploratory paper we propose a particular interpretation of what “localization” and “centring” could represent within a n-fold approach, aimed to question the reality to raise analytic and methodological issues. This concerns a discussion on a project of localization of an information system addressed to student's needs. Our subject of analysis is the student of Trento University (Italy) that stands for the pivoting point of the comprehension and knowledge of the situated context we study. Adopting a scenario-based design we try to give the researchers and designers a useful tool embodying the questions and problems of a complex reality such as student's life is.

Keywords: localization, centring, scenario-based design, n-fold approach.

1 GENERAL AIM AND CONTEXT OF THE RESEARCH

The purpose of this article is to discuss a project of localization of an information system (IS) for supporting student's life. Our aim is to focus on methodological aspects and to describe and propose a design research approach.

Doing so, we had a first deal with the establishment of our methodological and epistemological bases for a qualitative analysis of our local context. We refer to the “e-Me”'s Swedish research and development team and experience (Albinsson L., Forsgren O., Lind M., 2006a) as a springboard in order to draw our path and to generate and offer an approach that gathers qualitative information for the re-localization of an information systems.

As the Swedish team, we are guided by the will to develop a co-design approach with students that aim to be scenario-based (Rosson and Carroll, 2001, Carroll, 1999) and centred on students themselves (in a user centred design fashion, see Norman, 1993). In our case, to locate and centre on students becomes the way we problematize our context. We did this with the aim to produce scenarios to be used not only as informative device for IS development but also as rhetorical artefacts able to disclose relevant issues about the problem of localization and centralization and involve and draw the interest of the many stakeholders. In this paper, we will not propose solutions to our local problems. Rather, we will provide and propose a methodological account of the way we have interpreted our task to think of localization and student-centred design through scenario-based design.

1.1 On localization and centred design

Localization should be meant as an adaptation process of certain properties to specificity. In our case, the properties represent the research methods and techniques we will put into practice for dealing with our student-centre design and the problem of re-locating an already developed IS. Specificity instead represents the life of the student in the University of Trento.

Centring means that the student for us acquires a multiple role: on the one side s/he represents the object of explicit attention, on another side s/he is considered and treated as an active player participating in the co-design process and finally s/he represents a prospective source providing a student pivoting understanding.

2 FOLDING THE APPROACH

The complexity of a student's life emerges with the grown and still growing set of services and institutions with which the student interacts during her/his time. What we see is a growing redundancy of user IDs and related on-line services managed by different information systems owned by different institutions. We see that this first kind of complexity originates, first of all, from the accessibility and availability of services; subsequently from the perception of the visibility and diffusion of information about these services. Unfortunately, we witness not only multiple accesses for different institutions, but also multiple accesses for the same institution. We also testify a continuum made of digital and traditional analogical services that accumulate, compete and overlap within students' lives.

To this kind of complexity we add another one that deals with the epistemological and ontological status of our central focus that is 'the student'. The student, our student as object of enquiry, appears to be a multifaceted object placed at the centre of different organizations and their services. S/He is an active actor proactively participating within an articulated environment that escapes linear and mono-dimensional understanding. S/He can not be reduced to a set of requirements; s/he can not be identified as supported by a single service. Rather, we need to carefully consider his/her multifaceted and multi-dimensional character.

Moreover, we found a third kind of complexity that concerns the value of the student as perspective pivot of our 'student centred design'. This point of view is a kind of analytic lens through which read the context and to be used as a mean to its understanding. The lens serves not only as a multifaceted means but also as a mean to increase our capability of problematizing the reality around certain issues. It is on such will to problematize reality and on the awareness of the multidimensional nature of complexity that we build and propose our approach.

3 TO CENTRE AND LOCALIZE, THE PARADOX OF FOLDING THE RESEARCH

The explorative nature of our research made us really careful in the definition of the domain to be explored. The initial part of our research has been dedicated to the *hermeneutic* search for relevant actors around which designing our project. We needed to identify a series of actors that were relevant for students and their lives. Such selection of relevant actors has not been arbitrary; rather it has emerged by a corpus of explorative interviews we made on 10 selected students in Trento on the basis of some features (gender; seniority; belonging to different faculties; living in Trento (or not) and citizenship).

A following analysis of our interview helped us in identify the most relevant actors as highlighted in our interview by the students. Three main actors emerged, so we decided to focus on these in the advancement of our student centred design research:

- students as the principal actors through which understand the university's context (student are both our object of inquiry and active player of our co-design research);
- Opera Universitaria Trento, that is an organization linked with Trento's Province. Opera offers a series of services for students in order to guarantee residential and study access' rights;
- ESSE3, that is an already mentioned information systems where student can manage their university data. It is developed by Kion (www.kion.it) for Cineca that is a consortium of 31 universities in Italy. Cineca (www.cineca.it) develops and manages big computer networks, it realizes complex information systems and manage great deal of data¹.

¹ As the reader may notice by actor we do not only mean people or institution but also objects as information systems.

Such synthetic list of actors allows us to introduce the approach we have developed after exploratory interviews. We have made this by always keeping in mind the student as our central pivot to tune our sensitiveness. The intertwined nature of the many complexities we have mentioned and of the relational definition of such actors made particularly difficult to select a specific, unique and unambiguous methodological approach. Therefore, we have decided that each actor will be deepened throughout different methods of enquiry. This will definitely produce autonomous results for each of the different analysis, but it will also produce results that are somehow comparable because they all refer (or not) the students' lives. To centre on complex actors (as students are) for us means to fold our research approach and to multiply tools for different objects of enquiry. It is on the basis of the pivoting nature of our object of study that we have decided to divide our research by three. The analysis, dialogue and dialectic with the three orders of results will represent the basis for the development of highly informed design scenario where to inscribe the emerged and problematic aspects and to propose visions of solution.

3.1 Fold One, Participant observation in the Opera University

The first fold, concerns the Opera Universitaria of Trento and follows an ethnographic methodological approach (Gobo G., 2001). This institution represents the main students oriented services provider that is passing through an informatization process of those services, that is changing the way it relates with students and its own intra-organizational structure. On the one hand, the aim of this study is to comprehend the users' needs and problems related with their link with Opera. On the other hand, to depict reference frame describing intra and inter-organizational difficulties coming with a new IS implementation. Adopting organizational point of view, through organizational ethnography, we try to comprehend what the relationships between Opera and students are. More precisely, we will adopt two techniques: firstly the observation on the field of some open-to-public desks, then some interview with internal actors, concerning students oriented services.

Through on-the-desk observation, during the period of most intense confluence (August and September), paying particular attention to the conversations between the users and the providers, we will try to get in touch with the problematicities coming out from the situated services.

3.2 Fold two, Participatory Design Games with students

As far as the actor 'Students', we have followed a different path than participant observation and we have involved them in some participatory design games (Brandt and Messeter, 2004, Brandt, 2006). Our aim was to actively engage them and let them to contribute to the definition and to the critical description of the Trento's context. This reaffirms their role as both active player and passive object of analysis (and central point of view).

Design games allow engaging the students - gathered in design workshops organized by us - by a participatory construction of critical scenarios. Such scenarios help us to understand how students see, interpret and represent (by the use of games material soon described) their daily practices, processes and concerns. The results obtained by playing design games are powerful and meaningful means for at least two reasons: on the one hand, design games are so open and flexible that let players to freely and richly express themselves without the limitations of a more rationalistic approach. On the other, design games give the researchers the chance not only to obtain clean outcomes representing students results but also to witness the whole process of production of such outcomes and all the underneath values and conflicts.

Design Games do not seek to control the complexity and fluidity of design. According to what Carroll state about Scenarios Based Design (1999, pg. 1), Design games seek to exploit the complexity and fluidity of design by trying to learn more about the structure and dynamics of the problem domain, by trying to see the situation in different ways and by interacting intimately with the concrete elements of the situation.

We have involved eight students for the games then split into two groups of four. Students were selected according the same principle used in order to choose the ones for exploratory interviews. During design workshop with students we have proposed two different design games freely adapted from Brandt (2006, see also Brandt and Messeter, 2004).

The first game allows (pic. 1 and 2) the students to take advantage of a rich series of tangible and colourful objects and pictures in order to co-construct students' stories and trajectories (one shared story, process or trajectory of their choice to which they all agree upon). Colourful pieces (yellow, red, and blue wooden shape) represent places, actors, tools and means to be specified while creating a collective representation of a piece of student life. Together with them, a series of pictures were intended to be used in the representation (a sort of collage or bricolage or bri-collage) as further means to give colours and flavour to it. During the game, we have provided the most autonomy to players concerning their definition, development and agreement on the process to be represented, what with and how. We tried hard not to provide examples or clues that would effect their construction. Our aim was to let them free to express what they really feel by the use of design pieces. While constructing the collective representation they were also digging into what they were giving for granted.

In the second (pic. 3 and 4) game we asked students to individualize six big problematic aspects in their life as students. Six problems for six dice' sides (such as work, accommodation, examination, relationship with the institution etc...). We asked them to use the dice to pick one problem. Then we solicited to use a series (wider then the one in the first game) of pictures (more or less abstract and varying from the domain of school, to art, from pop-culture to nature to abstractions) in order to characterize the problematic aspects and try, when applicable, to provide a vision of solution that is a picture of how that problem can be supported.

We switched the two groups in a way that both games were played by both groups. We had a three hours session for each group. The first group played the game 1 first and then uses some of the emerged issues to fill the dice sides in the second game. The second group played the dice games first and illustrate - through the second game - one of the most striking aspect emerged in the first one. In any case, the groups played the second games by building on the results of the first ones.



Figure 1



Figure 2



Figure 3



Figure 4

3.3 Fold Three – CyberEthnography of an information system

According to Christine Hine's definition of internet (Hine, 2000), we believe that ESSE3 should not be studied only on the basis of its technological requisites but also and mainly on its social bases. The ESSE3 information system's aspect that we are most interested in is that directly in dialogue with the students (personal records, didactic programs, exams registration and so on). This part of the system will be analysed on the basis of the messages exchanged among informatics and project managers that are all gathered around the development and the maintenance of the systems itself.

Our interest here is to try to get the chance to understand the logics that underlying the birth and the development of the ESSE3 systems and in particular the "reasons why" of the interface, functions and support provided for the students. We aim to investigate what is behind that information systems and its organization. ESSE3 cannot be considered and studied in a vacuum; it is indeed the result of a delicate and articulate process of negotiation and working practices where designers' decisions affect

students' life. We believe we need to study this decisions in order to be more conscious of what would mean to a create new scenario where the actual IS are integrated, interoperable and student-centred. For this, we will focus on a cyber-ethnography of the 'ESSE3 user group' (EUG, www.kion.it/eug.html), that is a remotely connected work-group aimed to the support and strategic management of the many university information systems related to Cineca (whose ESSE3 is a part of). EUG takes advantage of two different on-line tools: the on-line forum and the documents area to which we had gain access on behalf of our research. Both tools will be the place for our cyber-ethnographic investigation.

4 A SUMMARY CONCLUSION ON OUR APPROACH

Our qualitative research is not just a preparatory phase: it is substantial. The main purpose of this paper is therefore suggesting a qualitative approach addressed to the realisation of scenarios not only for an IS implementation, but also for the gathering and the drawing of the stakeholders that are relevant for the student life in Trento.

To sum up, our scenarios: embody a no more transparent vision of the real.(Goodwin, 1996); disclose embedded problematic issues usually taken for granted and essential to the definition of the situation; reflect on methodological and epistemological aspects on complex and multi-layered reality.

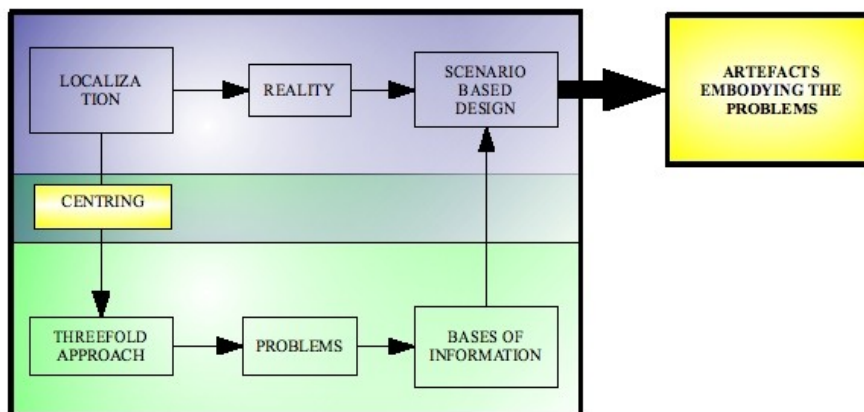


Figure 5

A synthetic diagram representing effectively our approach is described in figure 5. All key elements presented thus far and their relations are depicted. *Localization* stands for the starting point, as an analytic tool activating the process of problematization within the domain of reality we study. By *Reality* we mean an overlapping and multi-layering set of complexities, logics and ordering systems (see Schmidt and Wagner, 2004).

These question the *scenario-based design* and enrich design practices in use, filling it with contents that reflect on our research questions. This is the “substantial” level of the research project, moving through the meaning plane, the blue area in the picture.

Doing so, we move to the “analytic practice” plane - the green one in the figure. First of all it's necessary to isolate the student point of view. This operation is the act of “*centring*”, by which the dimensions of reality are led to pivot the core of the analysis - the students in our case – and to comprehend the multi-dimensionality of the field. Our suggestion is that the “*centring design practice*” could be rendered within the *n-fold approaches*. What we have testify thus far is in fact that to centre is not to follow one clear and unique path but rather to disclose many direction of research that usually ask for different methods.

This is a kind of paradox because to focus and centre the analysis on a specific subject also means to divide our understanding in n-knowledge directions. Thus, an indefinitely - but not causal - number of methodologies has to be set up within the flow of centred design research. The *n-fold approach* combines complementary methods for complex objects of analysis that are embedded with many

dimensions (and so our students are not only students but user of ESSE3 or costumer of the Opera Universitaria). Any single outcome generate by one single fold of the research co-participate to build up a combined *base of information*. This has nothing to do with the definition of a homogeneous and rational database. Rather it deals with shaping a rich, complex and heterogeneous base of meanings.

Scenario-based design represents the result of our *localization*. Thus, the attempt to enrich a practice of design, with a situated and problematic set of meanings, throughout contextualising a *n-fold approach*. Moreover it's necessary to understand that reality has no more to be perceived transparent to researchers and designers eyes (Goodwin, 2003).

To sum up, we believe we have three general finding thus far. First of all, we want to suggest that to re-locate an IS within a different context means to problematize that context itself, that is to see it with a particular lens that suggest certain investigations. Second, we acknowledge that to centre an IS, sometimes, means to go faraway from the centre itself and so, in our case, to study students in a design research might also required to study the developers of a student supporting IS or the daily practices of a student organization. Finally, we intend to stress that scenarios can be further explored and exploited not only as elements that inform and lead the development of a (scenario-based) design solution but also as drivers for drawing relevant actors in the design discussions and to make them aware of their roles.

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