

Introducing Ethnography to IS Practitioners with Experiential Pedagogy

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Abstract. In this paper we describe a long-term effort to raise the awareness of IT practitioners in the Swiss French region to the value of ethnographic observation techniques for requirements elicitation. This effort brought together academia and industry. Several awareness raising sessions were designed and delivered to IT practitioners in industry events. We used an active pedagogy, designing role-play phases interspersed with debrief and theory. We describe the context of this work, the design of the sessions and our subjective assessment.

1 Introduction

The state of the art in requirements elicitation is to collect needs through interviews, surveys and workshops with stakeholders. While undoubtedly providing useful information at a reasonable cost, these instruments have also been known to produce superficial and abstract requirements [1]. To get to the details of work that most often prevent people from using an IS system, or worse yet alienate them to its use, IS engineers had better go to the field where these details can be observed, captured, summarized and modeled.

A few years ago we embarked on a long-term project to bring this message to IS practitioners in the Swiss French region. Starting in 2012 we began offering active pedagogy based awareness sessions in the project management congress in Lausanne, Switzerland. These sessions were based on a course given at the master's level in the School of Computer and Communication Sciences at EPFL [4, 5].

In this paper we describe why we created these sessions, what sessions we provided and their structure. This is followed by the some of lessons we learned, a discussion of the similarities with our academic courses and a conclusion.

2 Why Did We Embark on This Work?

Back in 1997 the first and last authors, joining academia from industry, began offering a master's level IS course to computer and communication sciences students [4]. These courses used experiential learning [2] in an attempt to get students who lacked real work experience to appreciate the intricacies of work in organizations and the relationship of these intricacies with IT system design. A new course called Enterprise Service Oriented Architecture (ESOA) was designed for the academic year of 2007 with improved business game, requirements elicitation, and enterprise architecture modules [4]. The ESOA course has been given in this basic format, but with constant improvements, for a full semester every year since 2007.

Over the years in academia, the first and last authors maintained strong ties with industry, but in 2008 these ties became even stronger when the first author began working part time at Itecor, a privately held company specialized in IT governance consulting, in addition to his work at EPFL.

Bridging research and practice, we began to teach SEAM in companies and at the project management congress, a two-day conference for project management practitioners held annually in Lausanne Switzerland. We adapted the pedagogy and techniques we were using in the ESOA course so that they could be used to raise the awareness of practitioner to ethnographic techniques.

The ESOA course is tightly linked to the enterprise architecture method we have been developing over the same time span: This method is called the Systemic Enterprise Architecture Method (SEAM) [6]. Experiential learning emphasizes the use of concrete experience to enhance meaningful retention of knowledge. Similarly, in SEAM we encourage modelers to create models with concrete content. This makes the models more credible and challengeable than those that contain abstract elements. We would, for example, prefer the service model shown in Figure 1, with concrete entries such as "Manage Jean's appointments" rather than the more abstract "Manage customer appointments." Modeling the expectations of a real person named Jean enables to challenge the model by asking Jean whether these are indeed his expectations. If the model mentions the abstract expectations of an entity called "customer" it is much less clear how to challenge it. Who would we ask to confirm these expectations, knowing that it is probably the aggregation of the expectations of many people. We therefore prefer to first model very concrete expectations elicited from real people and abstract them into IT system requirements only at a later stage. This is in-line with experiential learning where concrete experience is gradually turned into knowledge by reflecting on it and abstracting it.

Eliciting concrete information from stakeholders is not an easy task. While working with practitioners we gradually realized that it is very difficult for them to come up with the relevant concrete data that we requested. The following anecdote illustrates this problem: In a workshop we once organized at a client site we asked the participants (business people), "what is the service you expect from the IT" only to be looked at with incredulous eyes, eliciting no answer.

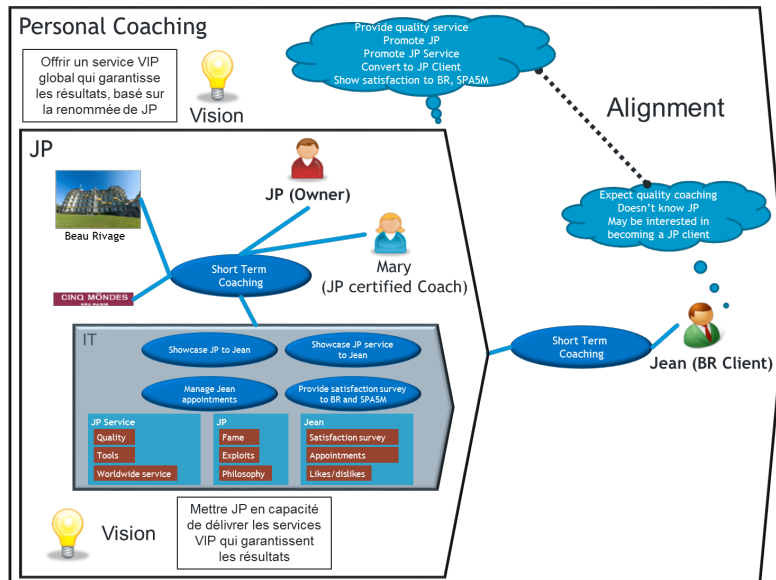


Figure 1 An example of a complete model provided to participants after the session at the 2012 project management conference, in French¹

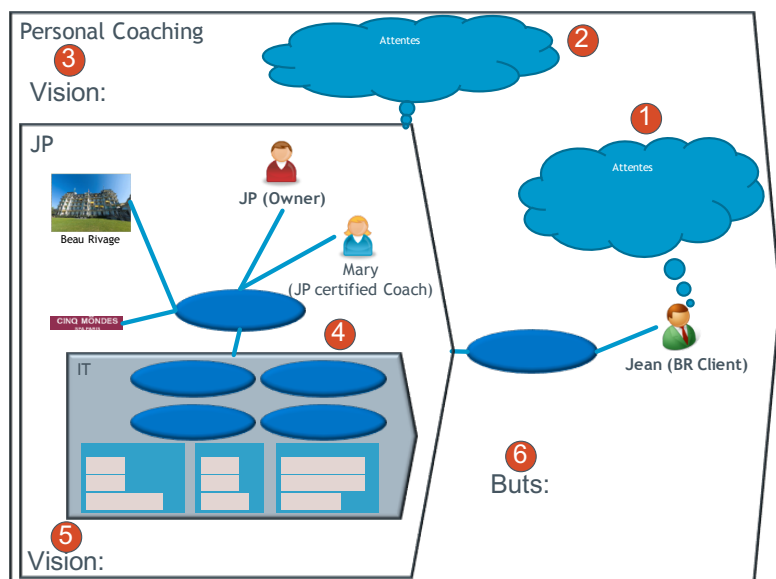


Figure 2 An Example of an empty template provided to participants in the 2012 project management conference

¹ The text in the figure is a mix of French and English. We purposefully avoided to translate the French text into English in order to keep it in its original form.

We switched modes and said, “ok, so what is the first thing you do when you get to work in the morning?” Ah the answer went, “I switch on my computer, check my emails, open this spreadsheet on the shared drive and check the program for the day.” From this answer it is possible to identify at least three IT services, email, spreadsheet and shared drive.

Workshops, however, are not the ideal setting for obtaining this detailed information. The best way to tap into it is in the real work context, when stakeholders are engaged in their everyday tasks [1]. Contextual Inquiry [1] was specifically designed to capture concrete information in this way. It is based on ethnographic techniques. Ethnography is the study of people in communities and the inference of their culture. Ethnography relies on the observation and documentation of the minutiae detail of everyday life. It therefore provides the means to elicit concrete information from stakeholders [5].

3 The Structure and History of the Awareness Sessions

The goal of the awareness sessions is to help participants to identify concrete requirement that are inaccessible to them with traditional techniques used by practitioners.

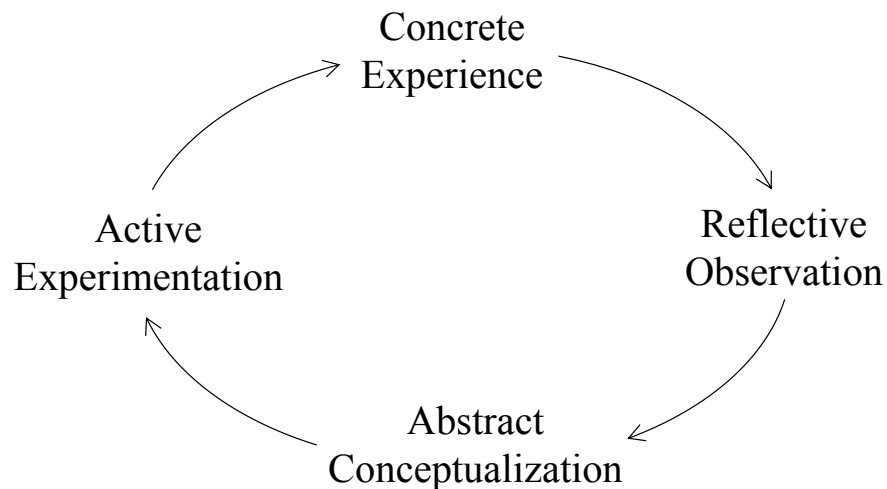


Figure 3 Kolb's experiential learning cycle adapted and simplified from [2]

The design of the sessions kept more or less intact Kolb's experiential learning cycle [2] used in the ESOA course (see Figure 3): Concrete Experience, Reflective Observation, Abstract Conceptualization and Active Experimentation. The Concrete Experience phase uses role-play in order to immerse participants in the intricacies of the daily life of the subjects we portray.

During this phase we also ask the participants to create the SEAM models with the concrete elements they elicit from the actors. Because of the fast pace of the role-play

and because most participants do not know SEAM, we provide them with model templates printed on A3 size sheets. Following the concrete experience, we debrief what was learned by the participants. We then show them how to fill the model templates (see Figure 2) and give a bit of theory. This corresponds to the third and fourth phases of the Experiential Learning Cycle.

We demonstrate the usefulness and richness of concrete information drawn from observations of everyday work by using a two phase approach. In the first phase we give only abstract, interview style information to participants. In the second phase, the actors simulate a scene that the participants observe in order to collect information. Participants are encouraged to ask questions and collect evidence (pictures, notes) during the role-play. We try to show participants that the first phase results in a very partial understanding of the potential IT system with respect to the second phase.

The content of the role-play was designed to be completely different from the ESOA course. Whereas in the ESOA course we use the example of an airplane engine manufacturer, in the sessions we first used the case of a luxury personal physical training coach based on the example of a friend of one of the authors. We studied the case of this real coach and designed the roles that each of the actors will play, the coach, two different customers and a future employee of the coach.

We gave this kind of session for four years in row, from 2012 to 2015, at the project management conference with between 30 to 40 participants each time. The first two years, 2012 and 2013, we had a slot of 90 minutes for the whole session. Because participants routinely complained about not having enough time to really learn the subject, we were given 3 hour slots in the subsequent years, 2014 and 2015. In 2014 we took advantage of this longer slot and created a link with another session given by Itecor about agile development. The requirements elicited in our session were used as entry points in the agile development session. The 2014 session was also different from the other three given at the project management conference because we designed a different simulation for it. Instead of the luxury coach we simulated a luxury helicopter service. In 2015 we reverted back to the luxury coach case. Indeed in 2015 the actors who were available for the simulation were those who knew the luxury coach game and not the helicopter game. It was safer and more cost-effective to avoid retraining them for a new simulation.

Also in 2015 we gave two other sessions in a different format and different content, but with the same experiential pedagogy. The first was an evening event for practitioners interested in knowledge management. We designed a role-play that simulated a small rural business specializing in tractor repair. The second was also an evening event, but for practitioners interested in project management. We simulated a small business specializing in appliance repair, e.g., washing machines, refrigerators, dishwashers.

This last event had an attendance of about 130 people. We could not possibly manage an active pedagogy session with that many participants. We therefore designed a mixed active/passive session. The audience sat in a theater style arrangement facing a scene where the simulation was played. We asked for volunteers in the audience to come forward and play the role of business analysts hired by the CEO of the small business to elicit requirements for a new IT system. Four participants agreed to play along and together we improvised a business scene that the other participants watched as if it was a theater play.

In all sessions except the tractor repair, the role-play was done by Itecor employees who agreed to do some theater grade performance with a large amount of improvisation. We needed 3 actors for each session. In the tractor repair case we drafted people who were available and willing to play along. We had an EPFL PhD student, a business school professor and a bus driver.

Over the years we increased the amount of humor we used in the role-play. The comedy exaggerates the day to day situations that we portray so that they look both real and ridiculous. Humor is helpful in making the role-play fun and engaging for the participants and actors alike. It releases emotions that can help participants remember what they learned. Humor also is used to increase the learning by showing participants how absurd some day to day situations can be.

4 Lessons Learned

Reflecting on our experience organizing and giving these sessions over the last four years, we found the following aspects to be significant.

The discomfort of role playing

Actors, participants and conference organizers alike had to accept the discomfort inherent to these kind of active pedagogy. This was not easy at the beginning, but with time and gradual success in delivering this kind of non traditional instruction, it became possible take more and more risks. The pinnacle was to take the risk of organizing the evening event in September 2015 without knowing how it will be received by participants. The fact that about 130 people participated and mostly enjoyed the performance was not guaranteed in advance. Also, we counted on some participants accepting to act in real-time in front of everybody and to take the risk of appearing inadequate. We had to have faith in the willingness and ability of some participants to improvise their role. In retrospect it worked really well, but we had to live with discomfort of the unknown until the evening was over.

Providing a useful and enjoyable learning experience to 130 people in a theater style setting is far more complicated and risky than with 30 to 40 people in a room. Some people sit near the stage and can see the scene much better than others, for example. When a phase of the role-play takes some time to unfold, the people in the back of the audience may quickly become bored. We indeed received comments about it from some participants in this large event. They felt some scenes dragged on for too much time. Even though we feared this will be a problem when we proposed this event and during its preparation, we were still unable to control the improvisation in real time and some scenes were indeed too long.

To reduce the risks inherent in improvisation, we organized rehearsals with the actors. During these rehearsals we discovered that some of our colleagues simply didn't like interacting with the obnoxious, undecided client, even in a game. The rehearsals helped the actors to improve their performance and helped us to know who would be a good actor, but they also had an unexpected outcome that can be viewed as positive and negative at the same time. Indeed, the participants in our rehearsal told

us that we were pushing the active pedagogy too far, that they needed to be reassured where the role-play was leading them to, that they needed to be given a plan of the session at the beginning. We realized that a pure experiential pedagogy may be suitable in academic courses, but that it made practitioners uneasy. We therefore structured the session so that we told the participants what the plan was at the beginning and at each stage. In particular, we didn't begin with the first stage of the experiential learning cycle, i.e. concrete experience. We had to produce more slides and the result was more academic than we would have liked, but probably less discomfoting to the participants.

The comfort of everyday situation

Because the actors are “ordinary” employees and not professional actors, the situations we simulate are everyday situations that everybody knows. This removes the need of providing scripts to the actors and enables to quickly create different plays.

The actors need to share the intention of the play and to really live their role, to be in the psychology and mood of their character. It is useful to ask them to connect themselves to a similar experience in their life. This is important so that they can improvise the most adequate answer to the given situation. In the case of the washing machine repair, the role-play puts an emphasis of the repair process being very technology oriented as opposed to being service oriented. For example, when the person who needs the repair calls, he or she has to provide technical information which are hidden somewhere on the washing machine. There needs to be a minimal agreement between the players on what kind of practical issues the play will exhibit.

The actor who is playing the main character (in that case the repair technician) cannot be selected from the audience. He or she must know the plot and what to insist on during the play. The other actors follow and play on the path set by this main character.

To make their role as real as possible, the actors need not only to be dressed in their role, but also to be equipped with whatever is needed for the role in real life. When playing a rich businessman on the road, our actor was of course dressed in suit and tie, but was also carrying an airplane cabin size suitcase. The repair technician had a miniature toolbox, the owner of the broken washing machine had a washing machine made of cardboard. All this paraphernalia must be prepared in advance.

The time issue

Apart from the actors, there is a need to have a master of ceremony who manages the transition between the experiential learning cycles. He or she announces when the role-play begins, when it ends, when the debrief begins and ends etc. One difficulty we have is that the people playing the main roles are often those who manage the debrief sessions and who can provide the underlying theory. These people must change costumes (e.g. the repair technician removes his uniform) so that the participants can recognize that they have changed roles. This is the same difficulty as in the academic setting, as discussed in [4].

The play can be short or extended. In the project management conference, participants always complained that the duration was too short. Hence, the duration of the session moved from 1:30 to 3 hours. However, at that point we made the mistake of adding learning material to the session. It is important not to add too much material. If people ask to extend the play, it is because they need more time to live the concrete experience, to debrief it or to understand the theory. Adding more material gives them the same amount of time for these activities as when the session was shorter. The organizers must manage their discomfort of extending the time without extending the material. We often create too much material because we are afraid people will be bored, but each time we realize that participants need far more time to assimilate what we provide than we expected. The exception we discussed above is the theater-like setting where participants are less engaged and needs a faster moving play.

5 Discussion

It is interesting to compare the attitudes of the participants in the awareness sessions compared to the students in our academic courses. To our surprise, there is not much difference between the attitude of practitioners (IT professional, project manager, consultant) and students.

Abstraction and concreteness

In the sessions as in the ESOA course, the participants usually ask the same kind of questions of actors. For example, abstract questions such as “What are your expectations from this service?” and quantitative questions, such as “how many customers do you have?” “Does this happen a lot?” “How much do these incidents cost?” We try to point out to participants that while these questions can be useful, they are often not adequate when asked during a field study. It is unlikely that during the repair of a washing machine the technician will be able to answer these kind of questions. It is much better to observe what the technician is doing in real time and ask questions that are directly connected to what he or she is doing. For example, “When you are in this situation what do you do next?”, or “What did your client tell you just now?”. Such questions are useful to really enter into the technician’s world, in his or her day to day tasks. We had had a participant once who asked the actor playing the technician “Can I help you find the spare part you’re looking for?”. For us this is an extremely interesting attitude as it allows the participant to actually do the job, to understand its intricacies.

While asking abstract questions, practitioners and students alike are likely to miss much of the details we attempt to show them. They consistently miss observing the post-it on which the technician wrote the client’s phone number or the difficulty the client faces when asked to give the serial number of her washing machine. During the Reflective Observation and Abstract Conceptualization phases that precede the Active Experimentation, we insist on all the stuff that the participants missed and encourage them to replay the scene so that they can live it in the here and now and bring back pictures and notes that serve as evidence to what they observed.

The differences in the sessions compared to academic course is that we spend much less time on the reflective observation part. In a classroom, students spend much time in teams reflecting on what they have learned from the concrete experience and presenting their findings to other students. In the sessions we do not have the time necessary for these reflections. We keep only the debrief where we spend a few minutes discussing what was learned with the participants. Also, in the classroom we have an emotional debrief that serves to externalize the emotions such as fear, confusion and frustration that students often feel during the role-play. We do not spend much time on this subject, if at all. We may be wrong on this, but it is awkward enough to talk about emotions with students, we fear that it would be even worse with practitioners.

All our sessions had a rather short time frame, an hour and a half to three hours. This cannot be considered as a real training but more as awareness sessions. In particular, to be really meaningful we would need more than two iterations of the experiential learning cycle. However, from the rehearsals, we have the impression that shorter, more numerous iterations run the risk of confusing participants, without improving retention. Obviously, for a real training, a more elaborate case can be contemplated to be run over several sessions.

The difficulty to practice ethnography

The power of established norms in business analysis (e.g. interviews, surveys, workshops) as well as the time and budget pressures in the office are such that we observe time and again that the essence of what we teach in our sessions is quickly forgotten. It is one thing to be aware of the importance of going to the field to obtain information about everyday work. It is yet another to be able to practice it. Even people we closely work with us, even ourselves, often resort to taking the easy path to requirements using the traditional tools and neglecting the field. Constant reminding is probably needed to move beyond the comfort zone of established techniques. And so, in order to know whether participants in our sessions really use the techniques we have shown them, we need to go to follow them in their daily work. In other words, we need to use the techniques we teach to discover whether they are used. Subject to the same pressures as our participants, we have not yet had the opportunity to conduct this study.

6 Conclusions

In this paper we presented our effort to bring ethnographic techniques into the toolbox of IS practitioners by using role-play sessions. These techniques help practitioners to elicit requirements that are impossible to discover with the tools that they are most familiar with. It is yet unclear whether participants in our sessions change their practice of requirements elicitation. We received good evaluations of our sessions and some participants have told us they enjoyed them very much. Whether they can apply the techniques we show them in practice is another matter. We intend to contact participants to find out.

We also intend to pursue this work by organizing more training with a varied portfolio of cases. We are in the process of delivering a full internal training in business analysis and requirements management for Itecor consultants. One of the modules in this training is devoted to exploring ethnographic techniques. We hope that this will help our consultants to better understand their customers.

7 References

1. Beyer, H., Holtzblatt, K.: Contextual Design. *Interactions*. vol. 6, no. 1, ACM (1999)
2. Kolb, D.A.: *Experiential Learning: Experience as the Source of Learning and Development*. Prentice Hall, Englewood Cliffs (1984)
3. Office of Government Commerce, *ITIL Service Strategy*, TSO, London, (2007)
4. Regev, G., Gause, D.C., Wegmann, A.: Experiential learning approach for requirements engineering education. *Requirements Engineering*. vol. 14. pp. 269–287. Springer (2009)
5. Regev, G., Regev, L., Naim, Y., Lang, J and Wegmann, A. Teaching an Ethnographic Approach to Requirements Elicitation in an Enterprise Architecture Course. In: Proc. First Workshop 1st International Workshop on Socio-Technical Perspective in IS development (STPIS'15), CEUR Vol-1374 (2015)
6. Wegmann, A., On the Systemic Enterprise Architecture Methodology (SEAM), in ICEIS 2003, Angers France (2003)