

# Socio-scientific analysis of user requirements in mobile learning- a case study on marginalised young people

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## ABSTRACT

Although marginalised young people have been proved to have less access to Information and Communication Technologies such as the Internet, their access to mobile phones does not differ from non-marginalised young people. Since mobile phones seem to play an important role in youth's life, delivering learning programmes via this piece of technology seems a promising idea. Thereby, to analyse the requirement of the future users of learning programmes to be designed is fundamental since little about their characteristics and needs is known. A triangulation of data, consisting of academic literature review, expert interview data and focus group data, led to valuable conclusions.

## General Terms

Design

## Keywords

User requirements, marginalised young people, user centred design

## 1. INTRODUCTION

Many marginalised young people have negative attitudes towards education and some have quit school before any qualification. Since these young people are difficult to attract through formal learning settings reaching out to them through their mobile phones seems a promising idea. Our project aims at establishing an online mobile community which allows for contributions from the youth's side and which delivers learning content in form of live-video streams to the participants.

The "ComeIn" project ([www.comein-project.eu](http://www.comein-project.eu)) is funded through the European Commission and involves seven partners from six countries.

Our target group is marginalised young people between the age of 14 and 21 who are currently neither engaged in any formal education programme nor participating in the labour market.

However, before the development of the platform and the content design gathering user requirements is regarded as crucial. Our project follows a user centred design approach that requires involving the target group from the very beginning of the technological development in order to study its needs and characteristics that will then be reflected in the design process. Within a multi-stage process feedbacks of the users at the pilot sites will then again feed back into the specification of the

requirements and the adaptation of the already established ones respectively.

## 2. SOCIO-SCIENTIFIC APPROACH

Socio-scientific approaches turned out to be very valuable in the collection of user requirements. Besides involving the target group other sources of information were used as well.

We chose a multi-methodological approach that comprised academic literature review and qualitative analyses of: expert interviews and focus groups with marginalised young people.

### 2.1 Academic literature review

A broad and in depth literature review of academic journal articles of the recent years laid the ground for all further steps in the elicitation of the user requirements and directed the development of the expert interview and focus group guidelines.

### 2.2 Qualitative Data

As basis for our qualitative analysis we worked with transcripts of all interviews and focus group discussions following the rules of Bloor [1]. For the analysis we relied on the coding concept of Kelle and Kluge [2] with the following steps: Coding and indexing, synoptic analysis, construction of categories and dimensions. We continued with comparing and contrasting of all cases and finally we found definitions of attribute ranges on the basis of our empirical data.

#### 2.2.1 Expert interviews

Compared to other types of expert interviews it is not used in the explorative research phases but is based on a detailed interview guideline that contains previous knowledge, which was in our case predominantly carried out by literature research about marginalisation, youth and ICT.

In this form of expert interview not the person of the expert him-/herself is the main focus. She or he represents an organisation or institution respectively the research she or he has done, single cases are not investigated. Hence, the experts themselves are not seen as target group, but as "complementary unit of action" to the target group.

The pool of experts we interviewed was composed of ten persons both from the scientific realm - academics who were engaged in actual youth, migrant or media studies - as well as practitioners who were currently working with disadvantaged youth in different contexts.

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### 2.2.2 Focus group discussions

Focus groups are moderated group discussions with approximately ten participants about a certain topic. The method is used for an explorative approach to discover topics and to interpret preliminary results or pre-assumptions. The discussions should show arguments, topics and messages and how they are processed within a group. However, they also reveal opinions, needs and interests of the groups. In our case, it seemed very important to involve marginalised young people, as target group of the whole project, already at this early stage to enrich the information gathered through the expert interviews and to validate it. This approach also complies with the user centred design approach.

In total we carried out three focus groups with each 8-10 participants who matched the target group of ComeIn.

## 2.3 Triangulation of data

To triangulate data findings from the literature review and findings from the qualitative analyses of the expert interviews and the focus group data were compared and resulted in user requirements.

## 2.4 Resulting user requirements

In the following some of example of user requirements will be presented that will feed into the technological development.

In the research of the specific needs of marginalised youth it becomes clear that in some areas they do not differ at all from their peers, while in others they do.

Some of the user requirements refer to the design of the technology in general, others to the design of the user interface or the content design.

### 2.4.1 Concerning requirements for technology

- The technology to be developed should work reliably, fast and should be accessible at any time since in the experience of many practitioners marginalised young people are easy to get frustrated and to drop out.
- Since building social networks is particularly important, as many feel isolated, the technology, i.e. the platform, could be used to connect with their peers as well as with the facilitators. Research indicates that social support will be essential in the success of the project.
- One device with several functions is preferred. Thus, the platform could feature different functionalities young people are attracted to.

### 2.4.2 Requirements for user interface design

- Our study indicates that young people, especially those with lower educational levels, prefer visual based technologies. This preference could also be applied to the user interface. Navigation based on symbols (instead of texts) seems easier, symbols as well as other visual elements could play an important role in the design process of the user interface and content design; textual information should be avoided as much as possible

- The design could be playful as most marginalised young people seem to be attracted by technologies if they allow for entertainment use.
- Because marginalised young people may lack certain media competencies such as structuring information or finding information following selection criteria, the design of the interface should be simple and easy to operate by marginalised young people.

### 2.4.4 Concerning requirements for content production

- Most marginalised young people prefer visual content over textual content
- Content should be interesting: Their skills are often suddenly increasing when they are interested in a topic.
- Marginalised young people should be attracted by the content to keep them engaged.
- Content design should be “hip”: This can either be achieved through an attractive design, content or the person to convey the content could be perceived as “cool”. This person could be a teenager speaking to his/her peers providing the content of the learning modules, thus from peer to peer, so that participants could identify with her/him. For instance, a young person who is integrated in society, who has a job or is engaged in further education, could be the carrier of the message and function as a role model.
- Transported information should be short, simple, concise, immediate, relevant, clear, and as concrete as possible. Correspondingly, content should not comprise “too much” theory, not much text and after all, no boring text or “too adult” content or feature “uncool” characteristics.

## 3. ACKNOWLEDGMENTS

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## 4. REFERENCES

- [1] Bloor, M., Frankland, J., Thomas, M., and Stewart, K. 2001. Focusgroups in Social Research (Introducing Qualitative Methods). Sage Publ Inc.
- [2] Kelle, U. and Kluge, S. Eds. 1999. Vom Einzelfall zum Typus. Fallvergleich und Fallkontrastierung in der qualitativen Sozialforschung. Opladen: Leske + Budrich.