

# How *come\_IN* computer clubs may foster collaboration in an intercultural neighborhood

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**Abstract.** Located in primary schools in Germany, the intercultural computer clubs *come\_IN* offer a place for shared practice of children and adults. In socially and culturally diverse neighborhoods this brings together people with different backgrounds. In four characteristic examples we discuss, how group-oriented project work in the clubs may foster collaboration in the intercultural neighborhood.

## 1 Introduction

Situated in German primary schools, the intercultural computer clubs *come\_IN* offer a place for shared practice of children and adults. In culturally diverse neighborhoods this brings together people of different migration background: Once a week they voluntarily gather in the club, work on joint projects or realize individual ideas at the computer, study and play. This shared practice is apt to develop an effect on an individual, as well as on the community level [6,7]: Via computer-based project work the club-members can establish new social contacts, learn about the ideas of children and adults respectively – within their own and from different cultures. Thus, they can actively develop a new understanding of the neighborhood and their own share in it – an understanding that may be seen as a crucial step towards integration.

## 2 *come\_IN* computer clubs

Primary schools are purposely chosen to give home to the *come\_IN* computer clubs: In socially and culturally diverse neighborhoods they are the place to inevitably meet for people of different backgrounds (e.g. economical, educational, migration). A basic rule for the two-hour club meetings is that children should participate together with a parent. Project work is conjointly decided upon. The multi-ethnic neighborhood has a large impact on activities that have been put into practice in the first *come\_IN* club that exists in Bonn since March 2004. Guided by school teachers and students from the *come\_IN*-team who work as tutors in the club, brochures about the neighborhood have been created; shared experiences like a trip to Berlin or a soccer match with a neighboring Turkish soccer club resulted in Scratch, photo and

video projects. In Siegen, the transferability of the concept was tested in 2006 with the establishment of a second *come\_IN* computer club. The experience from Bonn has been used to refine a) social and b) technical aspects of the concept by a) establishing an opening and a final short discussion round, where all club members gather and talk about current and prospective activities, and b) allow a more flexible way of playing and working by retrofitting the club equipment of stationary PCs with mobile laptops, concurrently structuring the clubs file repository with personalized logins.

Principles of action research guide the accompanying *come\_IN* research project at the University of Siegen: Information on collaboration and interaction, appropriation of media and computer technology, learning and social integration is gathered from narrative interviews, group discussions, audio and video material. This qualitative social research is combined with active or observing participation in the clubs.

### 3 Group-oriented project work

The following examples give an impression of the levels of collaboration that computer-based projects in *come\_IN* encompass. There is the community level, where people a) explore their neighborhood, as can be seen in a project of “neighborhood-stories” in Bonn, and b) become engaged with their neighborhood when establishing a mesh-network in Siegen. On an individual level, people can a) realize their ideas with the computer and collaboratively orchestrate this content in a framework called *Splatch*, and b) find support for joint activity in form of a project management tool.

#### 3.1 Neighborhood Stories

The idea of the “neighborhood stories” roots in the observation that the club members’ joint exploration of places in the neighborhood, followed by the processing of these experiences by means of the computer in the club, is apt to mobilize learning capacities that otherwise remained frequently unused. “*For me, there was an educational aspect to it, to improve especially the migrant children’s reading and writing skills [...] When they came to the club they wrote their little texts, or maybe only underlines to pictures they had taken.*” a teacher from the club recalls in an interview. In teams, children and parents decided on places and topics they wanted to explore: places of like and of dislike, special people, or the histories of their houses. They captured their impressions in photographs and texts that were then assembled to little brochures. And it appears that mobility has a considerable share in the story-related collaborative learning processes. “*We went out into the neighborhood to explore places, and then we came back to the computer to put down what we saw with our own pictures and writing. This was fun*”, a girl remembers. A father as well as a teacher describes how this collaborative processing of neighborhood experiences by means of the computer puts club members of different age and culture in an equal position as learners: “*All of a sudden, we had this dialog [...].*” In the end, they did not keep this dialog to themselves but proudly introduced it into the neighborhood by selling their “neighborhood stories” for little money in public places like the library.

### 3.2 Mesh Network

From the outset, the mobility and flexibility of hard- and software was considered to be very important for the computer club in Siegen: Laptops are used frequently and in addition to computers, mobile devices like digital cameras are utilized. By now, participants can use all the offered services only in the school and its surrounding area. Laptops are wirelessly connected, and first attempts have been made to transfer pictures wirelessly. In order to further develop technical mobility and independency in the club, a mesh network that is located in the surrounding neighborhood is being established at the moment [4]. Mesh networks are organized in a decentralized way. Every participant is represented by a network node and contributes to the creation of the network – everybody takes part in the exchange of data [1,5]. With the active help of the club's participants this mesh network may connect the neighborhood. It is planned to install mesh routers as first nodes of the network in the participants' houses and apartments. Club members will be familiarized with the devices and thus will be able take care of their maintenance. The use of a wireless mesh network may be seen as a technical realization of the club's social structure. Starting out in the school, the network is meant to “grow into” the neighborhood and provide information about the club and the opportunity to participate eventually.

### 3.3 Splatsh

Shared experience is also gained by joint excursions. Children and parents use digital maps and information on the internet to jointly plan their trips. Throughout those excursions, club members extensively use ICT, creating hundreds of picture and video artifacts. With MIT's visual programming environment *Scratch*, club members were given a tool to express and share their individual experience in form of personally meaningful media artifacts [3]. Still, *Scratch* offers no easy way to interconnect single projects, nor does it provide opportunities for collaborative projects. A navigational framework, *Splatsh* (built in *Scratch*) was developed to cope with those shortcomings. It allows users to navigate between other users' *Scratch* projects. A map metaphor is employed as an environment that can easily be adapted to the topical travel destination or neighborhood, etc. [8]: Utilizing *Splatsh* to document a trip to Berlin, a city map was laid out in a grid pattern as “orientation level”, each grid representing a neighborhood. A click on one of the 16 grids leads to a view of the selected neighborhood. As the “iconic level”, this view offers interactive icons, affording further interaction. A click on an icon redirects to one of the actual user-created *Scratch* projects, exhibiting individual narrative experience (“narrative level”). *Splatsh* may be orchestrated with manifold user content and thus supports collaboration by providing an adaptable framework all participants can contribute to.

### 3.4 Splatsh2

In projects like the trip to Berlin described above, we observed that the artifacts created by the participants often remained incomplete and needed intensive tutoring

during creation. We found that this is mainly attributed to an overwhelming amount and unstructured filing of available raw material produced during the activities (e.g. photos, videos and stories) as well as the rich experiences and impressions gathered during the trips. Participants lack an overview of the material available they could use to process their experiences, and some of the skills needed to transform them into personally meaningful artifacts [2]. Hence, we are developing a project management tool, which supports the participants in their everyday project work and in multiple projects over time. The tool helps them on an individual level by displaying relevant artifacts in the current context (e.g. raw materials or previously created or incomplete artifacts) and embedding them in the network of other related artifacts. It encourages re-use of own and the artifacts of others. On a collaborative level the tool visualizes expertise by highlighting the authors of or contributors to specific artifacts and recommends experts in specific fields to actually collaborate in the co-located club settings. The tool is currently being developed and evaluated in an iterative process.

## 4 Conclusion

Computer-based project work in *come\_IN* encompasses and fosters collaboration and social interaction in socially and culturally diverse neighborhoods. This joint learning and processing of common neighborhood experiences may be seen as a very active and conscious step towards integration.

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