Chapter 2
A Computer Club for the High Atlas

This chapter delineates the cooperation networks through which I came to be familiar with the High Atlas Mountains, and the valley of my ethnographic research in particular. Getting established in the valley was thereby not a lone endeavour—as so often appears to be the case in classic ethnographic accounts in the discipline of anthropology—I was instead associated with a research project. This necessarily framed the way in which people perceived me as a newcomer, but also the way in which I perceived the valley. It somewhat pre-determined my starting point in the valley. Precisely which people I talked to and lived with was therefore not arbitrary, but the result of a *cooperation in the making*. I could thus draw on the support of particular people on the ground and a small—though subsequently more expansive—network of relationships, each of which helped me to settle in. These cooperative relationships set me apart from the usual *iromin* (*Western* people), who would come to the valley as tourists. It was thus also easier to explain the purpose of my stay. Explaining that I was learning the language, trying to understand how people go about their everyday lives, and writing a book on the topic, would often leave certain questions unanswered, if the reactions of my interlocutors were anything to judge by. Saying that I was part of a project and working together with a local association put me on the local map, so to speak. Moreover, it showed that I was involved in contributing or giving something back to the community, sharing know-how about technology and supporting local school children. Over the course of the following pages, I will describe the emergence of this

cooperative project between a research team from two German universities and a local Moroccan association, reflecting on the motivations for the project and discussing some of the implications. I thus provide an overview of the kind of cooperation that was actually created, thereby setting the stage for the rest of the book. Through this cooperation, the research project became an active player in the local field of development cooperation, and a part of the socio-economic interrelations of the valley.

Cooperation in the Making

In early April, I was sitting together with Mohamed, the president of the local association Amezray SMNID, and Ouleid, as well as three colleagues from the University of Siegen; Thomas, Daniel and Lisa. My university colleagues had recently arrived in the valley and were staying at Mohamed's *Maison d'Hotes*. On the beautiful terrace overlooking one of the villages' *igherman* (ancient granaries), the group was discussing how to work together in the future over tea and biscuits. The researchers from Germany spoke English, which Ouleid translated into Tashelhit for Mohamed. The driving force for our cooperation together was to establish a so-called *computer club*, with the aim—as Thomas from the Siegen delegation put it—of creating interest and enthusiasm for the "worlds of possibilities that can be opened up through computers and the use of technology. This resonated with the SMNID team, who viewed the use of smartphones and computers as a pressing issue for the younger generations in particular. In fact—and as Mohamed and Ouleid pointed out—a lot of young people already had access to devices, but would use them "in negative ways." During the meeting, Mohamed expressed his hope that through the project these issues would be rectified, or "corrected", by teaching the youth of the valley "how to use technology in a positive way: to market their projects, learn about new apps and so on." With the signing of a contractual cooperation agreement between the two parties, which had been prepared by the University of Siegen, the meeting marked the official starting point for the joint project. It is worth noting

that as an active member of the project, I was also remunerated for my work.

The interdisciplinary research team consisted of academics from the German universities of Siegen and Cologne. The University of Cologne researchers had a background in social and cultural anthropology, while those from Siegen came from *socio-informatics* (see Wulf et al. 2018), which—broadly speaking—is a specific type of human-computer interaction research. Our shared research interest centered on: the question of how media technologies and the media practices that surround them can be positioned within the transformation of the mountain region in the Moroccan High Atlas; and what role these technologies play in generating new possibilities for action, consensus and dissent, as well as in shaping and mobilizing varying publics in this process. The socio-informatics part of the project would design and implement socio-technical (infra)structures in the form of a computer club, the activities of which were determined by the findings of existing empirical research. The anthropological research team, on the other hand, would observe which forms of cooperation arose through the use of media technology on the ground, and how these related to local political and socio-cultural events and arrangements.

The region was selected as it seemed particularly well suited to tackling the research question. It was strongly structured in terms of kinship and characterized by profound socio-economic, infrastructural, and technological upheavals. At the same time, there was a significant body of available literature for local reference. As such, an analysis of both the transformation processes and the formation of transnational links was possible. The aim was to take a historically situated and contextualized approach to reconstructing and describing the lines of change on site. We would then be able to explore which specific processes are supported by media technology and how these would restructure local social practice. To this end, an analysis of the potential and limitations of changing media practices for civic cooperation and political mobilization would be necessary.

Already before the meeting in April, the cooperation project was taking shape. Contact between representatives of Amezray SMNID and the

German research project team had been established almost a year prior, including several exploration and preparation trips in which the parties explored the idea of a joint project. I had briefly visited the valley in summer and returned with my colleague Daniel in October, when he conducted a preliminary workshop with children from the Amezray SMNID tutoring program. Additionally, some basic conditions for the cooperative project had already been determined by the funding logic of research projects. In order to secure public funding and make the project possible as part of a Collaborative Research Center, the German researchers had to submit certain documents, namely: a proposal detailing the scope of the project; a research plan; and a financial plan. The intention for extreme openness about the desirable course of the project, as well as mutual negotiation in terms of how to proceed jointly thus reached their systemically predetermined limitations before the project had even begun. Justification vis-à-vis public funding also necessitated a formal cooperation agreement; a document which listed the agreed sum for the purchase of technology and for the operation of the computer club (i.e., for electricity costs and salary for the project coordinators of the local association). Notwithstanding these rather rigid structural guidelines, the conceptual orientation of the project nevertheless made it possible to address emerging concerns, wishes, and discussion points and to negotiate them together.

The establishment of a computer club served different purposes simultaneously. For one, it is an approach taken directly from the socio-informatic methodological toolbox. The computer club, framed as an *intervention*, is primarily intended to produce academic knowledge that illuminates the general understanding of technology and the process of appropriation. Yet, at the same time the intervention is meant to have an empowering effect for local users. The efforts of stakeholders from the Global North to work together with local actors and contribute to the improvement of existing living conditions in the Global South made of the intervention a development cooperation project. As such, it necessarily engendered the ramifications—intended or otherwise—that projects in the field of development cooperation so often entail.

The intervention in the High Atlas was initially planned to span a period of four years. These four years were to include exploration, establishment of the computer club, the professionalization of coordinators, and an initial evaluation. After this first phase, the aim was to continue the project for another four years and thus expand the structures that had been jointly created up to that point. The project proposal itself formulated the preliminary expectations of the researchers as follows: the computer club should—in theory—serve as an option or offer of empowerment for the population. In addition, the establishment of the computer club should provide an opportunity to participate in debates and discourses (both online and offline) from which the local population may otherwise have been excluded. The local community should be provided with the opportunity to appropriate media technologies such as tablets, cameras, GPS devices or laptops in project-specific work—alone or in small groups and supported by the project coordinators of the local association. However, the focus should be first on children and women who had not previously had the opportunity to come into contact with different media technologies. Women in the High Atlas over the age of 35 rarely had access to school education as children and were therefore often illiterate. It was hoped that this target group in particular could be reached and supported with the computer club.

The concept of the computer club has its origins in the computer clubhouse approach established in Boston in 1993 (Aal et al. 2014), later growing into a worldwide network (Resnick/Rusk/Cooke 1999; Kafai/Peppler/Chapman 2009). The original clubhouses were built around the idea that children and young adults could learn by designing and building personally meaningful tools and artifacts. In the setting of socio-informatics ICT (information and communications technology) interventions, computer clubs are supposed to function as intercultural learning environments. They are established to foster learning, cross-cultural understanding, respect in culturally and socially diverse neighbourhoods, and to provide access to ICT and other related technologies, such as 3D printers and e-textiles that would otherwise be difficult for local people to obtain (Rode et al. 2015). In the computer club projects that had been realized by the socio-informatics researchers up to that

point, participants met once a week and conducted various projects by using technology to varying degrees according to their needs. These projects would range from creating games using a piece of software called *Scratch* to playfully learning the basics of coding, 3D-printing, and how to upcycle using garbage. In the case of computer clubs based in Germany and targeting migrants, different topics regarding everyday life in Germany also came up during the sessions. These included writing CVs, establishing guidelines on how to find an apartment, or learning the German language. Overall, the computer club concept aims to empower participants by encouraging them to work with technology in a more productive way that is not focused on mere consumption.

During the April meeting, Thomas, Daniel, and Lisa repeated their ideas concerning the computer club. They tried to translate the concept, method, and procedure both of the computer club approach and of overarching socio-informatics research into comprehensible terms. They were conscious, however, of not making too many demands or insisting on particular specifications in terms of how they imagined the cooperation partners should run the club. "The computer club is not mainly, nor exclusively, about computers. It's also about many different tools, digital and otherwise," they said. "The main purpose is not to teach people computers. If they learn to, that's great, but the main purpose is to give people certain tools, to use however they want—or for a project they themselves develop." The underlying concept here is the so-called *maker idea*, emphasizing the individual's ability to create things using technology. Hence, "we'd like to show and encourage the participants to see computers and technology as useful tools that might be integrated into their everyday lives." And here is where the epistemological objective of socio-informatic research comes into play. Or, in the words of my colleague: "we ourselves are interested in how people handle these things: cameras, tablets, and audio recorders."

From the start, they were quite transparent in presenting the almost activist nature of their approach and the moral claim of their own research with the computer club. Yet they strove to find a dialogical and respectful way of dealing with the project partners. They emphasized the openness of the project. Thus, their priority was for members of the lo-

cal association (SMNID) to bring their ideas to the table and to make the project their own. Furthermore, they were eager to avoid any kind of interaction reminiscent of top-down project management, and they intended to develop a shared vision of whom the computer club should be for and how it should be run.

Despite some unanswered questions, Mohamed and Ouleid were looking forward to the project, which was about to "fill a big gap," as they put it. "We need informatics, we need technology in our association; […] we're sure the project is good and will help the community in general." Asked about his opinion and estimation as to who might be interested in coming to the computer club, Mohamed said that in the beginning the club should probably not be completely open. Only a few people would be interested right away, and this would increase once the project was up and running. He proposed to progressively address different groups of potentially interested people: first school children and educated young people, then government staff and "the older generation of educated people," whereby educated meant literacy, not digital literacy. Now working in public administration or as teachers, such people would already be using computers in their offices, but only be familiar with the very basics. "They would like to improve their skills in *computering*," as Mohamed put it. Another group later then, would be girls and young women of the "new generation, now in school or coming back from university and helping their moms and in their house." They could support their families by using technology to learn more about textiles, for example, or to market the carpets or weaving products their mothers made. In addition, people working in tourism could also be targeted at a later date.

The German researcher team welcomed the outline provided by SMNID in terms of how to move forward with the project. The team considered it very important not to interfere too much. They wanted to create a casual, friendly atmosphere—with a certain degree of informality rather than mere openness—that would invite partners to take responsibility in shaping the project from the very beginning, rather than feeling obliged to fulfil particular expectations. As the research team saw it, the local association knew best. They knew the people, the language, and the

sensitivities across the valley. The researchers were eager to respect and value their expertise. In this regard, it turned out to be helpful that the procedure had not been defined in small steps beforehand.

With the funds and guiding principles provided by the socio-informatics researchers, the local association should run the computer club autonomously. Discussing the organizational basis, Mohamed pointed out that a single local coordinator should be responsible for the project at all times, thus ensuring continuity. After an initial period of two or three years, a further coordinator could potentially be introduced. The researchers agreed and asked if SMNID already had a coordinator in mind, which led to a short interruption of the meeting. On the spot, Mohamed took out his phone and called a man Ouleid had suggested and he considered a suitable candidate, who was working elsewhere in the Atlas. The man accepted Mohamed's offer to become coordinator and arrived back in the valley the next day, ready to meet the German project partners and receive further instructions for his new position. The choice for coordinator was thus made by Amezray SMNID. The researchers only inquired about the educational background and prior experience of the candidate—his language skills in particular.

Language was critical insofar as the researchers wished to continuously know how the computer club was progressing and what kind of activities would take place. For them, English was the working language for project business. If the coordinator, too, had spoken English—which he did not—it would have been advantageous for direct communication. However, it was not necessary as the coordinator would be interacting, first and foremost, with local participants in the computer club. Exchanges between the partners at the project management level would continue to take place in English, with translation, or occasionally in French for written documents such as the contract. At the same time, this galvanized Ouleid's role as intermediary and gatekeeper even further, as he was the only representative of the partner organization with an advanced command of English. He thus took over translating accordingly. He would also take over internal project communication as a kind of *liaison officer*, that is, as project manager on the part of SMNID.

The oscillation between formal requirements on the one hand and the more informal coordination on the other would continue throughout the course of the project. It became apparent that university research projects are staffed and structured differently than those of larger nonprofit organizations or national development agencies. Moreover, there were no standardized processes or institutionalized quality management to draw on. This had certain advantages, such as the familiar and personal feel of daily project business as well as a greater degree of cooperation and flexibility in shaping the course of the project. That this was less the case for planning at the level of project management could clearly be seen in the process by which the project coordinator was chosen. The date and process for the opening of the computer club—which will be discussed in more detail below—provided further evidence of this disjuncture. Indeed, it was a pattern that persisted throughout the project insofar as decisions were often made ad hoc via in-person discussions, despite discussions of the relevant topics often having occurred many weeks prior. Moreover, such decisions did not typically lead any clear delineations as to what course of action would ensue.

In the first official meeting, some areas of contradiction had already become apparent. SMNID voiced their expectation that hands-on IT knowledge and programming would take center stage in the computer club, with the improvement of job prospects as the main objective. Hence, working people would be assisted in their existing job routines, and other participants—school children in particular—would be given the tools to find well-paid jobs and begin their paths toward promising careers after finishing school. While for the social-informatics scholars the *maker idea* was the guiding principle, acquiring tools and skills in dealing with technology was a desired side effect. Orientation toward this outcome was evident in the interaction of the students with very different topics and personally-meaningful projects (Aal et al. 2015).

It also became clear that there were latent differences in the assumed timeline and desired publicity of the club. The researchers were well aware that the project could only get off the ground and gain momentum rather slowly, that is, that the number of users would increase

over time. Nevertheless, there was not so much an expectation as a hope that the opening of the computer club could have immediate and profound effects. This was a club that in theory could be an open space for all from the very beginning, with possibilities and options for everybody, depending on their interests. Mohamed and SMNID seemed more tentative and cautious. As far as they were concerned, the club's integration into existing local conditions could only be expanded very carefully. The networks of obligations in the High Atlas were too fragile, and there was too much potential for conflict in the development of new resources.

To start with school children as the target group for the computer club thus made sense for two reasons. First, working with and supporting school children had been SMNID's previous mandate. They already had a tutoring program in place, including premises, organizational experience, and two teachers or tutors for different groups of school children. Preparing children for a more successful educational path should of course also include the use of media technology. Hence, integrating the computer club project into these existing structures fit very well. In a word: the target group had already been targeted before. Second, supporting the children of the valley tended to generate goodwill rather than scepticism. SMNID considered it important to introduce this new partnership and its resources to a wider public slowly and carefully. By incorporating the resources through the tutoring programme for school children (and thus into the children's existing work), the opening of new lines of conflict ought to be avoided. Approaching the expansion of the project in this fashion would prove that the endeavour was not for profit. It would be clear and acceptable to those in the local community that improving the future prospects of local children was absolutely worthy of support. To open the club immediately to all interested parties, however, would likely entail having to negotiate questions of participation and distribution with local stakeholders: who is allowed to benefit and on what terms? Choosing school children represented both a safe testing ground that SMNID knew how to manage, and also a way of containing potential friction. Ideally, it would prevent scenarios in which self-interested individuals would seek to personally benefit from the programme.

One such scenario would be a tourist guide using the devices from the computer club to gain socio-economic advantages for themselves without necessarily offering any further benefit to the rest of the community. This said, this example would also constitute an intended use scenario for the computer club as far as the Siegen research group was concerned.

The Approach and Research Interest of Socio-Informatics

Having examined the initial steps of the cooperation project in the preceding section, I shall now provide some additional background on the socio-informatics approach as well as some of its theoretical and methodological foundations. The question thereby is how this type of intervention works and what the guiding ideas behind it are.

During the time I worked together with the socio-informatics researchers, I learned that the workshop sessions and small projects that would take place in the computer club were always context-dependent. Other ongoing research projects or upcoming conferences would often orient the themes and topics. "At the beginning of an intervention, we proceed quite exploratively," they explained. "The intervention itself is a first step in the scientific process. A first step that must be figured out as we go along." Once the intervention was under way, it would drive academic knowledge production while simultaneously functioning as a case study.

As the case study progresses, the use of media becomes more focused. This may include: directions or instructions on handling media technology; education on the use of particular media; or redesigning media by developing apps for example. The intervention may also transition from a case study to a design case study, whereby more emphasis is put on creative or formative aspects. The socio-informatics intervention usually follows a three-step process that can be condensed into the following formula: first understand what is happening on the ground; then take creative action and thirdly; evaluate or test the designed approach.

The documentation and presentation of this process and its outcomes represents the central scientific rationale of socio-informatics.

Through joint work, observation, and the reports of coordinators or supervisors on the ground, these case studies produce potentially usable data; specifically data that might elucidate how machines change (social) interactions. Critical incidents tend to be of particular interest for later analyses, as errors often yield fruitful insights that can then find their way as *findings* into academic discourse via scientific publications. Somewhat surprisingly perhaps, scientific papers in the field of socio-informatics do not necessarily deal with computers or media technology, but the processes and procedures they involve.

The approach is based on a series of preliminary considerations, central to which are questions of power relations given that interventions often entail a claim for empowerment. One central influence to the socio-informatics' interventionist approach is *participatory design* (PD), which at its core deals with these questions of power (Bratteteig/Wagner 2012; Bannon/Bardzell/Bødker 2018). Since the very beginning, the goal of participatory design has been to value and include cooperation partners in various computer clubs as experts for the appropriate dissemination of media technology. These partners participate in the development of technological tools, infrastructure, and processes in accordance with the relevant socio-cultural contexts and local needs (Mainsah/Morrison 2014).

The appreciation of social and cultural conditions and the wish to follow and examine the actual *appropriation in the real* has been further systematized in another participatory approach known as *grounded design* (Rohde et al. 2017). This method seeks to anchor its design objectives and intervention considerations more fundamentally in empirical contexts and findings. As such, prevailing social practices are given greater weight. Studies of this type typically consist of overlapping studies of appropriation processes—how participants acquire the skills to use technology independently—and empirical context studies—participatory design and the study of ICT tools. Design case studies that avail of a grounded design approach "are directed […] toward the needs and desires of practitioners. From this point of view, satisfied actors whose practices have evolved toward a better quality of life are testimony to a successful project. On the other hand, these experiences and

designs need to be documented and reflected on as part of the academic endeavour" (Stevens et al. 2018: 34).[1]

The motivation and driving force behind design case studies are thereby twofold:

> […] (1) supporting evolving practices and evolving social challenges and (2) developing new (basic) technological opportunities that may be employed to such ends. Grounded design explores new technological opportunities in the context of a certain domain of practice, as well as the challenges involved in studying the novel technology's fit with and impact on actual local practices over time. (Stevens et al. 2018: 42)

The scientific and scholarly contribution derives particularly from a comparative perspective and the documented collection of case studies carried out in a variety of contexts. These take the form of a layered portfolio, which can serve as the basis for productive academic exchange in terms of how the approach plays out in different contexts. In this sense, both approach and practice are experimental. It is not paramount to achieve a certain outcome, and precisely because of this juxtaposition of case studies, there is greater focus on the implementation of the projects themselves than on a quantifiable or qualifiable achievement of a specific overarching goal. This distinguishes design case studies as interventions from other projects and organizations in the field of development cooperation, which often use elaborate measurement systems to track their financial or technical aid effects. There appears to be a great onus on making impact quantifiable to thus justify one's work.

---

1 Concerning expected outcomes and the qualification of such: "With regard to investigation into appropriation, high-quality research offers long-term, in-depth, and honest empirical observation of the way the use of artifacts changes the related social practice over time. In this sense, it does not matter whether the introduction of the IT artifact affords changes in social practice that were anticipated during IT design. We would argue that the most interesting results emerging in this phase are those associated with unanticipated appropriation moves" Stevens et al. (2018: 35).

As was previously stated, the approach and method of socio-informatic research are based on normative claims. They are, above all, concerned with mutual learning and empowerment, and they favour a practice-oriented approach to computing, which mostly combines processes of *infrastructuring*.

The concept of infrastructuring has proven useful in the discourse of socio-informatics, as it serves to frame an understanding of how computer tools and technology artifacts are used within a broader practical context. Infrastructuring attempts to convey the "social, organizational, educational, and technical processes (design and redesign, implementation and introduction, adaptation and adoption, combination and recombination) through which complexes of technological artefacts become integrated into practices as taken-for-granted technical resources" (Lee/Schmidt 2020: 204, see also Star/Bowker 2002). Simultaneously it aims to open up the conceptualization of design activities rather than restricting them to professionalized endeavours (Pipek/Wulf 2009: 457). Infrastructuring is about "designers and users appropriating technologies in support of local practices, such as providing local data for specific community interests" as well as "creating the resources for the configuring and reconfiguring of socio-material environments in which new practices may emerge" (Wagner 2018: 267-268).

Infrastructuring is also an interesting term beyond the context of computer hardware.[2] With its practice-theoretical foundations, the term is a stark reminder that—despite appearances—technological infrastructure does not constitute an eternal monolith, but is instead subject to constant change and re-evaluation (see Star/Ruhleder 1996). With this perspective in mind, we may shift our focus as to how infrastructure (in the sense outlined above) comes into being, how it is shaped, and how its preservation through ongoing maintenance efforts actually shapes social constellations. Moreover, infrastructuring may be an intended, promoted, and driven course of action. In the framework of socio-informatics approaches, it may explicitly be understood and

2 And it also holds an interesting analytical potential as a heuristic tool, as I have attempted to outline in the chapter five.

envisioned as an *intervention*. It thus becomes a mode of research that "requires researchers and community teams to take action and make change" (Hayes 2018: 306). Through this interventionist foundation, insights can be gained and made productive for wider social contexts and communities. Academics gain expertise that, in turn, justifies and legitimizes their own research projects and procedures, endowing them with the status as agents of change.

If the practices and concepts of *others* are prioritized in the formation of one's own theory and action or intervention practices, this also entails a reduction in the centrality of one's own prejudices and preconceived ideas. In this way, a potential space can be created for considering, negotiating, and shaping the course of the project as both open and processual from the very outset. These dynamics are reflected in the participatory approaches of socio-informatics. In theory at least, these attribute a central role to joint negotiation with local actors at all points of intervention, given that the design requirements and means for implementation are based on empirical events in the given research field.

In the *Field*, Between Disciplines

Empirical events and *field* are terms which make an anthropologist-in-training (such as myself at the beginning of the project) sit up and take notice. I considered the foregoing elucidation of the concepts *infrastructuring* and *interventions* to be necessary as they differed from my own understanding of what I was doing in Morocco and how I would proceed with my research. Being part of a transdisciplinary research project while simultaneously having my own methodological toolbox and theoretical questions in mind was not easy to navigate, especially in the beginning. In the following section, against the backdrop of the socio-informatic intervention described above, I will sketch out which methodological questions inform anthropological research as I understand it. In doing so, I interweave aspects of my own positionality with regard to *field access* but also my role between different disciplinary positions, project partners and claims.

The *Field*

There is an ongoing discussion on how to conceptualize and methodologically understand *the field* of anthropological research (Gupta/Ferguson 1997; Candea 2007). I perceive the field—as I do ethnography itself—as a constellation of interrelated conditions. However, in the case of this book, the elusive field involves a very concrete location: a valley in the High Atlas Mountains in Morocco. More specifically, my research took place in two central villages: Amezray and Agoudim.

Firstly, the field was determined and to some extent bounded by the general research question. In my case, it was also shaped by the research project within the framework of the Collaborative Research Center 1187 *Media of Cooperation*—in the context of which I carried out my research and in whose employment I served as a research assistant. In this context, three layers of research—overlapping but distinct—emerged as the potential focus of my fieldwork: First, a *classical ethnological* field work situation in a mountain village—or rather in a valley—that is categorized as being strongly structured in terms of social ties and kinship. This functions, as far as possible, by describing and understanding the realities and conditions of people's everyday lives in a holistic sense. Second, a focus on media technologies in everyday situations and practices, together with the associated question of how new forms of publicness are produced; and how both aspects relate to the broader context of "development" and transformation of the entire region. Third, the cooperation of stakeholders from the fields of anthropology and socio-informatics, both in terms of their claims to research design and intervention, and their practices *in situ*.

One component of this interdisciplinary research environment was the fact that I did not have to *open up*, *access*, or produce my field of research as a lonesome anthropological adventurer, as is occasionally the case in the almost mystifying narratives of certain methodology chapters in anthropological research. Rather, I was operating within the conditions of an existing cooperation project. Even if I wanted to resist and distance myself from this, it would have been impossible for me to not be associated with my colleagues and the research project outlined above. It

was thus a matter of inhabiting this connection and accepting that I was principally perceived as being part of these relationships of cooperation. For my colleagues from the socio-informatics division, I was the local expert for socio-cultural questions and—thanks to the language skills I had acquired—an important intermediary for the documentation and evaluation of the work they did there. For other stakeholders and the cooperation partners SMNID especially, I was considered an expert on ICT issues and a representative and intermediary in terms of cooperating with the relevant German research institutions.

However, this was advantageous in that it did help to explain my purpose of being there, i.e., my intentions and goals in conducting research. Of course, at times I still had some difficulties in making clear what my research was about and why anyone "back home" should be interested in what I had to say about the High Atlas. However, I came neither alone and empty handed, nor with the sole purpose of producing anthropological knowledge. Rather, I came as part of a cooperation project that represented a new resource. From this point of view, I also came with the ICT tools and the media technology that the socio-informatics division provided to the local association.

This touches on a contradictory topic: ethnographers as resources. It could be argued, to a certain degree, that anthropological researchers should always be a resource for the people they are working with, or that they should at least present themselves as such if they hope to develop a functionable rapport. Anthropologists have more typically been accused (mostly by people outside the discipline) of representing a continuity with colonial abuses of power, by extracting local knowledge and perspectives without offering any real compensation. This claim tends, however, to disregard too readily that interlocutors, or any people *vis-à-vis* the ethnographer, for that matter, do have agency themselves.[3] In point of fact, when it comes to establishing a rapport, the power

3 Here I do not want to be misunderstood as relativizing the justified criticism of anthropology's colonial entanglements, which certainly need to be problematized, nor do I want to cast doubt on the general necessity of intensive reflection on ethnographic research, i.e. on one's own role and positionality.

relations may in fact be inverted, as is indicated by Paul Rabinow for example. In the following reflection, Rabinow alludes to a leader in the community where he was doing research, who

> decided that *I was a potentially valuable resource*, and that either I would work with him and be under his influence or I would not work there at all. His scenario anticipated that his tactics would scare everyone else away, so he could make me a generous offer of lodging and hospitality in his settlement. Several months later, he did make me such an offer. By then, I was firmly and productively ensconced in a web of relationships which I had no desire to break. I would have been happy to add him as an informant. But they were quickly sabotaged by the men with whom I was now working. *I belonged to them*, and they were not going to permit someone else to horn in. (Rabinow 1977: 89, emphasis added)

I take this as a reminder that mutuality permeates research relationships and interactions, even though power asymmetries may be at play. As regards my own research environment, there were certainly consequences to coming to the valley as part of the project. Belonging to a project with SMNID structured the way I entered the valley—though this was not necessarily my intention. In a manner of speaking, there was no onus to *access* or make *my field* for myself. Instead, the field *made itself accessible* to me. The local association organized my accommodation with a family from the village for example. At first the association had suggested that I stay in a guest house. I then inquired whether it would be possible for me to live with a family, so that I could improve my language skills and participate in everyday life in the High Atlas. Not surprisingly, the family I eventually stayed with were very close with the local association. The father of the family was also an important deputy and assistant to the president of the association.[4] Nevertheless, apart from various stays of

4 Many experiences and a lot of "thick participation" (Spittler 2001) of the everyday activities were only possible because I was both received and, to a certain extent, integrated by such wonderful, cordial and appreciative people. The sincerity and intensity with which I was received into this intimate network of so-

several weeks with my socio-informatics colleagues, I was alone there for the majority of the stay. From 2016 to 2019, I spent a total of roughly 16 months in Morocco, including: a one month exploration trip; a stay in Fes for a two-month language course and; a total of 13 months fieldwork in the valley, including one unbroken stretch of 10 months.

Neither One nor the Other

When SMNID and the German researchers were discussing the course of the project, my own role came up. The group was deciding which tutors would be in charge of running the computer club. The researchers from Siegen had just given some examples of possible activities and work samples for this, after which Mohamed asked: "The focus will be on training the tutors at first. But now you only have one more week here in the valley. What about the training? Will Simon—who is staying here longer—take over the training of the coordinators in the future?" One of the Siegen researchers answered, "well, … [pause] very good question [pause; then directed at me] what do you think? Could you handle it?" In several respects, my colleague's answer was more revealing than was first apparent. The training of the coordinators had not been exhaustively planned in advance, and not much time had been allocated to it in general. It was evidently not precisely clear what exactly my contribution to the project would be and it was conceivable that I could take over other areas of work for which my involvement was generally welcome.

Before I left for Morocco, they did not formulate any particular expectations in terms of my role in establishing the computer club, nor regarding my research more generally. Given the shared project, research interests partly overlapped, despite the two separate disciplines.

---

cial relationships and which for me has come to mean a lasting and deeply felt connection is still difficult for me to put into words; I am profoundly moved by it. For this same reason, I decided against stylizing the family into a prototypical but very personal symbol of life in the High Atlas. I am convinced, however, that through some of the experiences I had with the family and which are described selectively, the proximity of shared life will become tangible.

Hence, I was "the man on the ground," as my colleagues put it, providing "this observation data that you are collecting anyway." The request for my on-site observation was related to the question of how the computer club would commence as a practice in terms of how users acquire skills or make use of the resources made available to them (appropriation). Users were often seen by designers as passive consumers, obscuring their potential active role as co-producers. Guiding questions of my colleagues to me could therefore be: "How is the computer club actively used by the users? What do they do with the computer club and media technology in general? How precisely do they use it, for example: what happens during individual sessions? Do they do anything that designers did not foresee? Why do some things work well, some poorly? What exactly does the appropriation processes look like?" Observations from *inside* the computer club or during sessions would, of course, be central, yet those from *outside* or around the club would also prove very useful. In short, my contribution would consist in facilitating an understanding of the framework within which the intervention was happening and, thus, delivering so-called contextual data. The insights provided would ideally help to connect events within the computer club to a wider view of the local social environment. As one colleague explained, my insights would be useful in providing context "if, for instance, some children cannot make it to computer club sessions because they are needed for work in the fields."

I took a rather *wait-and-see* approach to the situation and was thus latently passive in accordance with my self-prescribed perspective of participant observer. I did not so much engage in processes of organization or guidance within the framework of the computer club itself, but rather endeavoured to be approachable as an intermediary or translator, of sorts, between the worlds of the valley and socio-informatics. Admittedly, however, I had neither the comprehensive expertise or authority to speak for one or the other. On the one hand, I had no background in socio-informatics and had never been involved in establishing a computer club. On the other hand, I was just learning how things were done in the valley. Indeed, in line with what I believed was imperative, I was far from

arrogating to myself any form of representation or ascription regarding the socio-cultural realities in the High Atlas Mountains.

Of course, I was not always in complete control of my time and at various moments my time and energy both were monopolized by one of these worlds of the other. This was the case when I was asked by representatives of SMNID to answer organizational questions about the course of the project, for example, or when I was requested to pass on information to my socio-informatics colleagues. I was also assigned an expert role in dealing with media technology and was consulted for trouble shooting. When children in the computer club were stuck on the computer or tablet, for example, I was called for help. At other times, acquaintances of the family I was staying with would come to the house so that I could resolve their tablet or smartphone issues. They would ask the father of the family as he had such devices himself, while I was asked as I was known to be involved in the technology project. The fact that I was in neither one camp nor the other initially led to diverse interactions and irritations, but it also gave me impulses for my own ethnographic work. Ultimately, this work became more interventionist than I had first anticipated.

From a certain point of view, anthropological research could be considered an interventionist practice in itself. That is, if we take seriously the claim that anthropological knowledge production is more than mere data collection, consisting instead of knowledge and experiences that are mutually and cooperatively brought to the fore in field work through: the joint creation of relationships; the establishment of interpersonal connections; and the negotiation of precisely the end to which knowledge is being gathered at all. It is an intervention into the situated practices, meanings, and lives of people in real life situations. This is especially true for anthropologists engaged in the field of development cooperation, as Annemarie Mol reminds us: "The effects of science do not come after the facts. That something is altered (organized, staged, manipulated, experimented with) is a precondition for finding facts in the first place" (Mol 2014: 102). Moreover, Mol stresses that in this context, ethnographers

and anthropologists do *not* write for the people they are living and working with, but for an academic or informed public.[5] As such, research

> does not stay outside its fields of study but interferes with them. However much we used the term 'observation', our work is not done through our eyes only. There is talking, travelling, trading. Things take time—not just our time, but also that of technicians, translators, research assistants, experimental subjects and our so-called informants. 'Truth' depends on collaborative work. (Mol 2014: 102)

With these explanations in mind, it is clear that anthropological research is thus always already *intervening*. As a discipline, however, anthropology is not as comfortable acknowledging this as is socio-informatics. The difference stems from the fact that socio-informatic researchers actively seek to bring about change, to empower, and to offer practical and technological solutions to social problems. Anthropology, however, aims to provide detailed descriptions and comprehensive analyses of social situations and contexts. Anthropologists typically seek to elucidate problems, rather than offering concrete solutions. By bringing together theoretical backgrounds and methodologies from both anthropology and socio-informatics, our project in the High Atlas aimed at both generating mutual benefits and uncovering new problems. The most important dimension of the project is a commitment to openness and a desire to transgress disciplinary boundaries.

Given that media and technology are mostly regarded as culturally neutral, a cooperative intervention project—together with productive dialogue on the ideas of socio-informatics—could indeed prove highly beneficial for anthropological research and theory. Using media technology as a common denominator for cooperation creates common ground between the two disciplines. In turn, this may even contribute

5 This gives rise to different kind of questions concerning solidarity and gratitude. As Crawford aptly puts it: "How can I pay people back for this? A collaborative project like this makes it difficult to know who is owed what, and yet these mostly illiterate villagers have, in effect, given me a career." (Crawford 2008: xiii).

to the creation of a common space from which a more reciprocal rapport and intercultural encounter can emerge. Coming together around the issues of the computer club, actors create a sort of community of practice driven by mutual interest. As such, power relations and hierarchies—always present in ordinary fieldwork contexts—may equally be attenuated. After all, engaging with an object that is to be assembled and produced in common represents an inherently processual research situation. Ethnographic research could thus be enhanced by such a cooperative engagement in that this could circumvent certain inequalities that usually go along with the classical anthropological research setting, namely that it is primarily—and often exclusively—the researcher who has an epistemological interest.

Anthropology—or to put it more precisely, ethnographic fieldwork—may well seek to contribute to socio-informatic research. It may do so by providing *meta-research* according to grounded design terminology in order to empirically contextualize an intervention for instance. In such scenarios, the following two observations—the first of which is especially salient for the field of development cooperation—are worth considering: Firstly, "when the question is one of intervention, and accountability generates pressures that some kind of success story be told for funding agencies, anthropological concepts […] are stripped of complexity and made into discrete objects that can be manipulated for specific objectives" (Das 2014: 60). Caution must be taken that anthropological research does not become a science of auxiliary and justification. Secondly, even despite interdisciplinary collaborations, the research goals of the two disciplines are ultimately irreconcilable. Anthropology aims at a *thick*, critical-analytical description, whereas socio-informatics aims at an intervention that offers a solution to a (socio-technical) problem or an improvement to a specific situation as well as the aggregation of case studies. To state it somewhat simplistically, this means that the former strives to assume the role of a passive but curious bystander who would very much like to leave everything as they found it. The latter, on the other hand, hopes to be an active, intervening designer who leaves a positive mark. The only way out of this impasse is

by means of active cooperation with local partners and participants as acknowledged experts on their own (social) reality.

A Place for Technology

In order to create amenable conditions for cooperation, we needed to address various challenges concerning our respective expectations, language and communication, and the legal framework of the project. Some of these issues could be addressed and resolved at the very beginning, others persisted throughout the course of the first project phase. Certain organizational issues were central for getting the project started. These included brainstorming *maker-oriented ideas* for possible workshop designs and the general training of both tutors and coordinators for the computer club. In the following section, I describe the official opening of the computer club, which was a critical and formative moment in the project lifecycle. I then turn to the training of tutors and share some insights on the first workshop sessions. The guiding question here is how the learning process at the computer club worked and what the context variables were.

Opening the Computer Club

After our first gathering in April, we met on the following day in the new association building (*maqar*) at 09:00. An official opening of the soon-to-be established computer club was to take place at 10:00. As the opening had only been agreed and scheduled on the previous day, there was little time to advertise the event. The group had also been very busy in the lead-up to the date. While the researchers set up their technical equipment, two groups of children from SMNID's tutoring program arrived at the neighbouring premises of the associations' older building. One of their teachers began explaining the plan for the opening while the other prepared tea and set out biscuits on tables. Together with the SMNID staff, the researchers used nails to attach a white bed sheet to the recently plastered wall, which would then serve as a screen for the pro-

jector. On one window, they hung curtains that had been sewn by two French women from a partner organization. The new *maqar* building had recently been completed and though the ground floor was usable, the upper floor was still under construction. The furnishings were still somewhat provisional. A lockable wooden cabinet, in which the new technical equipment would then be stored, was the only piece of furniture that had been bought new. School desks and white plastic chairs from the old building completed the furnishings.

In addition to about 65 children from the tutorial classes, there were almost a dozen adults present, most of whom either worked in the local administration or as teachers in the government school. First, Mohamed introduced the association Amezray SMIND and its work. Then Thomas introduced the project and the group of researchers from the University of Siegen. He explained that computer club projects already existed in other countries, such as Germany, and emphasized that they were not just about computers, but about the creative use of different technology depending on the relevant context, idea and project. Lisa then shared examples of a project in Palestine, which focused on recycling and upcycling. Mohamed followed up on this and spoke in more detail about the topic of waste, in which he also tried to generate some more participation and to make sure that the children understood the importance of the topic for the High Atlas. Finally, Daniel concentrated again on the valley and reminded everyone of the short workshop that had already been held the year before. During his previous visit—during which the possibility of cooperation between SMNID and the University of Siegen was explored—he also created two videos about his stay, as an example of what could be done with the technical equipment and the computer club. The videos showed places from the valley as well as some of the children who were present in the room. Afterwards, I said a few words to show that I belonged to the project—after all, I had already been there for a few months—and to explain that I would be staying in the valley longer so as to observe how the computer club was developing. After the presentations, the children were allowed to try out the technology. Various cameras, tablets, laptops, and GPS devices were spread out on several tables. Taking photos and selfies was a particular hit, not only for the

children, but also for some of the adults present, given the presence of a new Polaroid camera that directly printed out small pictures. All the while, SMNID staff distributed tea and biscuits, first to the adults and then to the children.

At the beginning, and during the introduction of the project, I had the impression that the presentation was going over the heads of the mainly young, school-aged children and teenagers. It was geared more towards an older, informed audience, as there was a lot of input, a lot of talking and the content was, to an extent, somewhat abstract. But even when it became more practical, as with the examples of upcycling from the project in Palestine, I could not help but thinking "everyone must be asking themselves what this has to do with technology and computers." The translation of the do-it-yourself claim and the maker-idea as a way of appropriating technology seemed to me to be quite demanding, although my colleagues from Siegen made a real effort to make the connection in simple words. Nevertheless, the children were familiar with sitting still and listening from their own learning context, as frontal teaching was the most common mode of instruction. Despite the large number of children present, the atmosphere was very calm and concentrated, perhaps even expectantly tense. The films that Daniel screened after the long lecture loosened things up a bit and allowed spontaneous expressions of enthusiasm. Earlier, Mohamed had also tried to lighten the reverently quiet atmosphere and reminded the audience that they could not learn anything if they were shy. When it came to trying things out, the mood changed abruptly and after a short period of hesitation, the atmosphere became very exuberant, cheerful, and loud.

It was fascinating how quickly the children got to grips with the technological tools and machines, even if they had never before used them. One young boy, for example, inspected a digital camera first with some scepticism, obviously trying to hold the device correctly with due care. I showed him where the shutter release button was as he could not identify the available buttons. After he had taken the first photo and it appeared on the display, his tense face suddenly lit up. With freshly gained self-confidence, the pictures started coming thick and fast—in all directions, everything serving as material—until a friend had to

insist that the boy hand over the camera, almost snatching it from him. For me, this scene illustrated the potential of the *just doing it* approach, especially compared to classic training scenarios in which the correct handling or required operation is explained from a theoretical point of view. Ultimately, the focus then shifts towards fostering confidence in trying things out and not being intimidated by the unfamiliar feel or the fear of breaking something. This approach entails sparking interest and enthusiasm for computers and the use of technology in a playful and experimental way. There is an underlining conviction that the computer ought to be a means to an end, not an end in itself.

The opening boosted our motivation given that things were now finally getting underway. At the same time, it was relatively quiet in terms of its impact on the wider community, possibly because the organization of the event and the arrival of the German researchers had each occurred at quite short notice. The fact that the date was not fixed several weeks in advance—as might have been expected—also meant that SMNID had only one day to advertise the opening and invite possible guests. In sum, the two German project leaders were absent, as were certain members of the SMNID board, there was no promotional material, and only a few members of the association plus a few adults from the area were present. There were equally no representatives from the other active NGOs that SMNID collaborated with.

In a way, SMNID's efforts to reach the general public actually limited the horizon of the opening, which was more of an internal opening event rather than a presentation directed at a large attendance. As such, it was fitting that we received no welcome from political dignitaries or representatives of the local administration, as may otherwise have been expected for the opening of projects with greater media impact. The reasons for this were unclear. Perhaps it was simply not considered a priority at this early stage of the project. It may have been due to the insufficient notice given. Or perhaps SMNID had deliberately decided to keep the event small as they were both uncertain what to expect from the project and unclear as to what impact a larger event may have had at this early stage.

I was initially under the impression that the structure of opening was as spontaneous as it was due to insufficient planning. Before the first guests arrived, each of the project partners made short-term preparations, in an effort to demonstrate to one another their willingness and ability to cooperate. It is perhaps somewhat typical for certain decisions to be taken last minute at such events, yet the list of constraints was extensive: The technical devices and equipment were not yet available in their entirety, or to the extent planned, as shipping was complicated by regulations concerning computer batteries. The researchers thus brought PCs, tablets, and cameras from Germany to Morocco in their suitcases, with the obvious limitation of the amount that could be brought as well as the general difficulty of getting equipment through customs. Tablets and laptops still had to be set up and central applications had to be installed. Sockets, lamps and curtains in the recently completed premises were installed the day before and no additional tables or benches had been purchased yet. The newly delivered equipment cabinet had arrived in time, but had to be assembled in the absence of a professional carpenter. The coordinator, who was supposed to be in charge of the club, was not yet back in the valley due to a last-minute appointment and could therefore not be officially introduced. It seems to me that these problems could have been avoided with more diligent planning.

It is not that these problems posed any threat to the project, of course, nor were they so profound as to create a controversy. Rather, they were inconveniences that particularly stood out to me. It should be noted that most of them were easily disregarded given the desired openness of the project organization. The opening event was fortunate insofar as there was no conflict of organizational modes, whereby one would involve advanced organization, the other greater space for spontaneity. Instead, all participants worked together on the spot to develop the procedure *in situ*. Everyone seemed to be aware of the fact that the project needed time to develop the desired momentum ("*Eigendynamik*") as well as a certain degree of composure in terms of the organizational process. What we had achieved at the opening brought the whole group

together and thus constituted a first milestone in establishing good communication and collaboration for the burgeoning project.

Getting Started

After the opening, several details still had to be clarified: When would the training for the future coordinators take place? What would the workshop sessions look like? Who should be invited to participate in the computer club? And how could ideas best be received from the very heart of the community? The training sessions and instruction of the soon-to-be coordinators took priority in the days after the opening. Initially, we briefly considered whether the whole SMNID board should take part in the trainings given their general desire to have a deeper understanding of computers, but the project partners then agreed to focus on the future coordinators in a smaller setting.

Over the course of the following days, there were training sessions with the soon-to-be coordinators, usually in periods of 90 minutes to 2 hours, mornings and/or afternoons at the computer club. The first sessions with children from the tutoring program were scheduled for the following week, before the researchers from Siegen were due to return to Germany. Three tables were arranged to form one group table, on one side the two remaining socio-informatics researchers Lisa and Daniel (Thomas had already returned to Germany earlier), on the other the two designated tutors: Mustapha, who was the newly appointed coordinator, and Aziz, who also taught children for SMNID's tutoring program. Ouleid—the project manager of SMNID—and myself sat on the third side. The fourth side was left empty and would be occupied by the president of the association during his sporadic visits. Daniel and Lisa were the only ones with their MacBooks—the others used notebooks and pens—on the table in front of them and were constantly typing away. In combination with the seating arrangement, this left no doubt as to their expert role. At the first meeting, the coordinators had also fetched the new laptops, but then quickly folded them up again and put them aside, because the hands-on part would only take place at a later training session.

Occasionally the project manager would not stay the whole session as he worried that his attendance could be intimidating or counterproductive insofar as the new coordinators would be anxious to avoid mistakes and thus not ask questions that would otherwise be beneficial. This did not seem unjustified, as it turned out. However, it posed another difficulty concerning language barriers and communication. Ouleid was our English translator, and while his absence may have led to a more relaxed atmosphere, the language barrier became a problem, which was all the more frustrating given the objective of helping the tutors, and answering their questions. With one tutor, we communicated in English as he knew a little, with the other we spoke in broken French. My own Tashelhit language skills were not yet advanced enough to offer much in the way of help with specific vocabulary.

The training content primarily consisted of a short ride through the methodology and theory of socio-informatics. It was very cursory and based on many work samples followed by a guided trial and error process, rather than systematic instruction on the devices or specific applications. It was important to highlight to the participants that empowerment and doing/making things in a group setting were core tenets of the computer club, in contrast to the lonesome consumption of the internet café. The coordinators were asked to think of themselves as being part of a "community of learners, where we all learn from each other." Thus, they would be tutors that supervise, accompany, and support, rather than teachers in the sense that they necessarily had to be experts on all things IT. "You should strive towards helping to support the participants," as Daniel put it, "you will be guiding them as well as the ideas they develop." Hence and how he added, a "classroom setting, with chairs and tables in rows facing a whiteboard" was not as desirable as setting up group tables that would enhance a more "constructive environment toward working and learning independently." This prelude set the stage for the hands-on sessions that followed. "Gaining confidence" and "breaking away from frontal teaching and lecturing" were key phrases. The group started using the devices, taking pictures and transferring them from the camera to the laptop, and editing a small film.

"It's in German," exclaimed Ouleid as they opened the laptops on the second day. Not only the operating system, but the pre-installed applications as well. The Siegen researchers changed the language settings for applications to French. However, this was not possible across the board. Because of the license regulations, the operating system could not easily be changed. Even after installing a new language pack, some areas of the system language and system settings remained in German. Similarly, the German keyboard layout on the laptops could not be changed. While this was a slight hurdle in terms of using the devices intuitively, it did not have a dramatic effect on the overaell use of the applications and the general functionality. The socio-informatics scholars showed the tutors the applications they deemed most necessary for running computer club projects, such as software for word processing, editing pictures or audio, as well as creating movie snippets, and learning how to programme. There was no in-depth instruction on the various applications or detailed explanation of the functions, which made sense as this would have taken a great deal of time—and would have perhaps even contradicted the underlying self-learning focus of the computer club. Nevertheless, it may not have been the kind of instruction or training the soon-to-be-coordinators had expected. Daniel repeatedly encouraged them to actively participate in the learning process, "you just have to go to YouTube, type in type in 'edit photos with Gimp' or just 'Gimp'—or any application we've just opened, for that matter—and you'll find many tutorials and videos that help you understand the application and specific the functions."

After a week of what I would call *accompanied experimentation* or trying out, including the creation of small work samples with the different devices and software available, we then began the workshops with children. The first task was for the children to take pictures, transfer them to laptops, and save them in their own folders. The two Siegen researchers behaved very reservedly, almost passively, to let the coordinators actively engage in their role as tutors. This was a little easier for Aziz than for the other teacher, as Aziz had already worked as a teacher in the tutoring program. He was, however, more used to the frontal teaching setting. It was clear during the first sessions that the tutors were doing a good job of tackling the technical devices and setting an example for

the children, yet the methodology had been disregarded to a certain extent. Here the Siegen researchers would have liked to see more structure: "children need a clear framework from the beginning, otherwise they don't know what to do and where to go." In general, the atmosphere in the computer club was reminiscent of a classroom and was characterized by a very respectful, almost authoritative, relationship between tutor and children, rather than representing a more interactive situation of communal learning. If a constructive approach of *working it out for ourselves* was to be the main focus, a framework would be needed that allowed and encouraged this, something for which methodical tips had proven themselves helpful in other contexts. However, the methodological knowledge for this freer kind of guided collaboration does not by any means come naturally and this should, perhaps, therefore have been an even stronger part of the training. Even when alternative methodologies are taught to the tutors in greater detail, implementation is far from straightforward and can have a disruptive quality. After all, it is a matter of putting one's *standard truths of good education* as well as one's tried and tested templates to one side.

During the first sessions it had also become apparent that the composition of the group could change on a daily basis. A month after the first session, Aziz and Mustapha conducted a survey to identify the children who were interested in the computer club project and to organize them into groups. The groups were important in order to come up with a weekly attendance plan given that the interested children were in different classes and thus had different schedules. After all, the computer club was intended as a supplement to regular school lessons and had to be organized according to the availability of the school children. The coordinators identified 49 children, about a fourth of them girls, the rest boys, from grades three to seven for which the appropriate attendance times had to be determined. There were usually between seven and 15 people at each session, and the attendance list was never full. One limiting factor was the available technical equipment, which was always used by several children together and this, in turn, became increasingly difficult when there were more than three or four children sitting at one laptop or tablet. Depending on the grade, the learning content also dif-

fered. A distinction was also made between *sessions*, which had particular training content and were based on thoughts of a sort of curriculum or learning objective. And *free sessions*, where the participants could use the devices on their own, which generally meant playing small mini and flash games or watching films that were provided by the two coordinators. Older teenagers or young adults were not initially invited as the computer club had started as a children's space. Only much later, at the end of the first project phase, did a women's group become part of the program.

Figure 5: Training session with the coordinators of the computer club

Appropriation

Asked about the worst-case scenario for the computer club and the project, the socio-informatics researchers answered: "the worst sce-

nario for us, which seems very unlikely, would be that the machines are so badly maintained (*kaputt administriert*) that after a very short time they are no longer usable. The most basic working level for the project is that the machines are working and that there is some basic technical knowledge to ensure this." Although the training of the tutors was based precisely on this, the fact that Daniel and Lisa would initially only stay for two weeks and that it was not exactly clear when they would return was not entirely reassuring. Nor was it particularly reassuring that the rest of the technical equipment had not yet arrived and would also have to be brought to the valley. We were quite worried about this at the beginning, especially because the low level of digital literacy among participants made it all the more important to supply more intensive training and closer supervision. The fact that the project manager at SMNID, Ouleid, had a firm grasp of how to use the equipment was advantageous but the two tutors could not exactly be described as *tech-savvy*. Neither was in possession of a smartphone and each had only come into contact with computers quite briefly in the course of their studies. The idea that computer and technology skills can be acquired through learning-by-doing, through use and creative handling, however, presupposes a solid knowledge of at least the very basics. If participants are lacking even the most elementary skills, such as copying and pasting, or maximizing a window, the question arises as to whether preliminary training is indeed essential for all participants before they can begin developing their own project ideas.

This touches on the central issue of the actual learning process in practice, the first central empirical insights of which have been discussed in detail elsewhere (Rüller et al. 2021; Rüller, Aal/Holdermann 2019; Aal et al 2018). Appropriation refers to the

> active and creative process in which users develop their social practices against the background of the newly created possibilities for acquiring information and communications technology (ICT) artefacts. This appropriation process is highly contextualized, i.e. different users and social systems may appropriate the same ICT artefacts in very different ways. (Rohde/Wulf 2011: 211, my translation)

Access to tablets and laptops is central for the level of digital literacy. For children and young people in particular, the learning curve rises very quickly. Swiping and typing on a smartphone screen, for example, were intuitive for them, while using the mouse and keyboard was more of an irritation and even proved quite difficult for some. This speaks to the fact that although smartphones were used by many people in the valley, computers and laptops, on the other hand, played little or no role in people's everyday lives. When I asked the children at the computer club what they wanted to do with the devices, they would generally answer "Facebook" or "WhatsApp." Other applications or functions seemed to be little known, as became clear as the computer club progressed. For instance, the folder function on the machines—how files were saved and stored—was a mystery, as was the fact that a browser was necessary to surf the internet or that homepages and search engines existed: in short, that the internet was not limited to Facebook or WhatsApp constituted a veritable news flash to the participants. Of course, many of the adolescents already owned a smartphone. One girl, for example, came to the *maqar* during a session hoping to use the internet with her own smartphone. Internet access usually had to be bought through vouchers for data traffic at kiosks or shops, so the idea of a free Wi-Fi connection at the computer club was very attractive. The coordinator explained that there was no internet yet, but that the girl was welcome to join the sessions. This was apparently of no interest to her: she had a smartphone herself.

The computer club was integrated into the local association's existing tutoring program for school children, and they then took responsibility for implementation.[6] The researchers had expected creative work to occur on a project basis. In reality, the appropriation process was guided by an approach whereby knowledge was imparted by the teacher, or tutor to be more precise. It was the local association's opinion that this should continue to be the case. For the tutors, this approach represented a way

6 Only through the logic of NGO work described in the next chapter—with which the integration and involvement of the computer club are closely connected—will the extent of the question of appropriation be fully comprehensible.

to ensure that they could meet the association's demands for substantive tuition and to underpin the quality of their own teaching. For SMNID, the target group was clearly school children. For the responsible SMNID staff, children were the future; they were still willing to learn new things. At the same time, those responsible on the cooperation partner side were convinced that there first had to be training and clear learning objectives, before more open and project-oriented activities could be introduced. They held that only in this way could children and young adults be furnished with the basic knowledge that they needed for their future paths. Furthermore, it was only in this way that there could be a professionalized educational framework in which the work and activities of the computer club could be distinguished from the leisure activities of smartphones and tablets (especially with WhatsApp and Facebook), and thus be classified as "meaningful".

The association also did not arrange for an internet connection or local Wi-Fi network in the locality of the computer club to be set up. They gave technical reasons for this, but later also voiced concerns that internet use may be difficult to effectively supervise. This again could cause problems. If, as was feared, younger participants accessed and shared pornographic content, this could have serious consequences for the association's reputation and negatively impact its current and future operation. Even if the worst-case scenarios were not to materialize, there was a general concern that free internet access would simply undermine the meaningful time of self-formation by allowing kids to play games and surf the internet at their leisure. Here, it is worth noting the inconsistency given that even without internet access, there were times when children could freely use the devices, mostly by playing games or taking pictures.

What I had initially and primarily interpreted as a consequence of poor communication and lack of planning was—as it turned out—an expression of much more deep-seeded dynamics. For the researchers now back in Siegen, the project was one of many, and they each equally had teaching commitments, and (publication) projects of their own. In other words, the human and financial resources to closely and intensively supervise the project were not available to the extent that one

might have hoped. The fact that there was so much focus on self-administration, and experimentation with media technology was, ultimately, a pragmatic necessity in terms of how the project was managed.

This raises an interesting question, which unfortunately cannot be answered conclusively here as the project is still running and has not yet delivered a clear outcome: Do the Moroccan project partners consider this invitation to *do it your way* a positive expression of autonomy, partnership, and equal co-creation on their own terms? Or is it rather perceived as a deficit of commitment, guidance, and support—perhaps even as an unfulfilled obligation—given that the training measures did not quite occur as expected? Where is the boundary between necessary accompaniment and autonomy?

In other words, it would only be possible for the project to develop its own dynamics and momentum—which the project partners hoped for and encouraged—if the foundations for communication, transparency and commitment were also in place. Otherwise, there was a risk of reproducing asymmetrical relations of colonial power, and making of the project a mere opportunity for the researchers to advance their academic careers, thus reneging entirely on its emancipatory potential. In this scenario, the local partners have little or no part to play at all, instead being *left to themselves* or even becoming passive extras in the narrative of the research project's academic success. By (voluntarily or involuntarily) legitimizing the German researchers' work, the local cooperation partners risk being instrumentalized. This form of structural paternalism can only be successfully avoided if the agenda and goals of the local partners themselves are given the space to take priority. Successfully navigating these dynamics, without merely *playing politics*, is enormously difficult and potentially constitutes a significant achievement if successful.

The appropriation practices of the local association deviated in certain aspects (frontal teaching, focus on school children) from the expectations of the researchers as formulated in the project proposal (project work and the maker idea, with open access). The more political aspirations of the project proposal became rather more developmental and educational given how the project partners ran the computer club. It would thus be understandable at this juncture for those who had

put together the proposal to wish to intervene and steer the project in the envisioned direction in order to ensure its success. After all, those running the project were deviating from the prescribed course. At the same time, taking control in this way would contradict the participatory approach with which the intervention project was supposed to proceed. The German researchers chose not to take control in this way, instead accepting the contradictions and various unfulfilled expectations. Rather than formulating hard guidelines, they decided to respect the autonomy of their partners.

Nevertheless, the structural power relations that are inscribed in such research projects became visible (see Holdermann/Aal 2019). These developments also highlighted the frictions that result from different expectations and approaches. Ultimately, it was and is a question of constantly evolving together and negotiating the conditions under which joint work can occur. In order to reverse this power dynamic and also to promote more dialogue-based cooperation—while at the same time providing impulses for joint project work—the researchers organized for the Moroccan project partners to come to Germany. During their two-week stay, a common understanding of joint project work would be raised to a new level with both the concept of the computer club and the university-based research process discussed in much greater depth.

Conclusion

How can we best classify the partnership between the German research team and the local association? What kind of cooperation are they engaged in? What kind of public does the computer club produce? It is, no doubt, a partial public that is confined and somewhat restricted, given that the space was not initially open to everyone, but was instead—under the management of SMNID—directed at children and adolescents. The project has been woven into the existing relationships, patterns and working methods of the local association and thus provided them with a new resource, and a new means to achieving their goals, namely to improve living conditions for local residents. Additionally, the computer

club project conferred the association's work with renewed legitimacy in the eyes of the community. Crucially, we as a German interdisciplinary research team have become part of these local references, paths of expectations, and commitments. We have thus become players in a complex and conflicted endeavour to contribute to the development of a mountain region in the High Atlas. As for my own research, my process of becoming familiar with the valley was enmeshed in the developments of the computer club. The lens through which I viewed the area was critically informed by these cooperative relationships.