

# One Campus – Many Ways to Go?!

## A methodological comparison of paper-pencil and electronic logbooks when exploring students' patterns of spatial use.

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### Abstract

*The following article is based on a lecture held at the ESA Conference 'Innovating Qualitative Research: Challenges and Opportunities' in Bayreuth on September the 22th 2010. Opening with the relevance of the logbook for social research alongside the example of the 'My Campus' project, methodic and methodological insights in the use of logbooks are presented. Operating with paper pencil logbook to observe students' patterns of spatial use, the advantages and disadvantages of the logbook as a research instrument and the differences towards electronic logbooks are illustrated here. Further it is taken a closer look on aspects regarding the researcher as well as the user of this instrument to close with an outlook on its further development in social research.*

*Keywords: qualitative empirical social research, ethnographic fieldwork, self observation, diary research, logbook*

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The use of logbooks and diaries is steadily gaining popularity in empirical social research: whether

- i. As a *natural* source of empirical data (in the form of private notes, which were made without an actual cause for research and which are analysed in regard to a certain topic ex post),
- ii. As a researcher's diary (in which the researcher documents his own field experiences in order to reflect systematically his perspective which affects the interpretation),
- iii. Or either as instrument, which is set up for the research of a topic in the form of a diary in order to systematically document everyday experiences.<sup>1</sup>

The possibilities are diverse (cf. Alaszewski 2006;<sup>2</sup> Kenten 2010<sup>3</sup>) and the spectrum ranges from the historical diary (The diary of Anne Frank) to the PDA in clinical research, in which physiological conditions and measurements are being documented (e.g. Ebner-Primer/Bohus 2008<sup>4</sup>).

Particularly through the developments among the (above all mobile) information and communication technologies, new possibilities for conceptualizing innovative instruments arise.

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<sup>2</sup> Andy Alaszewski, Using diaries for social research, Thousand Oaks, CA 2006.

<sup>3</sup> Charlotte Kenten, Narrating Oneself: Reflection on the use of Solicited Diaries with Diary Interviews, in: Forum Qualitative Social Research 11(2). 2010.

<sup>4</sup> Ulrich Ebner-Priemer/Martin Bohus, Echtzeiterfassung von Symptomen, in: Deutsches Ärzteblatt 105(28-29). 2008.

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<sup>1</sup> We apply the two terms, logbooks and diaries synonymously; the broader term is generally constituted as diary.

These developments as well as our own experiences when using two kinds of logbooks (paper-pencil and electronic ones) in explorative research designs are the cause for us to submit these procedures to a methodical-methodological reflection. To verbalize it in a more specific way: We ask for the data and their methods as well as for the methods and their data.

As an empirical basis, we make use of our experiences and results from our research on different campus user types and *Studierkulturen* (a study that was financed by university funds; the main topic was how students perceive and use *their* campus; cf. Gothe/Pfadenhauer 2010)<sup>5</sup>.

For this purpose, we developed a paper-pencil logbook, in which the students that had been recruited for the so called *My Campus-Project* were asked to protocol their spatial-temporal use of the university campus of Karlsruhe over a period of two calendar weeks. Even though, de facto, it is a diary approach, we decided to call it a logbook in order to prevent expectable associations to a diary (“dear diary”). These might probably have promoted a special style of writing and – especially at a technically oriented university – we might have had recruitment problems regarding the male participants. Above that, the instrument rather looks like a logbook than a diary, due to its highly pre-structured layout, including columns, lines and so on, which results immediately from the research object.

First of all, the students were asked to list their classes in weekly plans. Above that, in daily routine plans they had to protocol their daily activities, to list the locations at which these activities took place and to mark chronologically the stations of their stops and routes on a campus map. Additionally, they had to comment and evaluate these routes and places and on every day they could make creative notes or rather illustrations, to describe which places they evaluated as especially *good* or *bad*. This logbook structure was complemented by an in-between or rather final reflection, in which the students, with the help of stimulating questions, were prompted to document their *commendable* places as well as the *places they avoid* and their visions of an ideal campus in Karlsruhe.

In a training research project named *Students’ lives* that aimed at developing methodological competence, this paper-log with all its components was transferred as accurate as possible to a mobile terminal device – a Personal Digital Assistant (PDA). Also for this case, certain structuring with the help of timetables, daily protocols and so on takes place – however, not in an *analogous* hardcopy form, but as digital data. While in the paper-pencil study every data had to be captured by the participants themselves, in the second study, the PDA exactly documented the time when the data was recorded in an automatized way and connected location information with the respective GPS data.

Since the logbook was for both cases applied mainly for self-monitoring, the study’s participants had to be introduced to the instruments. In the conception of these instructions, explanations were drafted and examples combined in such ways that, on the one hand, the *technical* component (this is also true for the paper-pencil) of the instruments became comprehensible, on the other hand, the participants were influenced as little as possible on the content-side. They were asked: 1<sup>st</sup> to note down all that appears important to *them*, in order to depict their use of the campus, 2<sup>nd</sup> to comment on the entries that they made (and thus to contextualize them), as well as 3<sup>rd</sup> to make their notes as prompt as possible. These three stipulations are found on the theoretical assumptions that form the basis for our empirical research:

- i. the assumption that the social construction of reality is initiated in actions and developed in processes of habitualization, typization, institutionalization and legitimization<sup>6</sup> and
- ii. that acting inherits a subjective meaning.

This brings with it the following two methodological implications:

- i. to bring into account the relatedness of situation and context for all events and
- ii. to gain the preferably close (also temporarily) subjective perspective of the agents (“to seeing the world from the social actors’ point of view”,

<sup>5</sup> Michaela Pfadenhauer/Kerstin Gothe, *My Campus. Räume für die ‚Wissensgesellschaft‘? Raumnutzungsmuster von Studierenden*, Wiesbaden 2010.

<sup>6</sup> See also Peter L. Berger/Thomas Luckmann, *The social construction of reality: a treatise in the sociology of knowledge*, Garden City, New York 1966.



Alaszewski 2006: 36<sup>7</sup>) – which needs to be taken into consideration in relation to the objectified definition of the situation.

As already illustrated, we tried to take account of all these necessities through the logbook while we gave the study’s participants the opportunity to explicate their relevancies through free entries and explications. Due to the prompt documentations, memory effects were supposed to be diminished.

- a. Concerning the diary in principle as a method of data assessment in non-standardized research processes
- b. regarding and reflecting the potential of new technologies (PDA/electronic logbook) in empirical social research.

From an ethno-methodological perspective, on the contrary, which, independent from the subject, is meticulously interested in the *How* of an action, one needs methods, which allow painstaking registration of practice from the outside. Having this in mind, Jörg Bergmann developed an approach, which he calls *registrating conservation* (opposite to the reconstructive conservation). This approach includes trying to “keep a social event in its authentic eventfulness” (1985: 312<sup>8</sup>), without furnishing it with effects of reconstruction/reactualization/recapitulation (such as reduction, evaluation, stylisation etc.) already when registering it – as it is the (deliberate) case for the logbooks that include explanatory impulses.

In the registrating conservation audio-visual reproduction media are used as a sort of *time machine* (ibid. 304<sup>9</sup>) for the past, which is the moment of the situation: Especially with the help of tape recorders, video cameras etc. it is possible to capture events in their situation audio-visually and to conserve them, to reproduce and to analyse them afterwards.

Our instrument, the logbook, which we put forward for discussion for the first time today, contains an immanent reconstructing moment, due to the high amount of self-monitoring (in paper-pencil

exclusively self-monitoring). However, it depicts the attempt to move the approach within the two poles of *reconstructive conservation* on the one hand, and, on the other hand, the *registrating conservation* towards the direction of registration: namely based on the temporal convergence of the event and the recording. Not at least because research with new technologies is difficult to keep up with the rapid technical changes of the instrument, we discuss our insights in recourse to the debate on registrating and reconstructive conservation.

Against this general background and referring to our experiences we present early methodical and methodological insights:

**On the diary in general**

In regard to the variety of diaries, the following dimensions appear to be relevant, in reference to which different forms of diaries can be distinguished or rather designed:

Dimensions	Paper-Pencil	Electronic logbook
Degree of structuring	Highly structured	
Relation of documentation and reflection	Both set up for documentation (through daily protocols) and also reflection (e.g. commentaries, explanations)	
Addressee	Researcher	
Degree of focusing on certain contents	Obvious focussing on spatial- temporal campus acquisition	
Supporting medium & sign system	Book/ paper (analogous); mixed-media: use of materials such as texts, maps and art works, illustrations (not animated pictures, writing and drawing); hardware based support through disposable camera	PDA (digital); mixed-media: use of materials such as texts, maps, photos and video (animated & not animated pictures, writing & sound); PDA as exclusive hardware
Degree of fiction/ the artificial	No natural data; though set up as ‘quasi natural’ everyday life documentation (not as novel or art work)	
Temporal extension	2 weeks	1 week
Author	Person being researched/ Participant	

**Figure 1.** Distinction – Paper-Pencil- vs. Electronic Logbook

<sup>7</sup> Andy Alaszewski (see note 2), 36.

<sup>8</sup> Jörg R. Bergmann, Flüchtigkeit und methodische Fixierung sozialer Wirklichkeit: Aufzeichnungen als Daten der interpretativen Soziologie, in: Wolfgang Bonß/Heinz Hartmann (Eds.), Entzauberte Wissenschaft: Zur Relativität und Geltung soziologischer Forschung (Sonderband 3 der Zeitschrift „Soziale Welt“), Göttingen 1985, 299-320.

<sup>9</sup> Jörg R. Bergmann (see note 8).



The respective specification of these dimensions can be combined with each other virtually unlimited, so that instruments, which are operated under the term 'diary', can turn out very diverse. Appropriately, they can find a use in very different contexts as purchase decision research, biographical research and many more. It appears to make little sense to speak of *the* diary procedure per se. Nevertheless, some common characteristics do exist:

- i. Self-monitoring: When using diaries, we – at least always also – deal with a self-monitoring procedure, in which the cursiveness of events is supposed to be diminished by most prompt recording (“to overcome memory problems”, Alaszewski 2006: 28<sup>10</sup>). Even for logbooks in the clinical research, during which physiological measurements, such as blood pressure, are examined often parallel and without support of the proband, self-monitoring becomes important if the participant is asked to note down, explicate and explain his sensitivities.
- ii. Coincidence of procedures and instruments: It is remarkable that when using diaries, approach and instrument coincide. Diaries signify not only a certain approach, but at the same time, an instrument, which additionally fulfils three different functions: the functions of expression, storage and transport (see Bergmann 2006: 13).<sup>11</sup>
- iii. Depiction/description of issues instead of issues: Above that, it is to care especially about the fact that diaries like interviews (not regarding registering elements) include no issues, but the depiction/description of issues: Not all events are documented, but those that are regarded as relevant by the participant. He presents his perspective on events and his interpretations of events (eventually, he has laid out the depiction/description in such a way that the reader receives a certain impression).

<sup>10</sup> Andy Alaszewski (see note 2), 28.

<sup>11</sup> Jörg R. Bergmann, Qualitative Methoden der Medienforschung – Einleitung und Rahmung, in: Ruth Ayaß/Jörg R. Bergmann (Eds.), Qualitative Methoden der Medienforschung, Reinbek bei Hamburg, 2008, 13-41.

### On the My Campus paper-pencil logbook

Finally, how can we assess the value of our instrument, which was developed and applied in the context of the My Campus survey?

For this survey we could recruit around 60 students, who protocolled and commented their everyday life twenty-for-seven for 14 days. The extent and presentiveness of the data were remarkable:

1<sup>st</sup> there are depictions/descriptions of the daily courses, which are extensive enough to reconstruct patterns of acquisition (*How* the campus is being used). 2<sup>nd</sup> highly detailed information about the multitude of places and themes, which go far beyond a simple evaluation scheme (*good-bad*) and, thus, both allow impressive descriptions of places and also hint to complex contexts between physical and socio-spatial aspects. The following sets of criteria were mentioned: construction and design aspects, comfort and convenience, appearance and neatness, aspects of social life and communication, technical functionality, organization and services (Gothe/Pfadenhauer 2010:117)<sup>12</sup>. To this evaluation of places, (self-)reflections are added, which helpfully show the evaluation criteria (*Why* the campus is used the way it is being used). Above that, 3<sup>rd</sup> detailed information on the individual study routines are being made, which give an insight, e.g., into the learning behaviour or rather procrastination etc. With the help of this extensive data material, five campus user types as well as an intersubjectively shared campus view could be reconstructed.

Let's stage some first conclusions: Comparable to the open interview, our logbook motivates to report (documentation) and to comment (reflexion) – this, however – different to the interview – in greater temporal proximity to the event. Due to the high structuring degree of the logbook – comparable to a questionnaire or a dense guideline, we could direct the detailed accuracy of describing the campus use. But our paper-pencil logbook, apart from the stimulative nature that was herein implied and made explicit by us, allowed no further possibility to direct or even control the temporal proximity of the entries.

Different to the questionnaire, which often rather in the conclusion offers a possibility for personal commentaries, we have given instructions for the event and context related commentary, for reflection

<sup>12</sup> Kerstin Gothe/Michaela Pfadenhauer (see note 5), 117.



and evaluation. In this regard, our logbook is again rather comparable to an open interview, in which the researcher can inquire immediately about the description of an event – however, with the grave difference that the researcher is not immediately present. Thus, after having handed out the logbook, he has no opportunity for further inquiries which, on the one hand, leaves questions open, due to which, on the other hand, effects of social desirability can be reduced. At the same time, some wording (e.g. with interrogative or stimulative nature) of the participants indeed show that the researcher is being regarded as addressee – at least some-times: Effects of the social desirability are not to be excluded completely. However, to a certain extent they adopt the helpful function of the “narrative compulsions” (Schütze 1982<sup>13</sup>) and they urge the participant to produce consistency, without, however, the researcher attributing own relevancies like with the – particularly exmanent – inquiries in the narrative interview. Also in comparison to data assessment, which relies on *pure* registration, this personal attribution of relevance appears to us as being a great advantage: Thus, even the positioning of camera and microphone has an influence on the data, because the devices can only record what the researcher regards as relevant. A *pure* registration does, hence, not exist. In doing so, the procedure of self-monitoring – for which a period of at least one week appears definitely appropriate in order to recognize regularities and to *provoke* consistent depictions – allows not only attribution of relevance and offers of interpretation, as well as the production of consistency through the participants. It *saves* them also the observation by a permanently present researcher, which otherwise would be needed in order to continuously record the habits of spatial use. This is also true in relation to registering approaches: Already a camera in a room can be enough to feel observed and to adjust one’s behaviour.

Conclusion: The researcher has to give up understanding the material’s context of origin when using a logbook. However, one gains extensive material, already put into writing, which offers appropriate data for the quasi *mesoscopic* research interests, both for the *How* and *Why* of acting.

<sup>13</sup> Fritz Schütze, Narrative Repräsentation kollektiver Schicksalsbetroffenheit, in: Eberhard Lämmert (Hg.), Erzählforschung: ein Symposium, Stuttgart 1982.

### On the methodical comparison of paper-pencil and electronic logbooks

In the context of a training research project, together with electrical engineering technicians and computer scientists, we developed the already presented electronic logbook. In order to keep factors of influence such as age, the subject of study and the conditions for studying as controllable as possible, we let the two instruments be *tested* parallel, in two groups of students of the same course of study. As control group we could also use the data from My Campus.

In a comparable consideration:

- a. Aspects, which become mostly visible *for the researcher* (to these especially aspects, such as the fabrication of the different kinds of logbooks, data preparation etc.), are to be distinguished analytically from
- b. Aspects that become apparent most of all in the participants’ use (such as extent and kind of entries).

On 1<sup>st</sup> Aspects regarding the researcher:

- i. The fabrication costs per sample: While the material costs for the paper-log are relatively low, circa ten Euros per piece (in this version), the material costs for an e-log are circa Euros 500 (without software). Each sample of the paper-pencil logbook can, however, only be used once. Opposite to that, the electronic logs can shortly after the (very quick) data transfer be used again without causing new costs.
- ii. On the necessary previous and specific knowledge of the researcher: For the composition of the e-log, detailed knowledge of programming is needed. However, also in the paper-pencil sample, which appears rather familiar to us, one needs the specific knowledge of a graphic designer or at least a respectively trained person who designs the individual pages user-friendly and who knows, for example, the use of distinct icons. Further, in the preparation and analysis of the data, technically specific knowledge is needed: While these steps can in case of the paper logs principally be carried out with the basic cultural techniques of reading and manual writing, for the handling of the e-log-data, knowledge of electronic data processing is indispensable.



- iii. Technical effort during the data preparation and reproduction: For a computer-based analysis of the paper logs, first of all the data need to be digitalized, while in the e-logs, they already exist digitally. Also the reproduction of the data records is – based on the *row material* – connected to less effort: Literally, the e-log data can be reproduced unlimitedly and sent with one *click*, while with the paper log one is confronted with time-consuming copying, for example, in order to make these available to all members of the research group.
- iv. Regarding the outer appearance: In order to leave enough space for entries, the paper log is in most cases (also by us) used in A4 format. Opposite to that, the e-log in its mobile phone format is very small and can be used without attracting attention.

#### On 2<sup>nd</sup> Aspects regarding the user:

- i. With regard to possible application: As would seem natural, the *classic* logbook allows all sorts of entries, which can be *put on paper* somehow – texts, drawings etc. Opposite to that, with the e-log various information can be *recorded* without great efforts, which are bound to visual and auditory storage capacities – such as videos and oral contributions or photos. The e-log can be programmed in such a way that without the support of the user data can be stored: In our case, the time of the entry was stored *en passant* and information of place was connected *automatically* with the respective GPS data.
- ii. Technically related problems: For the e-log, additionally to the customary dangers of media use (such as the loss) problems based on the electronics emerge (poor readiness for use due to a programme break down or low batteries).
- iii. Quantity and length of the entries (referring to the survey week): The quantity in the paper log is both higher and more continuous than in the e-log. Above that, in the paper form there are longer entries compared to the electronic version.
- iv. Temporal intervals of the entries to the protocolled event: While we can give no reliable statements on the temporal interval between the entries and the protocolled event for the paper log, for the e-log, distinct figures are available. Within one logbook, the latency spreads from a very prompt entry to about ten hours.
- v. Use of photo & video data: While the user of both logbooks very seldom worked with photography, at least the predominant part of the e-log users used the video function in order to make a *campus video*.
- vi. Content: Thematically, in the paper and in the e-log very similar topics were handled, whereas the entries of the paper log related more equally to the documentation of the daily routine *and* the open possibilities of explanation, while the entries of the e-log, above all, protocolled the daily routine precisely.
- vii. Stylistic particularities: Regarding the entries in reference to stylistic particularities, the entries of the e-log are all in all more *cursor* and schematic, while in the paper logs, more detailed and *personally* formed entries resulted (use of capital letters for accentuation, underlining, framing, emoticons etc.).
- viii. Previous and special knowledge of the user: That on the side of the user certain knowledge is needed, in order to use the instrument, is obvious and was especially good to observe during the issuance and return of the e-logs: The participants started to occupy themselves intensively with the device. When returning it, without being asked they expressed themselves about technical problems and gave very different feedback, ranging from “cool” to “I could not handle it at all”. Particularly this refers to the significance of previous knowledge and media competences: While writing on paper has been a long established cultural technique within our cultural circles and a white paper is nearly inviting to being written on, writing with mobile devices is still relatively uncommon. Since the participants were at the age of around 20, which to a greater or lesser extent have been *digitally socialized* and who are used to mobile phones, at least basic routines should have established in dealing with such devices. Reversing the argument: For user groups, which have no routines of using such devices, usage should prove highly problematic. Should these devices establish further in our everyday life, which is already today streaked by media use as early as some years from now, they should also in the contexts of research be applied with much less reservation.



Conclusion: Regarding the conception of our comparison, the data collected with the e-log are without an obvious added value, compared to the paper-pencil log. On the contrary: The detailed explications are cut back to the benefit of a cursory application, and the spellings that conform to the principle of orality are reduced. Especially the comprehensive and insightful descriptions of the *Why* result in a lower amount, and the presentiveness of the paper logs that was produced with the help of individual designing completely disappears. When using the technically specific possibilities of the e-device appropriately, special options emerge, though:

With regard to our research question from *My Campus*, for example a photo and video diary with voice recorder, implemented watch and GPS tracking system could be designed: The basic conception with a mixture of documentation and reflection would be kept, but the time-consuming writing (which also can be a barrier especially, for example, among foreign students or persons with a very tight time schedule) could be replaced by voice recording, which probably would foster detailed explications. The protocolling of time, place and patterns of movement would be fulfilled automatized and photo material would be stored without additional efforts; video material could provide further insights. All these *capacities of discharge* could support that the entries are reported more promptly than before and the logbook could be integrated even further in the regular daily routine – particularly since the mobile-phone-format of the PDAs is easier to be carried around.

Beyond this exhaustion of the technical possibilities and the direct use of technical implications, mobile devices could finally also lead to new possibilities of collecting data for the registering conservation: mobile instead of place related recordings – both of audio and video material which hook-up and record natural data without the support of the one being researched. Under full reserve of personal rights, which is fundamentally imposed on the empirical social research, with the help of these technical innovations, the proximity to situations or rather everyday life of the qualitative research can be increased.

