Abstract
An exploratory project of the Department of Educational Technologies at the University of Basel examined what “the campus of tomorrow” might look like and which steps will take us there. Together with users of university premises and designers of learning environments, this project looked at “the campus of today” and drafted collective propositions “for the campus of tomorrow”. In the process, it became clear in which fields of tension between different needs and requirements the university is moving with respect to designing its space and services. Knowing the poles of these fields of tension making deliberate decisions and finding a campus-wide balance together with future users appears fundamental to new building, service and campus concepts. During this development of spaces and concepts, it is particularly worthwhile to consider individual institutions, such as the library, more within the context of the campus as a whole and to intensify the cooperation of different stakeholders of the university for this purpose.

This article summarises the project outcomes published in Lernumgebungen an der Hochschule. Auf dem Weg zum Campus von morgen [Learning environments at university. On the way to the campus of tomorrow.] (Škerlak et al., 2014) in a review article and supplements them in particular consideration of the role of university libraries.

1 Introduction
Spaces shape us – through their architectural characteristics, their interior design, but also through our subjective experiences within them. Therefore, in particular universities should ask themselves the question what “space for education” looks like and should look like and how different disciplines can contribute to a greater understanding of space, for instance architecture and psychology, design and didactics, IT and educational theory. Thanks to mobile devices, by now people generally learn anywhere on campus. But how do the virtual and the real classroom coalesce? And what exactly would a teaching and learning environment incorporating both
look like? These were the fundamental questions of the “ITSI - Modern learning environment for the campus of tomorrow”¹ project.

The findings generally apply to all learning spaces, thus including the library, as well as to the “learning landscape” formed by the campus as a whole. The university library plays a very important role, of course, and we will suggest that future library development might benefit from taking an even broader perspective both on learning and future learners’ needs and on the context of the campus.

The aim of the project was to design a concept for a modern learning environment for the campus of tomorrow, together with internal stakeholders and academic services involved in the design of the university’s teaching and learning environments, as well as external experts, in a series of workshops. The goal was to identify options for their implementation that were both suitable and feasible for a traditional university such as the University of Basel. When we talk about the physical university campus, in Basel we are not thinking of a closed architectural or city-geographical unit, but of the entirety of the university’s premises that are traditionally distributed across the city, including subject-specific premises as well as central institutions like the university library.

Current educational trends and the practical implications of the implementation of the Bologna declaration were used as the starting point:

• Independent study, group and project work are gaining in importance (“shift from teaching to learning”)

• Examinations are performed throughout the study course and are skills-based (“(e)-assessment”)

• The entire campus becomes a place of learning (“mobile learning”)

• The virtual component becomes an integral part of the learning environment (“virtual learning environment”).

¹ ITSI stands for “IT service integration in academic study and teaching”. The overall project was comprised of two stages. During the first stage, the focus was on the IT services, whilst the second stage focused on designing future learning environments and the interaction of virtual and physical spaces on campus. The ITSI project has been comprehensively documented online at http://itsi.ltn.unibas.ch/ [11/08/2015]. In addition, the input of the project team and the instructors of a series of workshops accompanying the project has been summarised in a final publication (Škerlak et al., 2014), which is available free of charge online at http://www.waxmann.com/fileadmin/media/zusatztexte/3056Volltext.pdf [11/08/2015].
These developments in education and the progress in IT result in new utilisation needs and requirements with respect to spaces at the university, which were investigated within the scope of the ITSI project. In order to meet these needs and requirements, the campus of tomorrow requires various types of spaces, all of which are spread across the different buildings, with various focus:

- **Teaching rooms** for holding and organising lectures or any other kind of course,
- **Study areas** for independent learning, be it alone or in groups (this is one of the most common type within the library)
- **“Spaces-in-between”**, including transition zones, waiting areas etc. as well as rooms where students and staff can relax, exchange ideas with others and access food and drink,
- **Examination rooms** for holding the increasing number of examinations that often take place concurrently,
- **Rooms for testing new settings, or scenarios, or new space design**, in order to develop and implement innovative teaching and learning methods.

Together, the different types of spaces constitute the university campus. Within the scope of five workshops relating to these types of spaces, various aspects of the campus were examined in depth, problem areas were identified and future scenarios were outlined. This was done jointly with users of university spaces and designers of university learning environments. Parallel to the workshops, accompanying studies were conducted to look at individual aspects in greater detail. In addition, visits to other universities provided valuable knowledge.

What the different workshops and studies\(^2\) have in common is the inductive approach using empirical, qualitative exploration, with the goal of being able to describe the students’ requirements of a modern learning environment.

The following article summarises the outcome of the overall project. First of all, it describes study today and the associated organisational challenges. From this an initial interim conclusion for the campus design is derived. Subsequently, the “spaces-in-between” will be examined in depth. Which specific functions do they have for the members of the university on the one hand, and how can they be a control mechanism for the campus development on the other hand? Following this, a conclusion for the role of the library within the context of the campus is drawn, suggesting how, seen from this overall perspective on the campus, the library could not only re-consider its own role but become an even more central place within the university.

\(^2\) The underlying studies are described in Bachmann et al. (2014) and comprehensively documented in the project blog [http://itsi.ltn.unibas.ch/](http://itsi.ltn.unibas.ch/) [11/05/2014].
2 Is the traditional campus suitable for study today?

The following section focuses on teaching rooms and study areas of universities and their design.

2.1 “Learners on the move” – on the move to learn

Plate 1: Students at Delft University of Technology (NL)

“I’m a learner on the move.” This is how a student describes his learning behaviour within the context of the study. He could not have defined the essence of the current trend more fittingly. In the ITSI project, the term “learner on the move” has become a metaphor for students of today: In order to learn, they are on the move both within and outside of the campus, if there are better resources elsewhere or if other areas of their life suggest other places (e.g. part-time job, childcare, sports etc.). As learners on the move they look for the optimal environment for the respective activity. On the one hand they are learners on the move thanks to mobile devices, digital literature and online learning resources, whilst on the other hand they spend an increasing amount of their student life on campus due to their dense timetable and they frequently change the physical and virtual places between lectures, independent learning and “idle times” (plate 1). Within the context of learning on the move, a number of topics have emerged, which indicate that there is a need for action when designing the campus. In the following, with respect to these topics an
image of the campus from the students’ point of view is portrayed and the associated fields of tension are presented from an organisational point of view (cf. Bachmann 2014). The term “field of tension” implies or suggests a tension between two poles which are both highly valuable but represent different objectives. Quite often, both objectives are to be met within the campus as a whole, but not every room can or should serve both. In each of the respective fields of tension, conscious decisions have to be made, considering both the impact and the context.

(A) Learning on campus: Places and equipment

“Although I often learn in very different places at university, I sometimes wish that I had a personal desk in the department, where I could simply leave my resources every now and then.”

(Student, participant in the ITSI project)

Learners on the move carry everything they need for their daily routine with them; not only learning resources and equipment, but also their remaining resources for the day, such as jackets and food, sports gear or equipment, cycle helmets and umbrellas. The belongings have to be stored somewhere and our observations have shown that in general only a limited amount of storage space (e.g. lockers, cloakrooms) is available and that, for instance, desks are fairly narrow, given that they should accommodate not only a laptop, but also books, lecture notes or a folder (plate 2). The most frequently mentioned needs of the learners on the move are: space for communication and concentration, space for the mobile office, information on where learning can generally take place and where there is currently space available, as well as more sockets, more storage space and Wi-Fi across the entire campus. However, although the students describe their student life as daily learning on the move, many wish they had a permanent workspace on campus, where they can set up and leave their personal learning equipment.
Field of tension: “anytime and anywhere” versus “in one place”

The wishes with respect to learning on campus are caught in a field of tension between “learning anytime and anywhere” on the one hand and “learning in one place”, a kind of “home base”, on the other hand. These two needs illustrate that many students are increasingly moving the focus of their life to the campus. The aim is not to play these two wishes off against one another or to push the students towards a particular learning behaviour by means of one-sided facilities, but instead to create or maintain a balanced, situation-specific offer.

(B) Learning in changing contexts: boundaries and transitions

"I don’t want students from other subject areas to occupy our workspaces and I don’t like group work in the quiet library rooms"

(Student, participant in the ITSI project)

Private and academic matters blend, formal teaching situations merge into an informal exchange, intensive learning phases alternate with periods of recreation. In this context the question regarding the boundaries and transitions between the various contexts in which students move, arises: Where are they desired or indeed required and where are they superfluous or obstructive?

Field of tension: “integrated” versus “dispersed”
From the university’s point of view, the question arises to what extent the integrated mixed use (be it virtual or physical) is desired (plate 3) and where dispersion is given preference. In this field of tension – “integrated” versus “dispersed” – the aim is to deliberately create the boundaries and transitions between teaching rooms and study areas, study areas and spaces-in-between, students and lecturers, concentration and communication, academic and private matters, learning and recreation, specialist subject areas and interdisciplinarity etc.

Plate 3: Study area for mixed use: Individual workspaces (front), computer workstations (left), group workspaces (right), informal exchange (back)

Sometimes transitions can only be created through clearly defined boundaries. One example of this is the Research Hive of the University of Sussex, a study area of its library, which was established exclusively for doctoral researchers (Ball, 2014). Its intention is to promote the exchange between the disciplines (transitions) by restricting the space to the academic grouping of the doctoral researchers.

The question of how flexible or specific an environment, a space or a tool should be, cannot conclusively be answered, but must continuously be asked again, taking into consideration its future users. The solutions don’t always have to be of an ar-
chitectural or technical nature. Often jointly developed terms of use, which are made explicit, already suffice.

(C) Learning at the university: user cultures

“The caretaker should accept the ‘unsterile’ environment – and the users should take greater responsibility for leaving the room in a ‘workable’ state.”

(Member of the university administration)

Students often spend their entire day on campus. They do not just come onto campus to attend a course and then go home again. However, sometimes they are treated as if that were exactly what they do: not as members of the institution but as visitors. The premises have accordingly been optimised for visitors, as the implied expectation is that the students leave the campus after their lecture has finished. In some places, however, the students get to design their own faculty’s study area themselves and also take responsibility for its use (plate 4).

Plate 4: Study area designed and managed by students in the Department of Mathematics and IT
Field of tension: “service requirement” versus “personal responsibility”

From an institutional point of view, this results in an field of tension between the “service requirement” of students as customers and their “personal responsibility” as members of the institution; a balancing act that it also observed in other contexts in connection with the Bologna declaration (cf. Gómez Tutor, Hobelsberger & Menzer, 2011). The different user cultures in the buildings have an impact on the learning cultures in the respective subject. Projects and initiatives managed by the students themselves are supported by a user culture that encourages personal engagement. For this purpose, both subject-specific and interdisciplinary, appropriate premises should be made available.

With this field of tension, the objective as a university is not to decide on pure customer orientation or exclusive personal responsibility, but to facilitate a culture of “as well as” that is appropriate to its own profile. The objective is to keep an eye on the fact that students often put themselves in a non-conducive position as a customer by turning lecturers into service providers. In doing so, the students forget that academic education is not just about lecturers imparting knowledge, but also about students themselves acquiring this knowledge and therefore shaping it.

(D) Learning within the subject area: (subject-specific) socialisation

“The environment immensely shapes the reference system and the world view that every student develops individually from their study course. Do chemists therefore require different spaces to historians?”

(Member of the university administration)

In different contexts, the students emphasised that it is important to them to be able to learn where their own subject is located. Identifying with their subject (just like identifying with the university as an institution) is an important desire of the students. (Learning) spaces within the faculty and access to them can significantly influence the sense of belonging. Vice versa, the students also explicitly expressed their desire for places of interdisciplinary exchange. Within the context of a workshop, one participant wished for an interdisciplinary space as a place for open communication, without any obstacles even between students and professors – a place where he could talk to anyone. At present, the cafeteria of the university library and the main building, as well as the refectory, are apparently the only places providing an opportunity for this.

Field of tension: “faculty cultures” versus “the university as a whole”

For the university this results in an field of tension between “faculty cultures” and “the university as a whole”. Ideally students identify both with their subject or sub-
jects and with the university as a whole. How can we therefore foster both faculty cultures and an interdisciplinary exchange? Is specialist discourse most likely to arise in subject-specific study areas? In fact, how does a specialist community organise itself spatially? What impact do study courses, which include more than one subject, have on the students’ identification with both the subject and the university and on the faculty cultures? Here it is important that both peripheral learning rooms for the different subjects and central study areas are required and that one should not be developed at the cost of the other.

(E) Learning with others: exchange and discourse

“If I had to say where I personally learn the most, I would divide it as follows: the lectures are in third place, the individual independent study comes second and discussions with fellow students rank in first place.”

(Student, participant in the ITSI project)

Students do not only stay on campus for the lectures or focused work. They need and desire places for group work, subject-specific discourse and exchanging ideas. The ITSI project has visualised that the University of Basel offers too few rooms that are specifically designed for exchanging ideas and group work. Therefore, where possible students move to other places, such as cafés or their own shared flat. However, these usually do not provide an ideal environment for group work: they lack the required equipment, do not provide enough space or it is simply too loud for focussing on the group work. The learning rooms and workspaces are generally designed for focussed independent study (plate 5). A similar picture emerges with respect to the teaching rooms. They are generally geared towards the front for instruction purposes, providing little flexibility for group work or exchanging ideas in a plenary session.
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Plate 5: Individual workspaces for students

Field of tension: “individual” versus “discursive”

From an institutional point of view, a field of tension between “individual” and “discursive” arises here. Both learning methods must be supported adequately by means of suitable rooms. Traditional universities that have developed over long periods of time, tend to have too few rooms and places for group learning, specialist discourse and the informal exchange of ideas.

(F) Learning like at home? Ambience and food

“Do we want a place for studying (and nothing else) or a kind of second home for the students? Or maybe something in between?”

(Member of the university administration)

Plate 6: Study area designed and managed by students at the Faculty of Theology of the University of Basel
If students spend their entire day on campus, it becomes their living environment. In 2013, a student blog of the University of Basel presented places on campus “where you can make yourself at home” under the title “Feeling at home at university”. Catering, a pleasant outlook, ambience and nature are the four aspects under which each of the places at the university is presented by students (cf. plate 6) – these qualities are important to today’s students. Comparable with a healthy “work-life balance”, it appears that a level-headed “learn-life balance” is significant to the students. Fresh, healthy, varied and low-priced food also plays an important role.

Field of tension: “living room” versus “workspace”

In accordance with the previous deliberations, from an institutional point of view it pays off not to underestimate the issue of “food”. The field of tension that emerges within the context of catering and ambience for the planning university could be described as “living room” versus “workspace”. Here the question arises as to what extent a university should or wants to comply with the desires for cosy surroundings, a pleasant ambience and a healthy diet and where the boundaries should be set. On the other hand, one can ask why the feel good factor often has negative connotations, particularly in educational establishments. Does learning have to “be painful”? Research into learning indicates that the opposite is true: positive environments aid the learning process. Within the meaning of a sustainable university, in addition to efficient economic activity and ecological compatibility, the well-being of the people moving within it should be a central concern.

2.2 Study today: implications for the campus design

Based on observations from a student point of view, the following six topics have emerged:

(A) Places and equipment: The students of today are “learners on the move”. They move around between lectures, breaks, individual study time and group work; this means they are often on campus from morning to night with their daily belongings.

(B) Boundaries and transitions: The study course takes place in varying contexts, whereby some students clearly separate activities such as independent study, group work and recreation, as well as the physical and virtual spaces used for them. Others prefer to remain in one place for everything and desire more flexible and more varied environments.

4 Cf. e.g. Konzept der grundlegenden psychologischen Bedürfnisse [Concept of the fundamental psychological needs – published in German] (Krapp, 2005) or Konzept der positiven Verstärkung [Concept of positive reinforcement – published in German] (Edelmann & Wittmann, 2012).
(C) **User cultures**: Students feel like members of the university; they want to be able to use rooms accordingly and are able to contribute to their management in a responsible manner.

(D) **(Subject-specific) socialisation**: The identification with the university and its “academic home” (subject of study) is a key concern of the students.

(E) **Exchange and discourse**: The campus is an important place for them for group work and exchanging ideas with fellow students.

(F) **Ambience and food**: The wellbeing on campus is not a secondary, but a key aspect for the students.

Based on our observations, there is a need for action in the above-mentioned topic areas. It is not a case of “either…or…”, but rather of “both… and …”: The two poles of the field of tension establish the respective scope for action and are to be regarded as complementary opposites (see also Bachmann, Dittler & Tesak, 2004).

Within this meaning, the campus of tomorrow should

- facilitate time and location-independent learning, whilst at the same time providing a permanent place of learning (**field of tension: “anytime and anywhere” versus “in one place”**),
- create intersections for flexible ways of utilisation and define boundaries, where required (**field of tension: integrated versus dispersed**),
- respect the students as customers and integrate them as members of the university (**field of tension: service requirement versus personal responsibility**),
- facilitate subject-specific solutions and create university-wide facilities (**field of tension: faculty culture versus the university as a whole**),
- provide spaces for individual independent study, as well as for group work and the informal exchange of ideas (**field of tension: individual versus discursive**) and
- provide a workspace, which is at the same time a part of the living environment (**field of tension: living room versus workspace**).

### 2.3 Campus design within the context of didactic requirements

The following deliberations are based on a paper by university educationalist and mathematician Anna Sfard (1998) with the title “On Two Metaphors for Learning and the Dangers of Choosing Just One”. Her understanding of learning at university is based on two metaphors: the acquisition of knowledge and skills on the one hand (“acquisition metaphor”) and the enculturation, i.e. the growing into the academic and faculty culture, on the other hand (“participation metaphor”). Depending on the perspective, the various aspects of learning vary (Table 1).
<table>
<thead>
<tr>
<th>Goal of learning</th>
<th>Acquisition metaphor</th>
<th>Participation metaphor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning</td>
<td>Acquisition of something</td>
<td>Becoming a participant</td>
</tr>
<tr>
<td>Student</td>
<td>Recipient (consumer), (re-)constructor</td>
<td>Peripheral participant, apprentice</td>
</tr>
<tr>
<td>Teacher</td>
<td>Provider, facilitator, mediator</td>
<td>Expert participant, preserver of practice/discourse</td>
</tr>
<tr>
<td>Knowledge, concept</td>
<td>Property, possession, commodity (individual, public)</td>
<td>Aspect of practice, discourse, activity</td>
</tr>
<tr>
<td>Knowing</td>
<td>Having, possessing</td>
<td>Belonging, participating, communicating</td>
</tr>
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Table 1: Two metaphors for learning (according to Sfard, 1998, p. 7)

Similar to the fields of tension described above, it is not a question of “either… or…” in terms of only acquiring skills or growing into the scientific thinking of a specialist community; both are required. Learning-as-acquisition and learning-as-participation are complementary opposites and in this sense they form the two halves of learning. Sfard (1998) describes the two metaphors as lenses, through which learning at university can be examined (cf. Wegner & Nückles, 2013, p. 17). If you see the campus through these two lenses, you notice that it provides very efficient spaces and good equipment for learning-as-acquisition, yet it is not an ideal environment for learning-as-participation. According to Sfard, to date the campus is used only for “half” of the learning, another key assumption of the Basel-based project.

Both students and lecturers should be supported in their understanding that teaching and learning does not consist merely of the acquisition of existing knowledge, but involves participation (which to some extent creates knowledge). As defined by Anna Sfard, it is a matter of “both… and …”: it is not about replacing existing teaching rooms and individual study areas with places for specialist discourse, informal exchange or group work, but to facilitate both. This way, in future the campus can be used for the “holistic” process of learning. The so-called “spaces-in-between”, which are examined in more detail in the subsequent section, also play an important part in this; here we see an exciting area of development, in particular for libraries.
3 The function of “spaces-in-between” within the university

In addition to and in between lecture theatres, seminar rooms and student study areas, the campus offers an often underestimated type of space: An important part of university life takes place in catering and waiting areas, in staircases and hallways and on all paths and in all squares of the campus, both inside and outside. Such “spaces-in-between” could initially be defined as anything that does not fall in any of the other categories of functional spaces. However, at the same time we can define typical needs and attitudes that “live” in these spaces – Franke, Haude and Noennig describe “retreat and dialogue” as the key functions of “open spaces” at university and the openness within them as common ground: “The (still) uncertain and indefinite is a condition of learning, discovery and creativity. Innovation and knowledge building require a culture of thought and dialogue with indeterminate outcomes. For this, the university offers freedom of dialogue, as well as freedom to retreat. The academic activity alternates between both; it depends on them” (Franke, Haude & Noennig, 2012, p. 79).

Therefore, a positive definition of this type of space, i.e. spaces-in-between, which are commonly perceived as non-functional spaces, allows us to describe them according to their function for users: They are spaces for informal communication and informal learning methods, for exchange and recreation and not least, contrary to their rather minor significance within campus planning, as places where students can identify with the university and academic life. Using such an extended definition, we can include further facilities – both in the physical and in the virtual space, which have been initiated by the university or the individual subjects or which are based on student initiatives – in this type of space. These types of spaces may be common rooms, sports facilities, student cafés, online discussion forums and blogs, to name but a few.

During all these considerations of designing spaces-in-between, we are faced with the paradox task of planning what can intrinsically not be planned: The success of informal communication depends on the respective situation; although it is to a large extent contingent on basic conditions, it cannot be predetermined by them.

3.1 Exchange and networking

The most important function of spaces-in-between within the university is indisputably that of space for informal communication. They are used to exchange information and ideas, support networking at all levels of the university and are thus places (and tools) of knowledge management within the university as an organisation. In addition to the physical needs for food and recreation, it is primarily this exchange that makes these places equally appealing to all members of the university.
Networking, here within the academic community, is one of the most crucial topics concerning spaces-in-between (cf. Wenger, 1998). Socialisation and role models, learning as and through enculturation (cf. Sfard, 1998) also, at least to some extent, take place in spaces-in-between, where researchers, teachers and young academics meet.

3.2 Recreation, retreat, movement

In their second function as space for retreat and recreation, spaces-in-between provide opportunities for a mental and physical balance to the demanding academic work and, through catering, recreation and exercise facilities, contribute to the health and the preservation of efficiency. Especially the “learners on the move” would like places where they can retreat and that provide recreational opportunities, for the time between the various activities during their day on campus. A number of facilities (such as university sports) can at the same time foster social encounters between students.

In everyday life the transitions between retreat and informal communication are often seamless, for instance when discussions develop from chance encounters. Where spaces have not explicitly been assigned a certain purpose (such as monitored relaxation rooms with loungers, which are already offered by a number of universities), therefore where sofas invite you to take an afternoon nap as much as having an animated discussion or doing group work, it is often the first people present in this space who determine the noise level that may and is allowed to prevail in the near future. A structural separation is not always possible or desirable, therefore the outfit of many spaces-in-between allows for the creation of various situations. As such flexible spaces for retreat can incur conflict between parallel uses (in particular those involving greatly varying noise levels), and the concept of “first come, first served” is not really satisfying, we must find solutions to settle this issue. In addition to structural separation and so-called islands for various uses, these solutions also include mutually agreed terms of use and flexible signals to regulate the noise level and degree of privacy.

A more conscious approach to drawing boundaries and making inclusions or exclusions would increase the quality of many spaces-in-between, for instance by creating spaces designed exclusively for a certain type of learning, for members of a specific subject, a certain study situation or level of qualification and associated facilities.
3.3 Identification

A good design of spaces-in-between, e.g. with appropriate equipment (workspaces, seating furniture, provision of information etc.), catering facilities, vibrant spaces or common rooms designed by the students themselves, can provide points of contact and a feeling of being “at home on campus”. It is not by chance that specifically these spaces-in-between on campus lend a face to the university with respect to the students and give them a feeling of common identity: This is where student culture is alive, where important information is exchanged, where fellow students arrange to meet for dinner, recreational activities or learning together, where friendships are made and time is spent between lectures – be it in preparation of or as a follow-up of the study course or for private purposes, either individually or in a group. In many spaces-in-between lecturers can also be met in an informal manner. You can observe advanced students and academics, understand how they rise to challenges and thus also learn through participation or enculturation as defined by Anna Sfard (cf. Sfard, 1998). The certainty of being able to independently procure the information required for the study course and to get support, significantly contributes to the academic success. Students and young researchers develop their self-image as academics and members of the university not only at the “bench” or in the seminar room, but significantly through informal communication with specialist colleagues, students, researchers and teachers.

3.4 University culture in spaces-in-between

Whilst another function of spaces-in-between is not explicitly intended, it could become pivotal when considering the university and campus of tomorrow and the desired ambience there. Particularly in these spaces, where people communicate spontaneously, yet according to unwritten rules and where learning opportunities arise, the university’s culture of learning and organisation is negotiated, passed on and, at the same time, becomes apparent: Who is actually a member of the university and which level of qualification determines the affiliation with the academic community? Are students members of the university or guests? Who communicates with whom? How important is a hierarchical order in everyday interaction (between students of different study levels, as well as between students and university employees or employees among themselves)? Are there any customary rights or implied dividing lines (e.g. in the form of secret seating arrangements)? What is the general atmosphere like, who initiates conversations? Are there more and less socially supported learning methods? Are rules clearly defined and transparent? Do the users show consideration for one another? Is a culture of prohibitions or commands prevalent? Is that, which is not explicitly forbidden, allowed and if so, does it occur? Is equipment comprehensively protected against theft? Is the furniture treated well? Who trusts whom?
For these and many other questions we can make observations and find answers in spaces-in-between and subsequently draw conclusions with respect to the organisational culture. The space-in-between has the potential to be both an indicator and a promoter of university culture. As defined by Oblinger (2006), it is also possible to use the space on offer, as well as the associated rules and stimuli, in order to respond to any changes in the usage patterns and requirements or to initiate changes and thus use the space as a “change agent” (cf. Brandt (2014).

3.5 Spaces-in-between as places of learning
Are spaces-in-between, beyond informal learning through discussion, enculturation and knowledge management, also places for group and individual work? It is evident that they are neither primarily intended nor designed for this purpose. However, we can observe a clear trend in the behaviour of students, as a qualitative study on study areas and spaces-in-between at the University of Basel shows: In addition to student common rooms, “learners on the go” also increasingly use foyers and catering facilities as places of learning (even if this does not exactly comply with recommendations of the psychology of learning, and lecturers often wonder why quiet seminar libraries are empty, whilst at the same time many students are studying in the neighbouring cafeteria). The reason students give is that they in particular like the informality of such places, where several types of use are allowed alongside one another. In these places they are less likely to disturb each other than in a quiet study area or library room, where having to be quiet per se requires additional attention.

Common rooms, which are intended and designed for mixed use of informal exchange, catering, recreation and learning, appear to be primarily popular as “intermediate stations” and for shorter learning units. They seem to be used for focussed learning only if their use as a study area has been established. In this case positive effects, which are familiar from study areas, such as social control over work phases and breaks, can take effect in spaces-in-between – Joanna Ball expressed this with reference to the doctoral researchers in the Sussex Research Hive as follows: “They feel policed, but in a good way” (Ball 2014).

4 Opportunities for the library
As one of the most traditional places for study, research, and learning, the library more or less easily adapted to development e.g. in technology and learning. However, this development seems often rather separated from the campus context. And moreover, it is often restricted to (re-)designing one of the types of spaces we tried to suggest here, learning spaces.
Especially for libraries, however, the design of appropriate spaces-in-between seems to hold great potential: If places of learning through participation, retreat and informal exchange are created, which are often lacking elsewhere on campus, then the library can even more become a central venue. Experiments on innovative learning environments can start here and influence the university. The key questions concerning „good“, „suitable“ and “innovative“ study areas have, in the library, been asked for many years, where a tremendous amount of expertise regarding the design of learning environments is present. This expertise should be incorporated to a greater extent in the university-wide planning, especially if the entire university is intended and seen as a place of learning.

From this perspective, the library becomes an even more important institution within the campus, but of course cannot be the only place of learning: within the context of the identified fields of tension, the library cannot meet all the needs and requirements and would lose its specificity. For instance, there would be little point in locating subject-specific study areas, which are managed by the students themselves and intended to promote subject-specific socialisation, in the library. Therefore, the campus planning should not consider the library too much as a “special case” or “third place” (as we often do with good reason), but in the context of the university as a whole.

The campus of tomorrow requires spaces that offer a framework for the core function of universities, i.e. the education and training of people within the meaning of knowledge transfer, creative handling of this knowledge, but also participation and enculturation in the faculty culture. It is a campus for “holistic learning”, which provides a suitable environment for “learners on the move” throughout their study course.

The objective of the ITSI project was to develop a common concept for the “campus of tomorrow” against the background of changes to educational policy, as well as technological innovations. It was not about preparing a catalogue of requirements with a checklist, but to inspire a debate concerning campus planning within the context of designing modern learning environments at the university by employing a qualitative and explorative method. One of the major project outcomes was a much closer collaboration now implemented between departments and institutions, including the library with its experience and knowledge about learning spaces, on the development of the campus as a whole. Thus, the much-needed expert knowledge of the library can be used for designing better learning spaces on campus, and the library becomes an integral part of campus development with all the various types of spaces.
5 Conclusion: how shall we design the future?

Subsequent to the ITSI project, a “Learning spaces task group” was established at the University of Basel, which supports conversion and new building projects at the university, using the experience gained from the ITSI project. The aim is to establish and exchange expertise concerning the design of contemporary learning spaces and to make it available across the university. Pilot projects are now developing “new places of learning” in order to gain experience with other designs of learning environments and to derive potential for improvement from this, with respect to both the campus design and the cooperation of the stakeholders involved in the planning processes. The task group includes representatives of the student union (‘skuba’) as well as the different departments of the university who contribute the specialist knowledge and expertise required for designing learning spaces: Property planning and spatial management, didactics and change management, as well as the university library, campus management and IT services.

As no-one can predict the future needs with absolute certainty, this project also focused on identifying the way to the campus of tomorrow and taking initial steps in this direction, on proposing adequate methods and, by working together with colleagues across the university, on establishing trust that these methods can yield ground-breaking results. The gradual implementation of pilot projects involving iterative testing, observation and, based on evaluation results, further development, appears to be a promising course of action. User participation is the second key in order to identify needs and the way they are changing, to include implied needs and to satisfy faculty cultures and the increasing diversity of users.

Within the scope of the project and the discussion with colleagues, it was conspicuous that many considerations concerning the campus development and the changing practices and requirements had been employed in a similar fashion for many years. This concerned strategic areas at management level, property planning, operation and maintenance, teaching development and the university library – from various aspects, with different focal points and a varying degree of direct applicability. However, the expertise distributed across the university as an organisation is not integrated sufficiently in this field and the different perspectives are not contrasted and developed further university-wide. As a result, the implemented ideas often lack context, whilst new developments and changing needs (especially if implied) usually attract little interest within the tight building and planning routine.
Decisions concerning the (conscious or unconscious) positioning within the identified fields of tension are often not considered in a university-wide context when planning new buildings, conversions, a change of previous facilities or the setting up of new services. However, it would be important to implement the “both…and…” approach beyond the boundaries of buildings, institutions and faculties – perhaps the neighbouring building is exactly the sought-after counter-pole, offers what is lacking, compensates for deficits and thus provides new design flexibility. Therefore, for the future development it appears crucial to us that we regard traditional, relatively independent institutions, such as the library, more strongly as being a part of the campus and that we no longer develop unconnected or even competing facilities, but instead coordinated, common or complementary offers.

References


