5.10

ENGAGING AND EDUCATING YOUNG PEOPLE IN SUSTAINABLE DEVELOPMENT

Communicating research findings and planning practice in an active learning environment

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Introduction

Take an apple and cut it into four slices. The first quarter of the apple represents the landmass on earth. From this “landmass” take away another two thirds of the apple, because it represents desert areas and high mountain areas, which are not suitable for living. The tiny quarter of an apple left represents the land that sustains our lives.

This apple metaphor is used as an interactive learning activity with children and young people. The activity captures the attention of the participants and makes clear the reasons why sustainable land revitalization matters. The apple metaphor also represents the focus of this chapter, which explores mechanisms for the engagement of children and young people as stakeholders in important policy issues through undertaking specific forms of research and engagement activity. The chapter highlights how these engagement activities can be used to facilitate policy implementation and the communication of research findings.

Sustainability and brownfield land revitalization

There is no definitive definition of sustainability, yet classic definitions tend to share common dimensions and considerations. The most widely cited definition of sustainability comes from the Brundtland Commission, which defined sustainability as “meeting the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on the Environment and Development, 1987). The popularity of this definition is in part due to the clarification and simplification of a complex concept. Since its wide use as a concept in the early 1990s, there has been guarded optimism in the use of the concept of sustainability. Key questions nevertheless remain, focusing on what sustainability is, whether
it can be achieved, whether it is a valid goal and how we should measure it. Despite these questions, the concept of sustainability still remains a valid construct in land revitalization. Ruckleshaus (1989, p. 167) notes that “environmental protection and economic development are complementary rather than antagonistic processes”. In the United States, the President’s Council on Sustainable Development (1999, p. iv) has a vision statement that “recognizes that a sustainable US will have a growing economy that provides equitable opportunities for satisfying livelihoods and a safe, healthy, high quality of life for current and future generations”. Gillham (2002) purports that sustainable development is development that limits impacts to the natural environment and society while preserving the existing resources of both as required to sustain future generations.

Representing land resources as a finite apple in the aforementioned exercise allows young people and students to quickly conceptualize the notion of land as a finite resource and the potential to use it in sustainable ways. Additionally, these audiences have been born and raised in the years following the Brundtland Commission, and sustainability therefore potentially forms an important part of their world view. Another group for whom sustainability forms an important paradigm is urban and regional planners. Sustainable city and regional development has traditionally involved securing a balance between economics and ecology. Kaufman notes that the impetus for a policy is rarely a right or obligation to protect land; rather, the reasons cited as justifying a policy are usually efficiency, economy or resource protection (1985, p. 291). Kaufman nevertheless goes on to argue that ethical considerations are alive and present in planning and development processes for land resources. This dichotomy continues to shape land policy and planning policy. However, this dichotomy in urban land revitalization has been further complicated by the concept of social equity.

Following the Brundtland Commission, planning and development researchers have included the notion of social equity in their discussions of sustainability (Cohen and Preuss, 2002; Burton, 2000; Counsell, 1999; Pezzoli, 1997; Campbell, 1996). In particular, Cohen and Preuss (2002) make a distinction between social equity and sustainability, stating that the latter is focused on natural resource protection and food production, while the former allows for a broader view and would permit land use change unrelated to landscape preservation. Campbell (1996) presents the ‘planner’s triangle’ of environmental protection, economic development and social equity. His conceptualization of this triangle places sustainability at the centre. Jepson (2001) also noted that there are numerous definitions of sustainability. However, these definitions are predominantly descriptive. Jepson offers a functional form based on environment, economy and society (equity), referring to these as the “three Es”. Like Campbell, Jepson relates the ability to achieve sustainability to the ability to address all three Es – environment, economy and equity – simultaneously.

For urban and regional planners there is a clear understanding that the sustainable development of cities and regions has to incorporate brownfield sites as potential areas of development to improve environmental quality and sustain the integrity of ecosystems. The development of brownfield sites can enhance the quality of neighbourhoods, cities and regions. Yet this understanding of the importance of incorporating brownfields into regional development is not necessarily self-evident to those outside the planning profession and research community. This means that there is always the task of communicating research findings and best planning practice in order to foster a wide public understanding of why land revitalization matters, to reduce land consumption and to promote sustainable cities and towns (Bock et al., 2009, pp. 203ff.).
There are several important target groups for communication and education in sustainable land revitalization. These include site owners, city officials and politicians and the general public. Recent literature has demonstrated the importance of youth education – focusing on children and students, including university students – and the need to provide tools and knowledge to enable these groups to participate as informed citizens, future decision makers and mediators and communicators of future plans and visions. Youth involvement in planning can add a valuable perspective to the decision-making process (Quon Huber et al., 2003). This could also introduce people to the concept of the reduction of land consumption through the reuse of brownfield sites. The authors of this chapter share the experience of Rankin, who stated that during the construction of a brownfield project it often "evolved into an environmental education project as well as a teaching resource for sustainability" (Economic Progress Alliance, 2008, cited in Rankin, 2008, p. 120). Furthermore, these projects can be a basis for further research on what forms of knowledge and tools of planning influence the adoption of sustainable lifestyles and decision making (Utte, 2012).

The ‘communicative turn’ in planning in the 1990s (Healey, 1996) emphasized a shift from urban planning as a closed-door ‘Gestaltungsakt’ to a process for active negotiation on the diverse needs and preferences of different actors. There has in recent years been an increase in public interest in shaping sustainable environments, resulting in the emergence of new forms of ‘collaborative’ or ‘deliberative’ planning (Healey, 1997; Forester, 1999). There has at the same time been an accelerated rise in the availability and use of digital technologies and new tools and methods of communication. These technologies and tools not only have influenced social networks and impacted on the urban environment but also are changing the ways that research and planning are undertaken, with increased possibilities for participation in data collection and the communication and implementation of research results through the fostering of collaborative decision-making processes. Public participation is influencing planning practice and research, and it is here where communication shifts from informing the public to educating the public. Planning researchers today can and should use a wide range of tools and methodologies to communicate with audiences and educate them about their research and aspects of planning practice. These tools cover the field of analysis (GIS, mapping, crowdsourcing, real-time data analysis, etc.), the methods of design and representation (hand sketching, computer-aided design or CAD, 3D, graphic design, model building, interactive models), the distribution of content (print media, Web 2.0, social networking, mobile Internet) and the involvement of different stakeholders in planning processes (surveys, moderation). A selection of these methods is presented in the case studies in the following sections.

The remaining sections of this chapter document the tools and methods of communication used in selected projects on engaging young people as stakeholders in the implementation of planning policies related to the use of brownfield sites and land revitalization, as well as some of the educational outcomes. The account of the projects is in many cases based on our own experience and insight gained from being educators in the projects. The projects address several different institutional contexts, including university, school and extra-curricular contexts, and therefore engage different target groups, such as university students, high school students and children. Finally, the accounts explore a range of different formats, methods and tools for teaching and researching in spatial planning. Four projects focused on youth engagement in spatial planning are relayed. These are (1) an international university exchange programme hosted by Michigan State University (US) and the University of Technology Dortmund (Germany) for the past fifteen years; (2) a workshop series called ‘Summer Academy’ for children, by the non-profit association JAS Jugend Architektur Stadt e.V. (Germany); (3) a high-school project called
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‘Open Space’, realized within the REFINA research programme (‘Research for the Reduction of Land Consumption and for Sustainable Land Management’); and (4) a children’s planning education programme called ‘Landscape Explorers’, which introduced youth between the ages of nine and twelve to planning concepts, approaches and a real-world local brownfield project.

Sustainable land revitalization in education

Sustainable land revitalization is the balance of social, economic and environmental interests and objectives. It involves a holistic and integrated approach, and asks for viable decisions based on all three aspects of sustainability (Federal Government of Germany, 2008, p. 21). The challenge of sustainable land revitalization is significant, and “achieving this balance is increasingly important in cleanup and revitalization of regions incorporating sites with real or perceived contamination, since many of these areas are not meeting their full economic, environmental/ecological, or social/cultural potential” (Forschungszentrum Jülich GmbH, 2008, p. 7). The task is not new, and in Germany land revitalization – especially the recycling of brownfields – has been one of the most important fields of public and private urban redevelopment efforts in the past thirty years (Henning, 2007, p. 10). The change in economy from manufacturing towards service industries led to decreased demand for industrial areas. Also, the demand for construction land is in decline. At the same time the new use of land for settlement and transport in Germany stood at 113 hectares per day (Federal Government of Germany, 2008, pp. 144–145, Abb. 1). The increase in unused industrial land and the rapid consumption of land for new uses led to the German federal government’s 2004 goal to reduce new land use for settlement and transport to 30 hectares per day by 2020. Progress towards this goal depends on a dual strategy: protecting peripheral areas by developing inner cities. It is about fostering the recycling of land through brownfield developments over greenfield development at an aimed ratio of 1:3.

Several pilot studies and research projects were started in Germany, which were designed to develop creative and practice-oriented approaches to counteract a further increased use of land. These projects included: Fläche im Kreis or ‘Land in a cycle’; REFINA; Nachhaltige Siedlungsentwicklung or ‘Sustainable settlement development’; and other related projects. Only in the REFINA project was there a specific programme of action dedicated to communication to develop new methods and concepts for education and training in the field of sustainable land use (see www.refine-info.de).

In the US, the negative externalities associated with brownfield sites spurred a number of federal, state and local policies and also prompted the development of tools and incentives aimed at encouraging brownfield redevelopment (Adelaja et al., 2009). In Michigan, examples to incentivize land revitalization include brownfield tax credits (BTCs), tax increment financing (TIFs), brownfield redevelopment grants and loans, and brownfield site assessment services (Michigan Economic Development Corporation [MEDC], 2008). Michigan has been among the leaders in the US for adopting brownfield redevelopment strategies and other land use tools, such as land banking. Like Germany, Michigan has lost industrial market share for many years and, as a result, has an overabundance of unused industrial spaces. Michigan now has one of the largest inventories of brownfield sites in the nation (NALGEP, 2004). An estimated 44,000 acres of brownfield land are currently undeveloped in the state of Michigan (MEDC, 2008). Larger cities like Detroit, Flint and Grand Rapids have had varying success at redeveloping former industrial sites into loft style apartments, offices and other creative uses, such as breweries. Policies that encourage brownfield remediation and an overstock of unused industrial space give Michigan a competitive advantage in this area of urban planning.
Sustainable land development is taught within the curriculum in several classes on urban planning university programmes in Germany and the US. These classes, for example, cover economic development, land use planning, urban design and landscape design. Yet sustainable land development is barely present as a topic in school-level education (Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit [BMU], 2008, p. 52), although several institutions already have developed educational material. Examples in Germany include Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit (Federal Ministry for the Environment, Nature Conservation and Nuclear Safety) in 2008, and Wüstenrot Stiftung (Association of Wüstenrot) in 2010. Similar examples from the US include a programme by the Pennsylvania Department of Conservation and Natural Resources (2005), and the Western Pennsylvania Brownfield Center School outreach programme for elementary, middle and high school students. There are also several active, extra-curricular programmes offered by environmental education activists and by built-environment educators. This chapter presents a summary of four spatial planning projects to illustrate teaching and research methods in youth spatial planning. The chapter then concludes with a discussion of cross-cutting themes based on the case studies.

**International university exchange programme in brownfield development between MSU, US, and TU Dortmund, Germany**

The exchange programme in brownfield development between Michigan State University (MSU, US) and the University of Technology Dortmund (TU Dortmund, Germany) began in 1984. Each year there is a 2–4-week student exchange that incorporates teaching and learning methods, such as lectures, discussions, field trips, site visits and workshops, on brownfield development. Approximately thirty students work together in cross-cultural and interdisciplinary design charrette teams, in which German spatial planning students are teamed up with American urban planning and landscape architecture students. The project has several objectives, including helping participants learn the methods, instruments and tools for land revitalization, facilitating international knowledge transfer and providing the opportunity for working in interdisciplinary and intercultural teams. Finally, the project aims to provide a practice-oriented experience by working on real case studies of brownfield land development.

An important element of the programme is attending field trips to brownfield sites and to sustainable urban development projects (see Figure 5.10.1), as well as participating in a 4–5-day design charrette in Germany or the US to develop solutions to problems faced on brownfield sites. A brief is usually prepared by the students themselves to introduce the project to the guest students. Site visits are arranged with the owners and city planners. The students work in small, interdisciplinary groups of four or five people. The charrette ends with a juried public presentation, while feedback on students’ work is provided by guest critics, the press and the tutors.

Overall, the students learn that certain planning questions and problems are universal and that ideas can be transferred between different countries. They also learn that political and economic situations differ and that land use issues are far more complicated in the US due to patterns of ownership. The students themselves stress the international student workshop as “a very successful method of studying and learning different aspects and attempts of planning relevant subjects” (Hoffmann and Ziegler-Hennings, 2009, p. 48). Many of the students in both countries have continued their interests in brownfield revitalization work, which needs to be done to clean up the environment so that the land is restored to a suitable condition and can become productive again.
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Summer Academy for Children by JAS, a non-profit organization for built-environment education

From 2007 through 2010, the Summer Academy in Gelsenkirchen, Germany, has run a four-day workshop for fifty children and young people about reading, shaping, experimenting with and researching the city (see www.jugend-architektur-stadt.de). The overall task is to develop ‘young’ visions about the future use of brownfield sites. Under the theme ‘Guess what I see’, children aged seven to twelve years have the opportunity to discover buildings and city quarters around the former coal mine of Oberschuir. Ideas for the temporary use and transformation of the brownfield site are developed. The young participants work in thematic groups of architecture, city planning, urban design and landscape planning. In small groups of 7–10 children, supported by two educators, the youth investigate the former coal mine, the surrounding neighbourhood and the former railway site next to the mine. The brownfield site’s conditions allow on-site working and, after analysing spatial situations, ideas are developed and made visible in 1:1 installations and models (see Figure 5.10.2). The project’s objectives are to promote children’s understanding of the environment and to sensitize children to the importance of the built environment, as well as to promote creative problem solving for positive environmental change. The project also provides hands-on design activities and space to experiment with different techniques, forms and materials. Additional project objectives include educating children and young people about space at different scales – including individual buildings, neighbourhoods and town centres – as well as encouraging children, young people and all other citizens to be aware of good design and their personal roles, rights and responsibilities in the creation of the built environment.

A variety of active learning methods are utilized in the project to educate the children on spatial planning concepts, including: mental maps, perception walks, map analyses, aerial
Figure 5.10.2  Delivering an understanding of chances and possibilities in the reuse and redesign of spaces in an on-site children’s workshop.

Source: Thorsten Schauz.
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Photograph interpretation, site visits for inventory and analysis, spatial experiments and model building. These methods provide opportunities for exploration of the urban environment, support peer-to-peer discussions and permit the youth to visualize their own ideas and desires about the built environment and experiment with different space experiences. The children can choose their scale and focus of planning and design, such as architecture, city planning, urban design or landscape design. For all groups a ‘city researcher toolbox’ is available with camera, clamping board and map material, in order to investigate the area. Methods used in the different groups while working with the children are adjusted to the scale and focus of the project. In general the steps are: investigating the site, experimenting on the site, developing a vision and visualizing the ideas in models. Thus, all children learn and utilize the planning and design process.

At the end of the workshop there is a tangible result, such as a model for a new city quarter on a brownfield site. Apart from this visible result, the project also delivers an understanding of chances and possibilities in the reuse and redesign of an underutilized site. The children also experienced the planning and building process of a city. The children learn that they have to address not only their individual site but also neighbouring sites to make connections and to work with neighbours in order to realize common ideas.

REFINA ‘Open Space’ project using new technology and media

Freifläche – Jugend kommuniziert Flächenbewusstsein – translated as ‘Open Space – young people discussing land use awareness’ – is a project within the REFINA research programme undertaken from 2007 to 2009 (see www.refina-info.de). The aim of the project is to foster understanding by seventy-five high school students in three selected schools in different cities in Germany of the German federal government’s goal to reduce new land use for settlement and transportation to 30 hectares per day by 2020. To capture their interest the project uses interactive, technology-oriented tools, such as satellite navigation GPS, Google Earth and the Internet. These tools are combined with traditional ways of spatial analyses, such as aerial photo interpretation and geographic information systems (GIS) (Mählmann, 2008, p. 36).

The objectives of the project are to educate high school students about the German federal government’s 30 hectares goal and to capture young people and their teachers as ‘multipliers’ or advocates to promote the same goal. In addition, the project attempts to develop innovative, didactical methods to investigate, document and evaluate the problem of land consumption through working with students. A final objective of the project is to foster the technical-methodical and didactical integration of the topic of land consumption in environmental educational facilities and schools by producing teaching materials.

An interactive DVD was developed and utilized within this project. It focuses on five main topics: land consumption, storm water, soil, urban planning and historical cities. Students began the curriculum by defining their ‘dream house’ and discussing the consequences of their ‘dream houses’ on land use development in their towns and cities. Land use analysis was undertaken using the Internet to access datasets, GIS, Google Earth, site visits and GPS systems (see Fig. 5.10.3). Students moved from analysis to defining planning goals and possibilities, in part based on previously defined objectives, such as the federal ‘30-hectare goal’. The programme ended with a PowerPoint presentation of the project results, posters, videos and websites created by the students. The focus of the presentation was to present their point of view and ideas about ways to create a more sustainable pattern and form of development.
The outcomes of the project showed that the students improved their ability to use knowledge and information interactively, as well as to apply technologies in a constructive manner. They were eager to be involved in decision-making processes and able to work in a wider context. The students produced ideas that can help to work towards more sustainable development (Freifläche, 2009, pp. 4–5). Additionally, the project resulted in educational materials that are available to other schools and institutions through the website www.freiflaeche.org.

Figure 5.10.3 Working with high school students using interactive, technology-oriented tools such as satellite navigation GPS, Google Earth and the Internet.
Source: Wolfgang Roth.
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Case study: Landscape Explorers summer session at Boys and Girls Club, Lansing, MI

In 2009, thirty children aged between seven and thirteen at the Boys and Girls Club (BGC) in Lansing, MI, were introduced to planning and design concepts, principles and skills through the Landscape Explorers programme. The children complete a series of hands-on creative projects culminating in a presentation of the brownfield redevelopment project to City of Lansing planning officials. Activities include: an introduction to design and design principles; Mapping Your Mind, an environmental imaging exercise; architectonics; neighbourhood analysis, with a SWOT analysis accomplished by a neighbourhood walk; designing an ideal neighbourhood; and the Logan Square brownfield redevelopment project. In this culminating project the children work in small groups to develop potential redevelopment options.

The project has the objective of developing participants’ understandings of their local environment, both at the neighbourhood and city level, and to introduce to them a series of urban planning and design concepts and methods. It also encourages creative problem solving and problem-based learning through engaging in hands-on activities in the design process. Finally, the objectives of the project include educating children about issues of scale at site, building, neighbourhood and commercial centre levels, as well as promoting involvement in local planning practices.

The children participate in several hands-on activity sessions, including cognitive map making, constructing their favourite space, redesigning the outside entrance to the Boys and Girls Club, neighbourhood analysis, designing their ideal neighbourhood and the Logan Square commercial brownfield design project. With the Logan Square brownfield project, the students undertake a site analysis, meet with city planning officials to generate design concepts and alternatives, develop models for conveying revitalization proposals and present these models to city officials. For model development, children work in small teams of 3–4 children and are supervised and guided by MSU students of urban planning and landscape architecture. Previous active learning sessions provide information on architectural elements, planning rules and regulations and the design process.

All sessions culminated in the final Logan Square Redesign Models and their presentation to city officials. While the models represent actual physical outputs, the teaching and learning outcomes are just as valuable, and perhaps more so. The children from groups traditionally under-represented in planning processes became aware that citizens can have an impact on how their community looks, feels and functions. The children are also aware of planning as a process, the function of cities and regions, and planning as a potential career path.

Discussion and evaluation of the case study projects

In presenting a summary of the foregoing case study programmes in youth education in brownfield revitalization, four common themes emerge:

- The rise in the importance of built-environment education for children and young people;
- Learning about and utilizing the planning and design process;
- The importance of hands-on, personal and on-site activities as a teaching approach, including the use of a wide variety of media formats and tools for communication;
- Peer-to-peer learning in small groups.
The following section discusses these four themes and the lessons learned that can be applied to research and teaching in planning with young people.

**Rise in importance of built-environment education for children and young people**

All of the case studies share a common value of built-environment education for children, young people and college students. The case studies presented here encompass an approach identified by Knowles-Yánez (2005), in which planning interacts with children – namely, educators teaching children about the practice of planning. The objectives addressed in all cases correspond to the aims of overall built-environment education (UIA Built Environment Education Network). Contents and methods of built-environment education (BEE) for children and adolescents have “developed especially in the past 20 years with a rising public awareness” (Uttke, 2012, p. 3). This rising awareness has resulted in the development of many groups and programmes all over the world. Children have moved beyond the focus of planning play spaces (Reicher et al., 2007). Teaching, planning and research practice include development and implementation of planning course curricula (see Race and Torma, 1999; Mullahey et al., 1999; Driskell, 2002); international conferences, scholarly and practitioner publications, such as the American Planning Association’s and the Canadian Institute of Planners’ educational publications and the *Children’s Environments Quarterly* (previously known as *Childhood City Newsletter*); and the formation of local, national and international organizations focused on built-environment participation and education of children (e.g., Place Perception Project, Childhood City, Environmental Design Research Association, Landscapes for Learning, PLAYCE, JAS Jugend Architektur Stadt e.V., Community Built Association, Children’s City Council).

The case studies presented in this chapter, in addition to the aforementioned programmes, demonstrate a growing recognition for youth education and participation in the area of brownfield development, in part because brownfield sites are a common sight in most communities. Children, and especially young people, are often pioneer users of these sites (at least in Germany: BMVBS/BBSR, 2010, pp. 46ff). Children are keen observers of their environmental setting and are capable of analysing and understanding their surroundings (Horelli and Kaaja, 2002; Moore et al., 1987; Lynch, 1977).

**Learning about and utilizing the planning and design process**

Another common theme addressed by all case studies is that the participants learn about and utilize the planning and design process. This is both a common objective and common result in all the case study approaches. While the scale of the project differs across programmes, from a ‘dream house’ to a city quarter, and to a commercial zone, the participants learn about and engage in the planning and design process. The students all perform inventories, gather historical information and identify goals, objectives and strategies. In all cases the sites are underutilized and in need of revitalization. While the participants are required to recognize the physical, economic and social contexts of their site, they are encouraged to use the planning process to ‘think outside the box’ to address land revitalization challenges. By allowing innovative thinking in the planning process, these case study programmes capitalize on the inherent ability of youth to be visionary, an ability often lost in adults.
The importance of hands-on, personal and on-site activities as a teaching approach

All of the case study approaches recognize the importance of a hands-on and on-site teaching approach in spatial planning education with youth, as well as the use of different media in analysis, design and the presentation of findings (GIS, mapping hand sketches, CAS, 3D, model building, etc.). An appreciation of the environment begins at an early age, marked by an intensity of exploration (Talen and Coffindaffer, 1999, p. 321). Research has found that children possess an inherent spatial cognition (Halseth and Doddridge, 2000; Hart, 1997; Blaut, 1987; Nagy and Baird, 1978; Hart and Moore, 1971). This combination of interest in on-site exploration and ability to understand spatial concepts makes planning and design charrettes an appropriate teaching method for youth. Design workshops were used in all four case studies, from a variety of international urban site revitalization projects to a coal mine site, to dream house design in individual communities, to a commercial brownfield site. Design workshops allow active engagement and participation. Additionally, the master plans and physical models created in the projects can be analysed. The hands-on nature of the case studies and the charrette approach is more appropriate for youth as they are more active than passive. Simpson (1997, p. 923) suggests that children’s participation must be encouraged through the creative processes that relate to their capabilities.

Leading up to the workshops, the different case studies use a variety of hands-on activities. For example, the use of beach tents to allow all children to find their favourite tent location and explain why they had selected a certain place provides one illustration of hands-on engagement activities. In this case different tent locations were experimented with, just as the creation of urban models allows children to experiment with the location of project elements. In both cases, spatial formations were experimented with and considered to determine which uses in which place would be most functional. Such hands-on experimentation allows children to understand planning concepts such as ‘compatibility’ without using words and concepts that are unfamiliar to them.

In the REFINA project case study, hands-on activities move from the physical world to the virtual world. In this case, technology and media allow for an interactive, hands-on experience. The interactive learning experience seems to be more enduring and effective. The usage of new technologies, just as the introduction of tents and model making, captured the interest of most young people and was fun for them. It was often a reason for students to study a rather ‘abstract’ topic, such as sustainable development, which is otherwise unfamiliar and uninteresting. One student stated his experience of the programme in a very direct way. He said, “To experience things myself and to understand them through doing is a lot more fun than reading a text with facts and numbers” (cited in Troll, 2009).

By using on-site visits and locations that are within the participants’ community, the teaching methods capitalized on a youth tendency to focus on their own individual perspective. For example, for the topic land consumption the students first were asked to talk about ‘My dream house – as I would like to live.’ The students then discussed the consequences of their ‘dream houses’ on land use development in their towns and cities. Personal connection and on-site opportunities are imperative to youth involvement and understanding. With youth participation in planning in education and data collection on youth perceptions, there is great value in being on-site. Site conditions can thus be experienced first-hand by the youth. In all case studies, youth were fortunately able to engage in site inventory and analysis first-hand.
Peer-to-peer learning

Small groups are a vehicle used for peer-to-peer teaching and learning in all of the case study approaches. In all the cases, the programmes stress the importance of small group activities to maximize the learning potential of the participants. In the case of the university exchange programme, small groups allow students from different cultural backgrounds and different epistemological settings to exchange ways of inquiry, ideas and concepts. These small group opportunities are particularly important given the participants are unfamiliar with one another (Kotval 2009). While the participants at the BG Club are familiar with each other, the small groups allow them to quickly recognize and explore different planning and design ideas. Even though the children are from the same culture, they still have different ideas. Small groups force the participants to engage in the charrette process or, in the case of REFINA project, utilize technology and software in an efficient and effective manner. In the case of the summer academy, given the age of the children (7–12) and the number (50), breaking the participants into smaller groups is needed in order for each child to maximize his or her participation and, in turn, his or her learning. Small groups are needed to allow the children to personally explore their environment and provide opportunities for them to speak, be heard and to articulate their visions for the built environment. These objectives are more easily achieved in small groups of 7–10 students than in a large group of 50 students.

Conclusion

This chapter focuses on engaged research methods and practices that use brownfields as a platform to educate university students, young people and children about sustainable land revitalization. It also depicts ways of communicating research findings and planning knowledge to a wider public. The methods and practices presented all involve active learning approaches in order to maximize the inherent capabilities of students and youth to comprehend and understand spatial planning concepts. Communication and learning strategies are intertwined. In summarizing the case study programmes, four cross-cutting themes emerge: the rise in importance of built-environment education for children and youth; learning about and during the planning process; the importance of hands-on and personal teaching approaches in spatial planning; and the role of peer-to-peer learning.

The cases demonstrate that there are a wide variety of communication and active learning methods and tools available to researchers and policymakers – from charrettes and field trips to workshops with spatial experiments and technology-based teaching in high schools and in youth centres – that seem to be successful in capturing attention and creating discussion between students and teachers about land planning and revitalization (Kotval 2004). Common to the case study programmes on brownfield revitalization is the use of active learning approaches. While there are some differences in the approach taken, as well as in the focus by individual groups and programmes, there is much commonality in their missions and teaching goals. On the one hand, it is about gaining knowledge on land use and incorporating divergent interests of nature protection, city planning, economics and individual versus group interests. On the other hand, the students learn to recognize spatial conflicts and gain attention for typical problems of their neighbourhoods, cities and regions, while also comparing their setting to other national or international settings. In addition, not only planning students at university but also much younger students in school or extra-curricular programmes
acquire planning competences in which land use conflicts and creative problem solving play a substantial role.

The methods presented in this chapter show that research communication and education in sustainable land revitalization have moved away already from a narrow, knowledge-based approach to a broader, more active approach encompassing knowledge and understanding, active and creative learning experiences and the development of values, skills and abilities. Whether the participants in the programmes really captured that the balance between economics, ecology and social aspects in sustainable developments is also connected with compromises and, sometimes, even suboptimal solutions (e.g. regarding land consumption) is an open question. There are more questions unanswered, such as: were the communication strategy and the learning experience successful? What are the impacts and outcomes? Which methods work well for which target group? How can a conscious choice of communication tools and methods work towards a more just and sustainable environment? So it would be interesting to exchange experiences and to explore experiences with further research.

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Websites

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