

WORLD IN TRANSITION – A STRATEGY FOR MULTIDISCIPLINARY PEDAGOGY IN DIFFERENT CULTURAL ENVIRONMENTS

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Abstract

The international Master's Degree Programme in Creative Sustainability (CS) at Aalto University is a joint teaching platform for the University Schools of Art, Design and Architecture, Economics, and Engineering in the fields of architecture, business, design and real estate. The CS programme offers courses and projects that bring together students from different fields to develop a more rigorous, multidisciplinary approach to problem solving.

World in Transition (WiT) is a combination of CS courses organized by different schools of the Aalto University. The courses and design studio projects address issues of development and globalization, in different scales depending on the discipline. By bringing them together, WiT establishes a multidisciplinary platform for collaborating with disadvantaged communities at grass root level. The focus of WiT is on community empowerment through participation, sustainable design solutions and cultural awareness.

This paper aims to demonstrate Aalto University's approach to pedagogy in the context of globalization and development through World in Transition. It examines the challenges and drawbacks of the approach, as well as its outstanding benefits to communities in the world majority context, and to learning processes in multicultural environments.

The strong social and cultural emphasis of World in Transition calls for commitment and personal involvement. It offers students an opportunity to test their own skills and potential in communication, problem solving, teamwork and participatory planning methods. It challenges them to put their ideas and knowledge into practice, and to step from vision to implementation. With its multicultural and interdisciplinary approach, World in Transition prepares students to confront real life challenges at a local as well as global scale – while being connected to the practicalities of human life at the grassroots level.

Keywords: multidisciplinary, university pedagogy, development, globalization, participatory planning.

INTRODUCTION

Universities are facing a major challenge in the contemporary world: the rapid change of our societies, as well as the transformation of our technological, societal and environmental context of living is forcing universities to respond to the issues of globalization and development. Attention is increasingly turned towards the world majority context, to cities and societies where people live with limited resources and scant access to information. The rapid urbanization and growth of cities all around the world is both a risk and an opportunity – which depends largely on our capacity to adapt and react to emerging situations.

In western universities, there is a growing tendency to promote multi- and interdisciplinary pedagogic entities. However, it has become evident that the existence of siloed structures within universities poses a threat to the development and long-term societal impact of these valuable institutions. Often this historical structure prevents collaboration between faculties, while appearing to promote administrative convenience rather than growing pedagogical ambition. In this scenario, some contemporary interdisciplinary initiatives seem to be inward-facing reactions to an existing institutional structural deficit rather than pedagogies capable of addressing majority human needs in an effective manner. Nowadays, even the very definition of many disciplines tend to fracture; new disciplines are born from within old ones, resulting in ever greater dispersion (Youngblood 2007). However, rigid disciplinary segregation no longer meets the needs of our contemporary societies. The challenges of globalization demand lateral thinking, the dissolution of boundaries and artificial divisions that separate faculties and disciplines.

How, in this situation, can university pedagogy adapt to changing societal circumstances? What action and measures can it take to respond to current needs in varied global conditions? How can disciplines communicate with each other in an effective and fruitful way within inflexible organizations such as universities? What kinds of pedagogic approaches are needed to enhance learning in cross-disciplinary situations?

This paper aims to demonstrate Aalto University's approach to pedagogy in the context of globalization and development. It addresses the challenges and drawbacks of the approach, as well as its outstanding benefits to communities in the world majority context, and to learning processes in multicultural environments.

MULTIDISCIPLINARITY IN UNIVERSITY PEDAGOGY

The terms *multidisciplinary* and *interdisciplinary* are often confused and used almost interchangeably. Youngblood (2007) describes their difference and presents a useful definition:

- a) *Multidisciplinary* is what happens when members of two or more disciplines cooperate, using the tools and knowledge of their disciplines in new ways to consider multifaceted problems that have at least one tentacle in another area of study.
- b) *Interdisciplinary or integrative studies* is what happens when researchers go beyond establishing a common meeting place to developing new method and theory crafted to transcend the disciplines in order to solve problems (Newell 2001; Repko 2005).

Multidisciplinarity can be *project based* or *personal*. That is to say, it can be defined through a project in which several experts from different disciplines come together to find a solution – or through a multidisciplinary mind that possesses the capacity to handle simultaneously perspectives and languages stemming from several disciplinary origins. Whatever the case, intertwining and interacting threads of knowledge are woven into a new type of fabric when people approach a problem from multiple directions around the same table.

Rather than merely bringing experts or students from various disciplines around a multifaceted problem to bounce opinions off each other, we should start by asking: "What can I learn from you that allows me to recognize what is useful in my field to be shared with you?" If individuals have access to each other's knowledge through collaboration and unprejudiced teamwork, they need not to possess knowledge of all domains themselves. Continued knowledge-building is a social project (Hollmén, Rose 2013) which requires open-minded discussion and self-criticism – as well as mutual appreciation and respect.

Interdisciplinary thinking stems from a solid and strong foundation of multidisciplinary endeavour. Although one must be well grounded in multiple disciplines (Youngblood 2007), interdisciplinarity is more than just transferring multidisciplinary challenges from two or more persons into one. It is a relatively new form of problem-oriented critical thinking that focuses on *process* rather than *domain* (Repko 2005). Interdisciplinarity becomes the means in a process of seeking resilient solutions, not the objective itself.

Providing an egalitarian and non-authoritarian learning environment is a prerequisite for a successful interdisciplinary course. The teachers, whatever their disciplinary origin, should be able to work comfortably within in their own areas of knowledge, while being encouraged to form new networks so that professional development can occur in the contexts of need. The initial questions posed to the class should be such that there are no wrong answers. The focus should be on the phenomena at hand, not on the professional competence of participants. As the course progresses, the different perspectives of the challenge begin to emerge through various fields of expertise. However, the original positioning of the question must be encouraging to all in order to reap the benefit of having participants from different fields.

Reciprocal learning can teach us essential things about our own discipline, and help us start positioning our knowledge relative to the knowledge of others. As the 'big picture', so often lost in our fragmented reality, starts to emerge, so does the relevance of the individual's expertise and its meaning.

AALTO UNIVERSITY'S MULTIDISCIPLINARY APPROACH

Aalto University was formed by merging the Helsinki School of Economics, Helsinki University of Technology and the University of Art and Design Helsinki into one entity. Established in 2010, the university builds on the combined 300 years of history of these three highly regarded universities (Aalto 2014).

Creative sustainability

The international Master's Degree Programme in Creative Sustainability (CS) was launched in autumn 2010. It is a joint programme between the School of Arts, Design and Architecture (Aalto ARTS, Department of Design, Department of Architecture), School of Business (Aalto BIZ, Department of Management Studies) and School of Engineering (Aalto ENG, Department of Surveying, Planning and Geoinformatics). The degree programme offers a multidisciplinary learning platform in the fields of architecture, business, design, and real estate economics.

The CS programme brings together students from different fields to study in multidisciplinary teams. The purpose is to increase their understanding of different disciplines and enable them to adopt a holistic approach, and to encourage them to produce new sustainable solutions for human, urban, industrial and business environments. The pedagogical approach is based on the integration of teaching and research, problem-based learning, blended learning and a strong connection to practical outcomes (Aalto CS 2014).

World in Transition

World in Transition (WiT) is a combination of CS courses organized by the Aalto Schools of ARTS, BIZ and ENG. By bringing together courses that examine issues of development and globalization, WiT established a multidisciplinary platform for collaborating with disadvantaged communities at a grassroots level.

The history of Aalto University courses on development issues and globalization dates back to the time when the three universities were still separate. 20 years ago, the Department of Architecture at Helsinki University of Technology launched a course called *Interplay of Cultures* that focused on participatory urban planning and building design. The name of the course was later changed into *City in Transition*.

The Sustainable Global Technologies programme (SGT) was launched in 2006 at the Department of Civil and Environmental Engineering at Helsinki University of Technology (HUT). The programme offers a 20-credit Master's and PhD-level educational module on sustainable technologies, combining the viewpoints of urbanization, technology and development. Great emphasis is placed on teaching methods to enhance communication and interaction between students, lecturers and project partners. The SGT programme was designed to attract students from all departments and fields of study, first at HUT and later at Aalto University. SGT is now aiming to increase awareness, education and research in the fields of sustainability, development and technology in multidisciplinary environments. Courses included in the module are *State of the World and Development* (2 ECTS), *Sustainable Communication* (2 ECTS), *Sustainable Global Technologies* (6 ECTS) and *Sustainable Global Technologies Studio* (10 ECTS). The SGT programme has organized continuing education courses in collaboration with Aalto Professional Development (AaltoPRO), Asian Institute of Technology, University of Nairobi, UN-HABITAT, and UNEP.

The courses *How to Change the World – Innovation toward Sustainability* (6 ECTS) and *How to Change the World – Sustainability Projects* (6 ECTS) were launched at the Helsinki Business School in 2009. The *How to Change the World* project course (6 ECTS) focuses on sustainable business, social entrepreneurship and inclusive business.

Although the three course modules above were originally offered by three different Aalto schools and disciplines – architecture, business and engineering – soon after Aalto University was formed, it became evident that there was a certain amount of overlap and that collaboration would bring synergy and not only enhance both multi- and interdisciplinarity, but also be financially feasible. Since 2012, the three course modules have been developed together under the umbrella concept of *World in Transition*.

Ever since its establishment, the *World in Transition* module has sought to explore and expand students' understanding of different cultural environments. Over the years, field trips have been made to Senegal, Benin, Cambodia, Tanzania, South Africa, Kenya, Lebanon, Mozambique and Rwanda. In all these locations, the course has had a strong collaborative liaison with local NGOs, communities and universities.

With its field trip and practical projects, the WiT combination of advanced Master's-level courses provides a

solid base for developing a genuinely interdisciplinary learning platform. Students with different major subjects share the same context, yet approach the projects from their own perspective. The focus of WiT is on community empowerment through participation, sustainable design solutions, and cultural awareness. It aims to provide students with a wider perspective and help them understand the processes and practice of their discipline when working in changing cultural contexts.

The problems of urbanization are gravest in developing countries. Seen as a metaphor of the world, a chaotic city challenges students to put their ideas and knowledge into practice, to take the step from vision to implementation. The design studio projects employ different scales for different disciplines, but they share a participatory and practical approach to problem solving. Deriving its name of one of the WiT courses, *City in Transition*, formerly called *Interplay of Cultures*, the multidisciplinary *World in Transition* module underlines positive prospects and possibilities for change.

WiT course schedule

World in Transition starts off the academic year with a common lecture course that prepares students mentally to understand the dilemmas of globalization and development. The aim is to provide students with a basic understanding of various cultural contexts, and to teach them to identify problems and possible solutions. After the lecture course, the other courses continue addressing the themes from the point of view individual disciplines: urban development, architecture and engineering, and business management.

The spring term begins with a period of seminars and lectures, in which the students from all WiT courses come together to prepare projects prior to a field trip. The emphasis is on the socio-cultural, economic and ecological aspects of the country and city where the field trip takes place. Students receive a wide range of background information on the contexts and communities they will be working with.

The seminar period also allows students to get to know each other within group exercises that prepare them for teamwork during the field trip. Students from different disciplines are grouped into multidisciplinary teams. Each group chooses a project related to a community, which has been prepared in collaboration with an NGO in the partnering country. The emphasis is on a participatory approach, since the work is done in close collaboration with the local community. The aim is to enable and facilitate change towards a better environment, better products, services and processes, in order to empower the local people and society.

WiT field trip

The two-week field trip takes place during Period IV (in the second half of the academic year). The location of the field trip can vary depending on available contacts and resources. During the academic years 2012–2014, the field trip has taken place in Dar es Salaam, Tanzania. WiT collaborates with the Centre for Community Initiatives, CCI, a non-profit organization established in 2004 in Tanzania to help poor communities develop their quality of life through sustainable solutions. In 2014, as part of the WiT module, a master class in architecture took students to Rwanda, where they designed public spaces and buildings with local communities in the rapidly growing city of Kigali. Local universities and students have been incorporated into every project, to help Aalto students access the local community and interact with local residents. Contacts with the partnering countries, institutions and NGOs are established through the networks created by the WiT course teachers in their development-related projects.

During the field trip and the entire design studio, students from different disciplines need specialized tuition. Instruction in every branch of expertise is required in order to prevent misunderstandings and ensure positive results. A course of such intensity as WiT calls for considerable responsibility from the organizers; it is not irrelevant how student projects are defined when working with disadvantaged people. There must be no risk of misleading the community's course of development, possibly creating tragic consequences. Appropriate expertise is therefore essential to ensure correct methods and approaches to problem solving. It is vital for the success of the process to develop a strong cooperative teamwork with local experts and resident groups. Collaboration with other universities and institutions is also of vital importance.

Studio project

The projects are defined in collaboration with the local community, and finalized after the field trip as teams continue to work on their projects back in Finland. All students receive tutoring from a teacher in their own discipline, defining their project in terms of the theme of the multidisciplinary group.

The deliverables include studies and reports on local socio-economic and cultural issues, architectural projects, such as housing or public building design, product design, urban planning and local business development. The final review takes place at the end of the academic year.

Feedback trip

Once the studio projects are completed, at least one member from each team should be given an opportunity to return to the partner community, to share and present the results of the design period. The purpose of the feedback trip is to facilitate the implementation of projects, to create ownership and empower the communities. The local partners must not be left with a feeling of having been exploited culturally; the information and know-how gathered during the course should be shared with the communities and put into practice.

WORLD IN TRANSITION COURSES

The *World in Transition* courses operate in different schools of Aalto University, but are connected through the Creative Sustainability Master's Programme and also closely linked by WiT. The contents of each course are briefly outlined below:

State of the World and Development (introduction: Aalto ENG, SGT programme)

State of the World and Development (2 ECTS credits) serves as a general introduction to the programme and is a precondition for taking any of the other four courses. The lecture course highlights the environmental, social and economic aspects of sustainable development and explores the dilemma of development. The course has guest lecturers from different universities and organizations.

The course helps students recognize global actors in the field of sustainable development. They will also learn to understand the main principles behind global governance and environmental policies. The course is held during the first quarter of the academic year (Period I).

Responsible teachers: Professor Olli Varis, Matleena Muhonen.

City in Transition (architecture and urban planning: Aalto ARTS)

City in Transition Theory (2 ECTS) and *City in Transition Studio* (12 ECTS) examine the reality of urban planning, architecture and landscape architecture outside Europe and the industrialized world, taking cultural understanding as the point of departure. The emphasis is on the historical, socio-economic and cultural development of emerging nations according to vernacular principles. The course features guest lecturers from different universities and organizations.

Responsible teachers: Professor Trevor Harris, Saija Hollmén (course coordinator), Helena Sandman, Taru Niskanen.

How to Change the World (business and corporate responsibility: Aalto BIZ)

How to Change the World: Innovation Toward Sustainability (6 ECTS)

Corporate Responsibility (CR) and sustainable development imperatives are typically framed as necessary requirements, "a contemporary must-do," for businesses. This course aims at breaking and broadening this sometimes negatively motivated mindset by exploring paths and alternatives for creative and innovative responses to sustainability challenges. Global environmental and social sustainability problems are taken as starting points for innovation of new forms of economic activity, business models, and organizational forms. The course addresses three main areas of sustainability innovation: energy- and material-efficient business models, poverty alleviation through entrepreneurial approach, and social entrepreneurship.

Responsible teachers: Professor Minna Halme, Armi Temmes, Sara Lindeman.

Sustainable Global Technologies, changing course (innovative technologies: Aalto ENG)

The content of *Sustainable Global Technologies* (6 ECTS) changes annually. In 2011–13, the theme was urbanization and development, with a special focus on sustainable technologies and their use in the context of the developing world. The main topics were energy resources, transportation, waste management, water resources management, ICT, and housing and urban planning. The course emphasizes the importance of recognizing/understanding one's own discipline as part of a multidisciplinary group. The course features guest lecturers from different research groups within Aalto University.

Responsible teachers: Professor Olli Varis, Matleena Muhonen.

Development of the World in Transition in 2013–2014

Because Aalto University strongly encourages multidisciplinary studies, the above courses were opened to students from all Aalto University faculties. Consequently, in 2012 there were students from different disciplines participating in all of the WiT courses. Making the *City in Transition* and *Sustainable Global Technologies* courses available to students from other disciplines widened the approach to problem solving, and it was recognized that some projects would benefit if there were more engineer and design students in the CiT projects and more architect and design students in the SGT course. In autumn 2013, *City in Transition Theory* was still an independent course in the curriculum, although in practice it was merged with SGT theory so that architecture teachers too were involved in teaching the SGT course.

WORLD IN TRANSITION

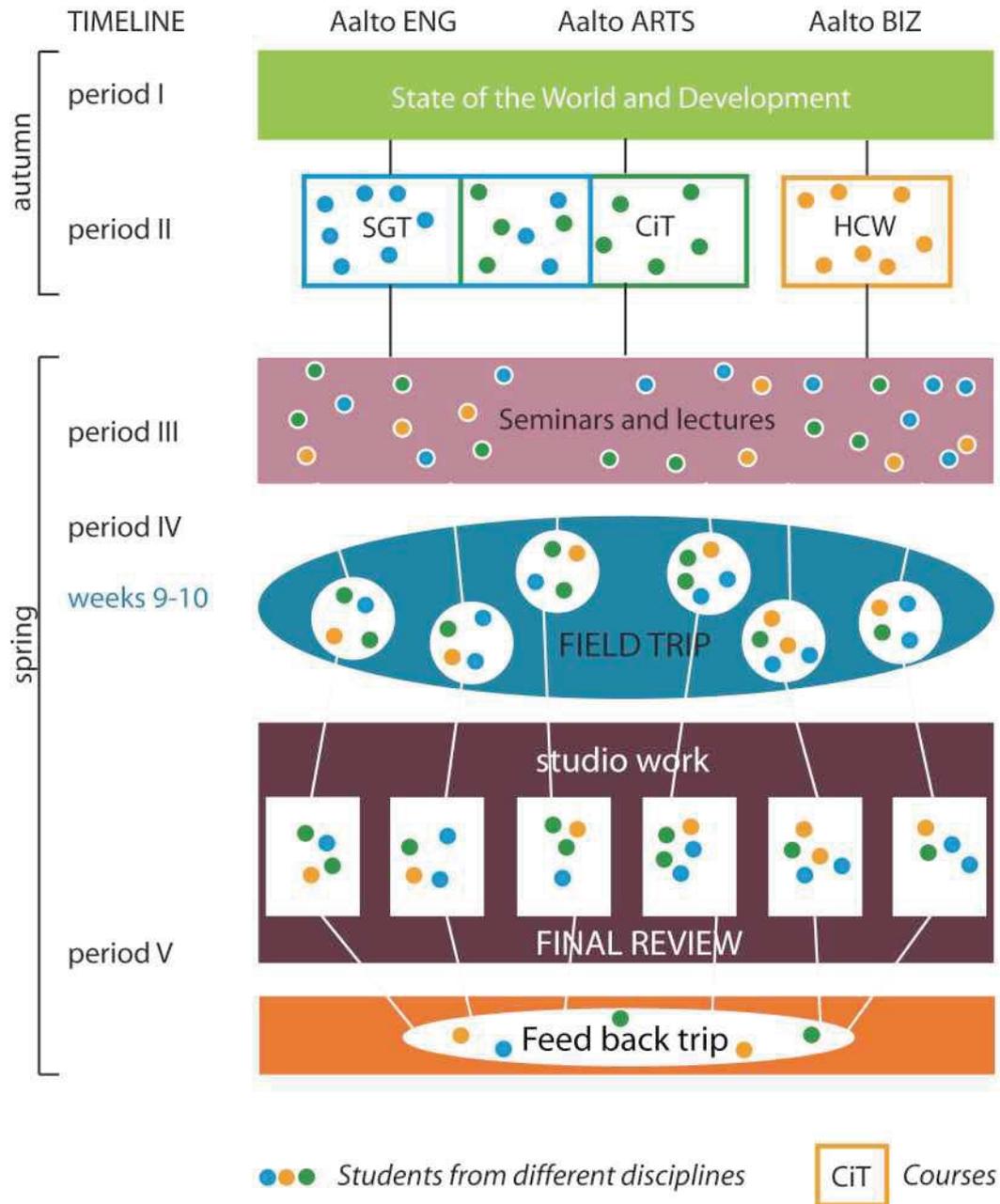


Figure 1: The diagram shows the overlap of WiT courses during one academic year.

COMMUNITY ENGAGEMENT AND PARTICIPATORY PLANNING

A group of visitors from a foreign university can easily arouse expectations in a poor urban community: Why are these people here? What are they doing? How can we take advantage of them being here? Especially in many African cultures in which reciprocity is tightly embedded in the social code, time and attention is also considered a gift. If visitors ask locals for their attention, it is only natural to expect a favour in return (Kapuściński 2002, p. 277). In some circumstances, light skin colour can still be misconnected with wealth – whereas in the case of students, their most valuable possession most often than not is their intellectual potential and their ideas, rather than any material belongings or money. Through conversation and discussion with the local community, interaction can become a reciprocal exchange of information and offer learning opportunities for all. Communicating an attitude of arrogance and superiority to a poor community would be indefensible; underestimating people's intelligence in any circumstances can have detrimental consequences. Humans need to be encountered with respect and dignity, their integrity appreciated. Only from such premises can an equal basis for communication and sharing be established.

Moreover, social coding and the rules of communication and for showing respect and disrespect vary from one culture to another. Understanding cultural locality is the foremost requirement when working in different cultural contexts, especially with disadvantaged communities.

The biggest threat on this planet seems to be the overabundance of human beings – yet at the same time, it is our greatest resource. How can we turn this threat into an opportunity in poor urban communities, how can we capitalize on the human potential that is so overwhelming, yet untapped? For any development project, the indicator of success is the level of engagement of the local community. How should we interact with people, one on one, in such a way as to make them feel that their human potential is perceived as valuable and useful? People are more likely to participate in and be part of an endeavour that aims at their benefit when they are appreciated – on their own terms. A fair and equal opportunity to share ideas and insights draws attention and invites engagement. Taking ownership of a project on a communal and even personal level is facilitated when ideas are shared on the grass root level; when people get an opportunity to actually do something, preferably something tangible that has visible consequences.

The expressed goal of Aalto University's *World in Transition* courses is to respect people regardless of their origin, social status or wealth. In all phases of course planning, the main idea is to bear in mind the lessons learnt from decades of development work, successes as well as failures, and the pedagogical principles WiT has committed itself to. The WiT attitude is based on respect, community engagement and participatory planning – in all circumstances.

Kigali master class

In January 2014, the Kigali master class under WiT took 10 students of architecture from Aalto University to Kigali, Rwanda, for a two-week field trip. The purpose of the class was to study possibilities for creating public spaces that could serve as a catalyst for urban development in the villages surrounding the rapidly growing city of Kigali. As informal settlements are moved away from the city centre, pressures mount to develop the city's master plan, and also to improve the planning of *umudugudus* (villages), where people from the informal settlements are evicted to. After identifying two such villages in the outskirts of Kigali, the class worked with the communities to outline master plans for the villages as well as individual building design projects in them.

Aalto students were paired with architectural students from the Kigali Institute of Technology (KIST) to work as equal peers in design. The KIST students also served as translators of Kinyarwanda in specific situations. The input of KIST students was essential to the success of the course as they enabled Aalto students to communicate with locals and discuss specific questions related to their environment: their wishes and hopes for the future of the village, the current employment situation and prospects, public services and transportation – what is urgently needed and what is not.

Interaction with local residents took place in informal situations. What helped our students most in overcoming language barriers and building trust, was their engagement in everyday activities: playing football with the children of the village, cooking and eating dinner in local homes, hanging around in the village marketplace to chat with people doing their everyday chores; carrying water, collecting harvest, tending cattle. Such involvement taught them more than any formal inquiry or interview ever could. Learning from the everyday life of people – what makes their lives difficult, and what makes them happy – was a necessary lesson in order to create meaningful architecture for these conditions. Participatory planning is about being open and receptive, vulnerable even – it is not an academic exercise.

The real-life challenge

The complexity of the societal and cultural challenges we are facing today tends to be too great to be addressed by any single discipline. Many universities face the challenge of adapting to their rapidly changing relevance within the societal needs of the future (Hollmén, Rose 2013). *World in Transition* offers students from different faculties an opportunity to test their own skills and potential in communication, problem solving, teamwork and participatory planning methods. Many of them have been inspired to take further action to continue the work they started during the course. Their feedback suggests that the opportunity to work with real clients and real projects have been a unique thing in their studies. The course has been a life changing experience for them, both in their personal and professional lives.

The strong social and cultural emphases in the *World in Transition* courses require commitment and personal involvement. For its participants, it is an unforgettable real-life experience in teamwork, a life-long inoculation against tunnel vision and narrow-minded thinking. With its multicultural and interdisciplinary approach, *World in Transition* prepares students to confront real-life challenges at local as well as global scale – while being connected to the practicalities of human life at grass root level.

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