

Settlement Project: Teaching Master Planning in a Studio-Based Course with Hands-on Tools for Learning

Joanne Tippett, School of Environment and Development

Abstract

In this second year undergraduate course, students spend a semester developing a master plan for a challenging site at the neighbourhood level. Working in groups, they learn to assess the site and develop an integrated plan for its future, considering ecological and social sustainability, design quality and the historical and wider contexts of the site within the urban fabric.

The Settlement Project has traditionally been taught as a studio-based course for around 25 students. This case-study describes the successful transformation of the delivery of this course to a much larger cohort of 70 plus students, whilst maintaining effective formative and summative feedback and peer-supported learning. Engagement of all students during class time is facilitated through use of an innovative, hands-on tool for group discussion, decision making and reflection called Ketso.

Students are encouraged to develop their reflective capacities through the group processes and discussions during classes, and through the inclusion of an individual reflective journal and peer-assessment process.

CEEBL is supporting the development of online resources that will further support student dialogue, creative planning and learning about sustainability, which will make these tools and processes more widely available.

In the first year of running this course to the revised programme, there has been positive feedback from course participants, and recognition from management of the wider potential of the achievements in facilitating personalised learning and effective group-based enquiry in challenging circumstances.

Background

The Settlement Project course is taught in the discipline of Planning and Landscape, within the School of Environment and Development. It is a 20 credit course for second year undergraduates, with 70 or more students in total. I am the course tutor and I have assistance from two graduate tutors. A professional planner provides additional input in several of the studio sessions and in a lecture, to introduce examples of master plans.

This is a core course for students of Town Planning and the B.A. in Environmental Management, taken in the second year. It is also taken by students from other disciplines, so it is possible to have participants from Combined Studies, Environmental Studies and occasionally subjects outside the field, such as Philosophy. The course is often attended by Study Abroad students from related disciplines; these have included Landscape Management, Architecture, and Planning.

For several years prior to my taking the course on, the Settlement Project was taught using traditional studio-based methods, which are normally taught in courses of no more than 25 students, reflecting its roots in an approach to Planning pedagogy that drew heavily on Architecture. This required high levels of one-to-one studio and tutorial support for students. This model proved increasingly difficult to sustain as student numbers grew, with consequent impact on the effectiveness of teaching and the quality of student experience (the latter evidenced by diminishing satisfaction levels in annual student feedback surveys).

I was asked to lead the course, improve the quality of the student experience, and find a way to make it more relevant to students on the environmental management course. The low student satisfaction scores prompted me to undertake a radical rethink of the basis on which the course unit was delivered, taking particular account of the (University of Manchester) President's review of undergraduate teaching and the need to develop innovative ways of bolstering personalised learning. I have developed several techniques to maintain the studio-based feel of the course with large numbers of students. These encourage genuine enquiry and learning from peers and recognise the need for teaching to be time effective for the tutors.

Rationale

The overall aim of this course is to teach the skills of master-planning, which could be paraphrased as integrated design on the scale of the neighbourhood. The Enquiry-Based Learning approach brings together concepts of sustainability, place, people, history, and design, based on the Royal Town Planning Institute's (2001) core ideas for planning:

- spatial - dealing with the unique needs and characteristics of places
- sustainable - looking at the short, medium and long term issues
- integrative - in terms of the knowledge, objectives and actions involved
- inclusive - recognising the wide range of people involved in planning.

The student project for this course is to develop a spatial plan for a large urban site of 128 hectares. Students are introduced both to principles of sustainability and methods for including community voices and different points of view in their planning. They learn to use tools and processes to draw their ideas together into an integrated vision, including Ketso, a hands-on kit for creative group work (Tippett, How *et al.* 2009). Ketso is a social enterprise that has emerged from my research (www.ketso.com).



Figure 1 – Ketso in use for developing ideas as a group

A site is chosen for the project to give a wide range of challenges. For the last two years has been the lower Irk Valley in north Manchester, which has large areas of environmental neglect and pollution and many social problems (indeed I am required according to our risk assessment process to insist that students do not visit the site alone, or after dark, and that they always inform others when they are going). One student commented on the first field trip that it was 'a site in need of a master plan'. The site is under active consideration by Manchester City Council

for regeneration. For many of the students, it is quite an experience to visit the site for the first time and realise that there are such neglected and run-down areas a short walk from Manchester's city centre.

This project gives students an opportunity to consider environmental and social issues, policy implications, history, aesthetics and the future of a place through a real-life project. At the same time, they develop skills in communication, teamwork, design, use of software and graphic presentation.

Students are given the following project brief:

You have been commissioned by the North Manchester Regeneration Team to develop a master-plan for an area in Collyhurst covering 128 hectares, including a large area of derelict land. This can be seen as a bid to gain the contract to develop a full implementation plan. The plan should achieve the objectives for area set out in Manchester's Unitary Development Plan for the Collyhurst area, the North Manchester Strategic Regeneration Framework and the Collyhurst Local Plan, and also goals developed by your groups during the master planning process.

The stated aims of the course include:

- To complete a step-by-step master planning exercise at the neighbourhood level of scale
- To appreciate the relationships between built form, natural landscape and social interactions
- To gain an understanding of urban design, design guidelines and design quality
- To devise a master plan based on viability, social and ecological sustainability and the local context
- To present a professional-quality vision with imaginative graphics, clear information and good presentation skills
- To develop skills as a reflective practitioner

On completion of this unit, successful students will have gained skills and developed their knowledge about place in a real project. The anticipated learning outcomes are as follows:

- analyse the assets and potentials of an urban neighbourhood through mapping and morphological analysis
- demonstrate an understanding of the relationships between built form, natural landscape and social interactions with reference to a particular context
- conceive and present an outline master plan

- discuss design issues, viability, social and ecological sustainability within a particular master plan
- understand the input of different professionals and community members in master planning
- use appropriate IT tools for professional-standard graphic presentation

Approach

When I gave a presentation on this teaching approach at the 2009 Conference, Innovation in Built Environment Education, I entitled the workshop: 'You want me to teach what – a studio-based course for 70 students?'

The first re-design I made to the course was to turn what had been an individual project into a group project. In order to ensure that students receive good feedback on their projects, in both the mid-way presentations and the final presentations, I needed to keep the number of groups down to 12. I thus set a lower limit of 5 and an upper limit of 6, or 7 if the numbers are slightly higher. I have found it is important to set a lower limit as well as upper, and the ideal number is 6.

I start the group work with randomly assigned groups for the first four weeks, and use creative group work techniques (described in more detail below) to help students develop the initial set of ideas for the master plan. It is important to encourage the students to interact and talk with each other in this process, as part of the aim is to break the patterns of students gravitating immediately to the groups they always work in (in this instance, most of the cohort are from the same discipline and have formed groups of friends in the first year). In addition, there are always a few students who don't know anyone, and I aim to give them an opportunity to get into a group and meet people before the pressure to choose a group develops.

Following this initial period of group work (three weeks), students are allowed to choose their groups for the second part of the project. It is hoped that the early random mixing of groups will introduce more students to each other, and encourage them to work with people they don't know, but still allow them to choose their groups for the main part of the course work. Allowing this choice appears to reduce, but not eliminate, complaints about 'free-riding' as students were given the option to choose who they worked with.

Students arrange their own meetings outside of the classroom, and are given clear guidance on working together in groups. This is reinforced in the class time with discussions of group-process and the need to learn to work as a team, as a core professional skill. There is a peer

assessment process, whereby student's marks can be revised up or down by 10% if there is clear agreement that there was a discrepancy of effort. All students are required to fill in a peer assessment form and hand it in with the individual component of their work, the reflective learning journal. There is thus a piece of work (worth 15%) that is assessed as part of the overall mark. Students are strongly advised in the written materials on group-work that they are given, as well as in the initial lecture, to keep records of their group meetings, including attendance and minutes.

Students are expected to meet regularly in their groups outside of class time to complete their projects. There are four hours of contact time per week. The course is largely taught in bi-weekly sessions where the groups work together, with the tutors circulating amongst the tables and offering feedback. Guidance on the day's tasks is offered to the whole class at appropriate intervals. I use a bell to call for attention, as I find this helps me not have to shout.

One two-hour session is held in flat teaching space, where the students work on large maps and drawings, and develop their ideas. The other two-hour session is held in the computer lab, where they download maps and learn to develop digital images using graphics tools such as Photoshop and Sketch-up. In the computer classes, students are given pre-prepared lesson plans to work through to familiarise themselves with the software. They can go through exercises at their own pace. Occasionally we demonstrate tricky aspects of the software, or call the whole class's attention to an issue or question that has arisen as we circulate around the computers looking at work and offering feedback. In the early sessions, these are more focused on use of the software, but after a few weeks, the exercises lead them through how to develop a graphic representation of the site, how to develop analytical maps, then a master plan image and the poster boards to best display their ideas.

There are two sessions of lectures, one at the very beginning of the course, to introduce students to the overall process and the key concepts of master planning, and one after several weeks, before the first assignment is due, to allow students a chance to deepen their understanding. In this lecture, students are introduced to several examples of urban space and are asked to reflect on the design principles being demonstrated in the examples. They are also introduced to international examples of master planning, to introduce the idea that this is not just a technical process but a political one.

Resources for the project plan and the computer classes are made available on the e-learning platform provided by the University. These include the local plans relevant to the area and several key policy documents. In addition, examples of master plans and graphic presentation of ideas are made available. Key information about how to download maps and develop the

graphic materials using the software is made available to students between classes, so they can direct their own learning outside of the classroom.

There is a field trip in the second week of the course, in which students are taken by bus around the area, shown the larger context in which the site sits. Walks through different areas of the site enable students to get a feel for the key issues.

Students are introduced to Ketso early in the process, to gather and organise their ideas, then to develop their thinking and new ideas for the site. Ketso provides them with a set of tabletop tools that can be used to capture and display their ideas. Ketso consists of colourful 'branches', 'leaves' and other materials, which participants write their ideas on. These re-useable shapes are then placed on a felt workspace, where they can easily be moved around in response to the developing discussion. It is an inclusive tool in that it overcomes many communication barriers often found in group discussion, and can be used with people from culturally and linguistically diverse backgrounds. Thus in using this kit, students not only learn to work together as a group and develop a picture of their thinking, they learn processes that will be useful in engaging with stakeholders and community members in the future.



Figure 2 – Ketso in use for interactive group work with large numbers

Ketso incorporates ideas on visual communication, as developed into Mind Mapping® by Buzan (1993; 1983). It incorporates the thinking of Gardner (2000; 2003) on multiple intelligences, as it is highly visual, but also includes words. Ideas are given a physical representation that can be moved on the workspace, supporting kinaesthetic learning. Students are encouraged to discuss and explain their ideas at the same time as adding them to the workspace, which is useful for those who learn best from listening and speaking. Influenced by the ideas of de Bono (1990; 1996), I have developed the workshop process for this course to encourage students to

break outside of their familiar patterns and frames of thinking. The coloured shapes of the Ketso kit are used to juxtapose the students' ideas on the workspace, and using different colours for different types of thinking (brown for what is working well on the site, green for new creative ideas, grey for challenges and yellow for goals) helps students to think through issues more comprehensively.

I wanted to stimulate lively group discussions, and felt that more effective ways for the students to see and understand each other's ideas would help them to learn from each other. I use Ketso to engage students in such activities in a wide range of contexts. CEEBL has supported development work with Ketso, with workshops held in the CEEBL space to develop ideas with academics and student tutors for new ways to use the kit in teaching. The potential for Ketso's use in teaching will be extended once a current CEEBL supported project, eKetso, is completed. This project is developing an electronic version of Ketso, in which ideas can be recorded and developed over time by students in different locations.

The early work with Ketso helps the groups to develop their ideas, and to talk to new people. In each use of the kit, I ask groups to go and look at the work at other tables, broadening their perspectives and enabling them to see the project from different points of view. I ask students to type up and share the early ideas developed, to create a common pool of knowledge to draw from about the site. Having to integrate the ideas from a diverse group of people also builds skills in assessing and considering the ideas of others. Such skills are essential when involving the community and stakeholders in planning.

Following these interactive sessions in the class, I ask students to reflect on their ideas, considering what was surprising to them, what have they learned from the content of the ideas developed. I then ask them to reflect on the process used – how did they find the process, how could they see using it in their professional lives? This cycle of asking for reflections on the content of the ideas developed helps to develop reflective capacity. Questions lead the students towards thinking of other possible uses of the techniques they are learning, along with their future roles in their professional lives. Planning a cycle of discussion or group work and reflection on thinking throughout the course has been influenced by Kolb's (1984) work on experiential learning. I aim to work with students to develop their capacity as reflective practitioners, challenging them to reflect on their own values and roles.

The work before the first feedback session mainly consists of analysis. This includes looking at the settlement pattern, learning to create historic figure ground maps, and analysing the current transport networks, as well as the ecological and social situation. The first submission consists largely of this analysis, along with initial concepts for the future development of the site.

An important theme of the course is ecological and social sustainability. Each team is asked to consider social regeneration and ecological improvement, such as habitat protection and creation, energy efficiency, water-use, transport and recycling as part of their plan. After the first submission, they are introduced to a framework for sustainability and decision making, based on the Natural Step (Robert 1991; Martin 2008) and developed into a positive framework for sustainability, the RoundView, in research with Tesco (Tippett, Farnsworth *et al.* 2009). The RoundView provides a scientifically grounded framework for a 'change in direction'—to inspire, inform and engage people in the creation of changes and practices that lead society towards a truly sustainable dynamic. CEEBL is currently supporting the development of RoundView Online, which will make open-source learning resources about this framework widely available.



Figure 3 – RoundView Guidelines being taught using interactive felts

Having learned about the RoundView, students then use Ketso to develop additional ideas about how to improve the sustainability of the site. Again, I ask groups to swap around tables to compare their ideas. This encourages learning that there are several possible ways to move towards sustainability, even on one site. Students are asked to consider sustainability guidelines in choosing and developing future options for the site.

The final weeks of the course allow students to pull all of these ideas together into a master plan, and offer an opportunity for the ideas to be developed and integrated in a real context.

Assessment

I introduced several ways to ensure that students receive in-depth feedback on their work, one of which was changing the assessment from individual work to group work, so that there are only 12 or fewer projects (as opposed to 70 sets of master plans as in the past). The students present their project work to the whole class on two occasions, followed by verbal feedback from the course tutor. I listen to three of the five-minute presentations in a row, then give feedback on all three presentations and projects, drawing out similarities and differences as aids to learning. I also work with the Ph.D tutors (and occasionally an external tutor) in the classes to give ongoing feedback and promote discussion amongst students.

I added an individual reflective learning journal to the assessment, both to give a component of individual work for students' final marks and to deepen the learning from the process. The aim with this is to encourage students to become reflective practitioners, as well as develop subject based knowledge and skills.

There are three submissions for the course:

Stage One Submission:

Group presentation and studio critique of analytical work on the historic development and present condition of Irk Valley area and ideas for master plans (Group work). 15% of final mark.

In this presentation, the information can still be in draft form. I tell the students that what I am interested in is seeing the quality of analysis and the beginnings of ideas for the future master plan, in order to give feedback on developing the plans. Students are also assessed on the oral group presentation and the clarity of the information conveyed in the drawings.

Stage Two Submissions:

Submission of individual work - reflective learning journal and development of design ideas (1,500 – 2,500 words), and a peer assessment sheet. 15% of final mark.

This journal based on students' experiences of doing the master plan. It can follow the chronological order of the sessions, or it can be thematically based. It should show evidence of the development of thinking. Students can reflect on what they have learned, what has helped in learning, elements they found difficult, ways in which their ideas have changed over time, etc. I suggest that they read Moon's (1999) work on reflective writing.

This journal can include drawing or mind-maps, and can be hand written, but must be legible. It should include sketches and show some development of design ideas. These can be rough sketches – they do not need to be redrawn to be finished products; the idea is to show the thought processes and to reflect on the development of ideas.

Stage Three Submission:

Students are required to present their ideas in a formal presentation of 5 minutes, using three A1 exhibition boards. They are also asked to submit a brief supplementary report, one per group (max 1,500 words) to provide further detail. This is worth 70% of the final mark.

Students are assessed on the quality of the ideas and the clarity of both verbal and visual presentation. They are given feedback on their presentations in the first submission, and are given guidance on graphic communication, including pointers to the theory of integrated visual communication (e.g. Tufte 1990; Monmonier 1993) during the studio and computer cluster classes. Thus they develop transferable skills in communication and the visual presentation of ideas.

Evaluation

This course has been run once in this format, and at the time of writing, I am partway through the second round. The first course was evaluated through a standard student feedback questionnaire, which I supplemented with several informal focus groups with students. It is highly interactive in nature, so I have been able to engage students in discussing ways to improve the course on a regular basis. An example of this improvement between the first and second round was assigning random groups for the first few weeks, so that students got to know people outside of their normal cliques and broke some patterns of with whom they tended to work. A further improvement came in the addition of a brief report with the final group project, as the students who had really developed their ideas felt they were not able to fully convey the depth of their thinking on three poster boards and in a five minute presentation.

In the first year of this new approach the feedback was very positive, with reports to the Undergraduate Programme Committee that students were very pleased with the learning and feedback, came only a year after there had been complaints to this same committee about the way the course had been run, for such a large group.

Qualitative feedback from the course suggested a high degree of student satisfaction:

The course was interactive, enthusiastic and informative (with each group); Useful skills learnt for the future career as a professional planner; Very fascinating doing the project in group work; Reality included in the course unit; Constant feedback was very beneficial; Joanne constantly checked to ensure that everyone understood the whole.

One comment in particular is telling:

It was the first time I felt like a proper student (not just a number).

This demonstrates that with careful attention to group process and the use of interactive tools to stimulate discussion, it is possible to encourage personalised learning even in large classes.

This work has been recognised within the department, with the Head of Discipline commenting (about this course) in a written submission about innovative teaching:

First, her work on embedding interactive group discussion within the curriculum has provided an exemplar for colleagues in the School, and has the potential to impact more widely on personalised learning across the University. Second, Dr Tippett's pioneering work on innovation in the delivery of formative and summative feedback to students also has the potential to extend beyond the School. Both of these contributions are important because they have been developed in the context of longstanding course modules, illustrating the potential for innovation in teaching and learning to apply across areas of activity that have tended to be delivered along more conventional lines. Both of these innovations have generated plaudits from students, evident in the impressive scores garnered through student feedback.

Dr. Tippett successfully transformed the module over the course of only one semester. She did this by making especially good use of graduate assistants, and by employing her own pioneering approach to interactive discussion. In doing so, Dr Tippett has I think established a model from which other tutors can draw in considering how best to incorporate innovative practice in mainstream course units.

Further development

This course is a core requirement for our students, so it is an ongoing process. In future years, I intend to add a stage of discussing group work and managing time and expectations partway through the group projects, to allow students some structured time to discuss any issues that are arising. The aim is to provide a way to bring problems to the surface, discuss underlying patterns of behaviour and find to deal with problematic behaviours, rather than personalities. I intend to use Ketso to ask students to discuss what is working well, what is not going so well and to brainstorm solutions to the problems. I am considering asking students to start with what is working well, and read and share these out with their group. They would then be asked

to write what is not going well on grey leaves, knowing that another group will be coming to read them out, so they don't have to lay claim to their ideas initially. They would then go to a different table to read out what is not going well at that table, whilst their own ideas are placed on the felt by a different team. They could then move to another table to brainstorm some solutions to the problems developed at that table. In the process they are likely to see several similar problems to their own, and hopefully also learn from what is going well in different groups. By the time they return to their own table, there will be some solutions generated to the problems they were experiencing.

I am hoping that if students know that they will not have to read out their problems, that they may be more honest about difficulties, since they are under less peer pressure. Allowing students to write ideas down and build a group picture of the process, without having to verbally defend their position, can allow potentially difficult issues to be aired and discussed. I am hoping this will improve the process of the groups working together, and in the process learn more about how to deal with the inevitable tensions that arise in a semester long group project.

I aim to develop a narrative around learning how to use software to help make your tasks easier, to run alongside the learning of particular software applications. Thus I hope to introduce students to the idea of questioning how software can help them, and to the process of exploring its capabilities, as opposed to learning steps by rote. This year I pre-empted some of the difficulties I had in the first year, with students wishing to be told exactly what they needed to learn on the software, by explaining that this was more a process of learning how to learn about software. I inadvertently demonstrated the ongoing need for this, as software changes over time, by having to work out myself on the fly how to do certain stages of the process that had been changed in a recent software upgrade. I would like to explore more use of open source graphics software, so students have more opportunity to use the tools at home, as much of the software is very expensive. This needs to be done in discussion with colleagues, however, as the software we are teaching (e.g. Photoshop) may be considered as a core skill in employment.

Having set up the structure for this course, there is not very much preparation needed before each class, apart from in the early stages of making sure there are large scale maps printed, etc. However, it does take energy and a willingness to communicate during the class time itself. Often the students pose challenging questions and ideas, which I find cause me to learn as I go along. A further reward is the experience of listening to students present their ideas to their class, noting that they themselves are often surprised by what they have managed to produce and learn.

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