Media, Technology and Teaching

Joanna Crotch [1], Robert Mantho [2]
Mackintosh School of Architecture, Glasgow School of Art, Scotland
[1] j.crotch@gsa.ac.uk, [2] r.mantho@gsa.ac.uk [2]

Abstract. *With the growing reliance on technology and other visual media to explore architectural ideas, has architectural pedagogy realigned itself with the evolving possibilities of the new technological age?*
With the above in mind, we designed a program to explore and test this question. The programs encouraged experimentation and speculation. Technology was seen to be central to the program. The starting point was the selection of an activity. Each stage of the process required the student to firstly, carefully observe, then to create an image utilizing different 'medium' to realize their observations. The chosen mediums were cubism, movie making and digital imaging. Conventional plans and sections were required to be made of each final outcome, of each stage. As part of and in response to each progressive stage, a space to house an element of the activity was designed. The concluding part required the design of a small urban building to accommodate the activity selected.
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Media, Technology and Teaching

With the growing reliance on technology and other visual media to explore architectural ideas, has architectural pedagogy realigned itself with the evolving possibilities of the new technological age?

How can one engage students in the creation of a deep and broad body of knowledge and combine the possibilities of the new technologies available and also draw on a sound historical framework to deepen knowledge?

In our quest to try and answer these key questions we designed a program, to direct our teaching, and the learning of our students, that would facilitate a more informed approach, and one that would embrace the potential that the new mediums had to offer.

Second year students are balanced on a threshold where skills' learning morphs toward the creation of buildings, and further again toward the making of architecture. Our ideas centered on each student's acquisition of a personal visual language, connecting them to a historical culture and opening possibilities through experimentation.

We took the existing Stage Two teaching framework – a traditional, well tried and tested series of programs with a weighting on manually made drawings. Using this as our context, the new program would encourage students to be more explorative in their investigations; and embed these pieces in a

series of 'events' with which the student would become intimately involved. And all this aligned with the possibilities that new technologies can now offer.

Architecture based on activity

The program consisted of four elements. These elements run consecutively, each one informing the next. The premise for the programs is that architecture is embodied and experiential, and that events are more relevant to architecture than form. The program was also focused on each student acquiring a visual language. The program encouraged the students to be explorative and speculative; and embedded all work in the study of a specific activity, to produce a thorough and personal understanding. Technology is seen as central to the program, being required in both student work and in the course delivery.

The four elements were split into two stages, the first seen as 'research', and the second as an opportunity for the knowledge gained and techniques generated during the research programs, with a design brief as the vehicle for further exploration.

'Movement Space'

The first stage began with students selecting an activity, which was required to have a group of 8-10 participants. Students then observed the activity, documenting carefully their observations in various media…. becoming 'experts'. Students also researched the historical, cultural, physical, sensual and emotive aspects, with a particular emphasis on movement over time.

The next stage required the students to produce three distinct, yet connected pieces of work, using different media. This permitted exploration of specific insights connected to the particular media and to a broader cultural context. Each task required students to generate a source document, whose spatial and conceptual propositions were then investigated using sections and plans as analytical tools. The three media selected were cubist drawing, film, and digital modeling. Each medium was carefully chosen because of its impact as watershed moments in western culture.

Plan & Section as analytic tool and interpretive instrument

The analytic drawings created from the source documents were speculative. Being constructed with a foundation in the conventions of plan and section, each source document contained particular challenges for orthographic drawing. The complexity and multiplicity of spatial propositions in a cubist drawing required disciplined interpretation in the construction of coherent set of plans and sections. Working with the filmic document to generate a static representation of moving images, while also portraying the spatial relationships between moving bodies, required a lateral approach. Generating plans and sections from the 3-D digital model shifted the challenge from depicting spatial complexity and movement, to conveying the qualitative aspects of an activity in analytic drawings.

Using new knowledge

The second stage of the program centered on the design of a building to house the activity. Having created an individual intellectual neighborhood and visual language, each student generated a brief based on a generic framework, for a given site and context. The expectation was that the architecture that emerged would be derived from a deeper and broader understanding, and that the spatial relationships, movement, and mood captured in the research stage would be manifested in the proposals, with the activity and the research investigation forming the core of the architectural endeavor.

'Media, Technology and Teaching' was presented and discussed at the ILLA teacher's conference in Lisbon in May 2007. This paper was presented prior to the completion of one full academic cycle; subsequently review, assessment and analysis of the student work had not yet taken place. Reflection and reworking of the brief was to follow. This paper present

this critique, reveals our findings, and presents our revised program.

The original program was introduced and ran through the academic session 2007/08, with assessment taking place in June 2007. Students were required to make a portfolio submission at this time, and it is at this point in the term that assessment and grading occurs. Despite significant alterations to the programs, the assessment process fundamentally remains unchanged. All work is evaluated against a set of learning outcomes. These outcomes are contained within the briefs issued to students, and also the Glasgow School of Art Student Handbook.

The program required the students to tackle tasks somewhat different to those previously required through more conventional design programs. Our aim was that through the acquisition of deeper research information surrounding their chosen activity, the application of this knowledge would result in a more informed result with a specifity that may not have occurred in the more traditional approach.

The program also required changes in the delivery of tutoring, reviewing, and recording. The 'group tutorial' emerged as a successful learning and teaching tool, with a significant reliance on technology. This resulted in discursive tuition, with cross fertilization of ideas and efficient delivery of information. The review was redesigned, requiring active participation in the critique of peer work, with everyone 'grappling' for clarity in his or her work. Finally the necessary portfolio submission, core to the schools assessment process, required students to consider and design how their work can sit explicitly within a 'hard copy' folio.

Portfolio presentations

This final challenge for the students required them to translate their investigations in to a paper format. Currently the A1 folio submission is demanded at the end of Stage Two, and it remains the format with which the summative assessment of the years work is made. Each of the three research components presented its own issues to be resolved by the students. With the Cubist piece, scale and medium for many of the students required thought in how they can comfortably place this work in the folio without losing the quality of original work, which in some cases, is significantly bigger than A1. With the Film Space, the students have to design how they represent their movie in static images and how their constructs can relate to these images. Again, scale is an issue as A1 become very restrictive a format for this 'freer' presentation. The Digital Space program is less problematic, in this program control and editing is essential in order to represent the work appropriately. As a School we are questioning the appropriateness of such a restrictive submission format, and as Technology become the mainstay of the students work, digital submissions will have to be trialed. This is one of the alterations that we have now implemented into the Stage One, where part A1 paper submission and part electronic submissions will be made at the end of session portfolio submissions. The success and implementation across the other undergraduate Stages will be discussed at the end of the session.

Reflections on the curriculum

It is impossible to state 'absolutes', but we have endeavored to be careful with our reflections and postulations of our observations and findings. No control group as such existed, with the entire student cohort participating. What we do have in order to make a comparison is the work of previous years, of which we are familiar. We also recognize that the range and depth of skill across the year group is significant, this would manifest itself in a broad spectrum of results, which we had to take into account when drawing conclusions. Alongside this assessment process was the critique of the program from the implementing tutor's perspective. The delivery of the course has required staff to rethink their teaching practice. Feedback and discussion with the staff team has therefore been a key component in the development and refinement of the program.

As one might expect, the results in terms of our aims for the program were not consistent across the

year group. What we did observe was that almost without exception the work produced from the three research exercises was explorative, original, and well presented, with students handling the new presentation challenges. In terms of the forth component, the design of the building; stronger students produced work that was exemplary in quality and architectural ambition, and clear connections could be seen with the research strands clearly supporting the design component. What was also clear was that weaker students were grappling to make the connections between research and design; appearing to 'package' each element separately with application of the findings of their research not being in evidence in the design element. Another of our observations noted that, despite the program being heavily weighted in the production of the making of drawings in the research strands, where results were good, both manually and with the computer. We were disappointed to observe no significant difference in output of drawings to represent their architectural proposals, when compared with previous years.

Figure1
Cubist drawing; Kang Sisi

Figure 2
Cubist Space; Kang Sisi

Developing the program

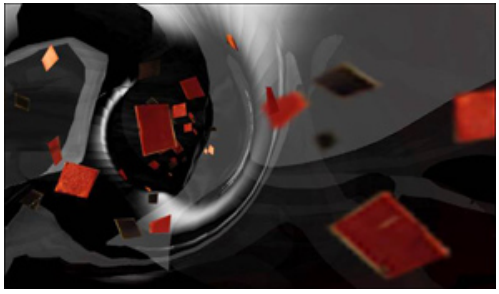
Following extensive discussions and analysis of the results, the program has been developed to try and address these issues resulting from this critique. The most common difficulty encountered by students was how to translate the knowledge developed in the research phase into a spatial proposition in the design project which followed. The revisions attempt to, through the introduction of a design component relating to each research strand, bridge this observed 'gap'.

For 'cubist space', after completing the plans and sections, the students were asked to make a spatial proposal for the activity their research was focused on. The spatial proposal was to deploy the understandings of space and its definition, derived from the construction and analysis of the 'narrative cubist' drawing. Students were instructed that the material and tectonic aspects of their proposal should not be addressed and that the objective of the assignment was the development of a spatial proposal that extended their investigation of space. This portion of the brief is designed to encourage students to use their knowledge on a small-scale problem.

The design component of the 'film space' brief asked the students to place the spatial proposal developed in the 'cubist space' brief on a site in the city of Stirling. Students were then asked to design a passage from an edge of the site to the 'cubist space' proposal. The brief asked them to use the knowledge and insights discovered through filming and 'reading' the space of the film in the construction of their plans and sections. The students were briefed to focus on a spatial proposal that was specifically for people to move through, rather than the provision of a space for a specific activity. Conversations centered on how to build relationships between an existing

Figure 3
Filmic Study; Aleksandra Dudziak

Figure 4
Filmic Space; Aleksandra D



context and an abstract space with the design of a space of passage. This problem introduces students to issues surrounding site and the relationship between separate design elements.

Having completed the digital model and analytic drawings for 'digital space', students were asked to analyze their chosen activity to determine a subsidiary aspect of the activity that was essential, yet clearly secondary to the core activity. Students were then required to design a 'support space' for this secondary activity, e.g. a 'support space' for Yoga might be a space for individual meditation. Again, students were directed to utilize knowledge attained from reflection and critical assessment of the 'digital model' and its analysis. The problem confronted students with programming, allowing them to begin to understand the ordering of various elements clustered around an activity.

Staff recognized that digital models allow students to confront space directly, and encouraged students to use digital tools during the various research segments. Students were asked to use this media to spatialise analysis and to grapple with complex spatial problems, emphasizing the possibilities of digital media as investigative tools. Another aspect of the teaching is the discussion surrounding the use of traditional drawing techniques and the abstraction of space required by them. Staff emphasize to students that the different techniques are complementary and supplementary, highlighting the benefit of using a diverse range methods in their exploratory process.

Each additional design component reiterates the need for clear and concise graphic representation with an emphasis on the making of plans and sections, complemented with the graphic communication of the 'experiential'. The idea being that this iterative process will enable the students to make the transition from research to design more seamlessly, and will result in more specific space making together with more conclusive attainment of the programs learning outcomes.

Figure 5
Digital Models and Digital Space; Douglas Drysdale

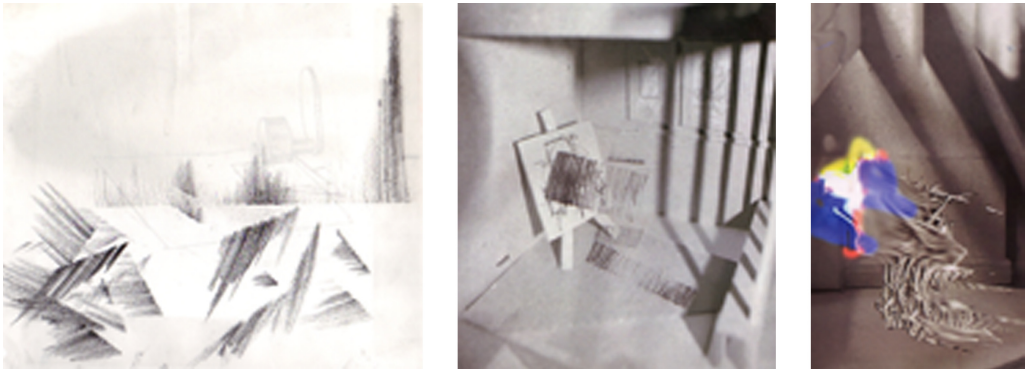


Figure 6
Spatial studies generated via video analysis and applied to design program; Hugo Corbett

Interventions into Stage One

An observation made throughout the initial stages of the program is that students seem to lack the confidence that the program demands in respect of the explorative nature of the investigations and that a degree of speculative thinking is required. In order to support the students, aspects of the new program have been integrated into design programs in the preceding year of study.

These sub- programs have been layered into the design programs and require the students to use the different technologies available to explore the ideas of spatial constructs, movement and sensual experience. The students are asked to utilize film, sculpture and digital tools to record specific events related directly to the design program. One of the vehicles was the design of an Artists Studio, and sub-program explored the particular spatial requirements of an Artist at work, vertical circulation, and an investigation into core support space. The use of new technologies i.e. computer 3d representations, filmic documentation and video analysis were utilized, along side conventional drawing and research tools. One program examined 'stair' and considered its purpose not only as a device to move occupants vertically, but also as an experience to support their design. Film was utilized to explore the kinesthetic of stair and complemented survey work, analytical and observational drawings. Another example was the observation of an Artist at work, through the repeated viewing of a video. Following this the students were required to make a spatial construct in response to the observation. The students adopted various means to explore and present their findings, such as photography, sculpture and drawing using various manual mediums. These additions have run parallel with the design briefs, and students have been directed to explore the connection between these experiments, and incorporate their findings into the design component.

Presentations using digital technologies have also become a requirement in the Stage One for a proportion of their work. This is supported with formal teaching sessions in RHINO, PowerPoint and Photoshop; and compliments the teaching of conventional drawing techniques. The aim being that by the end of Stage One, all students are able to utilize a spectrum of tools to investigate, analysis, explores and communicates their ideas and proposals.

We believe that this gentle introduction to some of the methods, skill and tools that the students will be expected to use in Stage Two will help prepare them and hopefully give the students the confidence to investigate and explore, and relieve the anxiety that has been observed. Our belief is that the unknown, the requirement to speculate, and the recognition that there is not one right way to approach and explore the problems posed, fuel this anxiety.

Figure 7 & 8
Final proposals containing explorations; Brendon Higgins; Edward Eastam

The students in the Stage One have responded well to these more unconventional approaches to analysis and have embraced the new mediums with competence. We now have to wait and observe if these prelims assist with the transition in to Stage Two. We have also introduced submission of an electronic portfolio for a proportion of the end of year portfolio submission. We wait with interest to observe the success of this for both students and staff.

Interventions into Stage Two

The use of design problems to familiarize students with the process of translating new knowledge into their design process was the major change in the teaching program. While Stage Two staff will again undertake a much more considered evaluation of the teaching program after the formal assessment of the student's completed work, throughout the year it has become clear that students have benefited from the changes to the program. It has been recognized that students have been utilizing the results of their research in the design process more readily and appears that the initial struggle with how to deploy complex spatial concepts in more manageable in the newly implemented design elements.

After the final reviews, Stage Two staff noted that a significant number of students had applied knowledge and insights from their research phase into their architectural proposals. After the final submissions, a more extensive critical reflection of the results of the revised teaching program will be made in effort to continue our refinement of the use of technologies and alternative practices in Stage One and Stage Two of the Undergraduate Program.

Conclusion

The program has now run for two years and will continue to develop and evolve as we reflect, analyze and discuss the results. Reflections on the interventions in Stage One will be carefully monitored to assess their success. Early observations point to some positive outcomes, such as more thorough understandings of habitation and spatial awareness. The program will continue to be revised and develop over the next academic year.

Having nearly completed the second year of the program in Stage Two, we have recognized a shift towards a more spatial approach to architectural problems and an exploitation of 'event' as a source of architectural inspiration.

Currently Stage Three do not directly reinforce our program strategies. However, what we have been able to observe from the current Stage Three cohort, is more careful and thorough research methodologies and the more thoughtful habitation of their design proposals.

Our conclusions lead us to believe that the developing program offers students design stratigies, opportunities and directions beyond that of previous design programs, and we await with interest and anticipation to witness the outcomes of the new amendments…. the program continues.

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