# PUTTING STUDENTS ON THE MAP

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**ABSTRACT**
The paper describes the development and pilot trial of a student self-positioning exercise with third year Design students, which attempted to examine their perceptions of success, and help facilitate a more focused self-directed personal learning plan for their final year programme of study.
The paper describes how students were asked to undertake a personal mapping process asking themselves, where am I, where do I want to go, and how will I prove I've got there? The project aimed to help them think about, externalise and verbalise their design interests, general aims and goals for the year and more specifically, the approach they were going to take to their major project.
By developing personal mapping and assessment methods to enable students to take control of their lifelong learning, the paper critically analyses and reflects upon how the author helped students write their own personal stories of achievement, and proposes practical pedagogical methods to help enable students to put themselves on the map.

*Keywords: Mapping, design pedagogy, visual learning*

## 1 INTRODUCTION

*"Would you tell me, please, which way I ought to go from here?"*
*"That depends a good deal on where you want to get to," said the cat.*
*"I don't much care where," said Alice.*
*"Then it doesn't matter which way you go," said the cat.*
*"So long as I get somewhere," Alice added as an explanation.*
*"Oh, you're sure to do that," said the cat, "If you only walk long enough."*

Lewis Carroll, Alice in Wonderland [1]

The final year of a design degree programme can sometimes feel like a confusing world, where it is all too easy to feel lost, as students struggle to find a clear design direction. To avoid too many of my students becoming Alice's and being lost in a mythical world of tutorial dominance, designer vanity, the cult of design hero and the dreaded notion of house style, the author devised a series of interventions.
The aim of these interventions would be to address these concerns and create a personal map to help students navigate and manage themselves through the final year and beyond. In the same way as companies work from a business plan as a road map so designers must take control of their own career, set goals and milestones and monitor their own progress.
The project aimed to enable students to produce a final year map that outlined a student’s 'current position'; their 'target position' and the steps they intended to take to

move between the two. The resulting visual plan was intended to be a fluid and evolving document that would be reviewed and refined over a student's final year as their circumstances, interests and objectives evolve.
Such a map could potentially allow staff and students to regularly review students' achievements against their planned objectives, collectively tracking their progress in moving towards their personally identified goals through the medium of visual learning.

## 2 VISUAL LEARNING

Visual learning is the use of diagrammatic methods such as concept maps, mind maps, flow charts and organisation charts for storing, processing, organising and presenting information graphically. These techniques are widely used in the Design Industry and increasingly in academia. The most popular are Concept Mapping and Mind Mapping.
Prof. Joseph D. Novak developed the Concept Mapping technique at Cornell University in the 1960s. Concept maps graphically illustrate relationships between information. In a concept map, two or more concepts are linked by words that describe their relationship [2]. Concept maps encourage understanding by helping students to organise and enhance their knowledge on any topic. They help students learn new information by integrating each new idea into their existing body of knowledge. A number of recent studies most notably the work of Stauble [3] has clearly demonstrated possible benefits in using maps to enhance learning.
Concept maps are ideal for measuring the growth of student learning. As students create concept maps, they reiterate ideas using their own words. Misdirected links or wrong connections can alert teachers to gaps or misunderstandings in their students' knowledge. In this way concept mapping provides an accurate, objective way to evaluate particular areas requiring additional explanation to complete students' understanding.
Tony Buzan initially developed 'Mind Mapping' in his 1974 book "Use Your Head" [4]. A mind map is a visual representation of hierarchical information. Students follow a process of building a mind map, to represent an entire concept or an idea with branches of associated thoughts. As with other visual learning techniques, mind maps provide a simplified overview of complex information allowing students to better understand relationships and to find new connections.
Mind maps include a central idea or image surrounded by branches of associated topics or ideas. Subtopics are then added to the branches as ideas flow freely. Typically in a mind map, topic and subtopic text is one to two keywords, to provide a reminder for what the idea is. More information is then detailed in attached notes.
Mind mapping is a commonly used tool for brainstorming and note taking. The process of building a mind map is very fluid and nonlinear, making the expansion of ideas similar to the natural way of thinking. Symbols and images, along with keywords, are used to quickly retain and recall information. Branches are often in different colours to help students to remember the different branches and their associations.
The use of visual learning techniques, such as mapping, is achieving growing recognition in education. Imagination and association are the keys to high-level memory and creative thinking and mapping supports this. With many students being visual or kinaesthetic learners, this approach makes the teaching more effective and the learning more successful.
Both forms of mapping described above are essentially founded on the learning theories of David Ausubel, who contended, "the most important single factor influencing learning is what the learner already knows" [5]. Ausubel's subsumption theory

essentially states that "Learning is meaningful only when it can be related to concepts that already exist in a person's cognitive structure" [6].
To enable learner's ability to anchor their knowledge to existing concepts and create suitable 'mental scaffolding' Ausubel encourages the use of advanced organisers. As discussed in Bowen [7], Ausubel "emphasises that advance organisers are different from overviews and summaries, which simply emphasise key ideas and details in an arbitrary manner. Organisers act as a 'subsuming bridge' between new learning material and existing related ideas."

### 2.1 Personal Mapping

The Personal Mapping project conducted with third year Furniture and Product Design undergraduates aimed to help the third year students reflect upon their work so far and determine the design direction they intended to explore in their final year. This was intended to help them think about, externalise and verbalise their design interests, general aims and goals for the year and more specifically, the approach they were going to take to their major project.
By focusing their thoughts, prior to commencing final year, the author hoped to ensure that the students would confidently enter their final year and produce successful, professional final year projects, helping students to create either employment or postgraduate study opportunities for themselves at the end of the course.
The intervention involved two elements, a personal statement and a visual representation.
Their brief Personal Statement would begin to address the following information:

- Your area(s) of design interest – both types of object and areas of design thinking. Include why you are interested in these objects/areas.
- Your career ambitions – where do you see yourself working within the design profession and why?
- The approach you are going to take to your major design project and why you are going to take that approach.
- The research methods you will use in researching your major design project and what you hope to achieve by using these methods.

The accompanying visual map was intended to help the students to articulate some of these ambitions and the underlying concerns they may have about the year through a non-textual medium.

## 3 READING MAPS – PROJECT EVALUATION

In The Power of Maps [8], Wood argues that maps are essentially the result of representational choices about the depiction of reality. Maps and other visual representations require these kinds of choices and limitations to satisfy their purposes. Through the process of selection, a set of idiosyncratic personal knowledge or life-experience of a terrain can be communicated to a larger population of 'image-consumers', who then can tap into the experience of the cartographer, and the social framework they inhabit.
Maps and other visual representations should not be treated as static objects to be examined independently of their creators [9]. By examining the links between the maps and the studio culture that produced them, tutors can develop a deeper understanding of the students' aspirations and cultural framework, and enable them to help facilitate their students to actively develop a personal roadmap for their professional career.

The project's aim was to enable students on the programme to identify potential project and career paths. In attempting to articulate opportunities and routes, the series of interventions aimed to enhance students' sense of personal identity and creative methodology. It enabled students to place their own work within a professional context, with students debating industries' values and definition of success, while also providing an opportunity to examine and critique the academic context within which they work.
Reflecting on the project's impact on students' perceptions of success, assessment and project planning, the key findings arising from the students themselves, through discussions with the author, and the results of the student survey were:

- Creating a supportive group dynamic: students stopped perceiving themselves in competition with each other - norm referencing in other words - and began to help each other and collaborate in a open and sharing learning environment
- Taking responsibility: students becoming increasingly autonomous learners
- Building self-confidence: project contributed to enhancing students confidence in their chosen design direction, boosting self-esteem and developing life-long learning skills.

Overall, it can be said that the introduction of personal maps, has provided the third year students with a rich learning experience. The maps were really beneficial in enabling students to present the 'big picture'. They provided a non-textual avenue for students to communicate, depict and structure their conceptual knowledge. Many of the students in discussion voiced their relief in being able to present their concepts visually. However the use of visual maps did present some difficulties. One of the students found the exercise difficult to engage with and upon questioning revealed that it was *'stressful having to present your ideas in a new format*'.
In addition, because the format of the maps was deliberately left open to individual interpretation, each map revealed the students' particular idiosyncrasies and, as such, the author felt that comparisons between individual students were not a valid assessment exercise. The design department tries to follow accepted good practice and ensure that staff refrain from using a norm-referenced assessment model and instead use a personally negotiated criterion referenced assessment model, so perhaps the difficulties of comparing maps is not a major issue when weighed against the method's apparent benefits.

## 4 CONCLUSION – FUTURE DIRECTIONS

In conclusion, student surveys conducted after the Personal mapping intervention indicated that the use of visual maps enabled the following learning activities to occur:

- Student-centred learning
- Problem-based learning
- Alternative non-linear thinking
- Learner collaboration through multiple representations
- Graphic approaches to expressing new and challenging ideas
- Knowledge construction and re-conceptualisation
- Meta-cognitive skills development
- Accommodation of individual differences between students

The resulting discussions surrounding the group's statements and maps were highly illuminating, and clearly demonstrated the broad range of directions that the students wanted to work towards. The visual maps enabled the students to represent their goals to each other in a diverse manner, with students using a variety of techniques that they had used previously such as mind maps, image boards, storyboards and sketching.

While the complexity and artistic merit of the maps varied enormously, the key aim of the exercise was to help the students to visualise the landscape of their discipline, positioning themselves in location to other designers, companies and approaches. They created insights into where some of the students felt they were and where they wanted to get to, and begun to identify the problems they might face on their personal journeys.
By using visual as well as textual devices to communicate their thoughts, the students were able to express their feelings about the process and progress of their project development, and make visible the fears and contradictions in thinking that are often hidden within verbal or written communication. This approach to research planning has been demonstrated to expose the central changes in understanding which flow from action [10].
Initial analysis of the maps using the cognitive structure classification developed by Hay and Kinchin [11] seems to bear out the notion that a concept map's spokes are indicative of 'learning-readiness', that chain structures are indicators of 'goal-orientation' and complex networks are indicators of expertise. The revised maps also suggested that maps, which merely elaborated existing spokes or chains, indicated surface learning styles while the emergence of complex networks could be indicative of deep learning.
The series of interventions have helped strengthen the students' cognitive structure as evidenced in their maps and resulted in a better understanding of the philosophy of the final year and their personal ambitions. This, in turn, has allowed students to improve the planning and self-management of their learning for the forthcoming year.
The use of a self-positioning mapping exercise as an 'advanced organiser' has enabled students to develop new learning strategies. Similarly, group interactions allowed students to experience their peers' approaches to learning. The series of exercises has contributed to fostering meta-learning skills, and helped foster a critically reflective collaborative dynamic within the year group.
By developing personal mapping and visual learning methods to enable students to take control of their lifelong learning, design educators can help facilitate students to write their own personal stories of achievement, and put themselves on the map!

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