

FIND THE GAP – DEVELOPING ABILITIES IN SPACE CONSCIOUSNESS FOR ENHANCED LEARNING

Diane SIMPSON-LITTLE and Christopher LONG

School of Engineering and Design, University of Sussex, Brighton, Sussex, BN1 9QT, UK

ABSTRACT

Creativity and design is ultimately about making things that are visible, whether it is a chair, a sculpture, a poem or a theory. Nevertheless, it is where the initial creativity occurs in the important concept stage, that design education can be approached from a different perspective. Rather than focussing on knowledge – on facts, theories, skills and problem solving methods we can also develop the ‘knower’ – the sense of self – the consciousness of the student.

In the School of Engineering and Design, at the University of Sussex, we developed a set of tools and exercises in the area of consciousness, scenario visualization and guided meditation to enhance learning. If we regularly expand our container of knowledge within, we can not only enhance our learning through self-discovery and experimentation but also understand that our emotional and intuitive responses to experiences can enrich and enliven the way we design and communicate. It can also give inspiration and really advance creative abilities, and help us to understand that as designers, a successful product should emote all of the users senses.

Keywords: Consciousness, meditation, visualization, intuition, emotion

1 INTRODUCTION

Design education should develop students’ awareness on all levels, from practical skill based learning and experiential learning activities to working with senses, emotions, intuition and spiritual intelligence.

It is often thought that the essence of creativity requires us to be awake, alert and present, to enable us to deliberate on a particular problem or theory. But, intelligent thought and intuition does not always need our conscious attention. ‘Intuition is a technique of learning what to look for in a given environment, and of doing so without the conscious brain getting in the way’[1]. It would appear that if we can detach from our environment by using meditation and creative visualisation we can calm our mental chatter, put aside our intellect and judgment and become more aware and sensitive to what is on the inside, between thoughts and inner silence and then become more focused, still and receptive which ultimately can enhance our creative abilities. This is supported by [2] who note that ‘people discover their deepest self and reveal their greatest creative powers at times when the psychic processes are most free from immediate involvement with the environment and most under the control of inner balancing or homeostatic power’.

The potential for this to be used in education has been explored through a set of guided meditations and creative visualisations with students in product design, engineering and multi-media. These workshops were designed to develop creativity, intuition and imagination in our students. This paper discusses the results from these workshops and ways in which they could be further developed.

2 ENGAGING THE SENSES

The use of PowerPoint as a teaching and learning support tool has become increasingly mainstream in higher education and if used creatively can be a powerful, flexible and multi-sensory aid in transferring information. However, to quote [3] “There are potential problems associated with increased stimulation using technologies. A counter argument is that whilst technology enables us to influence people’s senses, the over usage of multimedia can also create sensory flooding or sensory overload. Increasingly it might be that there is little or no space for thinking!.

Our senses are bombarded with stimulation on a constant basis and there is little time to 'just be' and little space to process our thoughts to actually see what is there. "In the fast-food-like stream of contemporary education, the incursion of these portable technologies into private space appears to create environments in which the learners 'cannot hear themselves think.'" [4]. This incessant visual and auditory stimulation leaves little time for silence as a space to process, reflect, take stock and connect. "Whilst forms of overstimulation can be awe-inspiring, meditation and meditative mind states can also be powerful experiences in learning." [3].

3 MEDITATION

Meditation has been around for thousands of years, for some it is a spiritual practice for others it is tied in with religion. It has long been known that meditation has huge benefits – it creates balance, releases tension, gives freedom of thought and allows spiritual 'energy' to flow more freely through the mind and body. It can be used to help change circumstances, develop careers, help loose weight, give up smoking, release stress and achieve goals. In fact, the Massachusetts General Hospital, Boston, USA, recommend it to patients recovering from cancer and heart disease as it has been scientifically shown [5] to calm the body, reduce blood pressure and enhance the immune system.

Finding inner calm and space to process experiences into ideas is an essential part of learning. "All information that we take in first has to be digested in our subconscious before we can turn it into ideas"[6]. We often get ideas during activities such as walking, playing sports, driving, journal writing, prayer and meditation, these are activities in which the mind is largely focused on an activity and becomes less susceptible to external stimulation leaving the brain free to connect ideas together in a playful manner.

There are many different types of meditation and it is not just artists, designers and the spiritual that use it as a tool. Athletes, dancers and practitioners of the martial arts use a form called soft-focus. This is a way to stop the thinking process in an immediate and busy environment. Here, the eyes maintain a soft focus on a neutral surface and the person becomes aware of everything around them without focusing on any one thing. They then notice immediately that peripheral vision is increased and sensitivity to the entire environment is enhanced, while the mind is calmed.

In competitive swimming some people are able to swim fast in a focused state yet see their own hand in slow motion flowing along the glistening water, and enjoy the experience with an almost out-of-body sensation. In Intense creative artwork some people almost enter the picture and lose track of time [7]. Diane Roffe-Steinrotter, who captured a gold medal in skiing at the 1994 Winter Olympics, said after she finished that she remembered nothing about it but being immersed in relaxation: "I felt like a waterfall."

4 CREATIVE VISUALIZATION

Creative Visualization [8] is the technique of using one's imagination to visualize specific behaviours or events occurring in one's life. Advocates suggest creating a detailed schema of what one desires and then visualizing it over and over again with all of the senses [9].

Creative Visualization is distinguished from normal daydreaming because it is done in the first person and the present tense – as if the visualized scene were unfolding all around you; whereas normal daydreaming is done in the third person and the future tense – the "you" of the daydream is a puppet with the real "you" watching from afar [10].

One of the most well-known studies on Creative Visualization in sports is reported in [11]. Russian scientists compared four groups of Olympic athletes in terms of their training schedules:

Group 1 underwent 100% physical training;

Group 2 had 75% physical training with 25% visualization techniques;

Group 3 had 50% physical training with 50% visualization techniques;

Group 4 had 25% physical training with 75% visualization techniques.

It was found that Group 4, with 75% of their time devoted to visualization techniques, performed the best. "The Soviets had discovered that mental images can act as a prelude to muscular impulses."

Other notable examples of users of this technique are:

- Nikola Tesla (1856-1943), an inventor, mechanical and electrical engineer. Truly was a visionary genius. He had such an acutely detailed visual sense, which could picture a machine in his head, test it, check it for wear and tear and envisage the blueprints. He could even instruct machinists directly from his mental image.

- Arnold Schwarzenegger declared “Before I won my first Mr. Universe title, I walked around the tournament like I owned it. The title was already mine. I had won it so many times in my mind that there was no doubt I would win it. Then when I moved on to the movies, the same thing. I visualised myself being a famous actor and earning big money. I could feel and taste success. I just knew it would all happen”
- Walt Disney used visualisation to create his entertainment empire. He called the process “Imagineering” when you visit Disneyland or Disneyworld you are seeing examples of the “dream that you wish will come true”.

What all these people have in common is their ability to calm their mental chatter, and put aside their ego, conditioning intellect and mindset and become focused and receptive. Many of us have reached that state unknowingly, if only for a second. It occurs after a blank moment when a name slips the mind or a solution appears unobtainable, only to be found when you stop thinking about it, perhaps when making a cup of coffee or going for a walk the answer springs into your head.

This exercise, described here used meditation to find this gap between thoughts and inner silence and then introduced creative visualization. The aim was to stimulate the senses and enhance the learning experience by emotional and spiritual engagement to allow self-directed experiential learning.

5 MEDITATION AND CREATIVE VISUALISATION LECTURES



Figure 1. The InQubate Creativity Zone

The following workshops were all carried out in the InQubate creativity zone (Figure 1); a teaching space at the University of Sussex. The technology rich room has a neutral laboratory, white-cube gallery feel that provides a flexible blank canvas for collaborative self-directed experiential learning. Here, full-length moveable writeable walls, and close-at-hand technology such as video streaming equipment, CCTV cameras, data projectors, webcams, and 360 controllable LED lights aid relaxed but productive sessions. It has flexible interlocking rubber tile floor covering, yoga mats and beanbags to add to the comfort of users.

5.1 Example 1 - Guided meditation and creative visualization for Engineers

This 2-hour session was carried out with 20 predominantly male third-year Mechanical Engineering students in week eight of a ten-week course in Fluid Mechanics and Heat Transfer. The aim of the session was to improve their understanding of turbulence, vortex flows, swirl and pressure and the effect of viscosity on fluid flow.

Upon arrival, students were asked to sit on a beanbag or if preferred an upright chair, a short visual presentation in PowerPoint was shown to introduce the session (Figure 2). Relaxation music was then played in the background. Below is an abstract of the text that was gently read out with relevant music and sound effects after a relaxation technique was introduced.

“Having finished your cup of tea you leave the house and decide to walk into Brighton. You take your normal route and as you are walking you begin to notice that the wind has become stronger. Discarded litter is being blown and back and forth across the road, and leaves blow in a twisting spiral around your feet, you begin to notice the sound they make, and the path they travel. A plastic bag fills like a balloon and is lifted high into the air, your eyes follow it upwards and you notice that the branches of the trees are beginning to sway with each gust of wind. Looking higher still you see the rooftops above and notice smoke coming out of a chimney. The plume of smoke rises vertically for just a fraction of a metre and is then blown sideways by the strength of the wind. You pause and watch this smoke for a while. The plume is not steady, but it flickers around like the flame of a candle. Your eyes then follow the rooftop and not far from the chimney there is a television satellite dish. One moment the plume of smoke appears to attach itself to the surface of the disc, the next it moves off in another direction.”



Figure 2. Meditation and Creative Visualizing



Figure 3. Drawing after

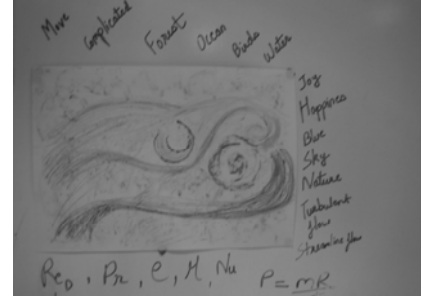


Figure 4. Visual Interpretation and Key Words

Paper and crayons were placed on the floor next to the students and they were asked to draw their visual interpretation of how they perceived the wind during the visualization (Figure 3). After their images were placed on the white boards they were then asked to write around it as many words as possible that related to the drawing and the visualization (Figure 4). From this three key words were chosen to sum up the experience and each student discussed their findings.

There was a very high level of participation for this workshop. It was obvious that the level of willing student engagement was very much greater than in the conventional lecture environment, where it is usually difficult to get a single response to a question posed to the audience. In fact, participation was universal

Students were interviewed immediately after the class and then a week later. These are some of the comments:

“This self-directed approach really helped me to understand the theories visually”

“I feel really relaxed now but in an alert sort of way. I may not realise how this has aided my understanding until later”

“I haven’t been able to stir my tea in the morning or look at the leaves blowing in the wind without thinking of vortex flows and swirl and pressure!”

5.3 Exercise 2 –Meditation and creative visualization for Product Designers

This 3-hour session was presented to a group of 24 second year BSc Product Design students (1/3rd female and 2/3rd male), in week eight of a ten-week course in Toy and Game Design. The students were set a brief to either design a toy or game inspired by a contemporary television programme or film, a toy or game based on a object or character from a current television programme or redesign a popular toy or game from at least 20 years ago. The aim of using meditation and creative visualization here was to encourage the use of emotional, visual, sensory and verbal responses to capture the essence of a movie and use the process to design a toy or game.

Sitting on upright chairs in the creativity zone the students watched a 25 minute synopsis of the children’s’ film ‘The Last Mimzy’. A meditation and creative visualization session followed, in which students were asked to visualize themselves walking into the movie and then encouraged to use all of their senses to help record the experience. Once again, music and words were used to enhance the event. Upon bringing their consciousness back into the room the exercise again concluded with silence and students being asked to draw their visual and emotional response to the experience. Their images along with stills from the movie were then placed on the whiteboards and they were asked to list all the words that come to mind when looking at the images and reflect on the film (Figure 5). From this they circled three main cues or key words; for example, curiosity/innocence/excitement - these provided the essence or feel of the toy or game. Ten lifestyle

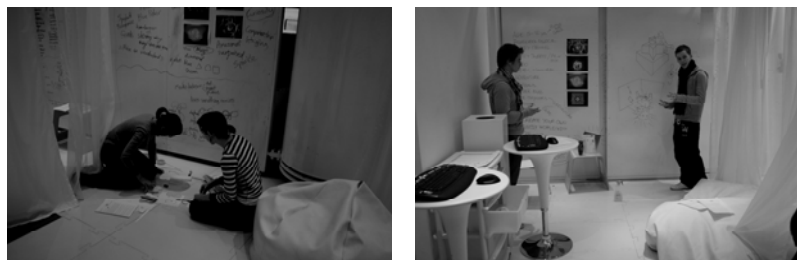


Figure 5. Toy and Game Design Exercise

points of the children the product would be aimed at were then discussed and finally concepts were drawn and a simple prototype made and presented. Motivation was extremely high and students were noted to be very receptive to this session all producing innovative products in a very short period of time. Below are two comments that illustrate the level of enthusiasm and the benefit:

“This technique is great I didn’t once get stuck for ideas, I couldn’t get them out quick enough”

“If we had not used this technique I perhaps may have gone for a slightly more literal response in the design of my toy, instead it has the feel of it”

5.2 Example 3 – Guided meditation and creative visualization for Product Designers and Engineers

This 2 hour session was presented to two groups of students in week two of a six week course in sketching and design; in group one there were 37 participants consisting of 31 male and 6 female first year product designers; in group two there were 36 participants consisting of 33 male and 3 female mechanical and automotive engineers. They were set a brief to design a lamp for a well-known designer. The aim of using meditation and creative visualization here was to encourage intuitive design, introduce a different approach to creativity and motivate self-directed learning.

The format followed Example 1. Upon arrival, they were asked to sit, a short visual PowerPoint presentation was shown to introduce the session, relaxation music was played in the background, and text was gently read out with other relevant music and sound effects. Meditation relaxed the students and a creative visualization followed. This visualization began with discovering each room in the designer’s home and finished with the selection of one to accommodate their design. It was then proposed they become the lamp. And they were asked to visualise the following:

- The style of lamp they became;
- The form they would take;
- The type of material they were made of;
- The kind of light they emitted;
- And their emotional characteristics.

The exercise concluded with silence and students being asked to draw their visual interpretation of the lamp they became or their emotional response to it. As noted for the previous two examples, the level of participation was high and the students were keen to engage and once participating they became engrossed by the exercise. The two comments below are typical and illustrate the benefits of this exercise.

“The visualization really helped my ideas to flow freely avoiding the usual creative block that I sometimes get at the beginning of a project”.

“ Imagining I was the lamp, felt like a weird thing to do at first, but my drawings definitely felt more intuitive”

The three exercises that have been discussed certainly appear to have been useful. As seen, the comments are exclusively positive and everyone appears to have gained something from their experience. However, the authors do acknowledge that no objective measure of improvement or benefit has been applied and we only have circumstantial and subjective information. Some thought has been given to devising an objective measure of the benefit of these meditation-visualisation sessions. The authors are working on this at the present and hope to report on it in a future publication.

6 CONCLUSION

Three examples have been described which introduce guided meditation and creative visualization into lectures for product designers and engineering students as a complement or aid in the creative process. The results appear to show that allowing space and silence from sensory overload provides valuable time for the thinking, processing and reflection of information that stimulates ideas, and most importantly assists in the discovery of the ‘sense of self’. The authors recommend this method for enhancing learning. We have used a common format for all three examples: a quiet comfortable space, gentle music and reading of a text to guide the meditation process. It is however, acknowledged that no objective evaluation of improvement or benefit has been applied and we only have circumstantial and subjective information. Thought is currently being given on devising an objective way to measure the benefits.

REFERENCES

- [1] Winston R. *The Human Mind*, 2003, (Bantam Press, London).
- [2] Walter G. and Marks S. *Experiential Learning and Change*, 1981, (John Wiley & Sons, New York).
- [3] Beard C. and Wilson J. P. *Experiential Learning*, 2006, (Kogan Page, London and Philadelphia).
- [4] Behuniak S. Finding solitude: the importance of silence and space for thinking, In *Design for Learning*, the Twelfth International Conference on Learning, 11-14 July, 2005, Granada, Spain
- [5] Paul-Labrador, M., Polk D., Dwyer J. H., Velasquez, I. Nidich S., Rainforth, M., Schneider, R. Merz N. B. The effects of a Randomized Controlled Trial of Transcendental Meditation on Components of the Metabolic Syndrome in Subjects with Coronary Heart Disease. *Archives of Internal Medicine*, 2006, 199 (11). 1218-1224.
- [6] Csikszentmihalyi M. *Flow: The Psychology of Optimal Experience*, 1998, (Harper Perennial Modern Classics).
- [7] Wilkes F. *Intelligent Emotion*, 1999, (Arrow Books, London)
- [8] Finke R. A. *Creative Imagery: Discoveries and Inventions in Visualization*, 1990, (Routledge).
- [9] Roeckelein J. E. *Imagery in Psychology: A Reference Guide* 2004 (Greenwood Publishing Group).
- [10] O'Keefe, B. *My Creative Visualization – Digital Storytelling a Tool for Future Visioning*. www.mycreativevisualization.com/mycreativevisualization.php (Referenced in February 2010)
- [11] Scaglione R. William Cummins, *Karate of Okinawa: Building Warrior Spirit*, 1993, (Tuttle Publishing).