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The Water Project
Investigating environmental issues through visual communications

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Abstract: Presenting works by undergraduate students enrolled in the author's Visual Communication III course at the School of Art, Design and Media, Nanyang Technological University, this paper addresses the concept and tactical aims of a curriculum devised to raise awareness of environmental issues, specifically solutions for sustainable water management. A key purpose of the course is to encourage discussions on different aspects of water as brought forth by the students themselves; enrolees devise their own conceptual framework and systematised design strategy to communicate their explorations visually using a range of media. Moderated by the instructor, discussions are tied with current issues on climate change, pollution, and over-consumption. This paper introduces five students' works over the years since the programme was launched in 2011.

Key words: Water, environmental issues, social responsibility, sustainability, content creation, visual communication, design education, design strategies, role of the designer, activism, paradigm shift.

1. Water, a global concern
Water is the most essential element for human survival. Since the beginning of time, civilizations were built and have flourished near such natural sources of water as rivers and lakes. And yet still today, despite modern technological advancements, access to safe drinking water is still limited for huge parts of the world's population. This concern has grown exponentially as a consequence of climate change and environmental devastation brought about by over-population and over-consumption. Nor is the situation limited to impoverished communities in third-world countries. Access to potable water affects everyone on the planet, as it concerns our most precious shared element. It has been

predicted that if no action is taken now, the global demand for water will not be met within two generations, threatening all life on earth (Harvey, 2013).

2. Water in Singapore

Limited in its natural resources, Singapore is dependent on water imported from Malaysia. Yet it has been able to turn its challenge of water insufficiency into a mission. Over the last fifty years various governmental agencies have developed programs to ameliorate dependency on this one single source. Other than importation of water, initiatives to boost the city-state's water supply via rainwater collection, water reclamation (NEWater), and desalination have been introduced. In its search for more sustainable water sources, Singapore has been recognised internationally as a model city for water management (PUB national water agency, 2014).

3. Rethinking the role of designers

While Singapore's successes in water management stem from wise governance, awareness of this important issue needs to be cultivated on all levels public and private. To that end education plays a fundamental role. As water, or more aptly its lack, is an increasingly pressing theme that demands global action, the need for a shift towards alternative economic models that prioritise the well-being of the environment is imperative.
While the work of graphic designers is closely related to the production and consumption of goods, present environmental concerns underscore that the mass consumption model of the last decades is unsustainable in the long term. Designers, too, must reflect on their own responsibilities and roles with regard to the environment. A paradigm shift in the profession is needed, one that enables it to become part of the solution rather than the problem.

4. The water project

To increase student awareness of environmental issues, the author of this paper focused her Visual Communication course on water. Beyond teaching about environmental concerns, this curriculum encourages students to exercise their curiosity, to explore different topics outside of design-related fields, and to generate content of merit that later can be translated into a form of visual communication. In this way students learn to reflect on contemporary issues regarding the environment and how to generate relevant content through research and critical discussion. As each student is required to present his or her unique perspectives to peers for feedback, the project flexibly envelops discussions about faith, science, environment, art, design, and many other areas. In this teacher-moderated format, students learn how to collaborate with one other, as well as to

think through ideas and concepts that will be screened by all. Everyone learns from the others' perspectives, requiring a shift as well on the part of the teacher, who effectively serves as a moderator of the discussions.

5. Students' works

Overall themes addressed by students since the course was introduced are as follows:

Student work content	2011	2013	2014	2015
Activist	3	1	1	1
Commercial	1	0	1	1
Cultural	3	2	5	5
Educational	0	1	1	2
Experimental	5	5	2	1
Personal	2	4	3	2
Therapeutic	0	1	1	1

Table 1. Student work content by year

Students are prompted to follow their own interests and curiosity. As such their work has fallen mainly into the categories of cultural, experimental and personal. It is hoped that that in future years a greater number of works will take on activist or educational themes.

5.1 *Hydroscape* by Lim Shu Ning

Concept

Through this project Lim hoped to explore the calming psychological effect water has while bringing attention to the water bodies found in everyday urban life: namely puddles after a heavy storm as well as rainwater accumulated in places like window ledges, sewage covers, drainage ditches, reservoirs, and even the gaps between pavement tiles. To redirect our attention to these forgotten bodies of precious water, she placed tiny figures in such settings, creating miniature scenes of relaxation with water. These sanctuaries serve as metaphors for the way in which urban dwellers might travel to beach resorts to escape city life. Set off by their huge real-life surroundings, the figures suggest at once the sense of being lost in a city and yet wholly absorbed in the serenity water offers.

Figure 1. *Hydroscape* website

Lim's work encourages Singaporeans living fast-paced urban lives to create their own hydroscapes with the purchase of a kit containing tiny figures. By creating one's own scenes in urban waters, the act of creating itself becomes a kind of therapy, calming the user's mind. A specially created website enables everyone to share their hydroscapes with accompanying titles and captions, thus creating a dialogue of ideas through which the browsing of other photos can spark further inspiration for new hydroscapes and so on, making this a self-sustaining project.

Hydroscape Photography book
This book features full-bleed pages of the photos with titles. On each spread, Lim juxtaposes a zoom-out image with an up-close one.
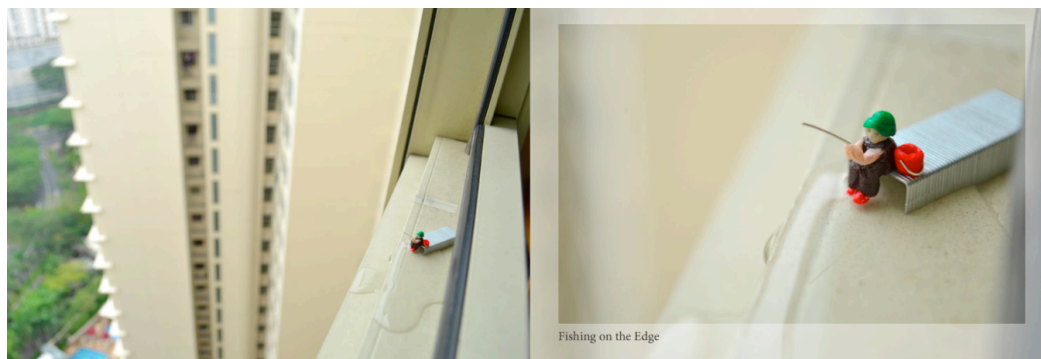

Figure 2. Page excerpt from *Hydroscape* Photography book

Packaging of the *Hydroscape* kit
In deciding on the form of the packaging, Lim drew inspiration from the ubiquitous Tetra Paks found on any supermarket shelf, themselves an invention that enables water to be contained in an urban environment.
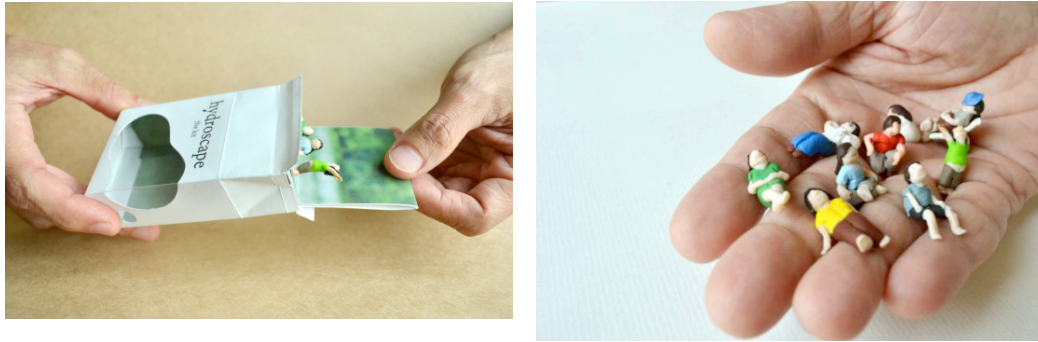
Figure 3. *Hydroscape* packaging

The *Hydroscape* website
A website allows participating people to share their hydroscape photos and also purchase the book and kit.
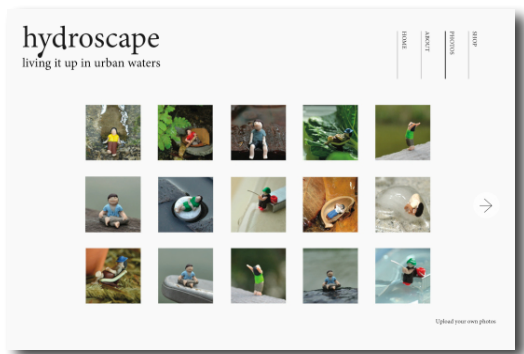

Figure 4. *Hydroscape* website

5.2 *Oikos, Nomos & Nero: A story about water* by Templonuevo Mariah Monina Imperial
Concept
"When the well is dry, we know the worth of water." —Benjamin Franklin

Like earth and air, water is a natural resource. As it is fundamentally essential to life, most people feel it should not be commoditised, or subjected to the same impersonal system as other goods. Indeed, many of us have grown up thinking water should be free. But this is where the problem lies. The notion of water being "free" comes at a price. It is common for the average person to have little or no idea about the conditions of their water systems, what it takes to sustain them and the effects such infrastructure outside their homes. And because of this, people tend to be upset when the governing body that manages our safe water supply increases rates.

Figure 5. *Oikos, Nomos & Nero: A story about water* website

Imperial tackled the project by addressing primary-grade students between the ages of 5 and 9 and, in turn, their parents. This choice demanded that she simplify the complexity of the economics of water to a level that even a five-year-old can grasp. Her logic is that by teaching the child, we are able to shape the next generation's attitude to water so that they are better able to appreciate its value and understand issues related to its sustainable management. Imperial used the following mediums: a hardcover book, an interactive website and an animated book release trailer.

Cultivation of a basic understanding of the economic problems surrounding water includes learning about the value of water, the concept of scarcity, government efforts to maintain a potable water source, the concept of virtual water or water footprint, and demand and supply. From there, knowledge builds to how water allocation and distribution work, as well as why we need better water management. The costs and benefits of water management and the impact of water allocation on human welfare and the environment are briefly addressed.

Oikonomia, the Greek word for administration, breaks down into the two root words *oikos*—meaning family, household, house—and *nomos*, meaning stewardship, or the act of management. In classical Greek water was *hydor*; the modern term is νερό, which is pronounced *nero*. And so the book was born with the name *Oikos, Nomos & Nero*.

Figure 6. *Oikos, Nomos & Nero: A story about water*

Picture book

Using the medium of a picture book was an easy decision, considering Imperial's intended audience. As for whether to go with a print version or an e-book, Imperial reasoned that while the latter is more aligned with her message as it has a far lower water footprint than print production, even in today's increasingly digitalised world, nothing quite compares to the charm of a physical book for a young child. She settled this dilemma by producing both. Her works managed to compress several layers of meaning into a single narrative, planting the seeds of a philosophy that will hopefully stay with children as they grow.
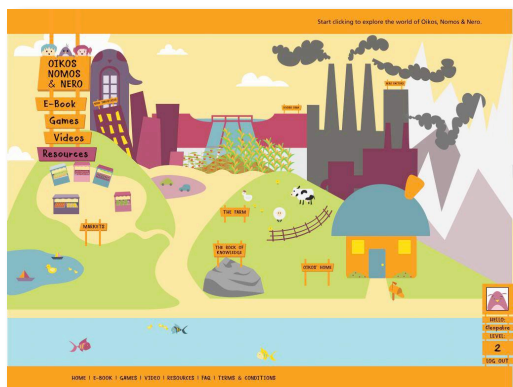

Figure 7. Website for *Oikos, Nomos & Nero: A story about water*

Interactive website

To accompany the book and explore its message further, an interactive website was devised with four separate sections: E-book, Games, Videos and Research. Though some of its content is restricted, the website is accessible to anyone. The E-book section is where the user can read a digital copy of the picture book. Its format is derived from a typical e-reader, though more simplified. The Games section expands on topics such as supply and demand, virtual water, water allocation, water distribution and other fun facts. In playing the games, which vary from 'fun' to something akin to 'educational fun,' the child is taught a little bit more on these topics. Through this interactive medium, Imperial hoped to promote tangential learning through the nuggets of wisdom scattered throughout one's experience of the interface.

The Videos section contains the book release trailer and other films related to the book. The Research section links to a separate website containing information for parents and educators.

5.3 *Living With Water* exhibition by Joseph Jinfa Mak

Concept

Living With Water was conceived as a series of exhibitions linking cultural, mythical and factual interests to the symbolic meaning of water. An immersive and experiential journey centred on the myth of the Dragon's Gate legend, it invites viewers to discover the meaning of water to the ancient Chinese and to connect with the very roots of the Yellow River—the cradle of civilization in the East.

Figure 8. *Living With Water* exhibition invitation

The Dragon's Gate legend

Courageously persevering in its long tumultuous journey upstream, a carp's determination enables it to resist many hurdles and achieve success. The Dragon's Gate legend holds that if a carp has the tenacity to swim up the Dragon's Gate waterfall cascading into the upper reaches of the Yellow River, it will be magically transformed into a mighty dragon.

Mak's project was inspired by the Chinese ideograph for water, '水'. Knowing that the ancient writings were mainly pictograms, we are able to see the close resemblance of the word '水' to a flowing river. Ancient records have shown that the civilization in the East came about due to the nurturing qualities of the Yellow River. Mak interpreted the ideograph as a picture of harmony and balance encompassing everything that the ancient Chinese knew about water. In its curves he saw more than just a river and its rippling flow, he perceived an entire civilization building homes, farms and lives along the Yellow River and living in harmony with it.

The logo for the project is thus a modern representation of ancient wisdom—to live in harmony with water. The central yellow stroke depicts the Yellow River; the four strokes on either side, civilization.

Spatial design

The exhibition layout is representational of the Yellow River. Giant LED panels cover discrete areas of the river, which flows along the length of the entire space. A five-storey-high LED panel installed in the Dragon's Gate Room simulates the legendary waterfall.
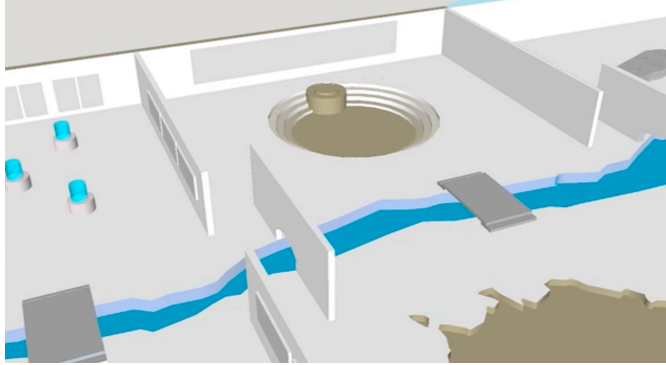

Figure 9. *Living With Water* spatial design

Ultimately, the goal is for all gallerygoers to arrive at the Dragon's Gate Room to enjoy the space and the movement of the waterfall from the LED screen and to ponder on what they have experienced thus far on their journey. Exiting the room via the doorway signifies one's courage to stand up for what is right and a completion of this experiential journey. The placement of the stone benches in the Dragon's Gate Room echoes the exhibition logo and reinforces the symbol of water.

Print collaterals

The print collaterals consist of the entrance ticket, gift card and the book series that complements the exhibition.
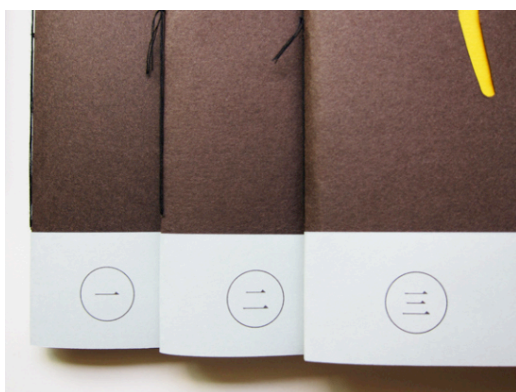

Figure 10. *Living With Water* print collaterals

The interactive design kiosk

This is a design kiosk where gallerygoers may create their own carp avatar to serve as their digital travel companion swimming alongside them in the LED river. They will be able to interact with it as well as with other participants' avatars.
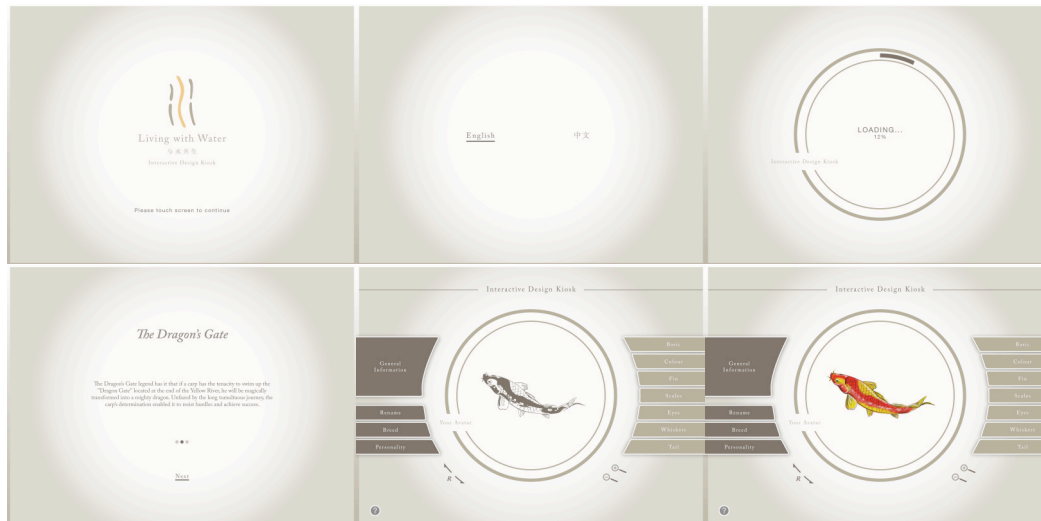

Figure 11. *Living With Water* interactive kiosk

5.4 Water Fluoridation by JC

Concept

JC chose to pursue the subject of water fluoridation, a topic fraught with controversy. Both proponents and detractors of the practice denounce each other for resorting to pseudo-science for justification.

The usual protests touch on the ethical implications of mass medication, and question the need for such a dated and unnecessary practice. The more inflammatory detractors ply more radical theories involving governmental malpractice, underhanded corporate dealings and intentional dumbing down of the public.
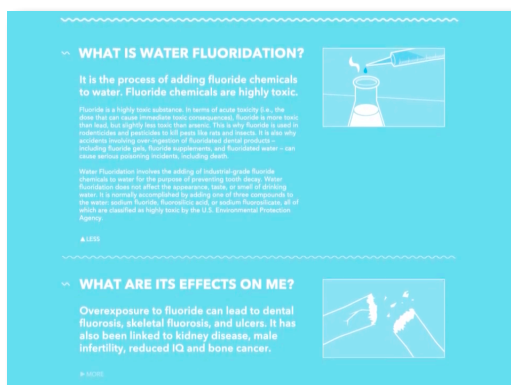

Figure 12. Water Fluoridation website

This project includes an infographic animation as well as a website that call for further dialogue, transparency and localized research.

The website served as a platform for information dissemination. News updates were sorted according to local and international events, and users were offered several avenues from which to contribute to the project.

Figure 13. Water Fluoridation website

5.5 *Alive:* by Chessa Lim

Concept

"In one drop of water are found all the secrets of all the oceans." —Kahlil Gibran

Alive: is an installation that presents a collection of personal photographs owned by twenty-five individuals of differing backgrounds. It brings to light hidden and forgotten memories captured within those lives—significant moments of tears and sweat that have driven others to live life to its fullest. The installation assembles these precious moments to engage us all in a collective reflection of the essence of what it means to be alive.

Figure 14. *Alive:* installation

Any drop of sweat or single tear contains the essence of our dreams and goals that are yet to come. *Alive:* goes back in time to capture that droplet, that very point in time, that

singular forgotten moment of hardship or emotional pain. Each droplet of water in the glass container carries with it a photograph representing such individual moments, the seeds of ultimate achievement.

Water is not bounded by time. It constantly travels around the earth in cycles of various physical states. As it ventures through cities, plants, animals and within our own bodies, it carries along with it the essence of countless moments of life. A droplet of water captures the reflection of its surroundings. The installation uses this reflective property of water to capture such individual moments from the great cycle of water's journey on earth.

Installation:
Every container represents a particular moment captured in an individual's life. *Alive:* presents 25 suspended containers of different shapes and forms, each carrying an image suspended within a water droplet.

Figure 15. *Alive:* installation view

Figure 16. *Alive:* brochure

6. Conclusion

Because the Visual Communication course is an open-ended plan of study, students were encouraged to choose different mediums to best express their thoughts, maximising the qualities of each accordingly. As technology moves away from print media, my courses tend to emphasize the role of graphic designer as content creator, orchestrating a given idea and its messages through many different mediums.

While only a few students elected to work on themes related to activism or education, as a group we spent thirteen weeks discussing the environment, water issues and the role of the graphic designer within a new, sustainable paradigm. Each student finished the course with his or her own perspectives regarding water more clearly defined, while also understanding the (sometimes contrary) points of view of peers. Each student developed a methodology for content development through to the actual creation of visuals, gaining confidence in designing across a range of platforms. These efforts represent a small step towards a time when designers take personal responsibility for their own role in safeguarding the environment, and I congratulate the students for their growth in this process. No matter how long the path ahead, it always begins with the first step!

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