**Water: Media and Science**

**Sydvatten Project**

**Water and Sustainability**

**LUMES 2013-2015**

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The Challenge: Communicating the Issue to High School Students

Our lesson “Water: Media and Science” is rooted in the complex relationship between media and water, and uses scientific reasoning to incorporate critical thinking into the analysis of the aforementioned relationship. Some media content bluntly presents fallacies regarding water and water products, while others contain inherent values of water that result in over-consumption. The challenge lies in providing students a framework to recognise these issues for themselves and allow critical thinking to develop outside of an academic context, particularly when it comes to forms of media that people often interact with recreationally. Communicating the importance of responsible freshwater consumption to high school students should be fashioned with appropriate language considering their age and language proficiency, as English is not their native language.

The Learning Objectives

The primary objective of the lesson “Water: Media and Science” is to **instill critical thinking** in students **related to media discourse** and water usage patterns. In order to present this frame of thinking, students must be able to **comprehend** how **water usage** is framed in the media. This will **raise awareness** concerning **human consumption** in general, as well as water consumption and water waste in particular. The specific output of the lesson includes **knowledge** about the possible **impacts** of **day-to-day products** and **water usage patterns** in the freshwater cycle.

Operationalising the Learning Objectives:

A key objective of our project is to sharpen the students’ perception and comprehension of how water is framed in the media. We want to demonstrate that media should be consumed consciously, as it can deliver biased and potentially distorted images of water usage and water as such. Queiroz et al. (2012) analysed the influence of newspaper reports on bottled water consumption. Their study suggests that controversial reports about tap water quality impact the overall consumption of bottled water, illustrating that media content has broad implications for consumption.

The class activity delivers examples from television advertisements on how water is presented. The “Super-Soaker” commercial, for example, subconsciously implies that water is abundant and can be used freely for leisure activities. Through our class discussion we pave the way for students to realise these issues themselves, and therefore strengthen and sharpen their own perception of media content.

Once the students become aware of the way media frames water usage, the next step towards behavioural change is critical thinking. Media discourses are often based on fallacies (exotic bottled water is better, if this celebrity is taking a large indulgent bubble bath so should we), and the way to avoid integrating their discourse into our mindset is through critical thinking (Haskins, n.d.). In addition to this, increased media literacy has been associated with developments in critical thinking in general, which makes it a valuable teaching tool ([Feuerstein, 1999](#_ENREF_1)).

After thinking critically, students can make more conscious decisions and segregate the biased discourse from the media and our own independent thoughts. They will be able to move towards a more environmentally aware, logical, science-based, and unbiased system of behaviour. Even with exposure to advertisements that suggests bottled water as being healthy, they will be able to come up with the conclusion that the water in the advertisement is not as healthy as tap water. After thinking critically, they will be able to decide not to buy bottled water if they have access to tap water because it is illogical, uneconomical, andenvironmentally detrimental. Critical thinking becomes crucial, especially during the teenage years, since it is when students are most exposed to media messages without having fully developed a mature, individual mindset. Learning critical thinking at this age will help their future cognitive development and identity.

In order to raise awareness for water consumption and waste in particular, we must first begin with raising awareness concerning human consumption in general. This lesson employs advertisements that would be seen every day in the lives of teenagers in order to expose the ubiquity of human consumption in our everyday lives. Consumption in the context of water is important for the following reason: less than 1% of the world’s freshwater is available for human use, but can be renewed if it is not contaminated. The notion of water limitation can be applied on a general level, if one recognizes that increased human consumption results in increased waste (Kotler, 2011), as portrayed in the “Super-Soaker” commercial with using fresh drinking water for leisure. Through the exercise of watching the videos and reflecting on their purposes, we aim to instill an awareness of how our everyday actions are influenced by consumerism and the impact it has on our limited resources.

A significant reason for individual water mismanagement is ignorance about how our daily activities affect the water supply (Howarth & Butler, 2004). From physically consuming water in drinks and food products to using it to clean (ourselves, dishes, cars, clothes etc.), conduct leisure activities, and grow food and flowers, there are many different processes where water can be wasted, contaminated or over-consumed. In order to increase the students’ knowledge of the possible impacts of their daily activities on water usage, it is necessary to raise awareness of how their activities can harm the quality and quantity of freshwater (Hultman, 1998; Pahl-Wostl, 2002) through practical examples.

 There is also the indirect mismanagement of water which must be highlighted, as exemplified by the RoundUp weed killer advert, where we do not directly use water but our activities affect its quality. Fewer people are aware of these impacts, and it therefore requires a more critical approach to dealing with these problems. Thus we can introduce the ‘Precautionary Principle’, where if we are unsure of the harm that an activity may cause then it is better to find an alternative solution (Kriebel et al., 2001). In the example of the weed-killer, it is safer to pull the weeds by hand than to spray a potentially contaminating herbicide all over the path.

Ultimately we believe that if we are able to address both the obvious issues surrounding water use, waste and contamination, coupled with the more subtle underlying messages the media is instilling; then we should be able to encourage the students to critically think about how the media discourse frames water and take steps to change their behaviour with the precautionary principle in mind.

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| **Key Concepts/LEARNING OBJECTIVES*** Correlation between individual's health, daily habits and lifestyles in society (in terms of training, nutrition, drugs, consumption and environmental impact)
* How science can be used as a basis for critical review of the message and standards in the media.
* Understand that society sees water as an infinite resource, demonstrate that it is finite (it can be wasted and polluted so that it is unusable)

**Prerequisite Learning*** Basic understanding of the water cycle
* Understanding of finite vs renewable resources
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| **Time Frame*** **Opener (Hook) [10-15 mins]:** Nestle Water Taste Testing
* **Transition Activity [5 mins]:** Discussing quotation from Nestle chairman on the board
* **Delivery of Information [5 min]:** Show first video, explain media standards
* **Main activity [20-25mins]:** Four videos with student analysis and class discussion
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| **Materials/Resources*** Nestle water bottles
* Water pitchers
* Reusable cups for taste testing
* Projector, links to movies, speakers
* Large sheets of paper for student group discussions (optional)
* Markers (optional as above)
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| **Getting Started - Hook/Intro (10-15 min)*** Start with student desks in groups, and one water bottle and pitcher, plus cups for each group. The water bottle should preferably be from Nestle, but other brands are acceptable. Students taste the water from the different sources and describe which one tastes better.
* Replace all of the water from the nestle bottle with tap water. When students claim that the two are different, you can tell them they are the same.
* Use this to start a discussion on how media distorts our perceptions. Mention how we used science (controlled variables, single blinds etc.) to be critical.
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| **Discussion (5 min)*** Show students quote from chairman of Nestle, “’access to water is not a public right.’ Chairman, Peter Brabeck-Letmathe, Nestle.”
* Ask them to discuss in their groups. Have volunteers from each group share what they talked about with the class
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| **Instruction (5 min)*** Explain how to critically analyse a video, using this example: <http://www.tellyads.com/show_movie.php?filename=TA16614>
* The ad shows that high water usage is associated with pleasure, sex appeal etc. Taking a huge bath, using a fire hose to fill the bath, excess of bubbles (which came from a chemical soap etc.)
* We want to encourage the students to critically think and question: is this product really better than something more simple/environmentally better?
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| **Main Activity**Divide the class into groups (5 groups max.)Show 4 adverts to criticise. Themes: chemical pollution (Roundup), consumption (bottled water), lifestyle (Sunny Dee), waste (super soaker)Each video gets 5 minutes of working time. During this time the students should watch the videos, discuss the questions and write down some key words to the questions.Students should use the following guiding questions for each advert:* What is the purpose of this advert?
* Are there alternatives to this product?
* What values are associated with this advert? e.g. you are cool if you own this product
* What could be the negative effects of this product? (hint: think about water)

Super Soaker CommercialLink: <https://www.youtube.com/watch?v=DZ0x58a_L4s>A toy that exclusively uses water for fun. The refill-process is really sloppy. Overconsumption.Nestle water advert “Drink Better. Live Better.”<http://www.youtube.com/watch?v=WHJ-dokcV_E> Why: water is vital for life but Nestle are implicitly saying that bottled water is better than tap water - ‘Drink better.’Sunny D Commercial<https://www.youtube.com/watch?v=qFmYU_4JzoY>Juice can replace water as a nutritional substitute. Frames the juice as healthy because it’s associated with athleticism.Roundup Commercial:<https://www.youtube.com/watch?v=uv7uinV1S64>A toxic pesticide. Associated with masculinity, deep voices, cowboy music. We can control nature. Better to kill weeds with a gun than remove by hand or leave alone.Discussion / PanelEach of the groups should present their key words and thoughts on the video to the whole class. The teacher collects their ideas and, if necessary, adds to them. The teacher should also ask the class “what each of these adverts tells you about the value of water?”i.e. Supersoaker - it’s okay to waste water if you’re having fun  |
| **Conclusion*** Teacher assesses student learning
* In groups students write the three main points from the session today and write them on the board (it is ok if they repeat other groups answers)
* If they have missed any of the main points below the teacher can fill them in. Summarise verbally, ask for final questions
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