



Learning by Playing, Animating Words and Images

Inma Carpe¹, Hanne Pedersen²

The Animation Workshop¹ (Denmark), University Polytechnic Valencia² (Spain)

Abstract

Words and gestures are signs that fund symbols; we connect them to communicate and to connect with each other, in order to create a "meaning" out of experiences. But what about images? Aren't they "like" words? Pieces of a "visual puzzle" that our mind puts together, to make sense of our reality? Visual narrative is a "language" as valid as writing or speaking. Sometimes, a more valuable tool when there's an impediment to use verbal communication. Animation is a feeling and visual thinking media which allows us to "translate" words into images, sentences into stories and scripts into movies. It teaches visual literacy, as any other curricula, together with emotional intelligence. It's a source of knowledge and for producing knowledge. Not only educators but filmmakers, as George Lucas or Martin Scorsese, agree in the importance of teaching how to read images, in the same way we are taught writing at schools. "I believe we need to stress visual literacy in our schools. We need to educate (young people) to understand the difference between moving images that engage their humanity and their intelligence, and moving images that are just selling them something" (Scorsese, Martin. 2013. The persisting vision). We are aware of the resistance that alternative learning tools suffer from the most traditional school systems, as Sir Ken Robinson claims; we need to change the old teachings paradigms. At the Animated Learning Lab, together, with some of the newest results from other schools and institutions, are already promoting and practicing animation as a learning tool. We want to expose and share its effectiveness, which helps to shape creative, emotional and thoughtful minds. Some of the newest studies in the European Community, such as, EMEDEUS, European Media Literacy Education, Pilot study on Media literacy assessment or Use of films in Schools (University of Barcelona, 2014); high education courses like, the master of Art Therapy and Animation from the University Polytechnic of Valencia (Spain), among others, help us to support this alternative tool, as a communication and artistic media of thoughts and emotions. We work from the constructivism of Vygotsky, taking into account student's opinions to enhance the learning experience, by guiding the pupils in finding their own way to express themselves. Furthermore, to regulate emotions and work on human values such as: resilience, tolerance and critical thinking. Very important skills in our daily lifes to co-live in a multicultural society and visual world, which is, continuously surrounded by apps, images and electronic devices of great influence. Our methodology merges the pedagogy of teaching and the professional protocol to work on animated productions. We focus on the learning process by observing, analyzing and creating images in movement, by watching films and making our own. Working with animation and visual literacy, permit to enhance our potential at acquiring and understanding information; by playing, animating the unspoken words in images, full of emotions, learning to talk and express ourselves.



Figure 1. Animated Learning LAB. Children Workshop



Introduction

In this paper, we propose animation, besides the most common definition of the illusion of life (Frank Thomas and Ollie Johnston, 1995) as a “social emotional learning tool” due to work our system of beliefs, emotions and actions. At the Animated Learning LAB, we name animation as a neuroplastic art media, an artistic expression capable of produce and work the brain’s neuroplasticity, key word for learning and unlearning patterns since our brain changes with any new input (Richard Davidson, 2009). We work on verbal and non-verbal communication and relationships by making animated movies, enhancing an optimal learning and wellbeing among the students. Since our emotions affect our decision making (Antonio Damasio, 2009), we connect animation and cognitive neuroscience with pedagogics to understand what we see, think and feel, in order to make sense out of our experiences.



Fig.2 Capture game Hey Bear productions

In other words, we can teach the writing language but the language of emotions at the same time, to comprehend our external environments as our inner self, which both are interdependent and crucial in developing social emotional environments and communication. Animation is a visual thinking media which provides us with a wide scope of techniques to explore our emotions and behaviours, over all; it’s the communication of an emotional energy in movement. Some scholars refer to language as “grammar of action” (Katerina Pastra, Yiannis Aloimonos, 2011).

Language is probably a unique characteristic of the human being, we learn through stories thanks to our capacity to connect and build sentences by linking words to get a meaning.

Nowadays everything is becoming more abstract and digital, touch screen based and perhaps ironically, missing that “human touch” in learning and communicating, out and inside the schools. We are surrounded by more images without being trained in visual literacy as we are in writing language. There’s a big market full of apps and companies (Hey Bear productions), that by the time you read this article they probably multiplied, or made several updates. There’s a demand and a powerful market, emerging studies about the neuroscience of cinema (Zack Jeffrey, 2014), but with a serious gap between the tools, media and our knowledge of visual literacy to use them. Dr Anne Bamford wrote (2003, P. 1):

“Visual literacy involves developing the set of skills needed to be able to interpret the content of visual images, examine social impact of those images and to discuss purpose, audience and ownership. It includes the ability to visualise internally, communicate visually and read and interpret visual images. In addition, students need to be aware of the manipulative uses and ideological implications of images. Visual literacy also involves making judgements of the accuracy, validity and worth of images. A visually literate person is able to discriminate and make sense of visual objects and images; create visuals; comprehend and appreciate the visuals created by others; and visualise objects in their mind’s eye. To be an effective communicator in today’s world, a person needs to be able to interpret, create and select images to convey a range of meanings.”

We learn by playing, mimicking what we see, feeling others people’s emotions due to the mirror neurons and empathy (“Brain to brain coupling”. Hasson, 2011). Crucial to connect with each other, develop resilience and compassion. Animation helps to understand the cognitive processes that our brain uses to acquire knowledge through the creative process of making a movie, by being the protagonist of it and experiencing in first person the feelings and ideas that we embodied and perform.

Our research is mostly qualitative but also quantitative, with tests run before and after the production movies, which show the positive effects of learning improvements even with better score in the autistic children, not only for language but in making animations. Animation holds a great potential in terms of working creativity: aesthetic, emotional and ethical subjects.

Learning is growing and changing, as our bodies and brains do, they are plastic, let's use a plastic tool for our plastic organs to improve learning. We all are responsible at influencing the educational, scientific and professional industry. Animation is a tool to conceive, visualize and materialize ideas, charged of emotions and feelings that bring us alive.



Figure 6. Animated Learning LAB, Denmark

Methology

1.1 Why animation?

Einstein wrote to his son:

"That is the way to learn the most, that when you are doing something with such enjoyment that you don't notice that the time passes."

Animation is a media and artistic expression, where participants can play and explore their imagination without limitations, feeling free of judgement, which improves communication. It offers a secure space to show and tell without feeling afraid of failure because failure is understood as part of the creative process.

The power of this media is abstraction, the use of metaphors, facilitating the connections between a meaning and a symbol (letter, image). It's a game to perform other roles since animators rehearsal hypothetical situations as explorers or scientists make their trials. We become actors, starting to be aware of how we feel, act and think as our characters. We learn how to observe, analyse and filter information. During this process different perspectives are appreciated, it's a mindfulness tool to focus our attention in details. Animation is fun, attractive for the use of different techniques and its combination. We train our eyes to feel and our hearts to see. Experiences colour what we know, but our senses and beliefs can cause misunderstandings. Visual literacy is necessary if we want to learn how to speak our minds and hearts.

1.2 Theories and participants

Our production –teaching method is based on the constructivism and social development theory of Vygotsky (1896-1934), in which social interaction comes first a child's development; and the creation of consciousness (Antonio Damasio: The quest to understand consciousness, 2011).

Our students are from different ages, backgrounds and nationalities; we tailor workshops with schools and colleges for short and long periods. In our own centre in Denmark, we keep a closer eye on the long term results, from the Animation and Creative Learning class, and external collaborations with PhD studies in universities of Arts and Communication in Spain, The Netherlands or the United Kingdom. We use computers, cameras and softwares, as well as students carry their own. The dynamic of the class starts by watching and deconstructing some visual material to work on a discussion, where we apply knowledge of visual literacy, emotional intelligence and formal aspects of film making language and animation. When we specifically are required to teach language or any curricula, little doses of these subjects are implemented to increase the learning as we go through the regular programme. We use recent articles, games and books to support the classes together with our websites: Teaching with animation (<http://www.animwork.dk/TWA/>) and Animated Sciences (<http://animatedscience.dk/>).

1.3 Animating movies

After some theory, students come with a brain storm and idea to discuss. They are assigned roles by themselves or by the teacher when they are too young. The creative process of an animated movie as art production is similar to the cognitive process in which our brain process information (ANIIV, 2015): -re-presentation: animation re-creates ideas and feelings as our brain re-build moments based on experiences or imaginary.



-experimentation: animation explores different approaches and solutions to resolve problems. The brain seeks for predictability to keep balance, it tries to look for solutions and be steady. Movies are based on what happens next.

-research: animation, as an art form produces knowledge about the study objects (themes, taboos, characters, places and so on) as it offers the ways to access to those: acting, writing, drawing, editing, making sounds, etc.).

The biggest advantage between learning watching movies vs making movies, relies on the experiencing “the doing”. By doing, our bodies get more sensorial data which the brain can use to create more relationships between concepts.



Figure 5. Animation and Creative Learning classroom

In language acquisition exercises, we play identifying words with symbols or images, meanings, feelings, or ideas. The words are represented by any technique in any form students decide. Through this method they put in practice several abstract concepts as team work, problem solving; social skills as resilience; emotional intelligence as self-awareness, self-management and so on.

The learning process with autistic children is quite successful for the focus in details. Small exercises contrasting happy and sad faces help them to start up to comprehend other people’s expressions. Autistic see the world unsynch, they need to find an order than make sense for them. Reason why some children copy sentences from movies and repeat them as their talking mode..

Results

- Improvement in social skills and emotional intelligence.
- Better understanding of cognitive processes, aligning system of beliefs, emotions and actions.
- Students learn to listen and communicate more effectively working in groups.
- Animators become more aware of their emotions and they retain more details through storytelling.
- The class in average learn faster and in a more consistent way that conventional reading, writing lectures.
- Higher motivation to explore new concepts and achieve goals.
- More relaxing environment to work and learn, students become more compassionate and resilient to critiques and problems.
- Creativity rises.
- Students learn to use with criteria visual literacy and animation terminology. They become more literate.
- Development of critical mind regarding to the evaluation of external information.
- Better self-esteem and relationships in the work groups
- Personal growth in most dedicated students compare to their initial status.
- Autistics tend to be better animators than other average students in regular conditions
- Animation helps to get students immersed in the flow that Mihaly Csikszentmihalyi (2004) studied.
- Increase of happy mood during most of classes and students.
- Cut out is the most effective and fast technique for children and beginners.



- Girls/women tend to pay more attention to details, colour areas and design while boys/men are more into technical and directing roles.
- Animation creates diverge thinking and a context where the action determines it.
- Students are more aware of their bodies, feelings and thoughts.

Conclusions and Discussion

- Animation is an emotional learning tool which helps to develop individuals and societies.
- It works improving learning skills thanks to the implication of movement, connecting body and mind.
- For autistic or any language, communication barrier, it results an excellent alternative media.
- It is a powerful tool for visualizing ideas and treats cognitive disorders or its improvement in regular conditions.
- Animation can be the bridge between sciences, arts and education as a new communication media.
- It should be included in cognitive and Art Therapy treatments with specialists.
- Any subject can be taught with animation due to its variety of techniques, flexibility and approaches.
- It is a powerful teaching tool to visualize ideas, re-create scenarios o rehearsal situations of high risk, for example, in medicine, mechanics, criminology or robotics.

If we stop to think for a moment in which language would be the most natural and intuitive, without any doubt writing would be the hardest of all, at least to learn. Could we determine which language comes first? Mimicking, images, sound, touch? Can they be considered languages as writing? Could animation be our visual language?

We encourage scientists to meet artists and animators to explore the possibilities to enhance education in the classrooms, not just with computers or apps, but by doing an intelligent use, which motivates and enhances the learning experience. By making animated movies we start a dialog, sharing and exploring the unknown, animating words and images together, connecting ideas to feelings, minds with bodies. Our goal is express ourselves, create art, entertain and make us feel alive. By keep playing, we remain children who enjoy every minute, we can learn more than language; we can learn about life and any curricula that we imagine. From body experience through acting, to language.

Reference

- [1] BAMFORD, ANNE:” The Visual Literacy White Paper”. Art and Design University of Technology Sydney. [on line] <http://www.images.adobe.com/content/dam/Adobe/en/education/pdfs/visual-literacy-wp.pdf>
- [2] BEDFORD, AURORA. (2014):”Animation for Attention and Comprehension”. Nielsen Norman group journal. [on line] <http://www.nngroup.com/articles/animation-usability/>
- [3] BOUCH, JOE. (2009): “A picture is worth a thousand words”. BJP sych. Advances. DOI: 10.1192/apt.15.2.81 [on line] <http://apt.rcpsych.org/content/15/2/81.full-text.pdf+html>
- [4] MORAWETZ, Carmen. KIRILINA, Evgeniya. BAUDEWIG, Juergen. HEEKEREN, Hauke R. :”Relationship between Personality Traits and Brain Reward Responses when Playing on a Team”. 2014. Plos One. Department of Education and Psychology, Freie Universitat. Berlin, Germany. doi: 10.1371/journal.pone.0087277
- [5] BUTTERFILL, A. Stephen. “Perceiving expressions of emotion: What evidence could bear on questions about perceptual experience of mental states? “.Elsevier. 2015. Consciousness and Cognition. [on line]. www.elsevier.com/locate/concog
- [6] CARTOONS FOR CHILDRENS RIGHTS. [on line] <http://www.unicef.org/crcartoons/>
- [7] CLARK, Rob. “Storytelling & Neuroscience”. [on line]. Slideshare. Feb 23, 2015. [on line]. <http://www.slideshare.net/theelusivfish/storytelling-andneuroscience-pcto>
- [8] GRUNDMANN, Uta. “The Intelligence of Vision: An Interview with Rudolf Arnheim”. [on line].Cabinet Magazine.2001.Issue 2. [on line]: <http://www.cabinetmagazine.org/issues/2/rudolfarnheim.php>
- [9] GARDNER, Howard. The Theory of Multiple Intelligences: As Psychology, As Education, As Social Science. October 22, 2011. Multimedia-and-multiple-intelligences –The American prospect n.29, November-december 1996. Art, Mind, And Brain: A Cognitive Approach To Creativity.
- [10] JHONSON, Ollie. Frank, Thomas. (1988). Disney Animation: The Illusion of life. 3rd ed. US: Abbeville Press Inc. ISBN-10: 0896596982

- [11] MILLER, Greg. "Cinematic Cuts Exploit How Your Brain Edits What You See" [on line]. Wired Science. September 04, 2014 [on line]: <http://www.wired.com/2014/09/cinema-science-film-cuts/> [consulted: May 04 2015]
- [12] MIALL S. David. "Emotions and the Structuring of Narrative Responses" [on line]. Poetics Today. 2011 Volume 32, Number 2: 323-348. [on line]. <http://poeticstoday.dukejournals.org/content/32/2/323.abstract> [consulted: May 04 2015]
- [13] MURCH, WALTER. In the blink of an eye. 2nd Edition. US. Silman James Pr. 2001. 148 p. ISBN-10: 1879505622
- [14] P.CHIN, Nancy. "Teaching Critical Reflection Through Narrative Storytelling" [on line]. Michigan Journal of Community Service Learning. University of Rochester Medical Center, US. Summer 2004, pp. 57-63. [on line]. <http://hdl.handle.net/2027/spo.3239521.0010.305>
- [15] PRATT, J., RADULESCU, P.GUO:"It's Alive! Animate motion captures visual attention". Psychological Science, R.M., & Abrams, R.A. 21 (2010), 1724-1730.
- [16] MOLL, C. Luis. (2014). L.S. Vygotsky and Education (Routledge Key Ideas in Education). 1st ed. New York: Routledge. ISBN 978-0415899499
- [17] RAZ, Gal. Hagin, Boaz. Hendler, Talma. "E-motion pictures of the brain: Recursive paths between affective neuroscience and film studies" .15_Shimamura_C15.indd 285-312.
- [18] RIEBER, P. Lloyd. (1996). "Seriously considering play: Designing interactive learning environments based on the blending of microworlds, simulations, and games". Educational Technology Research and Development. Volume 44, Issue 2, pp 43-58. [On line] <http://link.springer.com/article/10.1007/BF02300540>
- [19] SMITH, Murray, 1995: Engaging characters: Fiction, Emotion and the Cinema, pp. 73-109. Oxford. University Press, Oxford.
- [20] The Animation Workshop /VIA University College . Animated Learning. Digital web. [on line] <http://www.animatedlearning.dk/>
- [21] ZACKS, Jeffrey. 2014. Flicker. Your Brain on Moves. 1st ed. USA. Oxford University Press. 2015. ISBN-10: 0199982872.