Using multimedia tools to engage learners in Disaster Risk Reduction (DRR) and Prevention at all ages.

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What is DRR?

DRR, according to the United Nations International Strategy for Disaster Reduction (UNISDR, 2009), is "the concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events".

The role of education?

The United nations consider it to be an important tool in reducing disasters. When the 2005 Hyogo Framework for Action (UNISDR, 2005) for DRR was drawn up, one key underpinning was to "use knowledge, innovation and education to build a culture of safety and resilience at all levels" (UNISDR, 2005, p. 11). This should be based on providing "easily understandable information on disaster risks" while enabling people to "take action to reduce risks and to build resilience" (UNISDR, 2005, p. 14).

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- However, the term 'education' is extremely broad and might cover a full curriculum, a short-impact project by an NGO, a poster, leaflet, or comic strips.

Furthermore

- 'Learning' is a more helpful term
- Learning has been defined as a transformation in the potential for behaviour of an actor in response to experience, as seen from the viewpoint of an observer (Ison et al., 2000).
- In terms of Disaster Risk Reduction this is a key and missing element. The idea of transformation has also become more important to my research in where I am examining transformational learning as a method for enabling DRR.

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Application to DRR...

The idea of resilience is being used more by agencies examining the threat from climate change as well as within the broader field of DRR. Definitions of resilience include:

- 'The ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organization, and the capacity to adapt to stress and change' (IPCC, 2007)

And:

- '*Dynamic process encompassing positive adaptation within the context of significant adversity*' (Luthar, et al., 2000, p.543).

Both definitions stress adaptation when faced with challenges. Paramount to which is the ability to learn. This requires an open mind and self-efficacy (e.g. Bandura, 1977, 1997) meaning that individuals are not deterred by challenge and failure but, to the contrary, enjoy overcoming them.

Consequently children and youth are targeted both for their adaptability and resilience as well as being the source of messages that can be transmitted to the household.

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A 2011 paper dealt with these issues when teaching about disasters, concluding:

Education is sometimes seen as a top-down, one-way process of bestowing knowledge on the ignorant. Instead, one aspect of education to be emphasised is involving people on their own terms, highlighting their own interests with educational materials and actions produced by the people themselves (e.g. Freire, 1970;Wisner, O'Keefe, &Westgate, 1977). Student–teacher interaction can sometimes be facilitated by reducing the power relationship and hierarchy, in order to promote more of an exchange, with each party supporting and gaining from the other. Critical thinking is key, with the teacher facilitating the student's learning process, much along the lines of the "guided discovery" approach in international development (Bruner, 1961).

Sharpe and Kelman, 2011

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What does this mean for teaching and learning for DRR?

The following are examples of short (and this is key) videos aimed at engaging discussion, debate about a serious matter

What should you not do if there is an earthquake ?

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What does this mean for teaching and learning for DRR?

The following are examples of short (and this is key) videos aimed at engaging discussion, debate about a serious matter

Is this video effective ?

Why will the brick win?

Who is the video aimed at?

Click me to see:>>

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This appears to resonate well with students who:

- Find the videos funny!
- Like short videos (the YouTube generation).
- Enjoy learning from audio visual sources or are visual learners.

BANG!!!
But it is still didactic....

So...

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Getting students engaged in learning for DRR requires more than just being passive. Consequently Gardner's multiple intelligence theory can be usefully applied in teaching and learning:

Intelligence form	Examples
Linguistic	• Write a newspaper article about how everyone can prepare for disasters in general or a specific disaster. • Write scripts for filming or for radio spots.
Logical-Mathematical	• Plot distance–time curves for the two types of earthquake waves. • Play a decision-making game where a range of items is left on a table and items suitable for a go-bag must be chosen.
Musical-Rhythmic	• Write a song, such as an aria or rap, that helps others know what to do in an emergency. The United States National Oceanic and Atmospheric Administration commissioned a rock song on "Turn Around, Don't Drown" to try to prevent people, especially new and young drivers, from driving through flooded roadways. • Describe what music should or should not be used in public information media regarding DRR and disasters.
Bodily-Kinaesthetic	• Demonstrate the appropriate action if there is an earthquake or a thunderstorm. • Make up a "flood dance" and "flood risk reduction dance" to share with younger students. • Learn first aid.
Spatial	• Map hazards around the school or school area. • Use data from mapping to show safe evacuation routes. • Run participatory mapping exercises for DRR (see Maceda et al., 2009).
Naturalistic	• Make models of drainage basins and add or remove trees made from sponges on cocktail sticks. Pour water down the basin to see what happens. • After appropriate surveys have been done and appropriate permissions have been attained, consider planting and maintaining vegetation on steep slopes around the school. • Analyse how human actions or behaviour influence the natural environment to turn normal environmental events, such as the slow-rise annual spring melt flooding, into extremes and natural hazards, such as dangerous floods. Examples that can create such changes are deforestation, engineering rivers or building structural flood defences (e.g. Criss & Shock, 2001; Etkin, 1999; Fordham, 1999).
Intrapersonal	• Set up and lead your own school youth emergency committee. Liaise with people in your school to ensure that student needs are met and know what is expected of those involved. • Create and maintain competent community-based teams for DRR and disaster response (e.g. Ogawa, Fernandez, & Yoshimura, 2005).
Interpersonal	• Present in an assembly what you have discovered about hazards and vulnerabilities in your area and how to deal with those hazards and vulnerabilities. • Invite your local councillor or other politician and hold a meeting to present your concerns and possible solutions for hazards and vulnerabilities in your community. • Convince your school to support disaster-related education and action.
Existential-Moral	• Describe why DRR might and might not be a human right along with balancing the right to education with the right to a safe education (e.g. Boyce, 2000; Kelman, 2007). • Explore how different religions view disaster.

Source: Sharpe and Kelman, 2011

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So when students are engaged in a scheme of learning the use of multi-media techniques is not just about knowledge transfer from the teacher/lecturer, but can be also utilised to measure student understanding of a particular subject. For example:

On this occasion older students (18 years old) used playdough to make tactile models to explain plate tectonics as a system.

They then explained it and filmed it on their phones. This was shared with the class via YouTube.

>> Click me to see video

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Whereas this second video was filmed while in a class where students had learned about what to do if an earthquake occurs. This was carried out on October 21st when there was a shake-out organised in California. This was filmed at the same time 10:21am so that students could share in the experience with students in schools and Universities across California.

While watching the video, think about what benefits there are to students…

Click me to see video >>

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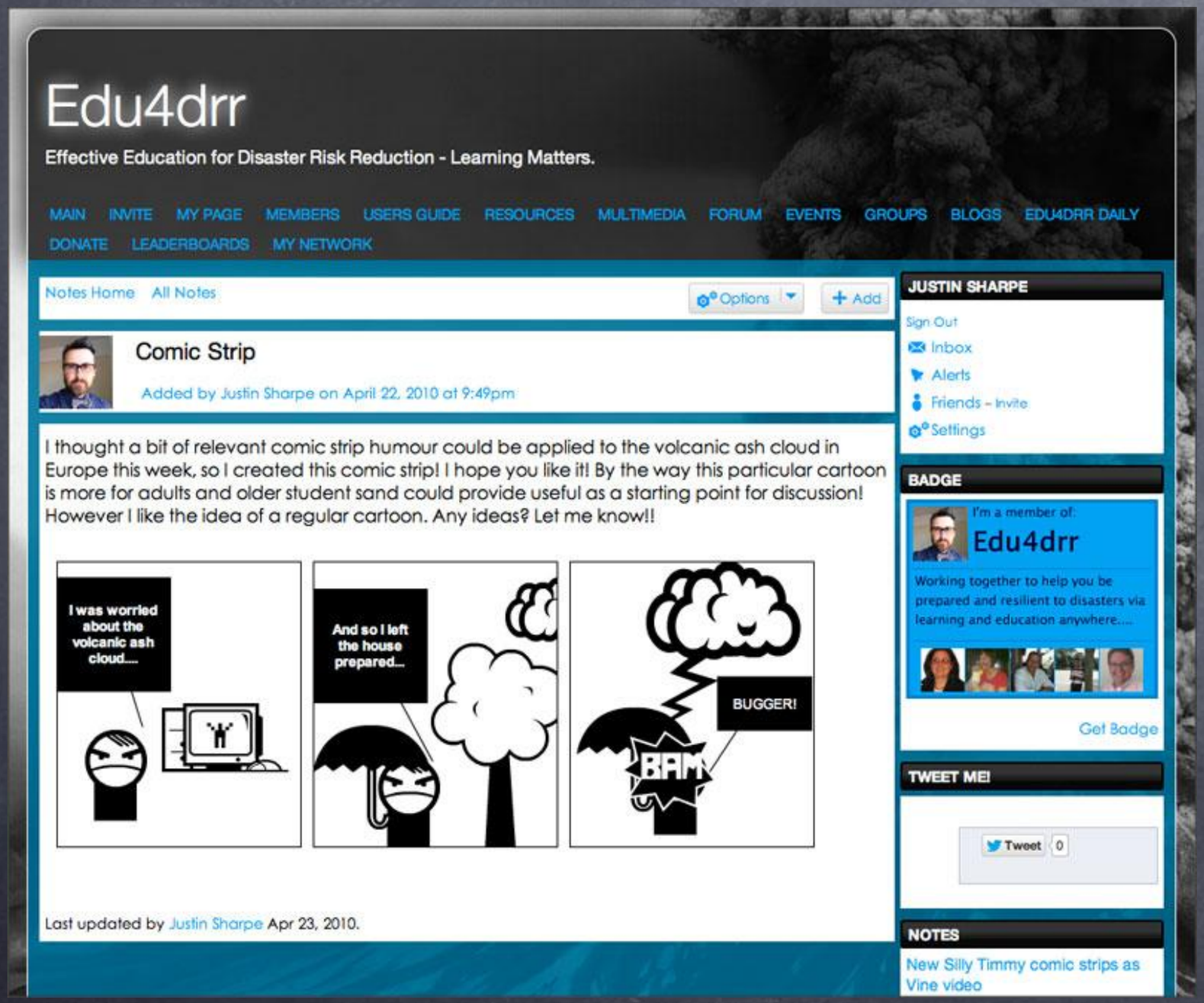
To support such teaching and learning I provide resources for students on www.edu4hazards.org:



And for teachers and educators resources (including 60+ vidos, curricular, comics etc) are provided on www.edu4drr.org

Thhis provides a growing online repository of resources linked to the field of DRR education while offering help and advice for its 300+ members globally.

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- The key to success is taking risks and experimenting.
- In November 2012 usingan iPad App called 'Toon ToolKit' the 'Silly Timmy' comic strip were created. Dealing exclusively with DRR related education and learning, 52 comic strips were created with the aim of enabling very young children learn about DRR:
- Generally the principal character, 'Silly Timmy' makes a series of mistakes or errors, during or after a hazard event occurs, while the reader either predicts his folly, or learns what it was.
- This allows key messages to be delivered in a manner that allows the reader to learn via observing the experiences of others (the comic strip characters) in a form of social learning. (e.g. Bandura, 1977, 1997)

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Anatomy of a comic strip:

1. Setting the scene. Timmy is out for a walk with his dog.

2. Setting up the situation: Note his dog trying to warn him that this is not right!

3. The action!

4. Delivering the message. The *Fairy* character is always used to do this in this comic strip.

To view more of these comics click this text >>

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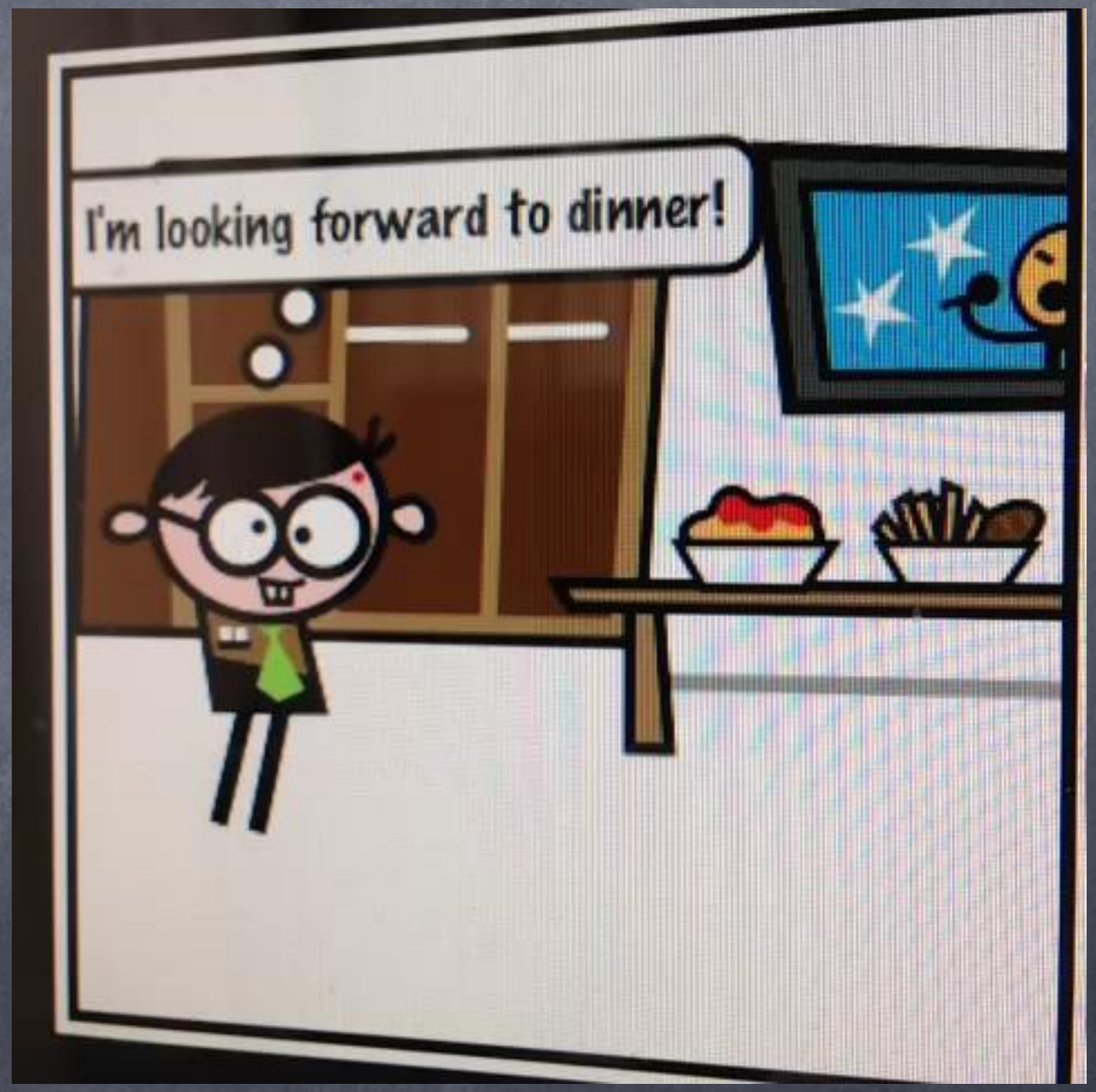
The future of learning with multimedia.

- More and more students are using Twitter as well as Facebook to follow celebrities, friends. A LOT of what is posted is dull 'What I had on toast…' but there are benefits to the medium that forces expression in 140 characters or less (BTW expressing less is better as UR likely to be re-tweeted! And, yes the 'text speak' was on purpose!
- The use of Vine is a new phenomena. Looping videos of six seconds! Here is one I created uisng Silly Timmy and my own silly sound effects:



To see these vines and for further details click here >>>

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In conclusion:

1. Embrace the technology and use it to you advantage as an educator.
2. Listen to what your students are saying when they give feedback, you will often learn of a new website, video or podcast that you can share with the class or use at a future time.
3. Use the technology they use! Ensure that home learning, extension tasks have relevance and use the social media that they are using. For instance. Get them to sum up as a tweet and post it!
4. Don't be afraid to experiment. There were many videos where students didn't get it right or were just not good enough quality and are not on YouTube…on the other hand there is a lot of awful quality on YouTube as well!!
5. Ask others for help! There will be others who have done it before you or just do it quicker or more efficiently. While making this presentation I learned how to save Vine videos – Being a learner with an open mind makes you a better teacher to

Thank you!
Спасибо!

Contact Details:
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www.edu4drr.org
www.edu4hazards.org

To watch a Silly Timmy Comic Montage set to music click here >>

Thank you!
Спасибо!