Digital storytelling for supporting children's creativity

Elisa Rubegni, Senior Lecturer, Computer Science School
University of Lincoln – 10.11.2017

Child–Computer Interaction (CCI)

"*CCI is the study of the Activities, Behaviours, Concerns and Abilities of Children as they interact with computer technologies, often with the intervention of others (mainly adults) in situations that they partially (but generally do not fully) control and regulate*" [Read J., 2011]

My focus: to identify the key issues of **CCI** for better design and develop information systems to support **learning** and **teaching activities** in formal setting.

Context, people, and activities matter !

Elisa Rubegni, October 2013

CREATIVITY

The mechanisms of imagination and creativity is the experience and the re-elaboration of the experience through disassociation, association and mutation. [Vygotsky, 2004]

In this constant process human creativity rests upon real experience with the world, and **imagination is a special and unique form of using our real world experience**. [Vygotsky, 2004]

Creativity has an individual and a social dimension that constitute the two sides of the same coin [Vygotsky, 1978]

STORYTELLING

The narrative is a primitive function of human psychology and a fundamental aspect in the construction of meaning. Narrative is a way of mediating the construction of meaning and a child's organization of knowledge to express creativity and use the imagination. [Bruner, 1996]

Storytelling acts as a vehicle or metaphor for enabling children's creativity, experimentation, and language enrichment in their own oral and written stories [Amour, 2003]

STORYTELLING IN SCHOOL

Storytelling facilitates **pedagogical and psychological development** such as children's use of **language** and other forms of **creative self-expression** (i.e. drawing, acting, etc.) as well as their **social skills**.

The creation of stories **are articulated social practices** that make the child the fundamental actor in close relationship with peers and, first of all, the teacher(s) [Rizzo et al., 2002]

Recent CCI projects

2009-11, Digital-Based Narrative Activities in a Formal Educational Setting (Mr. Edu), grant from USI, CH
University of Lugano, Politecnico di Milano, It

2011-13, Activité Narrative Instrumentée (ANI), Funded by Partenariat Hubert Curien (PHC) Germaine de Staël, CH
University of Lugano, University of Paris 8, Orange France, Fr

2011-15, PAper and Digital resources in Schools, (PADS), grant from HASLER foundation, CH
 University of Lugano

2016-18, How design digital storytelling uthoring tool for improving pre-writing and pre-reading skills
University of Lincoln, University of Lugano

Context, people, and activities matter !

Elisa Rubegni, November 2016

PADS

PAper and Digital resources in Schools 2011-15

Educating pupils and enhancing their media literacy is concerned not only with computer usage and Internet browsing but also with the ability to create digital content

elisa.rubegni@gmail.com

June 2016

Swiss school curriculum

Subject:

Local/First Language and, in particular, on the subarea of narrative and storytelling
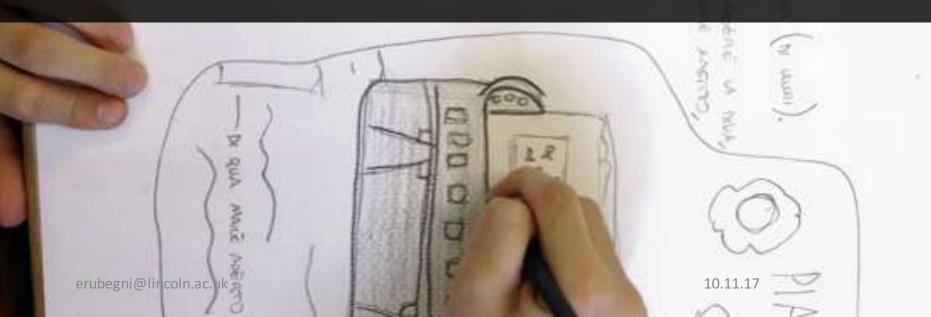
Curriculum goals:

- Linguistic competences
- Narrative styles
- Digital literacy
- Social and emotional skills

Longitudinal study

- 2 primary schools, the Leonardo da Vinci (LDV) and the Istituto Elvetico (IE)
- 130 pupils (ages 6 to 11)
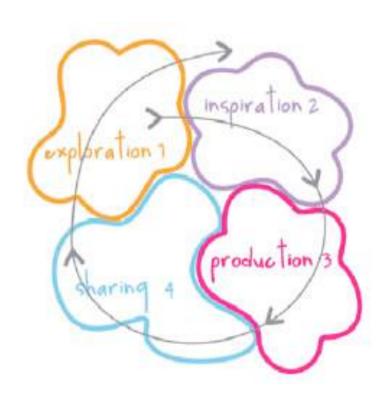- 7 teachers
- 2 school directors

Project phases

1. Activity analysis/users needs elicitation
2. Design and prototyping
3. Evaluation of the final prototype

The theoretical model

The ***Narrative Activity Model*** (NAM)
[Decortis et al. 2001]

Fiabot! components

I) Definition of story structure and plot;

II) Media creation and editing;

III) Sharing within the class and publication of the story.

I) **Definition of story structure and plot**

- Narrative types structure, plot, and content architecture
- Ingredients of the narrative – e.g. antagonist(s), protagonist(s), protagonist helper(s), antagonist helper(s), magic object(s)

II) Media creation and editing

- Children can create, import, and edit different media that can then be used in a story.
- The story contents can be very heterogeneous, i.e. images, photos, videos, music, audio, and animation.

III) Sharing in the class and publication of the story

Stories can be delivered as video and shared online and onsite with their peers and other schools

Fiabot!

Choose the narrative type

Fiabot!

Choose the narrative type

Select the story ingredients/characters

Text-based VS image-based

Textual version

Image version

Text-based VS image-based

Research question:

which version is more suitable to support the creation of a digital storytelling for supporting the achievement of curriculum objectives in a formal educational context?

Textual version

Image version

Recruitment

- The school curriculum needed to include the creation of stories

- Children 4th or 5th grade

- Teacher interests in using technology (no specific skill needed)

Study setting

- 1 school
- 2 classes: 4th grade
- 2 teachers
- 43 children

Methods

- Ethnographic observation

- Interview- teachers

- Focus group - children

- Teacher evaluation of students' stories:
  - Creativity,
  - Collaboration,
  - Media Literacy,
  - Consistency with the narrative genres.

Elements of analysis

Focus on:

- The plot structure,

- The characters' behavior and role,

- The children's ability to elaborate and use their experience as elements of the story,

- Children's sources of inspiration

Procedure

a. Children's training, 1 hour.

b. Stories Creation and sharing, 6 hours each day (3 days).

c. Focus group and Interview, 6 hours.

Set up of the class

- Children in small teams, up to five (good balance of children's skills, attitudes, and personalities)

- 1 iPad each group

- Pen and papers

Data analysis

- Data were transcribed, coded, and analysed

- Thematic analysis

Version 1: Image-Based Fiabot! Evaluation Results

Research question:

- How would children react to popular images?

- Would their presence trigger different reactions in terms of being creative?

- How would the story structure be affected?

Version 1: Image-Based Fiabot! Evaluation Results

Teachers (Interview)

- Children focused on the visual characters often left these unexplored in the story

- Characters taken from popular sources (movies, books and cartoons) were not elaborated any further and moreover, the resulting story would just follow the original one they were borrowed from

Children (FG)

- the Image-Rich version offered them guidance on how to build a story and ideas for characters

Version 1: Image-Based Fiabot! Evaluation Results

Children (observation)

- Children in the group used properly the name of the characters' types and they quickly started to create the story

Version 2: Text-Based Fiabot! evaluation

Research question:

- How would the textual version support children's creativity in making the story?

- Would children focus more on characters' role and habits without any insights of predefined characters' images?

Version 2: Text-Based Fiabot! evaluation

Teachers (Interview)

- the stories were very original: **the creation of both text and images and their combination on the story** triggered higher levels of creativity

- Working on the description of the characters brought the children **to focus on the story plot** and create good story

Children (focus group)

- they took inspiration from their **own imagination** and from **experiences they shared with their family or friends**

Version 2: Text-Based Fiabot! evaluation-results

Children (observation)

- The creation of the plot and **the description of the characters went in parallel** and one fed the other: some children started to draw characters on the paper while brainstorming about the plot

Summary: Text-based VS Image-based

The Image-Rich version:

- the **characters were not explored any further,** children create the story in line with the **pre-existent one**

The text-based version:

- allowed **to explore better the plot and to combine more original elements** of children imagination and personal life (including books, cartoon, movie, etc.)

Follow up: design and evalution of the Text-based Version

Study setting

- 2 schools
- 2 classes: 4th grade
- 2 teachers
- 46 children

RESULTS

erubegni@lincoln.ac.uk

Teachers' evaluation

	Creativity	Collaboration	Media literacy	Narrative genres
Rebecca	4	4	4	2
The past in the future	4	5	2.5	3
The dragons and the family stone	5	5	4.5	4.5
Luke and the savior	2	5	1	5
Clouds and problems	4.5	5	5	5
Jonny and the giants	1.5	5	4	4
Everything happened in one night	5	5	4	5
The crown	4.5	5	5	5
Lucia's savior	3.5	4	4	5
Searching for the gold and silver tree	5	5	5	5
Virginia the vain	4	5	4	3.5
Romea and Giulietto	2.5	4.5	5	4
The adventure of two friends	3	5	2	5
The jewels of the Queen	5	5	4.5	5
Discovering the sweetie world	5	5	5	5
The kidnapped princess	2	3.5	3	3.5
The knight Aghoss	3.5	4.5	5	4.5

Creativity

- 60% of the stories obtained a very high score (teachers' evaluation)

- "In 'Luke and the savior' story. Children took inspiration from Hunger Games but they didn't copy the game. They used the strategies of the game in the story by creating complex narrative mechanisms that were very intriguing for the audience... there was an improvement in the level of discussion and engagement of pupils in creating the character of the story and the plot." T1 (Interview)

- "I really liked how in the plot 'Virginia the vain' children integrated some episodes from one child's family with other elements that were invented." T2 (Interview)

Discussion

Fiabot! components

- I) Definition of story structure and plot;

- II) Media creation and editing;

- III) Sharing within the class and publication of the story.

I) Definition of story structure and plot

- The story structure and the ingredients support the children conceiving the narrative and its mechanisms before writing

- Improve their ability of collaborating and sharing tasks among a group

- The discussion of the plot and characters allowed them to figure out original elements for the story

- Reinforce the explanation in class by recalling the structure of the story, the ingredients, the style, etc.

II) Media creation and editing

- Children can explore the media opportunities and limits of producing digital content for creating a narrative

- The production and editing of media as well as the mix of different contents trained pupils in communicating through digital media

- The children felt in control of the quality of the final product

III) Sharing and publication

- Improvement of children's self-esteem and their satisfaction of being authors and sharing their stories with others (including the family)

- Enhancement of teachers' self-confidence towards the other colleagues and the school director

FUTURE DIRECTIONS

- How could we stimulate children imagination in the process of creation of digital media?

- How could we allow children to combine their past experiences and to create media for digital storytelling?

- How could digital storytelling creation support the improvement of children imagination and creative thinking?

Thanks for listening. Questions?

erubegni@lincoln.ac.uk