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Kids Story “Writers” — POGO, Tell-Tale, Sprite

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ABSTRACT

Children express themselves in a “hundred languages” [14] and they use what they know in one language, or modality, as a lever to gain fluency in others. This paper draws from EU project POGO—and related MIT projects Tell-Tale and Sprite—to illustrate how digital media can be used to leverage children’s own creative ways to blend speech and writing, to compose and contextualize text, and to link authors to audiences. We discuss what it means to be literate in the digital age, and what it takes for children to become so. We conclude by offering guidelines for the design of narrative environments for kids’ composers.

Keywords

Play, digital media, narrative, enactments, design, literacy.

INTRODUCTION

To a 3-years-old, it is not so different to enact a scene, tell a story, or doodle on a piece of paper. In their play, children set the stages and build the props that enable them to revisit, recast, and play out many intriguing ideas. Children also like to tell and listen to stories and before they know to read or write, they become fascinated with the marks they leave behind and the signs around them [1; 2]. Preschoolers scribble and recite, cut (collect) and paste, and they treasure their first books for the stories they conceal.

Psychologists and linguists have long studied children’s ideas about—and spontaneous uses of language, both spoken and written [5; 9; 10; 12; 19]. And many leading educators have opened venues enabling children to speak in a *hundred languages* while, at the same time, enjoying the benefits of telling their tales across time and space. Moving from orality to literacy, or becoming literate in a broad sense, is a call to inventing ways to send a *note* to those who would listen but are not here. It requires the capture and encapsulation of passing voices or gestures into durable traces, to be saved for later. To write is to ink in the ephemeral, cast it in stone, assemble and address it [11; 14]

As they reach the age of 6, children use a wide range of means for making up stories. While most narrative activities, especially in school, are still focused on verbal productions, teachers also know that stories can be told in many media, including drawing, music, or theater [6; 7; 8]

The challenge then becomes to combine and prioritize text, image, and sound in order to produce decent hybrids: easier said than done! Equally important, a story comes to life as it meets a responsive audience. Initiation to narrative composition provides children with the means to express themselves, and to convey their intentions successfully. One of the criteria for evaluating the acquisition of these skills is the capacity to combine and prioritize modalities of expression as one organizes story contents. Another is the capacity to modulate story contents and structure to fit pragmatic requirements, such as finding the right tone, being heard, not offending.

In recent years, increasing numbers of researchers and practitioners have been puzzling over the potential of digital technologies to support *literacies beyond print* [15; 16] Digitally mediated transactions provide new occasions for children to engage in story-“writing” and for educators and parents to teach children to read and write. Hence, as children become more fluent in *netting*, *mudding*, and *SMS-ing*, they contribute entire new genres of textual productions [13], which—provided we (adults) know how to listen—will help all rethink what it means to be literate!

The contention of the paper is that, contrary to belief, young children do not first speak, or narrate, and then doodle, or notate! Instead, starting at age 2 [17] a child simultaneously plays, pretends, and speaks, and becomes forever fascinated with traces and marks. Said otherwise, direct and mediated expressions feed one another, and co-evolve. We call “narrative competence” a child’s abilities to convey her intents in different languages, or modalities, and to switch, select, and adjust modalities in ways that make sense to those whose opinions matter!

CASE STUDIES

In order to communicate successfully, across time and space, children must learn to jog down their thoughts in coherent ways. This, in turn, calls for occasions to create and combine story-elements until they form meaningful and understandable configurations or sequences. We draw from 3 case studies to shed light into children’s narrative competences and creative contributions to *literacies beyond print*, and to gauge the potential of digital technologies to support students’ expressivity as performers, narrators, writers. Case studies are presented in 2 vignettes: POGO

(main study), and Tell-Tale and Sprite (related work)—all of which blend traditional and digital media in ways that enrich young composer's experience and skills

Vignette 1 – POGO

POGO¹ enables children to compose their own stories and “upload” them onto a durable support, or medium. The environment was designed to bridge a virtual story-world with POGO “active tools” to enable the creation and manipulation of story elements through physical experience. Said otherwise, a virtual world incorporates everyday objects via digital media, and relies on the child's physical environment and sensory modalities. The functionality of the tools span over many areas: gestural (live performances), visual (images and drawings), aural (sounds and atmospheres), manipulative (physical feedback) and material (physical objects). Although the system is computer-based, the standard interface of keyboard, screen and mouse has been replaced with a far more intuitive one..



Figure 1a and 1b: POGO with beamer and general view.

POGO active tools include a beamer, mumbos, cards, a camera, a recorder/reader, a background composer, and a shared table and screen (see http://www.iku.ulg.ac.be/projets_5.htm for details including a video).

Using the tools is simple enough for a 6-8 year-old to start playing with no need for instructions. Stories produced are generally well formed—with a clear beginning, middle, and end! They are ‘textual’ in that they ultimately live on a 2D surface yet they dynamically incorporate image, sound, movements, thus favoring seamless passage between oral and “writing”, i.e., direct and mediated expression.

What's in it for the children?

Observations of 6 to 8 years olds using POGO² show that the children develop new ways of composing a narrative, and working together: From gathering, recording, and super-imposing found and created story-bits to assembling visually-based episodes in spatial configuration and

temporal sequences, the strategies used are much in tune with Labov's model [8].

a) **Gathering, recording, and layering:** POGO enables a found-art approach to creating personally meaningful narratives (without being limited to components pre-selected and predefined by the system). The children are encouraged to feed their favorite ‘ready-mades’ or personal creations into the tool (ex: a token-object, picture, recorded sound, document, drawing,), and the tool “responds” by projecting (magnifying) the entries, and letting the children overlay, annotate, configure, assemble, and ultimately sequence chosen components (their gifts) into a growing narration. The tool augments their gifts by offering a projection and editing suite (French: *une table de montage*)

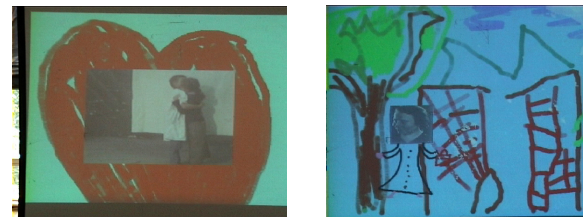


Figure 2a and 2b: POGO staging and composing a narrative

Fig 2a. A shot of a love story is enacted by children and superimposed on a drawing of a red heart. Fig 2b. Photos are used to re-invent the history behind them. Scenes enacted are captured using a camera. A narrator's off-voice is recorded on top, recounting the stages of the story.

b) **Working in team:** With POGO, narration takes on a collective dimension and the productions are addressed [7]. The beamer invites children to sit around and compose jointly. The table offers a shared workspace to create characters and combine story elements. The large screen offers a surface for projecting and editing story-bits. Visible to all, the shared board focalizes everyone's attention (unlike a personal notepad).

c) **Assembling visually-based episodes:** The composition often starts by pasting story-starters into or *scenes*, each of which can be made of background and foreground images, and tagged with a brief oral text, or sound effect, to represent an episode of the story. By triggering reflection on the composition of a scene, POGO supports a visual-spatial organization of narrative contents. The children get very involved in setting the stage, or scenery, where events will take place. They imagine and design many story spaces, arrange story elements (background, characters, objects) and create relations among the story elements.

d) **Sound as story starters.** Observations of children show a strong mutual leveraging between sounds produced playing with instruments and idea generation: from ideas to sound and back! POGO supports this bi-directional relation.

Vignette 2 – TELL-TALE, SPRITE

Simpler than POGO, Tell-Tale and Sprite bare family resemblance in how they support children's narrative skills and authoring capabilities through “secondary orality” [16].

¹ POGO is a EU project in the I3 ESE (Experimental School Environment Program). It is both a tool and an environment. Partners included Philips Design, Domus Academy, Università di Siena, and University of Liège.

² Observations took place at Hamaïde school, Bruxelles and Tozzi school, Siena, 1st and 2nd graders (6 to 8). Teacher roles: interviewees, participants in focus groups, animators during observations and prototypes testing in class. Children roles: interviewees during design and evaluation; active narrators and players in classroom without and with POGO.

TELL-TALE³ is a tangible story-builder that allows children to create, chain, and assemble recorded sound-bits to learn about the logic of ‘written’ or textual composition.

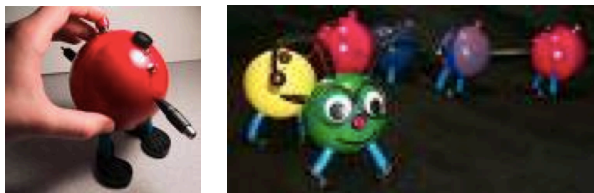


Fig 3a and 3b – Tell-Tale – a tangible sound-based story-builder

Fig.3 a: shows a small recording module that allows to capture and replay a short sound bit (push button(s) to record-play). Once encapsulated, recorded bits can be chained to form a “caterpillar” (fig 3a) and played back as a whole [sound-]story-line, from the caterpillars’ head to tail.

Tell-Tale’s tangible interface makes it easy to grasp the notion of sequencing: you literally build a chain. The tool’s consistent feedback [give back whole sequence] offers incentives to re-arrange modules, re-record story bits, and rethink connectors to make for coherent narrative sequences, with a beginning a middle and an end!

What’s in it for the children?

Observation of 6-8 year olds revealed several features of the language games played, using Tell-Tale. In Ananny’s words, “The children used cohesive language (e.g. conjunctive phrases and linking prosody) to join body parts; they mapped story structure to interface structure (e.g. body pieces represent story-segments); they used body-pieces to record dialogue turns either to each other (when paired) or recording both sides of a dialogue (when alone); they also comfortably collaborated with one or several other children to tell stories” (...) “Children also used TT in unanticipated ways: they recorded and experimented with the ordering of song fragments and rhyming sequences” [3.p.6].

SPRITE⁴ is like a « smarter » digital tell-tale for older children. Like Tell-Tale, the environment allows the recording and editing of speech/sound bits to produce speech/voice-based narratives. Unlike Tell-Tale, SPRITE lives on a PC and allows editing of multiple streams of recorded sound-bits. To Shankar: “Spriting lets children use speech to explore essential properties of writing such as permanence of record, possibilities of editing, indexing, and scanning. The product of spriting is a “spoken” document, or talkument » [18, p.1] Observations of elementary school children underscore the value of Spriting : (1) as a stepping stone to writing skills, (2) as a possible

substitute for writing, and (3) as a window into cognitive processes at play in composing text.

DISCUSSION

Our challenge as designers, researchers, and educators, is to provide children with environments that enhance their desire to actively engage in the production of narratives (provide an enjoyable and enriching narrative experience); that leverage their abilities to “write” good stories (the making of coherent, durable, and transportable narratives); and that shed light into what it means and takes to be literate in the digital age.

In spite of their differences, POGO, Tell-Tale, and Sprite share many features: 1. They tap into children’s gifts as narrators and performers (orality); 2. They help children—and educators—appreciate the benefits of casting and editing voice and gesture as a legitimate step toward becoming a story-“writer”(literacy); 3. They combine digital and physical in ways that change how children experience and structure the making of personal and collective narratives.

The children’s experience is enriched with the possibility to record and use sound and movement, and to bring images and token-objects into their creations. The introduction of new authoring tools (for capturing, manipulating and combining picture and sound) engages children in the structuring of story content. Simultaneous use of tools allows to partake in a group creation while, at the same time, working on personal contributions, as desired.

Beyond enriching children’s expressive power and authoring skills, elements that favor the making of well-formed stories include: (a) devices to develop visually rich narratives (e.g. possibility for close-ups on parts of a scene to allow different viewpoints); (b) the introduction of sound into narratives (e.g. characters could have voices, dialogues could be improvised, sound scapes reproduced).

The spatial distribution and tangible quality of the active tools in POGO and Tell-Tale facilitate their use in different time-spaces (information is no longer handled centrally). They also favor the incorporation of mnemonic units into physical objects (placeholders), and ultimately enable distributed production spaces. Both the creation and recording are integrated in the context of handling and constructing objects in the children’s physical world.

POGO, Tell-Tale, and Sprite, facilitate the structuring of well-formed narrative sequences. By providing opportunities to create and assemble narrative units, or scenes, using visual or sound captures, and to organize them into a sequence, or configuration, the systems support the development of narrative competence, and ultimately literacy, while, at the same time, honoring children’s natural tendency to “speak in a hundred languages” [14].

Finally the tools provide a new pragmatic context for exploring, producing, and sharing narrative productions. Observing children using POGO, Sprite, or Tell-Tale feels more like visiting a designers’ atelier, or a film crew at

³ Tell-Tale was designed by Mike Ananny, MIT Media Lab [3; 4] and used by children age 3 to 11, in informal settings and Cambridge Schools. In this paper we focus 6 to 8 year olds.

⁴ Sp-rite stands for Speak-write, and was designed by Tara Rosenthal Shankar, PhD Thesis. MIT Media Lab 2005.

work, than a literacy class. Children are busy running around and gathering inspirational materials (sounds, things, images). They spend much time “staging” and assembling what they’ve found, and projecting or playing back preliminary results (experimenting and comparing different solutions). They then go back to the drafting board and get ready for next iteration. Children’s monitoring of their own contributions in conjunction with the production of others is critical in coming up with a final “show” that is owned by—and pleases everyone—including the audience!

DESIGN GUIDELINES

Based on direct observations of children using POGO, and our own experience as interaction designers, we formulate recommendations to designers of digitally augmented narrative environments. Most important:

- support expression through different media
- enhance direct experience during story creation as source of inspiration: use body and senses! Move about!
- allow children to collect content in their environment and to import it in the system
- allow children to discover content in an haphazard way
- support transformation and manipulation of physical and familiar objects
- allow freedom in choosing the modality of interaction with objects
- allow manipulation of content produced through different media
- provide facilities for children to record their oral expressions
- provide facilities for children to sensorially interact with content and to manipulate it

NEXT STEPS

Over and beyond the dichotomy between speech and writing [16], the futures of narration and literacy are likely to overthrow today’s predominantly verbal and textual approaches. “Literacies beyond print” [15], in other words, will be less “graphocentric” [18] and involve a richer combination of sensory modalities. Children’s growing fluency in digital authoring tools will contribute to the raise of what Ong refers to as “secondary orality”: the possibility to externalize thinking, i.e., project it onto a support that conserves it, *without* divorcing voice from world, text from context, authors from audiences [16]. POGO, tell-Tale, and Sprite offer new occasions for children to articulate physical and virtual, build narrative competences, and become ‘literate beyond print’. In an ideal world, our next steps would be to further explore the qualities needed to evolve a next-generation POGO, Tell-Tale, or Sprite; and in concert with their creators—and creative users—run new iterations to better their offerings.

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REFERENCES

1. Ackermann E. Bambini Digitali, Strumenti narrativi, scrittura dialogica. *Tecnologie Didattiche*, n.24, numero 3, 2001, 24-48. Also available in English at: <http://web.media.mit.edu/~edith/publications.html>
2. Ackermann, E., & Archinto, F. Bambini Digitali, Strumenti narrativi, scrittura dialogica. *Tecnologie Didattiche*, n.24, numero 3, 2001, 24-48.
3. Ananny, M. *Telling Tales: Supporting written literacy with computational toys*. Unpublished Master Thesis MIT Media Laboratory, 2001a. Available at: <http://www.media.mit.edu/~ananny/anannyThesis.pdf>
4. Ananny, M. & Cassell J. *Telling Tales: A new toy for encouraging written literacy through oral storytelling*. Society for Research on Child Development. Minneapolis. 2001b,
5. Bruner, J., Language, mind, and reading. *Awakening to literacy* (Goelman, Oberg, & Smith. Eds.), Oxford. Heinemann Educational Books, 1894. 15, 193-201.
6. Cioni, S. Daele, L., Dumoulin, JM., Decortis, F., Fusai, C., Marti, P., Petroni, L., Polazzi, L., Rizzo, A., Saudelli, B., Save, L. (2000). *Narrative Learning : school studies*. POGO/Usiena-ULG/pm-fd/00
7. Decortis, F., Rizzo, A., Saudelli, B. Mediating effects of active distributed instruments on narrative activities. *Interacting with Computers*. 15, 6, 2003. 801-830.
8. Decortis, F. & Rizzo, A. New active tools for supporting narrative structures. *Personal & Ubiquitous Computing*, 6, 2002, 416-429.
9. Ferreiro, E., Teberosky, A. *Literacy Before Schooling*. New Hampshire, UK: Heineman. 1982.
10. Ferreiro, E. L'écriture avant la lettre. *La production de notations chez le jeune enfant: Language, nombre...*, (Sinclair, Ed) Paris: Puf. 1988. 18-70.
11. Freinet, C. Pour l'école du peuple: Guide pratique pour l'organisaion matérielle, technique et pédagogique de l'école populaire. François Maspéro, Paris, 1969.
12. Karmiloff-Smith, A. *Beyond Modularity*. MIT Press, Cambridge, MA. 1992
13. Lankshear, C. *Changing Literacies*. Open University Press, Buckingham, Philadelphia. 1997
14. Malaguzzi, L. & Al. *I cento linguaggi dei bambini: Narrativa del possibile*. Proposte di bambini delle scuole dell'infanzia di Reggio Emilia. Italy. 1987
15. Olson, D. *The world on paper*. Cambridge University Press, London, 1994
16. Ong, W. *Orality and literacy*. Routledge, New York. Shankar, 1982.
17. Piaget, J. *Play, dreams, and imitation in childhood*. New York: W.W. Norton & Company, Inc. 1962
18. Rosenberger Shankar, T.. *Speaking on the Record*. PhD, Media Laboratory, Massachusetts Institute of Technology, Cambridge, MA. 2005

19. Sinclair, H. La production de notations chez le jeune enfant: Langage, nombre rythme, melodies. PUF, 1988.