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Digital Storytelling for Education

Theories and Good Practices in Preschool

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Introduction

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This Manual Book is part of the Erasmus+ STORIES project (forSTering early childhOod media liteRacy competencIES). It is the first product of the research project and also a tool that the research team and teachers will be able to use later in the project.

Children are now born into a media–dominated society. From very early infancy, they use and interact with technology so much that they are often referred to as "digital natives". Neertheless, such early exposure to and familiarity with technology does not necessarily translate into digital competency. The STORIES project explores this context, aiming to provide an opportunity to promote media literacy in kindergartens.

In particular, the objective is to contribute to the development of digital competency through Digital Storytelling which, as the name suggests, combines digital tools with narration. Man has been handing down knowledge since the beginning of time. Stories continue to be a way of teaching children. By telling children stories, adults create an experience and invite the child into an exchange.

And that's not all. According to Bruner (1990–1992), both adults and children are capable of narrative thinking. This means that we tend to organize and explain our experiences by narrating them.

Inviting children to make up stories (Storytelling) means nurturing their narrative thinking as well as a variety of other skills, including linguistic and creative ones. Digital Storytelling also stimulates digital competency.

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The STORIES project aims to a carry out an action–study involving a large number of infant school teachers and children. Drawing on the experience and guidance of the researchers, the teachers will plan and present Digital Storytelling projects to children. The aim of the projects is to encourage media literacy and narrative skills. Several partners are engaged in monitoring the effects of the experiences on language learning and creativity.

Four countries (IT, DE, TK, FI) and six partners are involved in the project.

COOPSELIOS (IT) is the project coordinator. It is a cooperative of services to the person and to infancy, leading body in pedagogical innovation, leveraging on and originally reinterpreting the well–known Reggio Emilia Approach. Coopselios ECEC services (infant–toddler centres and preschools) have many teachers already trained on the Storytelling paradigm/techniques, and participated in several projects introducing digital media at kindergartens.

UNIVERSITY OF MODENA AND REGGIO EMILIA (IT). It has experience in national projects about text comprehension / Storytelling with preschool children, using visual and audiovisual materials. Furthermore, it participated in the previous EU project CREANET for developing a creativity framework in ECEC, particularly valuable for the work with media.

COMPUTER LEARNING (IT). It is a Cooperative society expert in following any organisation (especially school institutions) in the process of acquiring and introducing new media technologies and devices according to their everyday life needs and practices.

JYVASKYLAN YLIOPISTO (FI). The research team, from Agora Centre, has both coordinated and participated in many national and international projects dealing with educational technologies. The team already worked in partnership with University of Modena and Reggio Emilia within the aforementioned EU project Creanet, investigating the relation creativity and technology.

MIMAR SINAN FINE ARTS UNIVERSITY (TK). The research group has competence in EU projects; ranging from Educational

Sciences (allowing cognitive science observations) and Graphic Design. It collaborates with University of Modena and Reggio Emilia in projects with local schools aimed at promoting and assessing children creativity at all levels.

PÄDAGOGISCHE HOCHSCHULE KARLSRUHE (DE). The research group is specialised in language learning in ECEC and has experience on the use of media in education (e.g., doctoral programme "Performing Media"). The university is currently involved in a project focusing on the use of Digital Storytelling for foreign language learning (English), in partnership with local schools, working in strong synergy with educators and external cooperation partners for the design of training practices.

This Manual Book is split into two parts.

The first part reconstructs the theoretical framework around the stories. In particular, it defines the pedagogical background to conventional and Digital Storytelling. A definition of Digital Storytelling is provided and the main teaching strategies presented, namely those which would be useful in Digital Storytelling for pre–school children.

The second part examines nineteen different Digital Storytelling practices for preschool groups used in European and non–European contexts in order to outline the key factors.

Pedagogical premises of Digital Storytelling

ANNAMARIA CONTINI, ALICE GIULIANI[*]

1. Overview of constructivism as learning theory

In recent decades, constructivism has revealed as a dominant paradigm in education: the emergence of this paradigm was related to pedagogy distancing from information transmission models centred on teaching toward knowledge–centred and learner–centred approaches, focusing on cognitive and social processes in learning (Kaufman, 2004).

Constructivism as an approach to teaching and learning has developed from psychology and information processing theories and recently has progressively included ideas from linguistics, anthropology, and sociology. The conceptual frame of constructivist education derives indeed from cognitive and social constructivism: the former is grounded in the work of Jean Piaget and highlights the cognitive development and individual construction of knowledge; the latter accentuates social construction of knowledge and is generally ascribed to the work of Lev Vygotskij.

Piaget's conception about learning is based on his theory of intellectual development, for which the child is constantly creating and re–creating his own model of reality, reaching mental growth by integrating simpler concepts into higher–level concepts at each stage. Piaget argued for a "genetic epistemology",

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a timetable established by nature for the development of the child's ability to think, and he defined four stages in that development. He described the child during the first two years of life as being in a sensorimotor stage, chiefly concerned with overcoming his own innate physical reflexes and extending them into pleasurable or interesting actions. During the same period, the child first becomes aware of himself as a separate physical entity and then realizes that the objects around him also have a separate and permanent existence. In the second, or preoperational stage, roughly from age two to age six or seven, the child learns to manipulate his environment symbolically through inner representations, or thoughts, about the external world. During this stage, he learns to represent objects by words and to manipulate the words mentally, just as he earlier manipulated the same physical objects. In the third, or concrete operational stage, logic in the child's thought prepares and the classification of objects by their similarities and differences occurs. During this period the child also begins to grasp concepts of time and number. The fourth stage, the period of formal operations, is characterized by an orderliness of thinking and a mastery of logical thought, allowing a more flexible kind of mental experimentation. The child learns in this final stage to manipulate abstract ideas, make hypotheses, and see the implications of his own thinking and that of others.

Learning therefore becomes a dynamic process that involves change, self–generation, and construction, each of them building on prior learning experiences occurred through reading, listening, exploration and other experiences. Piaget used the concepts of *assimilation*, *accommodation*, and *equilibrium* to explain how new information is shaped to fit with the learner's existing knowledge, and the same existing knowledge is modified to accommodate the new information. New experiences are assimilated and integrated into existing schemas or into schemas under construction through the process of accommodation; the outcome of these processes is equilibrium — the fulfilment of new understandings, coherence, and cognitive stability.

The new conception of learning demands a new idea of teaching as well. If the development of certain processes of thought was genetically programmed, it follows that is not possible to teach concepts just by simple reinforcement; the child's mental development would have to be at the proper stage. Thus, the teacher becomes not a transmitter of knowledge but a guide to the child's own discovery of the world.

On the other hand, Vygotskij affirms that children's thinking and meaning–making is socially constructed and comes out of their social interactions with their environment: children's learning is thus facilitated by parents, peers, teachers, and others around them in the community. Vygotskij's "zone of proximal development" is the level at which learning takes place: it consists of cognitive structures that are still in the process of maturing, but which can develop only under the guidance of or in collaboration with others.

Active engagement, pursuit of diverse paths to discovery, and external and internal scaffolding are central to the learning process: namely, external scaffolding supports learners' acquisition of knowledge by breaking down tasks into comprehensible components, modelling, coaching, providing feedback, and assigning responsibility for learning to learners; internal scaffolding involves the learner in reflection and self–monitoring to enhance acquisition of concepts. Teachers too are learners in this context: they observe and identify students' zone of proximal development (ZPD); design appropriate, authentic, and meaningful learning modules through problem solving tasks; and provide instructional support and scaffolding to propel students to construction of higher levels of understanding.
Another key contribution to constructivism in education is provided by Jerome Bruner.

According to Bruner, cognitive growth involves an interaction between basic human capabilities and "culturally invented technologies" that serve as amplifiers of these capabilities. These technologies include language itself: like Vygotskij, Bruner argues that language serves to mediate between environmental stimuli and the individual's response.

The mediation by language is one form of the third mode of representation. In his research on the cognitive development of children, Bruner (1966) proposed three modes of representation: *enactive representation* (action–based information), *iconic representation* (image–based), *symbolic representation* (language–based). Modes of representation are the way in which information or knowledge are stored and encoded in memory. Symbolic mode is the most adaptable form of representation, for actions and images have a fixed relation to that which they represent, while symbols are flexible in that they can be manipulated, ordered, classified, etc. Among symbols, language is important for the increased ability to deal with abstract concepts: the use of words can aid the development of the concepts they represent and can remove the constraints of the "here and now" concept.

Rather than neat age related stages (like Piaget), Bruner argues that the modes of representation are integrated and loosely sequential only as they "translate" into each other. Bruner's work suggests that a learner even of a very young age is capable of learning any material so long as the instruction is organized appropriately.

As a consequence of this view, according to Bruner the purpose of education is not to impart knowledge, but instead to help children constructing their own coding system for knowledge and becoming "autonomous learners". This is possible through the concept of the *spiral curriculum*: this holistic model involves information being structured so that complex ideas can be taught at a simplified level first, and then re–visited at more complex levels later on. Therefore, subjects would be taught at levels of gradually increasing difficulty (hence the spiral analogy). "Spiral organisation" identifies one of the principles of constructivism provided by Bruner: instruction must be concerned with the experiences and contexts that make the student willing and able to learn, as well as instruction must be structured so that it can be easily grasped by the student. Moreover, it is to be considered that instruction should be also designed to facilitate extrapolation and or fill in the gaps, going

beyond the information given as well: Bruner argued that the most effective way to develop a coding system to build one's own knowledge is to discover it by your own rather than being told it by the teacher. Therefore, the role of the teacher should be to facilitate students discovering the relationship between bits of information, without organizing for them.

It can be noticed that Bruner, like Vygotskij, claims for a social nature of learning, citing that other people should help a child develop skills through the process of *scaffolding*, whose concept is very similar to Vygotskij's notion of the zone of proximal development: it involves helpful, structured interaction between an adult and a child with the aim of helping the child achieve a specific goal. Bruners also insists that important outcomes of learning include not just concepts, categories, and problem–solving procedures previously invented by culture, but also the ability to "invent" these things for oneself.

Finally, Bruner's constructivism learning reveals as a process of discovery where learners construct their own knowledge with the active dialogue of teachers, building on their existing knowledge and pursuing the aim of "learning to learn" to become "autonomous learners".

The recently increased importance of the science of learning, knowing, and developing understandings has driven constructivism – with its emphasis on the related cognitive and sociocultural impact on learning – to a leading position in education. Constructivism has placed the learner's individual development at the focus of instruction and learning and has acknowledged the critical role in the learning process of endogenous factors and internal schema combined with exogenous social and cultural variables. The combined role of endogenous and exogenous variables must be taken into account to remove a common misconception that constructivist learning emerges from learners' knowledge without direct instruction from teachers is refuted: learners benefit from multiplicity of approaches and learning experiences as they obtain salient information in acquiring new knowledge; they also benefit from assistance by teachers

who attend to their interpretations and provide relevant guidance and scaffolding to promote meaningful learning. (Kaufman, 2004, p. 305).

The constructivist experience creates opportunities for learners to engage in hands–on, minds–on manipulation of raw data in quest of identifying new and increasingly complex patterns, acquisition of novel concepts and construction of new understandings. The benefits of constructivist–based educational settings for learners' academic, social, and affective growth have been widely documented (see for example Brooks, 2002).

2. Multiliteracy and media literacy

2.1. *New educational needs: multiliteracy*

The multiplicity of communications channels and increasing cultural and linguistic diversity in the world today request a much broader view of literacy than portrayed by traditional language–based approaches.
The term "multiliteracies" was coined by the New London Group, a group of ten academics from different countries (US, Australia, United Kingdom) who met at New London (New Hampshire) in the United States in September 1994. Their proposal was based on the finding that it was crucial to overcome the limitations of traditional approaches to negotiate the multiple linguistic and cultural differences and to create access to the evolving language of work, power, and community, and fostering critical engagement in our society (New London Group, 1996). They specifically aimed at giving a response to two significant changes in globalized environments:

― the proliferation of diverse modes of communication through new communications technologies, such as the Internet, multimedia, and digital media;

—   the existence of growing linguistic and cultural diversity due to increased transnational migration.

In order to face these changes, The New London Group (1996) proposes the formulation of "a pedagogy of multiliteracies" to replace the existing monolingual, monocultural, and standardised literacy pedagogy. The pedagogy of multiliteracies expands the focus of literacy from reading and writing to an understanding of multiple discourses and forms of representation, including visual, audio, spatial, and gestural, subsumed under the category of *multimodal*. Its approach thus requires the involvement of media literacy, which provides a framework to access, analyse, evaluate, create and participate with multimodal messages. Moreover, media literacy builds an understanding of the role of media in society as well as essential skills of inquiry and self–expression necessary for citizens of a democracy.

2.2. *The four keys of the multiliteracies pedagogical approach*

The multiliteracies pedagogical approach of the New London Group (1996) involved four key aspects: *Situated Practice, Critical Framing, Overt Instruction*, and *Transformed Practice*. These four orientations were subsequently translated by the Australian *Learning by Design* project into the "Knowledge Processes" of "Experiencing", "Conceptualizing", "Analysing" and "Applying". *Learning by Design* can be considered as a reflexive approach: it is based on the synthetic combination of the diverse knowledge processes as well as of elements of didactic and authentic pedagogy.

Here it is a brief description of the original keys–schema (cf. Biswas, 2014).

—   *Situated Practice* involves learning that is grounded in students' own life experiences. It connects with the tradition called "authentic pedagogy", first formulated as a direct counterpoint to didactic pedagogy in the twentieth century, initially

through the work of John Dewey in the United States and Maria Montessori in Italy. Situated Practice involves situating meaning making in real–world and everyday lives contexts and takes account of the affective and sociocultural needs of learners who are culturally and linguistically diversified. This aspect of the curriculum needs to draw on the lifeworld experiences of students, as well as their out–of–school communities and discourses, as an integral part of the learning experience.

In order to apply Situated Practice to curriculum realities, Cope & Kalantzis (2009) reframed it as "experiencing" (p. 184). Experiencing takes two forms:

a) experiencing the known: it involves showing or talking about something familiar–listen, view, watch and visit, reflecting on learners' own experiences, interests and perspectives (Cope & Kalantzis, 2015);

b) experiencing the new: learners are immersed in new situations or information, observing or taking part in something that is new or unfamiliar, but within the zone of intelligibility and close to their own life–worlds.

However, the New London Group (1996) points out limitations to Situated Practice. First, it does not necessarily lead to awareness of what one knows and does not even lead to critique reflection on historical, cultural, political, or value–centred relations about learning objects. Moreover, learners might be incapable of reflexively enacting their knowledge in practice. Therefore, they clarify that Situated Practice must be supplemented by other components.

— *Critical Framing* helps students to derive their own meanings from classroom activities, which encourage them to think, understand, and negotiate their ideas, realizing and respecting diverse knowledge perspectives.

Different prospects of critical framing are crucial to include students' pleasure and experience from family, friends, popular culture, social media, and language in the process of making

text. Critical Framing in multiliteracies thus requires an investigation of the socio–cultural contexts and purposes of learning and designs of meaning, but it also helps to acknowledge increased socio–cultural contextualisation and diversification of text–types. The traditional curricula operate on various rules of inclusion and exclusion in the hierarchical ordering of textual practices, often dismissing text types such as picture books or popular fiction. Similarly, items like blogs, emails, websites, and oral discourses as well may often be overlooked as "inferior literacies". Multiliteracies pedagogies are instead aimed at critically framing and reconceptualising traditional notions of writing: it argues the varying affordances of different modes and how writing become just one part of the multimodal ensemble.

— *Overt Instruction* is the direct teaching of "metalanguages" in order to help learners understand the components of expressive forms or grammars: for example, teachers can provide systematic instructions about classroom tasks towards the explicit explanation of different modes of meaning. However, Overt Instruction is not direct transmission, drills, and rote learning: it includes the kinds of collaborative efforts between teacher and student in which the student can do a task that is much more complex than the task s/he can do it individually.

The original view of Overt Instruction includes the teachers and other experts supporting students through scaffolding and focusing on the important features of their experiences and activities within the community of learners. Teachers allow the learner to gain explicit information at times by building on and using what the learner already knows and has achieved.

This dimension of literacy pedagogy was reframed and translated in the Learning by Design project into the Knowledge Process of "Conceptualizing". Conceptualizing involves "the development of abstract, generalizing concepts and theoretical synthesis of these concepts" (Cope & Kalantzis, 2015, p. 19). Using these knowledge processes, learners can categorise terms, and collect these into interpretative framework: they include, for example, drawing a diagram, making a concept map, or

writing a summary, theory or formula which puts the concepts together.

Both teachers and students can explore possible pedagogies for classroom activities. For instance, teachers can suggest that students use "graphical concept map features" for creating an interactive concept–map of their classroom learnings. Afterward, teachers can guide students to clarify what, why, and how these techniques improve their learning processes in technology–integrated environment.

—   *Transformed Practice*, originally framed by the New London Group (1996), is embedded in *authentic learning*, where activities are re–created according to the lifeworld of learners. It involves applied learning, real–world meanings, communication in practice, and applying understanding gained from Situated Practice, Overt Instruction, and Critical Framing to a new context.

Transformed practice might encourage students to connect their learning experiences with their daily classroom tasks. Teachers can help students engage in reciprocal conversations that transfer ideas from one cultural situation to another. Learners can reflect on what they have learned while they engage in reflective practice based on their personal goals and values in new contexts.

Technology – aided educational tools can be used to transform information into knowledge and fulfil diverse language learners' styles and needs (Egbert, 2004): for instance, combining text with graphics, arts, music, and other visual elements in classroom activities can encourage students to comprehend the learning process.

Transformed Practice subsequently underwent reformation and was renamed "Applying" as part of "Knowledge Processes". Applying is considered as the typical focus of the tradition of applied or *competency–based learning* (Cope & Kalantzis, 2015). While learners actively learn by applying experiential, conceptual or critical knowledge in the real world, learners act on the basis of knowing something of the world,