Progetti della Ricerca
Raccolta dei poster scientifici

Agosto 2016

Centro scuola e società
CSS
Progetto FNS Sinergia
Il sapere della scuola e la sua definizione
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Introduzione
Il progetto, realizzato in collaborazione con UZH (Lea-
ding-house), UNICE, PHFHN e PHZH, da tre anni stu-
dia il progresso del sapere della scuola e delle politiche che portano alla sua definizione nel contesto della Sviz-
eria plurilingue e federalista.

Risultati
Il progetto è ora nella sua fase conclusiva che sfocia
nella pubblicazione di un volume collettare e in un
convegno internazionale a Zurigo (2-3 febbraio 2017).

Obiettivi della ricerca
Gli obiettivi del progetto erano i seguenti:
- Raccolta di dati e materiali, su un campione ampio di
  Cantoni, relative al sapere della scuola (piani di studio,
  libri di testo ecc.) e ai discorsi e le costituzioni di attori
  in cui esso viene definito (discussioni nelle riviste ma-
gistrali, atti parlamentari, regolamenti scolastici ecc.).

Bibliografia
Sahlfeld W. & alii (2016). Federazione: riviste di innovazione e transfert pedagogici (la casa della scuola, sedione monografica degli "Annali di Storia dell'educa-
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agosto 2016

AutoPlay

An objective and free of context conditioning system for the evaluation of very young children ludic development

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Introduzione
For many years psychologists have been interested in the relationship between play and child development, and have proposed many models describing this connection, especially in a cognitive perspective. However, an thorough knowledge of infants’ play, especially within the first two years of their life, hasn’t been reached yet. Undeniably, an infant manifests a particular sensory-motor pleasure in the sphere of play. An in-depth comprehension of how she/he approaches and manipulates toys would significantly increase the general understanding of children development, and above all, it may serve as an early indicator for developmental delays.

AutoPlay is a feasibility study funded by SUPSI and part-
nered by Centro Pediatrico del Mendrisiotto (Mendrisio) and Hautes écoles de santé, HES-SO (Lausanne).

Obiettivi della ricerca
The project aims at creating a friendly and unobtrusive solution for recognizing abnormal profiles of ludic development (i.e., autism), in their early manifestation stage. AutoPlay toolkit (see Fig. 1) could be regularly used by pediatricians and parents, allowing early diagnosis and treatments, improving their effectiveness, and, hopefully, paving the way for societal trend inversion of neuro-developmental disorders.

Descrizione
AutoPlay aims at acquiring new knowledge about the natural evolution of play in infants. With this project we foster an innovative multidisciplinary approach, designing a practical tool-set that gives an objective interpretation of the collected data, from a social and clinical standpoint. We instrumented classical toys (exploratory, sensory-motor and functional classes of play), embedding them with sensor nodes. These were then used to collect data while infants play in a context-free environment. Data are currently being analysed to identify relevant activity patterns and to follow their evolution.

Risultati
Data analysis (still ongoing), together with the results of the technological and the clinical studies, has allowed so far to differentiate manipulation patterns within three main classes:

• The Repetition Class regards repetitions of a certain movement (i.e., rolling a wheel on itself), repetitions of a certain game or movements patterns (i.e., throwing the ball, taking it, throwing it again).
• The Explorative Class comprehends children actions related to the analysis of the toy object, looking for information: usually an exploratory action is performed by the child creating a contact between the toy and the environment (e.g., the child’s mouth, the floor, another toy, child’s mother/father/educator) looking for the differences in the produced sounds. Children look for a physical feedback from the manipulated objects, and in such a way they develop better feedforward abilities.
• The Functional Class comprehends children actions related to the intended use of the toy (i.e., usage of the spoon to feed, movement of the car as a car is supposed to move). This is the class of actions which is already widely assessed by pediatrician during their regular child monitoring visit.

Discussione e conclusioni
Initial results have been really promising, although the data analysis phase and the related discussion has not been completed yet. The project clearly opens to further investigation and the next research steps are currently being designed (see Fig. 2), in order to complete and reinforce the results of the study described here. The multidisciplinarity of the research team (made up of experts in neuro-developmental disorders, mobile computing, sensors and signal processing, statistical data analysis, language acquisition, specific learning disorders, social science and Quality-of-life Technologies) has proved crucial for the success of the research work carried out so far and will be of paramount importance for the next steps of the AutoPlay project, whose ultimate goal is the promotion of social innovation through a systematic change in children playing assessment.