Early Childhood Education Using Robot in Korea - Current Progress and Prospects

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- Establishing a robot-based learning (R-learning) system as part of the child education advancement plan (November '09).

R-learning project of MEST

- Designed to maximize the synergies of combining education and scientific technologies since '08.
Children’s Life with Robots

- Home Robot
- Personal Robot
- Pet Robot

- Educational Robot
- Medical Robot
- Serving Robot

Children’s Life

Home

Educational Institution

Social
Definition of R-learning

- **Narrow**
  - Supply of Young children education contents & robots according to the curriculum

- **Wide**
  - Shift to digital education
  (Robot + contents + education program + physical environment)
Example (1-1): Attendance Check
Example (1-2): Attendance Check
Example (2-1): Portfolio
Example (2-3): Portfolio

Parents can see their children's works in real time.
Conceptual Diagram

Kindergarten

Content Development Firms:
Kindergarten teachers jointly participate in the development of content

Children’s parents-homes, offices

Atte

Development check

kindergarten Server Computer

Wireless Lan

Developing field-tailored content

kindergarten teacher

Developing field-tailored content

Kindergarten teacher: Using teaching materials and robot for education
Advanced education by interacting with children: Children’s song & story, photos, videos
Purpose of R-learning

- Experiential education system
  - Education based on robot-human interaction
  - Experiential/empirical learning system
  - Rich and customized two-way education

- Sustainable education
  - Addressing the inequality by region, level and ability
  - Narrowing the foreign language education gap
  - Reducing the private education costs
Summary of 2010 Project

• **Nov 09 ~ Jan ’10**
  - Announcement of the project plan, and launch of Center for the R-learning at KIST

• **Feb ‘10 ~ Jul ‘10**
  - operation of a committee comprising business, academia, and government personnel engaged in child education
  - The robots provided explanatory and training sessions to 10 of 16 offices of education in the various cities and provinces.
  - Diffusion of R-learning systems to 500 Kindergartens nationwide

• **~ Dec ’10**
  - Diffusion of R-learning systems to about 1000 Kindergartens
In the first half of 2010, authorized R-learning robots, iRobi Q by Yujin Robot Co. and Genibo edu by Dasa Robot Co., are being circulated among kindergartens nationwide that were selected for the pilot operation.
• Teaching-Learning Plans
Explanatory Sessions & Teacher Training
Controversy on Technology

The functional & dysfunctional aspects of technology

Young Children adapt easily to Digital World: needs of a novel educational environment and methods

Young Children should be learn in a natural environment without computers, textbooks etc.
Thank You !!

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