A Case Study of Distance Education for Informatics Gifted Students

JeongWon Choi
Korea National University of Education, Korea

SangJin An
Korea National University of Education, Korea

YoungJun Lee
Korea National University of Education, Korea

EXECUTIVE SUMMARY

This chapter analyzes cases in which programming was developed via e-learning in informatics gifted classes in Korea. The gifted class, which aimed to improve computational thinking and problem-solving ability, received the algorithm and programming education and experienced the design and implementation process of a programming project entitled "Interactive Movie Production through Scratch Programming" through the creation of a learning group. The learners received gifted education via e-learning systems, such as video lecturing, video conferencing, and smart phones. However, there was much difficulty in providing appropriate feedback and scaffolding to resolve the trial-and-error issues experienced during the programming learning process, which involved learning flow interruptions of the learners, which in some cases caused them to give up on the learning process. To overcome this difficulty, the selection of educational content appropriate for distance learning was regarded as important, and algorithm learning utilizing puzzles was proposed as an alternative. Puzzles can encompass learning content using texts and

images while also providing feedback and scaffolding appropriate for learners via suitable learning document compositions and descriptions of the problem solving process while also evaluating the learner's ability in detail.

ORGANIZATION BACKGROUND

Traditionally, Korea has considered promoting gifted students as one of the most important roles that a nation can fulfill, expending great effort to discover and educate the gifted students who will lead the future society in a variety of areas. In particular, gifted education has concentrated on mathematics, science, informatics and inventions by focusing on the science and engineering sectors, which can affect the advancement of state-of-the-art technologies and industries.

Terms and Definitions

'Informatics education' usually regarded as computing education in Korea. In the past, 'computer education' and 'ICT education' are used to mean computing education. In the 2007-revised national curriculum, the name of the subject related ICT and computer science changed to 'informatics', so informatics encompasses computer education, ICT literacy education, and computer science education. Though, the focus of informatics has changed to computer science now, informatics education has a comprehensive meaning that includes education for all computing-related contents. 'Informatics gifted education' also means the education for the gifted and talented students in computer science.

Educational System for Gifted Students

The main parties that operate gifted education programs in Korea are the Offices of Education in metropolitan areas and provinces around Korea and universities. Gifted students are selected via a selection process and are assigned to gifted classes operated by a school or are assigned to a regional collaborative gifted class operated by affiliated schools in that region. Furthermore, these students can attend institutes for gifted education operated by the local Offices of Education or other institutes for gifted education operated by science high schools, schools for the gifted, or education and science research institutes to take a high level of gifted education. The gifted education courses operated by 25 universities around Korea are managed by the Science Gifted Education Institution supported by the Korea Foundation for the Advancement of Science & Creativity. There are also gifted education courses

Related Content

Role of AR and VR in the Context of Technical Education

Dharmesh Dhabliya, Ankur Gupta, Anishkumar Dhablia, Sukhvinder Singh Dari, Ritika Dhabliya, Jambi Ratna Raja Kumarand Sabyasachi Pramanik (2024). *Embracing Cutting-Edge Technology in Modern Educational Settings (pp. 163-183).*

www.irma-international.org/chapter/role-of-ar-and-vr-in-the-context-of-technical-education/336195

Association Bundle Identification

Wenxue Huang, Milorad Krneta, Limin Linand Jianhong Wu (2009). *Encyclopedia of Data Warehousing and Mining, Second Edition (pp. 66-70).*

www.irma-international.org/chapter/association-bundle-identification/10799

Guide Manifold Alignment by Relative Comparisons

Liang Xiong (2009). *Encyclopedia of Data Warehousing and Mining, Second Edition (pp. 957-963).*

www.irma-international.org/chapter/guide-manifold-alignment-relative-comparisons/10936

Pattern Synthesis for Nonparametric Pattern Recognition

P. Viswanath, Narasimha M. Murtyand Bhatnagar Shalabh (2009). *Encyclopedia of Data Warehousing and Mining, Second Edition (pp. 1511-1516).*

www.irma-international.org/chapter/pattern-synthesis-nonparametric-pattern-recognition/11020

Legal and Technical Issues of Privacy Preservation in Data Mining

Kirsten Wahlstrom, John F. Roddick, Rick Sarre, Vladimir Estivill-Castroand Denise de Vries (2009). *Encyclopedia of Data Warehousing and Mining, Second Edition (pp. 1158-1163).*

www.irma-international.org/chapter/legal-technical-issues-privacy-preservation/10968