

# Using Standardization for Fair Data Evaluation

Kyongho Cho\*, Taeseon Yoon\*\*, Sunghee Park\*, and Dohyeon Park\*\*\*

\*Education, Gachon University, Seongnam-daero, Sujeong-gu Seongnam-si Gyeonggi-do South Korea

\*\*Computer Science and Engineering, Korea University, Anam-ro, Seongbuk-gu Seoul South Korea

\*\*\*Natural Science, Hankuk Academy of Foreign Studies, Mohyeon myeon wangsari 522 Gyeonggi-do South Korea

*hispano@hafs.hs.kr, tsoon@hafs.hs.kr, sungheepark@gachon.ac.kr, 9parkdoh9@naver.com*

**Abstract**— Evaluation on a specific criteria is divided into quantitative evaluation and qualitative evaluation, the former can clearly depict scores in objective manner while the latter is obscure to measure. To reduce the obscurity, we used formula of Z-score and T-score through 'standardization of normal distribution'. To testify the effect, we set a simulation of two groups of which consisted 3 interviewers and 5 interviewees. The result after using the method lead to equal mean and equal standard deviation regardless of different interviewers. Also, by using T-score, we again rearranged scores once again by using T-score, in order to enable comparing between criteria possible. By doing so, we summed up the altered scores, and arranged the ranks of interviewees from the highest to the lowest. This proved to be effective on reducing obscurity compared to raw scores' sum up.

**Keyword**— Evaluation, standardization, quantitative, qualitative, z-score



**Kyongho Cho** was born in Seoul, Korea in 1972. He received the B.A., M.A. and the Ph. D candidate degree in Spanish linguistics from Hankuk University of Foreign Language, Seoul, Korea in 2002. He served on the research staff at BK 21 *Cervantes* Team until 2004. Since March 2007, he has served as Spanish and Latin language teacher in Hankuk Academy of Foreign Studies, Yongin, Korea. And he has been a visiting professor of the Spanish Department, since March 2013, teaching Spanish Test *DELE* Class to Senior students in Cyber Hankuk University of Foreign Language, Seoul, Korea. Since March 2016, he has been in a doctoral course, gifted education, at Gachon University, Seongnam, Korea.



**Sung Hee Park** received the B.A. and M.A. degree from Ewha Womans University, Seoul, Korea and Ph. D degree from Purdue University, West Lafayette, USA. She is currently an associate professor of the Graduate School of Education in Gachon University, Korea. Her research interests include e-learning, technology integration in education, and gifted education.



**Taeseon Yoon** was born in Seoul, Korea, in 1972. He received the Ph.D. candidate degree in computer education from the Korea University, Seoul, Korea, in 2003. From 1998 to 2003, he was with EJB analyst and SCJP. From 2003 to 2004, he joined the Department of Computer Education, University of Korea, as a lecturer and Ansan University, as an adjunct professor. Since December 2004, he has been with the Hankuk Academy of Foreign Studies, where he was a computer science and statistics teacher.