

Developing an Effective ESP Course for Engineering Students Integrating Analysis with NIRS

Rumi Tobita

Ashikaga Institute of Technology
Ashikaga, Tochigi, Japan

Abstract

The present study examined the effectiveness of analysis with near-infrared spectroscopy (NIRS) for EFL listening training from the viewpoint of brain science. The data suggested that the analysis enabled to propose the well-matched combination of listening materials and training for Japanese engineering students. Recently activities of brain can be monitored and some researchers have pointed out that these data can be utilized the assessment of effectiveness of EFL teaching in Japan. The present study analyzed the amount of blood flow in brain while learners were learning English and examined relationship between brain activities and results of learning to try to clarify the preferable combinations of learners' characteristics and materials to teach English conversation with NIRS. NIRS is widely recognized as a practical non-invasive optical technique to detect characteristic of hemoglobin density dynamics response during functional activation of the cerebral cortex. The more the amount of blood flows, the more hemoglobin oxygenation gains; measuring the amount of blood can show the state of brain activation induced by the differences of teaching materials. From the experimental, the well-matched combination of listening materials and training for Japanese engineering students was suggested.

Biographies

Rumi Tobita is an associate professor of department of Innovative Engineering, Ashikaga Institute of Technology in Japan. Ms. Tobita holds a Bachelor of Liberal Arts degree in Language Education, a Master of Education degree in Audio-Visual Education, and certification of Doctoral Candidate in Audio-Visual Education from International Christian University, Tokyo, Japan. Her research topics are Computer Assisted Language Learning (CALL), Educational Technology, Curriculum Development, English Program Development, English for Specific Purposes, Extracurricular activity and International Exchange Program Development, and Brain Science. She has taught several fields of courses such as Educational Technology, Social Information, Brain Science besides English courses for engineering students for more than 10 years. She is committee member of The Japan Association for Language Education and Technology (LET) and also local organizing committee of World CALL 2008.