

SKL 2015

International Workshop on Skill Science

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1 Aims and Scope

Human skills involve well-attuned perception and fine motor control, often accompanied by thoughtful planning. The involvement of body, environment, and tools mediating them makes the study of skills unique among researches of human intelligence. The symposium invited researchers who investigate human skill. The study of skills requires various disciplines to collaborate with each other because the value of skills is not determined solely in terms of efficiency, but calls for consideration of quality. Quality resides in person and often needs to be transferred through apprentice systems. The procedure of validation is strict, but more complex than scientific activities, where everything needs to be described by referring to data. We are keen to discussing the theoretical foundations of skill science as well as practical and engineering issues in the study.

2 Topics

We invited wide ranges of investigation into human skills, from science and engineering to sports, art, music, craftsmanship, and whatever concerns cultivating human possibilities. Thirteen pieces of work were presented at the workshop, including one invited lecture. Four selected pieces of work are included in the issue from our workshop.

The article titled “The Trend in the Frontal Area Activity Shift with Embodied Knowledge Acquisition during Imitation Learning of Assembly Work”, written by Asaka and co-authors, reports how they identified motor learning process in the brain using near-infrared spectroscopy. Another article titled “Identifying Context-dependent Modes of Reading”, written by Fuyama and Hidaka, proposes a method to detect processes running in subject’s mind while reading books. The third article titled “The Cognitive Role of Analogical Abduction in Skill Acquisition”, written by Furukawa and his colleagues, employs a logic approach to studying cellist’s skill to propose a cognitive model of skill acquisition. The other article titled “Whole-body coordination skill for dynamic balancing on a slackline”, written by Kodama and his colleagues, reports how they traced the coordination developed in the whole body while subjects learnt to balance themselves on a slackline.

The workshop organizer is honored to present these reports, which deal with varieties of issues from theoretical to practical problems. He hopes that the reader will also find them interesting and will be interested to study human skills.