美術留学希望者に対する
ドローイング学習支援環境の構築と運用

Develop and operate an environment to support drawing learning for arts students

永井 孝[1]

Takashi Nagai[1]

[1] ものつくり大学 技能工芸学部
[1]Institute of Technologists, Faculty of Technologists

Abstract: Drawing is one of the fundamental skills in art education. All beginners must acquire these kinds of skills first [1,2]. Learning related to art requires repeated practice with a trial-and-error process [3,4,5]. Therefore, to learn drawing is categorized as skill-learning [6]. In this type of learning, novices cannot recognize whether or not they draw correctly and appropriately. As a result, their learning becomes slower and more redundant. As a traditional drawing skill development, instructors can assess all of their students' final works. However they cannot view their students' drawing processes and cannot assess them. All drawing techniques which are requisite and basic for professional art education are included in the drawing process. If a student wants to enter an art college, these techniques are necessary. The purpose is to capture and assess these drawing techniques by using geometrical analysis of drawing process. We had found some pedagogy about drawing learning based on geometrical analysis of drawing process and had developed a drawing learning support e-learning system based on the open source CMS. By using these achievements, a certain Japanese art school has started the drawing as his regular class since 2013. In the drawing class, all of our students use the digital pens as their drawing materials. Geometrical data of student's drawing process is automatically recorded in this pen and transmitted to our system. Our system can analyze these data. So far, over 1000 drawing processes by about 120 users have been stored in our system. Our users are students and instructors in the drawing class. Our system provides the drawing process viewer for our users. By using this viewer, each student can check geometrical features of his drawing and replay his drawing processes. Moreover, each student can compare two drawing processes of other students' or instructors'. In other word, our system can provide asynchronous observational learning. By using this function, we have fostered the awareness for correct drawing techniques and improvement drawing skill.

参考文献

[1] Sato K. : "Developmental Trial in Drawing Instruction at Art/Design Universities", Shizuoka University of Art and Culture bulletin, 4, pp.153-162 (2004) (in Japanese).

[2] Sekine E. : "A Trial to develop the ART SYSTEM", Art Education, 6, pp.89-100 (1984) (in Japanese).

[3] Bernstein, N. : "The Co-ordination and Regulation of Movements", Pergamon Press, NY (1967).

[4] Latash, M. L. : "Progress in Motor Control", Vol.1, Bernstein's Traditions in Movement Studies, Human Kinetics: Urbana, IL (1998).

[5] Latash, M.L. : "Progress in Motor Control", Vol.2, Structure-Function Relation in Voluntary Movement, Human Kinetics: Urbana, IL (2002).

[6] Furukawa K. : "Skill Science", Journal of Japanese Society for Artificial Intelligence, 19(3), pp.355-364 (2004) (in Japanese).