

# アクティブラーニング

## ——人体解剖学の学習——

カーン ファイアーズ アハマド

### Introduction

## Active Learning: Learning Human Anatomy

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### Abstract

Learning anatomy in a foreign language can be difficult for some Japanese medical students. A core educational theory, “social constructivism” and the principle derived from it can help learn the subject through the active learning approach. Active learning is necessary to equip the learners for the international community where connections with doctors, academics and researchers is essential for knowledge translation.

### 要 約

外国語で解剖学を学ぶことは一部の日本人医学生にとっては難しい。主要な教育理論である”社会構築主義”とそれに由来した原則は、アクティブラーニングの取り組みは学習に役立つとしている。アクティブラーニングは生徒が国際社会で医師・教員・研究者と知識を共有するツールを身につけるのに必要である。

### キーワード

アクティブラーニング (Active learning)

解剖学 (Anatomy) / 英語 (English)

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## 1. Introduction

In the educational context, constructivism as a paradigm is a process where learners actively construct an understanding and modify their knowledge from perceptions and experience as viewed by Piaget<sup>(1)</sup>. Further development of new knowledge can occur in a zone of proximal development (ZPD) with social interaction and this theory ‘social constructivism’ was elaborated by Vygotsky<sup>(2)</sup>.

A key principle based on Piaget’s and Vygotsky’s theories, that the connections between existing concepts and new ones will help the construction of new content and language knowledge, where the existing knowledge serves as a foundation; every Japanese student can learn alone in their ‘distinctive ways’ and further learning occurs when learning actively with some help. With the Vygotsky’s theoretical framework<sup>(2)</sup>, the social interaction with other learners and the tutor must play an important role in the development of understanding and to construct new knowledge. New concepts and links to existing knowledge occur when the learner is actively involved in the classroom.

## 2. Materials and Methods

Since the introduction of ‘active learning’ by Revans<sup>(3)</sup>, many benefits like the learners being actively involved in a learning process was described by Bonwell<sup>(4)</sup>. Applying this principle to medical students in Japan can be a challenge as cognitive, cultural and language processes are involved. Teaching anatomical concepts and terminology in English is practical after the students have learnt them in Japanese in their dissection classes first. These students are then ready to move to the next phase as described by Chaiklin<sup>(5)</sup> who divided the ZPD into subjective and objective. With subjective ZPD, the learners’ capabilities are realizing the requirements of the next phase. Lesson plans focusing on the Knowledge and Comprehension portion of the Bloom’s cognitive Taxonomy<sup>(6)</sup>, can help the students to interact and learn in a meaningful way. Since learning is based on prior knowledge, the students find it helpful to do a ‘fill in the blanks’ and answer five questions in English before they come to the class. At the beginning of the class, the students can be divided into groups to watch a narrated anatomy video related to the handout. The video is stopped at key points so that the students discuss their answers to the five questions in groups.

## 3. Discussion

The video helps the learners to retrieve what they had learnt in their dissection classes. During the class, the group discussion is a challenge because most Japanese students are shy to ask questions. Some students might not understand everything that is said in the narrated video and may not discuss as much as the other students who are more proficient in English. Conceptual changes occur when the students are

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encouraged to move around the classroom to collaborate with other capable learners. As far as the Japanese students' learning style in anatomy is concerned, there is no major preference as they prefer minor learning modalities like auditory and kinaesthetic from the VARK model<sup>(7)</sup>. The students modify their knowledge in the group discussions because they also use a little Japanese when it is difficult to understand something. Most students work out the contents of the video from the five questions, even though they might have not fully comprehended the narration. The facilitation of each group with language correction during the collaborative learning is important. Towards the end of the class, the learners receive a transcript of the video. The students also complete a feedback paper by listing the important things they have learnt in the class and by comparing them to the important things identified in the video.

## 4. Conclusion

More learning takes place in the anatomy classes with social constructivism<sup>(2)</sup>. Japanese students can learn by actively interacting with other learners in the target language during a task as this leads to improved comprehension and modification of knowledge<sup>(2),(8)</sup>. This would prepare the learners in the application of what they have learnt later in their careers. Learning Anatomy in English would be more suitable for the students that have learnt anatomy in Japanese first then later reinforcing the concepts through discussions in English leads to new vocabulary, improved pronunciation and knowledge.

Active learning is new to Japan and in the view of globalization, it has been brought to the attention of some medical schools to teach the medical sciences in English. This will help in the collaboration with health professionals across the borders which can expand the communities of practice, improve health care systems and hopefully lead to breakthroughs in the medical sciences.

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