

EFFECTIVENESS OF LEARNING ASSISTANTS ON STUDENT'S ACTIVE LEARNING IN COLLEGE STEAM COURSES

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This guy is a LA.



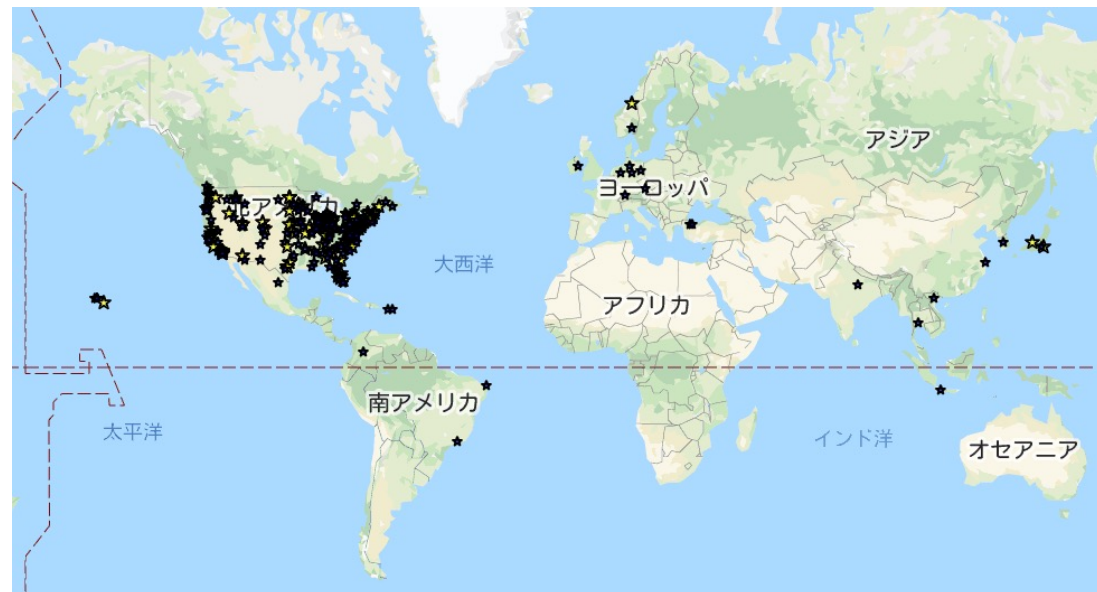
Research Question

- What are the benefits of introducing undergraduate LAs into the classroom?
- Research Methods
 - conducted questionnaire surveys at three universities in Japan

1. Introduction

What are Learning Assistants?

- Definition by the Learning Assistant Alliance
 - Learning Assistants are **undergraduate students** who, through the guidance of weekly preparation sessions and a pedagogy course, facilitate discussions among groups of students in a variety of classroom settings that encourage active engagement.



2,351 members at 503 institutions

Origins of Japanese LAs

- 1990
 - Keio University opened a new campus far from Tokyo for liberal arts, science, and technology education
 - They hired undergraduate students as “Student Assistants”



The first campus in Japan has hundreds of Unix workstations connected to the Internet.

The Keio Spirit

- *Hangaku Hankyo* (半学半教) : learning while teaching, teaching while learning

“There is no division between teacher and student, and those who learn first teach those who want to learn later.

This has been the spirit of the school since its inception: teachers and students are half teaching and half learning”



Yukichi Fukuzawa founded Keio in 1858.

“Hironaka” Report

- 2000
 - “Measures to Enhance Student Life at Universities” by the Japanese Ministry of Education
 - it was desirable that, not only graduate students but also senior undergraduate students should be actively given opportunities to be learning assistants in education



The chair of the council, Heisuke Hironaka is a professor emeritus at Harvard University and the second Japanese recipient of the Fields Prize in 1970.

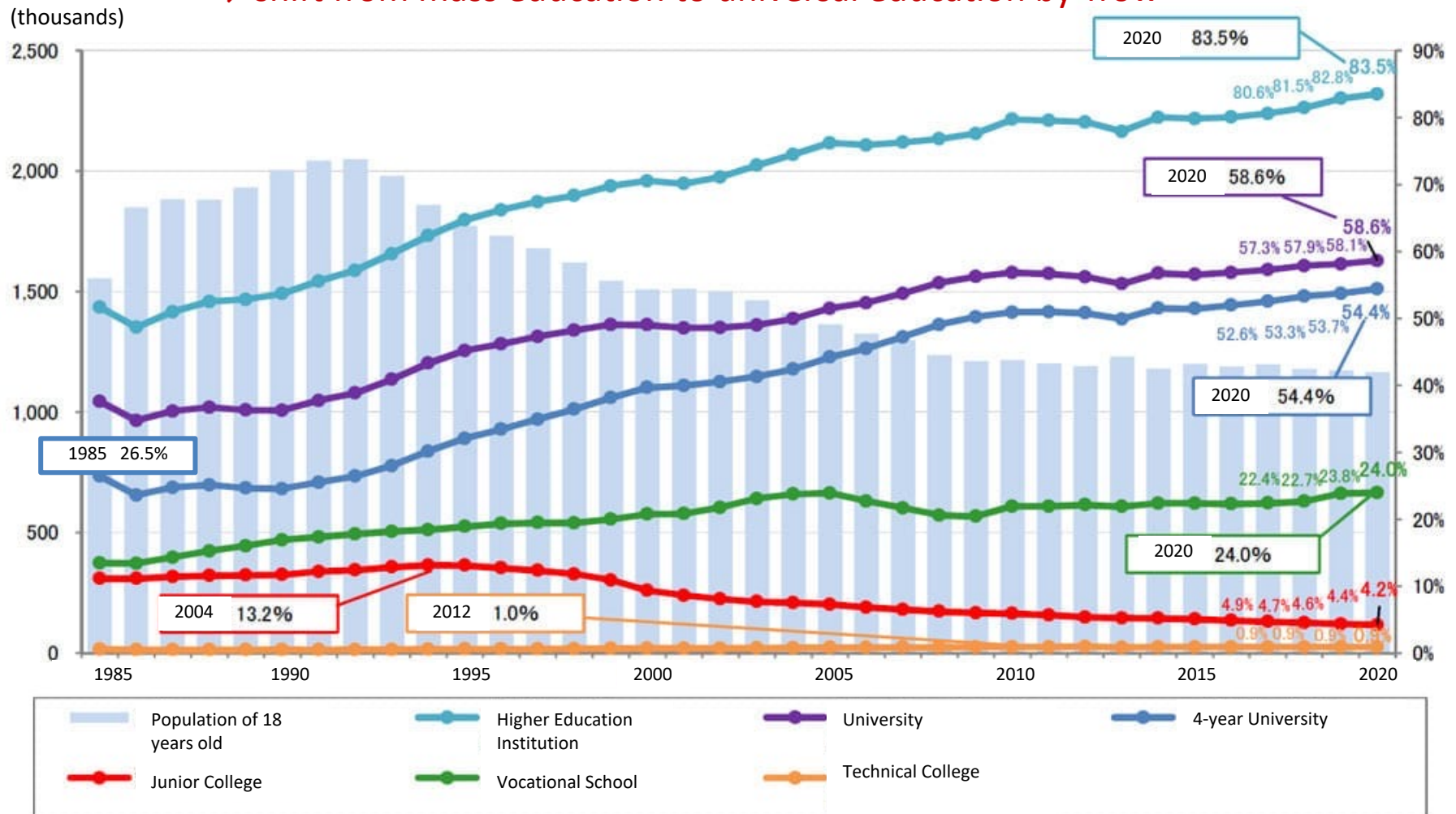
Paradigm Shift

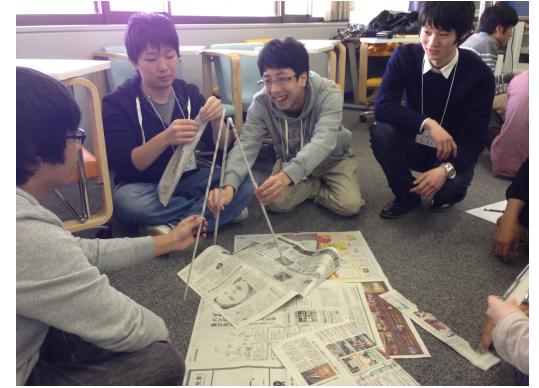
- From Teaching to Learning
 - In 2009, Japan's four-year college enrollment rate exceeded 50 percent.
 - Japanese universities had to shift from mass education to universal education (Trow)
 - From 2000's, Japanese universities have made an effort to qualitatively shift
 - From one-way teaching to active learning
 - From knowledge input-oriented courses to courses for competency development
 - Therefore, traditional Professors needed in-class assistants/facilitators

Enrollment Rate

4-year college enrollment has more than doubled in 35 years

→ shift from mass education to universal education by Trow





2. Related Researches

Benefits of introducing LAs into classes

University of Colorado Boulder

1. Benefits to faculty who use LAs	2. Benefits to students in courses that use LAs
<ul style="list-style-type: none"> • LAs can help faculty learn and understand about active learning and other evidence-based teaching "best practices." • LAs can help faculty design tasks and activities. • Faculty can use LAs as "virtual students. (Faculty can test lesson plans and ideas on LAs.) • LA program connects faculty from different departments, encourages collaboration and sharing of ideas. 	<ul style="list-style-type: none"> • LAs facilitate active learning, which has been shown to improve grades, retention, confidence, etc. • LAs have learned the course material quite recently, so they are often better able to relate to students' difficulties in learning. • LAs provide extra help (they have office hours in a "help lab," they can run review sessions, and so on). • Students in classes with LAs generally do better and learn more.
3. Benefits to the LAs themselves	4. Benefits to departments and institutions
<ul style="list-style-type: none"> • The best way to learn a subject is to teach it! LAs have the opportunity to learn a subject more deeply. • LAs get experience teaching. Some are inspired by the LA experience to become teachers. • By reflecting on teaching and learning, LAs learn more about themselves and their own education. • LAs make important connections with faculty. • LAs get course credit for their content and pedagogy courses. • LAs get paid. • LAs have an impressive experience to put on their resumes. 	<ul style="list-style-type: none"> • An LA Program can transform departmental culture. • By having an LA program, departments are engaging more actively and thoughtfully in teaching their undergraduates. • Teaching becomes more respected. • Faculty see that some of their best students become LAs, and this helps faculty recognize the value and intellectual merit of teaching.

(Stade, 2018)

Related Researches

- Otero and Finkelstein (2010)
 - LA Program has significantly increased the number of STEM majors earning secondary teaching certifications
- Gray, Webb and Otero (2016)
 - Compared K-12 teachers who served as learning assistants (LAs) as undergraduates to colleagues that were certified through the same teacher certification program but did not serve as LAs. The former LAs used significantly more reformed teaching techniques than their colleagues who were no LAs
- Alzen, Langdon and Otero (2018)
 - exposure to LA support in any STEM gateway course is associated with a 63% reduction in odds of failure for males and a 55% reduction in odds of failure for females in subsequent STEM gateway courses without LA support
- Iwasaki et al. (2008)
 - conducted a questionnaire survey with faculties and SAs
 - 89% of faculties satisfied with the use of SA
 - students who worked as SAs felt that their media literacy and business manners had improved
- Kawachi and Sugimori (2019)
 - conducted the student survey which target was the students in courses that use Active Learning Advisors (ALAs)
 - result showed more than half of the students consider ALAs' supports effective for enhancing their learning

3. Methods

Common Questionnaire Survey

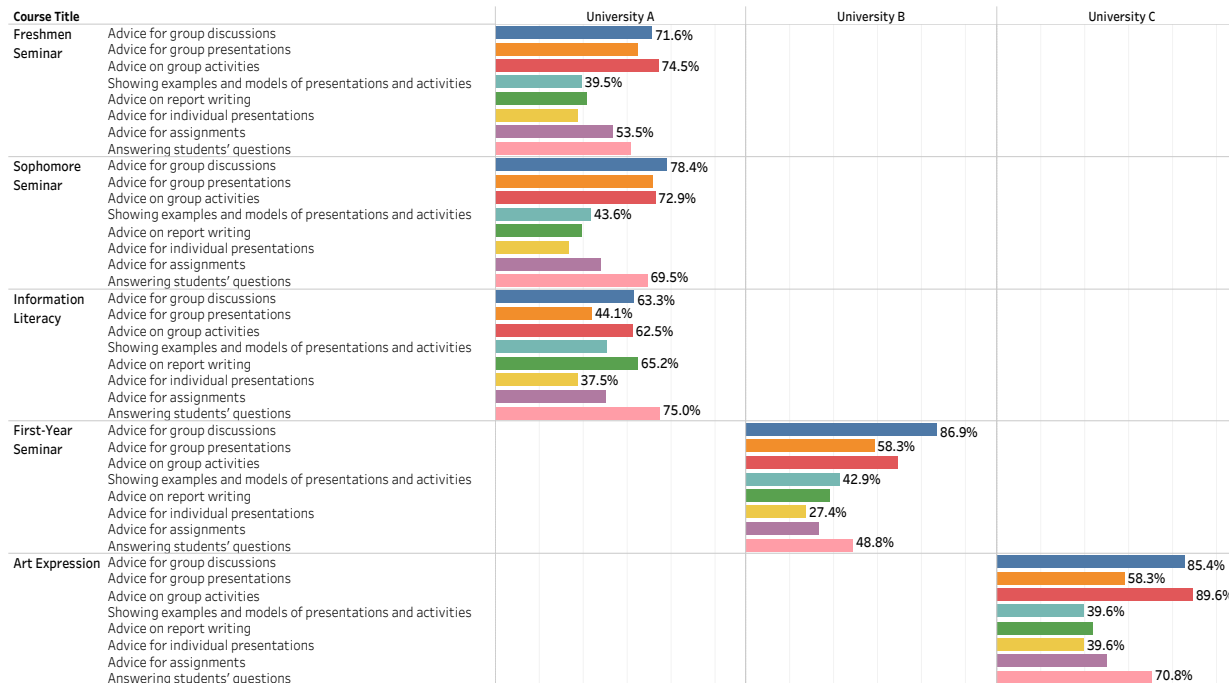
- We conducted a common student survey at three private universities in Japan
 - to examine the differences between programs at different universities and the differences between STEAM courses and other courses
- The survey was conducted on 867 students who were taking courses with LAs

	University Type	Course Title	year	# of classes	# of students
University A	Private	Information Literacy	Freshman	11	256
		Freshmen Seminar	Sophomore	11	243
		Sophomore Seminar	Freshman	11	236
University B	Private	First-Year Seminar	Freshman	Unknown (1)	84
University C	Private	Art Expression	Freshman	3	48
Total				37	867

4. Results

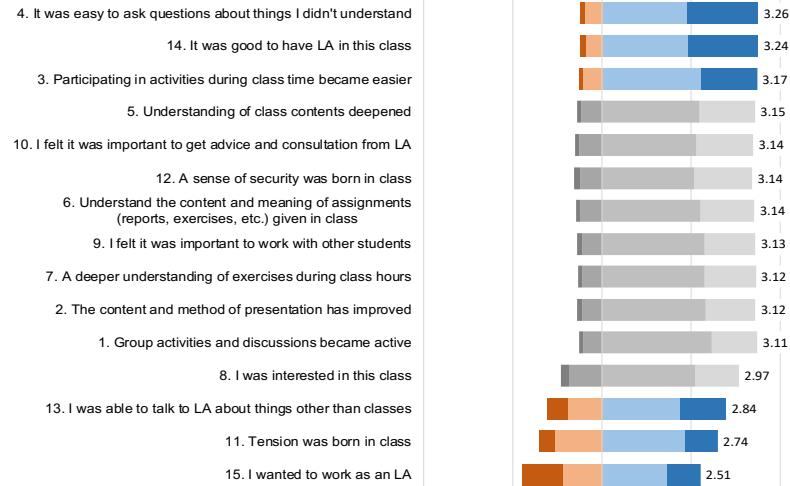
Level of LAs activities

- Main role of LAs at these three universities was to support and facilitate group activities
 - advice for group discussions
 - advice for group activities
 - advice for group presentations
 - answering students' questions
- the **information literacy** in University A showed a different tendency
 - advice on report writing was much higher than other activities

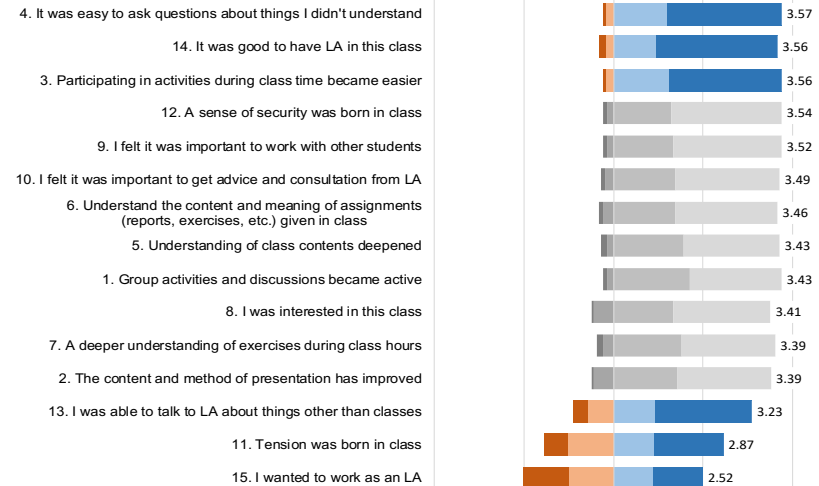


Effects of LAs activities

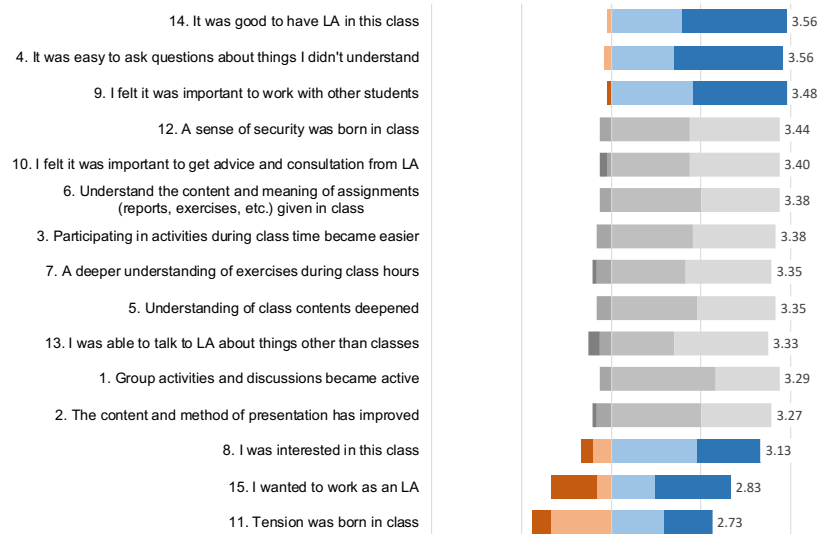
University A



University B



University C



- The top three effects of University A and B are same
 - 4. It was easy to ask questions about things I didn't understand
 - 14. It was good to have LA in this class
 - 3. Participating in activities during class time became easier
- University C
 - "9. I felt it was important to work with other students ranked third
- the least valued effects of University A and B are same
 - 15. I wanted to work as an LA
 - 11. Tension was born in class
 - 13. I was able to talk to LA about things other than classes
- It turns out that recognizing the positive effects of LA are different from wanting to be LA

5. Discussions

- The results of this survey are limited to these three universities.
- But we have shown from the survey that the effectiveness of the LA program is quite common, regardless of the university or course content.
- LA Program works effectively in active learning in introductory courses.
- However, factors such as how to increase its effectiveness could not be clarified from this survey.

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