



English-Medium Instruction in Japan: Experience and Its Implementation in Internationalization of Agricultural Higher Education in Uzbekistan

Narmatova Gulchehra Abdikarimovna

Naruto University of Education, Japan
Tashkent State Agrarian University, Uzbekistan

Abstract

Many studies have been conducted to explain and find out the best experience to implement in the internationalization of higher education (HE). Japan is one of the non-Anglophone countries where the internationalization of universities is growing rapidly due to the successful implementation of EMI programs. However, most universities in Asia face numerous challenges in realizing the globalization of higher education, especially those in the early stages of transitioning to English teaching programs. Tashkent State Agrarian University (TSAU) in Uzbekistan is one of them. This study attempts to investigate the challenges faced by Japanese universities in transitioning to EMI courses and what aspects of the Japanese EMI experience would be suitable to apply in higher education in Uzbekistan. Moreover, the study will focus on how consensus should be obtained in collaboration between English language and content teachers. To address the research questions, questionnaires and interviews were used to gather quantitative data by asking research participants the identical 30 questions on 5-point Likert scales with choices ranging from "strongly agree" to "strongly disagree" and coding of interviews. In the questionnaires, participated 37 content lecturers from TSAU, Akita University, and Tokyo University of Technology and Agriculture (TUAT), 17 English language teachers from TSAU, and 106 1st and 2nd-year undergraduate students from all three universities who enrolled in the EMI program. The results from the collected data revealed that content lecturers and students encounter variety linguistic challenges in EMI courses. Based on these findings, suggestions are made for enhancing the success of EMI courses at TSAU.

Keywords: English-medium instruction (EMI), internationalization, globalization, implementation, higher education, content lecturers.

1. Introduction

Internationalization, as a concept and strategy in education, is a new phenomenon in tertiary education. For the last 30 years, international education has boomed as more and more countries desire to connect with each other. It is also a key to improve the countries' economic, social, scientific, and international status in the world ranking. Many institutes and universities are developing their own strategies and methods to internationalize. It is a symbolic medium of instruction that reflects the general government's aspirations for internationalization. Internationalization in education results in higher education institutions (HEIs) deciding to attract exchange students and contribute to international research (Macaro, et al. 2018).

Since the early 1980s, with a growing economic influence in the world, the Japanese government has made further efforts to implement its policy of internationalization in various aspects of society. Subsequently, the word internationalization has become one of the guiding themes for major reforms, including the reform of higher education (Ebuchi 1997). Japan fosters various factors to drive the internationalization of HE. One of the important factors is the implementation of EMI policies in universities (Earls 2016).

Uzbekistan, a country with a rich cultural heritage and a growing economy, has recognized the importance of English as a foreign language and has been striving to integrate the EMI program into its national curriculum of higher education. As Galloway and Ruegg (2020) stated, a shift to using English as a medium of instruction is likely to be accompanied by linguistic challenges. One of the often-reported challenges in relation to EMI implementation is language-related challenges experienced by students and teachers (e.g., Tsuneyoshi, 2005; Hellekjaer, 2010; Wilkinson, 2013).

The research aims to explore the aspects of the Japanese EMI experience that are applicable to Uzbekistan's HE context. Furthermore, it seeks to examine the collaborative practices of English for Academic Purposes (EAP) teachers in tertiary education settings in Uzbekistan and Japan.

2. Literature Review

2.1 The urge of internationalization of HE in non-Anglophone countries

Universities are knowledge-producing entities and have social, cultural, ideological, political, and economic responsibilities to society. A key strategy for responding to the influence of internationalization is generally understood to mean the integration of an international or intercultural dimension into the tripartite mission of teaching, research, and service functions of higher education (HE) (Knight, 2004; Scott, 2000; Teichler, 1996).

In the increasingly competitive global higher education market, universities worldwide are aiming to increase their competitiveness both domestically and internationally. As a result, over the past three decades, they have increased and diversified their international activities (Goodman, 2005; Tsuruta, 2006). Universities in non-English countries worldwide are increasing their use of English for teaching and learning. English has become the language of international cooperation and competition, and increased English use in higher education enables universities whose home language is not widely spoken abroad to promote cross-border students' mobility and international partnerships with foreign institutions (Hazelkorn, 2015).

2.2 EMI experience in Japan

Since the 1970s, Japan has had a long history of striving to become internationalized, and English is perceived to be one of the critical factors toward achieving this goal (Rose & McKinley, 2018). English Medium Instruction (EMI) could greatly aid in the internationalization of Japanese English education, especially in higher education. Brown and Heekyeong (2015) state that the current boom is not Japan's first experience with EMI.

This can be said to be the fourth wave of EMI development in Japan, with earlier waves in the Meiji era, following World War II, and in the 1980s and 1990s (Brown, 2018).

Up to 3000 experts in a wide range of subjects were invited to Japan as consultants and teachers as part of the Meiji government's drive to modernize and westernize (Fujimoto-Adamson, 2006). This reliance on foreign specialists was, however, temporary; the government's long-term strategy was to staff the universities with Japanese academics. As the foreign instructors were replaced with domestic graduates or Japanese scholars returning from study abroad (Brown, 2017).

In the years following World War II, Japan saw the beginning of a second wave of EMI. The Japanese language remained as the primary language of teaching in higher education despite the drastic reconstruction of post-war Japan, with the establishment of very few English-taught programs. In the 1960's, the number of EMI programs expanded slightly, with some private universities starting short-term programs for incoming international students (Horie, 2002).

Japan attempted to internationalize its higher education sector in the early 1980s (Umakoshi, 1997; Yonezawa, 2014). During this period, the government encouraged universities to internationalize; however, most Japanese universities focused only on the numerical goal of increasing the number of incoming foreign students, without internationalizing the teaching methods or curriculum (Aspinall, 2013; Paige, 2005).

Internationalization was Japan's strategy for regaining its lost economic competitiveness in the 21st century. Rather than universities offering the benefits of Japanese education to students from developing countries as they had done in the past, universities started to actively recruit top-quality candidates who would help to improve their competitiveness (Hashimoto, 2017).

The second reason that projects to internationalize Japan's universities are being supported is the poor showing of these universities in the world ranking tables. University presidents are puzzled and irritated in equal measure to find that only the University of Tokyo and Kyoto University were in the top 100 of the 2014 Times Higher Education World University Rankings.

The number of graduate-level ETPs grew rapidly, and English-medium undergraduate programs were also created at a number of universities. Much of this growth was supported by the government's 2009 Project for Establishing University Networks for Internationalization, commonly known as the Global 30 project, which funded EMI programs at 13 universities. The efforts of the Global 30 universities also inspired the implementation or expansion of EMI programs at many universities not directly supported by government funding. The number of universities offering EMI programs grew by 50% in the decade between 2003 and 2013, with most of the growth seen in private universities (MEXT, 2015a).

Fostering globally capable human resources, or global *jinzai*, became central to the discourse on higher education reform in Japan (Yonezawa, 2010). One of the most recent government projects, the Top Global University Project, run through 2014-2023, aimed supporting universities implementing EMI and internationalization, MEXT selected 37 universities throughout Japan (MEXT, 2015).

2.3 Future plans

In 2023, Japan will make a renewed push to internationalize its higher education. In its first proposal drafted by the Council for the Future of Education Creation, Prime Minister Fumio Kishida pledged to increase the number of international students in Japan to 400 thousand. Also, the number of Japanese students who wish to study abroad will increase to 500,000. According to the government plan, at least 200 university departments in Japan should

offer degrees through English-language courses to international students by 2033 (*Japan Times*, 2023).

The Japanese government's implementation of the internationalization of HE focuses on two main strategies: 1. *internationalization at home* and 2. *internationalization abroad*.

Internationalization abroad Internationalization abroad concerns policies and activities that occur overseas or across borders rather than in the home university (Knight, 2004). This typically involves sending students or faculty overseas for varying periods of time to become "internationalized."

Internationalization at home, as Knight (2004) defines policies and activities that happen on home campuses, includes internationalizing curricula to attract inward student mobility.

However, Shimauchi (2018) described these terminologies in a different way: the "internationalization abroad" feature of EMI in Japan's higher education includes activities intended to spread "Japan" across the world, while "internationalization at home" refers to Japan's efforts to transform itself to meet the demands of global society.

2.4 Internationalization of HE in Uzbekistan

Nevertheless, the internationalization of higher education is a new idea of the 21st century. The theory of the internationalization of higher education in some countries began to be applied after 1980 (De Wit, 2002).

In 1991, Uzbekistan stepped into a new era as it became an independent state. The newly created states have only adopted the concept of internationalization of higher education after formulating higher education trends and educational policies to the extent that they serve national interests (De Wit, 2002). Additionally, it has grown to be a crucial component of the growth of the national economy, of the systems that support cultural variety, and of the national educational system. The internationalization of education is not new to Uzbek researchers. It is mentioned in the research of the following Uzbek researchers: Rahmanova, 2023; Rajabzade, 2022; Bezborodova, 2020 and more.

Classifying internationalization Trevaskes et al. (2003) state that some institutions employ superficial internationalization, being motivated only to maximize profit in education, while others emphasize the integration of the intercultural aspect in education. To what extent HE institutions in Uzbekistan implement internationalization is not well researched, but an international curriculum is assumed to be part of international universities with EMI.

The government's objectives through internationalization are as follows:

- Internationalization of higher education in Uzbekistan;
- Enter into the 30 leading countries of the world according to the rating of the PISA by 2030;
- Increase the competence of specialists at the international level;
- Improve the state's economy through the training of competent personnel based on the requirements of the market economy;
- Expand cooperation with foreign countries through fostering global specialists;
- To see the universities of Uzbekistan in the list of the highest educational institutions in the Academic Ranking of World Universities.

2.5 Internationalization of Agricultural higher education in Uzbekistan.

EMI in agricultural higher education in Uzbekistan is a new priority. Agriculture is a vital sector of Uzbekistan's economy, accounting for about 25% of the annual GDP and employing about 30% of the labor force in 2020 (ITA, 2022). Tashkent State Agrarian University (TSAU), established in 1930, is one of the prominent universities in Central Asia, where agriculture specialists are "grown". Unfortunately, in the current situation,

undergraduate TSAU students are less likely to be hired for better job positions in Uzbekistan in the agriculture sphere because bilateral and international cooperation with international organizations and companies is based on the English language proficiency of specialists (TSAU, 2022). In the implementation of the EMI program, TSAU objectives are as follows:

- Internationalization of the Tashkent State Agrarian University;
- Increase the university's budget through the tuition fees of international students' flow;
- Increase the scientific potential of the university;
- Maximize the employment rate of graduate students at TSAU;
- Popularize the university status and become one of the 10 international universities of Uzbekistan until 2030 regarding the presidential decree adopted in 2019;

In accordance with the order of the President of Tashkent State Agrarian University dated October 30, 2021, the first EMI groups were organized for the undergraduate level. Up to now, 20 content teachers are delivering lectures and laboratory trainings for 300 students who have enrolled in EMI classes.

2.6 Linguistic challenges in implementation of EMI programs

Linguistic challenges are the difficulties experienced when instructors and/or students are working in a non-native language. They include such things as student's inability to take notes from academic texts (Hellekjar, 2010) and professors' reduced ability to use accessible language in the classroom (Tange, 2010). These challenges can result in reduced program quality and a loss of confidence in faculty members' instructional abilities (Vinke, 1995).

English is the critical element of internationalization (Rose & McKinley, 2018). Even though there are decades of existing EMI programs within universities, it has not developed as much. Toh (2016) argues that there is a mismatch between a student's English proficiency to take the EMI courses and the objectives of university globalization. The linguistic challenges of students and lecturers in the EMI program almost remain the same.

Language-related challenges are extensively documented in the literature as the most critical issues students encounter when transitioning into EMI (Aizawa and Rose, 2020). These challenges include comprehending lectures (listening); writing academic essays (writing); delivering presentations and participating in discussions (speaking); and understanding textbooks with unfamiliar vocabulary (reading).

3. Methodology and Results

3.1 Participants and research instruments

The study focuses on undergraduate English-taught programs, as these are a new phenomenon in the mainstream of Uzbek universities and are thus likely to experience a variety of challenges. The study was conducted at two public universities in Japan: Akita National University, Faculty of International Resource Sciences; TUAT (Tokyo University of Agriculture and Technology); and TSAU (Tashkent State Agrarian University) in Uzbekistan. The Faculty of International Resource Sciences at Akita National University has enforced English-medium instruction for undergraduate and graduate students since 2014.

The undergraduate school of Tokyo University of Agriculture and Technology consists of two faculties: the Faculty of Agriculture and the Faculty of Engineering. Both faculties offer English courses for domestic students with the aim of internationalizing the university and preparing global agriculture specialists. Currently, the university offers English-medium programs for domestic and international students.

Since the year 2000, Tashkent State Agrarian University has been piloting EMI courses at seven faculties majoring in agriculture subjects. By the year 2023, universities will offer more than 20 courses in English for domestic students.

In the research, lecturers, English language teachers, and students across Akita University, TUAT, and TSAU participated, providing a comprehensive perspective on challenges in EMI (English as a Medium of Instruction) classrooms.

3.2 Research instruments

To address the research question, a Google questionnaire was used to gather quantitative data by asking all lecturers the identical 30 questions: for students, 14 questions; for English language teachers, 10 questions on a 5-point scale. Likert scales with choices ranging from "strongly agree" to "strongly disagree" (1 = *Strongly Disagree*; 2 = *Disagree*; 3 = *Neutral*; 4 = *Agree*; 5 = *Strongly Agree*). To collect data for qualitative analyses, we organized open-ended interviews. Interviews, as well as the online surveys, were adapted from previous studies.

The questionnaire for content teachers focused on collecting information about teachers' language abilities, students' English competence, engaging the class discussion, preparation time for lectures, teaching materials, and assessment. A Google survey for students focused on finding challenges in four language competencies: speaking, listening, reading, and writing. A questionnaire for language teachers focused on finding out the collaboration challenges and benefits between content and English teachers.

The quantitative data collected from the questionnaire were coded and analyzed by the Statistical Package for Social Science (SPSS) software. Descriptive statistics tests were run to analyze means and standard deviations for the participants' challenges in EMI classrooms. The qualitative data from the interviews was restrained to get the overall ideas of the participants. Transcriptions were re-read carefully and critically analyzed.

3.3 Research objectives and questions

By addressing the outlined objectives and research questions, this study aims to offer valuable insights and recommendations to policymakers, educators, and stakeholders involved in shaping language policies and practices within Uzbek HE mainly, Tashkent State Agrarian University. The research questions are:

1. What aspects of Japanese experience of EMI would be suitable to apply in HE of Uzbekistan?
2. What are the main challenges in transition to EMI programs and how to overcome them?
3. What are the collaboration benefits between content and English language teachers in the implementation of EMI courses?

3.4 Challenges of content lecturers

Three tables below show the variables with the descriptive mean scores of the challenge causes of three universities. In Table 1, out of all 6 causes, the first one shows the highest mean score of 4.20. Engaging the class discussion, followed by students' low English competence (3.60), preparation time for lecture (3.50), and the challenge of finding appropriate teaching materials (3.20). The mean score of the variable number 6 is 2.80, which is lower than the average mean score of 3.00.

Table 1. Mean scores of challenge causes at Akita University

	Causes	N	Minimum	Maximum	Mean	SD
1.	Engaging the class discussion; Item (14-18);	10	3	5	4.20	0.789
2.	Students' low English competence; Items (9-13);	10	1	5	3.60	1.174
3.	Preparation time for lecture: Items (19-22);	10	2	4	3.50	0.850
4.	Teaching materials: Items: (23-16);	10	1	5	3.20	1.135
5.	Assessment: Items: (27-30).	10	1	4	3.00	1.054
6.	Teachers' language abilities: Items (1-8);	10	1	4	2.80	1.317

Turning to TUAT's Table 2, "Preparation time for the lecture" holds the highest mean score of 3.90, closely trailed by "Students' low English competence" at 3.70, slightly surpassing the mean scores of "Teachers' language ability" at 3.40 and "Engaging the class discussion" at 3.30.

Table 2. Mean scores of challenge causes at TUAT

	Causes	N	Minimum	Maximum	Mean	SD
1.	Preparation time for lecture: Items (19-22);	10	2	5	3.90	0.738
2.	Students' low English competence; Items (9-13);	10	3	5	3.70	0.483
3.	Teachers' language abilities: Items (1-8);	10	2	5	3.40	0.843
4.	Engaging the class discussion; Item (14-18);	10	2	5	3.30	0.949
5.	Teaching materials: Items: (23-16);	10	1	5	2.30	1.160
6.	Assessment: Items: (27-30).	10	1	4	2.10	1.287

For TSAU, as depicted in Table 3, the first and second variables exhibit the highest mean scores, with all remaining causes surpassing the average mean score. This implies that all six causes pose significant challenges in delivering EMI courses at TSAU.

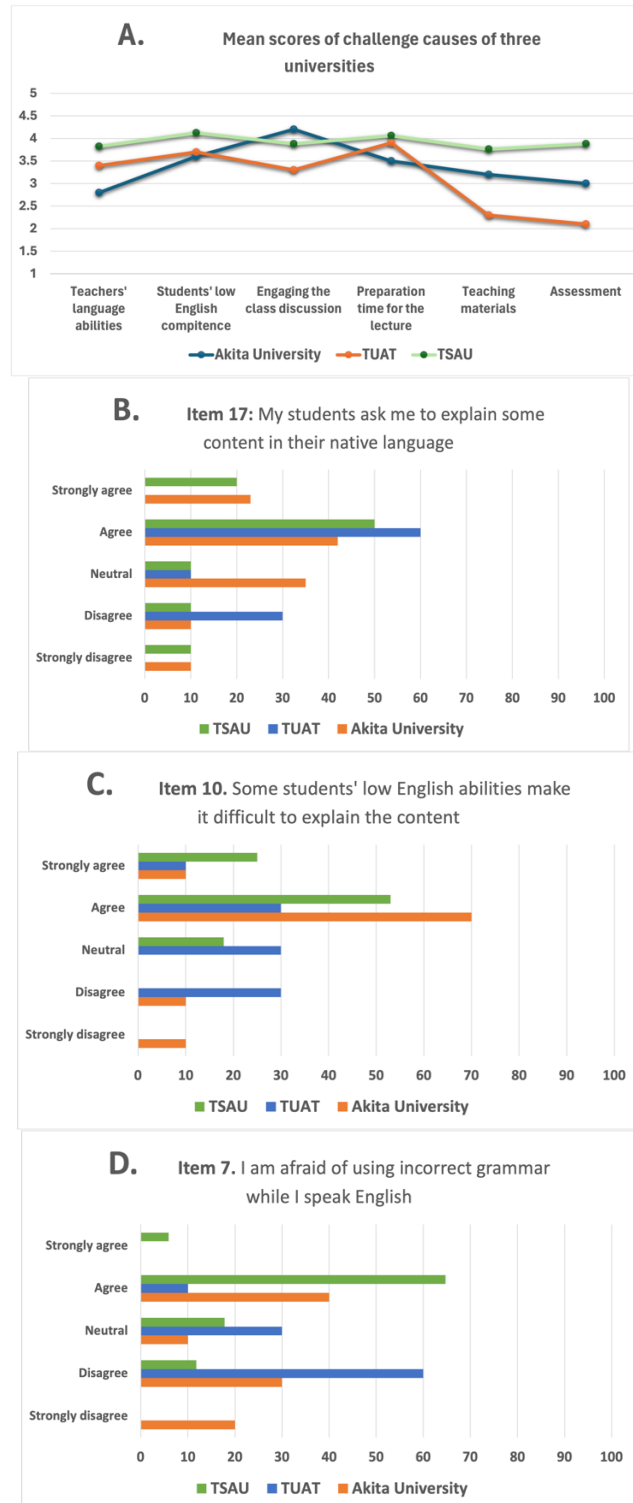
Table 3. Mean scores of challenge causes at TSAU

	Causes	N	Minimum	Maximum	Mean	SD
1.	Students' low English competence; Items (9-13);	17	3	5	4.12	0.697
2.	Preparation time for lecture: Items (19-22);	17	3	5	4.06	0.748
3.	Engaging the class discussion; Item (14-18);	17	3	5	3.88	0.781
4.	Assessment: Items: (27-30).	17	1	5	3.88	0.993
5.	Teachers' language abilities: Items (1-8);	17	2	5	3.82	0.951
6.	Teaching materials: Items: (23-16);	17	2	5	3.76	0.831

3.5 Findings from Surveys of content lecturers

Upon comparative analyses, it becomes evident that all three universities share common challenges, notably revolving around students' low language competency, preparation time for lectures, and engaging class discussions (See Figure 1, section A).

However, it is noteworthy that Teachers' language ability presents a lesser challenge for the lecturers of Akita University. Additionally, assessing students' knowledge appears to be less challenging for TUAT and Akita University.



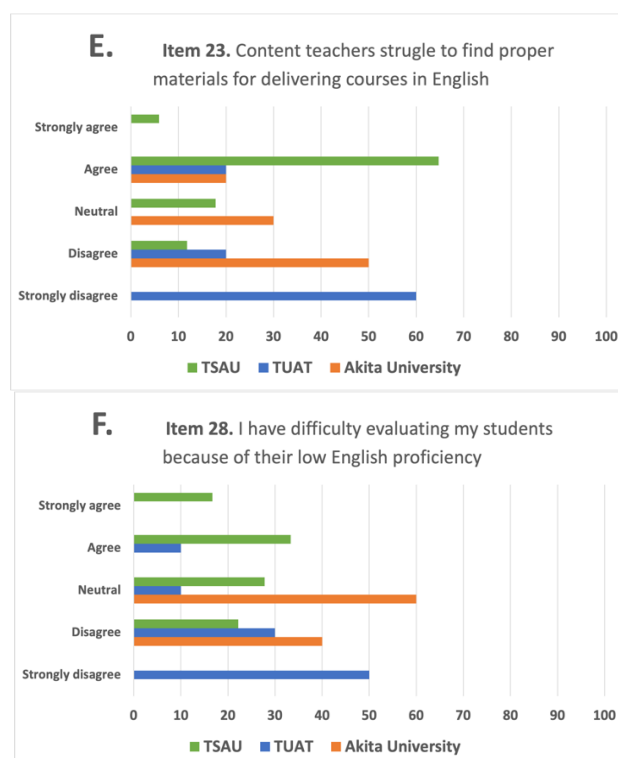


Figure 1. Content teachers' challenges in EMI courses

Section B. illustrates a notable disparity in perceptions among content lecturers across the surveyed universities regarding students' English proficiency levels. At Akita University, a striking 70% of content lecturers agree, with an additional 10% strongly agreeing, that the primary difficulty they face lies in students' low English proficiency levels. This sentiment is echoed to a slightly lesser extent at TSAU, where 53% of content lecturers agree and 25% strongly agree with the same assertion. In this research, lecturers also commented that students had difficulty in asking questions and lacked activeness in classroom discussion. Conversely, respondents from TUAT hold a contrasting viewpoint, indicating that students' language abilities are not a major concern for them.

In terms of language proficiency among lecturers, a common challenge arises in explaining terminology in English. Across all three universities, a significant majority of lecturers acknowledge this difficulty (See figure 7, section C). Specifically, 70% of lecturers from TSAU and 65% from Akita University find it challenging to articulate complex terminology in English. Similarly, with a slight variation, 60% of lecturers from TUAT express the need to resort to their native languages to interpret certain lecture content. Concerning the language ability, lecturers admitted that terminology and abstract concepts are difficult to explain in English; they have to pause to search for the right word when lecturing, and lecturing in English hinders them from going deeper into the content of the lessons than in their native language.

Regarding the English language grammar proficiency of lecturers, distinct results emerge among three universities (see section D). At TSAU, a significant majority of content lecturers, comprising 70%, express apprehension about their grammar proficiency when delivering English lectures. Similarly, at Akita University, 40% of lecturers share this concern. In contrast, teachers at TUAT present a different perspective, with a majority of 60% indicating disagreement with concerns about their grammar proficiency.

In terms of sourcing materials for EMI courses as it is illustrated in section E, a striking trend emerges across the surveyed institutions. A substantial 70% of content teachers at TSAU report encountering difficulties in this regard. In contrast, half of the participants from Akita

University acknowledge similar challenges, indicating a less prevalent but still notable issue. Conversely, a significant 80% of content lecturers at TUAT assert that they do not face obstacles in finding materials for their EMI courses.

According to Google survey results depicted in section F, it is evident that 50% of content lecturers at TSAU encounter challenges when evaluating students, with more than a quarter remaining a neutral due to perceived inadequacies in students' English language proficiency. In contrast, at Akita University, 40% of content lecturers disagree with this statement, while 60% maintain a neutral position. Notably, only 10% of TUAT lecturers agree with the statement, while half of the respondents express disagreement. Interestingly, for both Akita University and TUAT content teachers, the assessment process does not pose significant challenges.

3.6 Challenges of English language teachers

A questionnaire for English language teachers focused on identifying collaboration challenges between content lecturers and language teachers and finding out the beneficial outcomes of collaboration. 17 English teachers from the department of “Languages” at TSAU agreed to participate in the Google survey.

One of the significant results that should be taken into consideration is item 1. The advantages of collaboration between English language teachers and content teachers seem unclear. Over 40% of English teachers expressed agreement, and a notable 6% strongly agreed with the statement. This suggests a considerable portion of educators have yet to fully see the potential benefits of such cooperation. Statement 7 analyzed the logistical aspects of collaboration, specifically addressing challenges in organizing collaborative tasks. Here, a significant portion of teachers, over 47%, acknowledged the presence of obstacles hindering seamless cooperation. Moreover, about 23% stay neutral, supporting a degree of ambivalence towards the issue (see Figure 2).

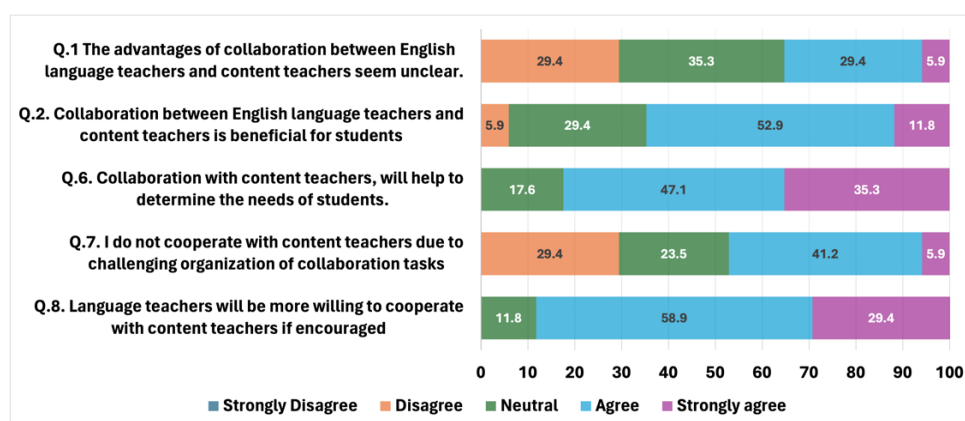


Figure 2. Survey responses of English language teachers

Regarding item eight, 88% of English teachers at TSAU think that English teachers will be more willing to cooperate with content teachers if encouraged. Moreover, almost 53% of English teachers agreed, and 11% strongly agreed, that collaboration between English language teachers and content teachers is beneficial for students. Also, a notable portion 82% of teachers believe that cooperation between content teachers and English teachers helps to determine students' needs.

Overall, these survey results underscore the importance of promoting collaboration between English language teachers and content teachers as a means of enriching the educational experience and supporting student learning outcomes.

3.7 Students' challenges

The statistical table 4 diagnoses the challenges and accurately describes the reality of the communication obstacles students face in speaking English during the lectures. The overall trend of the responses, as demonstrated in terms of means and percentages, shows that the English language is a barrier to communication between students and their teachers.

Table 4. Impact of speaking challenge on students' performance

Statements	University	SD	D	N	A	SA	Mean	Std.D
1. It is difficult for me to answer the questions in English.	TUAT	6.3	9.4	12.5	62.5	9.4	3.59	1.012
	TSAU	20.4	9.3	7.4	40.7	22.2	3.35	1.456
2. I have to struggle to participate in class discussions.	TUAT	6.3	12.5	15.6	56.3	9.4	3.50	1.047
	TSAU	9.3	5.6	20.4	38.9	25.9	3.67	1.197
3. I am afraid of not using correct grammar when I speak.	TUAT	3.1	18.8	18.8	50.0	9.4	3.44	1.014
	TSAU	13.2	7.5	17.0	39.6	22.6	3.51	1.295
4. I avoid asking questions because my speaking is not good.	TUAT	6.3	15.6	9.4	56.3	12.5	3.53	1.107
	TSAU	13.0	9.3	16.7	38.9	22.2	3.48	1.299
5. I have a lack of confidence and anxiety in speaking English in front of audience.	TUAT	6.2	9.4	9.4	50.0	25.0	3.78	1.128
	TSAU	14.8	5.6	16.7	31.5	31.5	3.59	1.381

During lectures, statistics show that almost 72% (mean score of 3.59) of TUAT and nearly 63% (mean score of 3.35) of TSAU students find answering the questions in English highly challenging.

Most respondents from both universities, comprising 60% of TUAT students (mean score 3.44) and 62.2% of TSAU students (mean score 3.51), express apprehension about using incorrect grammar while speaking English. This fear indicates a concern for linguistic accuracy among students. A significant portion of students, accounting for 68.8% from TUAT and 61% from TSAU, admit to avoiding asking questions during lectures. Three-quarters of TUAT respondents indicate experiencing a lack of confidence and anxiety when speaking English.

According to the data given in Table 5, listening in English is also not less challenging compared to other aspects of the language. A substantial portion, 63%, of TSAU students find it challenging to comprehend their classmates' English. Also, more than half of the respondents from the same university reported that they miss some content of the lecture conducted in English.

Table 5. Impact of listening challenge on students progress

Statements	University	SD	D	N	A	SA	Mean	Std.D
6. It is difficult for me to understand my groupmates' English.	TUAT	6.3	28.1	28.1	31.3	6.3	3.03	1.062
	TSAU	7.4	11.1	18.5	42.6	20.4	3.57	1.159
7. I do not understand fully the content of the lecture given in English.	TUAT	6.5	22.6	12.9	48.4	9.7	3.32	1.137
	TSAU	13.0	11.1	22.2	31.5	22.2	3.39	1.309
8. Sometimes I ask lecturer to explain the content in Uzbek/Japanese language.	TUAT	18.8	15.6	9.4	50.0	6.2	3.09	1.304
	TSAU	3.7	9.3	16.7	48.1	22.2	3.76	1.027
9. I do not understand teacher's instructions in English.	TUAT	9.4	34.4	9.4	43.8	3.1	2.97	1.150
	TSAU	11.1	14.8	24.1	27.8	22.2	3.35	1.291

Moreover, the majority of students from both universities express a preference for seeking explanations of lecture content in their native language. Also, over half of respondents from both TUAT and TSAU informed that they have difficulty understanding teachers' instructions given in English.

Table 6. Impact of reading challenge

Statements	University	SD	D	N	A	SA	Mean	Std.D
10. Textbooks and material teacher uses at class difficult to understand.	TUAT	12.5	25.0	15.6	25.0	21.9	3.19	1.378
	TSAU	14.8	9.3	25.9	33.3	16.7	3.28	1.280
11. I spend much time to read, translate and understand home assignments.	TUAT	15.6	12.5	21.9	46.9	3.1	3.09	1.174
	TSAU	5.6	11.1	13.0	37.0	33.3	3.81	1.183
12. Because of my lack of vocabulary, I miss some content of the topic.	TUAT	6.2	15.6	34.4	43.8	0	3.16	0.920
	TSAU	9.3	13.0	18.5	35.2	24.1	3.52	1.255

As table 6 shows, there is a problem with lecture and textbook comprehension that the language of lectures, books, and notes is essentially English. Paradoxically, the students are not well-equipped linguistically to attend English science lectures and read English science books. Specifically, 47% of TUAT and 50% of TSAU students acknowledge the difficulty they face in understanding the context of English textbooks used in their lectures.

Moreover, TSAU students, indicated that they spend more time on homework assignments compared to those done in Uzbek language. Similarly, half of TUAT respondents also reported spending more time on assignments than they regularly did in Japanese. A significant portion of TSAU students attribute their struggle to a lack of vocabulary in the target language, resulting in difficulties grasping lecture content.

Table 7. Impact of writing challenge on students' progress

Statements	University	SD	D	N	A	SA	Mean	Std.D
13. It is difficult for me to make notes in English.	TUAT	12.5	21.9	40.6	25.0	0	2.78	0.975
	TSAU	7.5	9.4	11.3	39.6	32.1	3.79	1.215
14. It is difficult for me to fulfill writing	TUAT	12.5	18.8	28.1	28.1	12.5	3.09	1.228
	TSAU	5.6	7.4	24.1	29.6	33.3	3.78	1.160

From the Table 7 it is seen that both groups encounter challenges, TSAU students appear to face more significant difficulties in writing tasks within the EMI program. A quarter of TUAT respondents admit to facing challenges in writing, while a significantly higher proportion, 71.7% of TSAU students, report encountering writing difficulties in this aspect. Turning to statement 14, which pertains to the difficulty of fulfilling writing tasks, 40% of TUAT students acknowledge experiencing challenges, whereas nearly 70% of TSAU students concur.

3.7.1 Impact of EMI on students' attitude towards learning

Findings underscore the complex linguistic challenges faced by students in navigating EMI programs at Akita University, TUAT and TSAU. Addressing these challenges requires a multifaceted approach that encompasses targeted language support initiatives, bilingual instructional strategies, and efforts to foster confidence and proficiency in English language communication. Studies by Byun et al. (2013) revealed that even classroom composed of students with relatively good command of English, a few students experienced difficulties with English.

Regarding the interview results conducted among 1st and 2nd year undergraduate students from Uzbekistan and Japan. Among Uzbek students at TSAU, a notable struggle emerges with reading and writing in English, while their counterparts at Akita University in Japan encounter difficulties primarily in speaking and listening (See Figure 3).

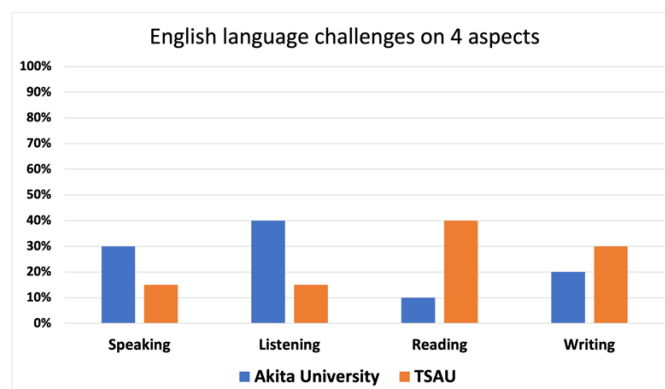


Figure 3. Interview results of students from Akita University and TSAU

Figure 4 shows the challenges encountered by students at TUAT and TSAU when engaging with English-medium instruction in their academic pursuits. It is evident from the statistics that a considerable proportion of students from both universities face difficulties across various aspects of English language proficiency.

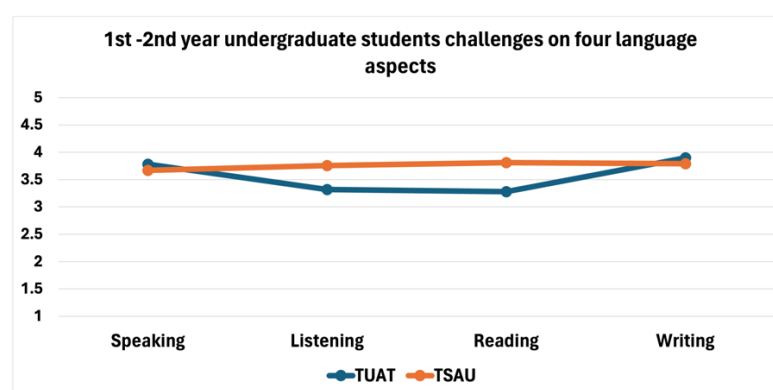


Figure 4. Survey results of students' linguistic challenges of TUAT and TSAU

One notable finding is the high percentage of students at both institutions who find answering questions in English during lectures to be highly challenging. This difficulty underscores the need for enhanced support in language acquisition and communication skills within the academic context. Moreover, the fear of using incorrect grammar while speaking English highlights a concern for linguistic accuracy among students, reflecting a potential barrier to effective communication in the classroom.

Furthermore, the challenges extend beyond speaking and listening comprehension to encompass difficulties in understanding English textbooks and written assignments. The majority of students express a preference for seeking explanations in their native language.

Moreover, the disparity in writing proficiency between TUAT and TSAU students is noteworthy, with a significantly higher proportion of TSAU students reporting difficulties in writing tasks within the EMI program.

3.7.2 Supplementary support means of students

In the findings from Figure 5, derived from interviews conducted at Akita University and the TSAU, students were probed about their preferred sources of assistance when grappling with lecture content and instructions.

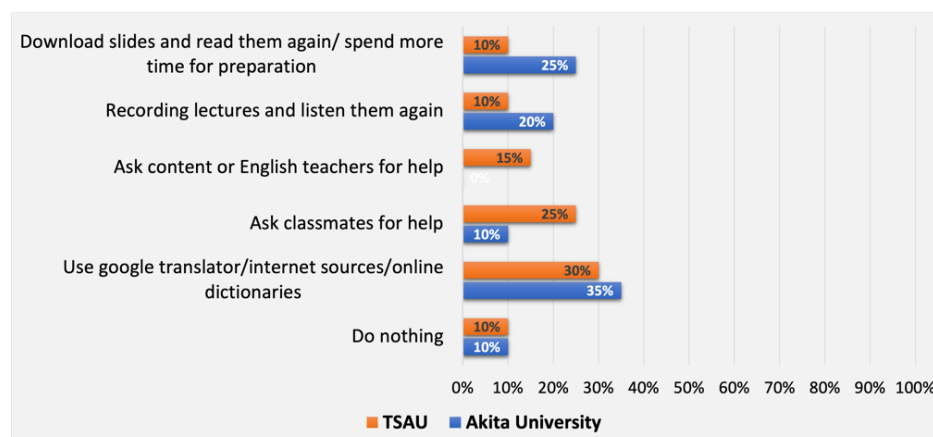


Figure 5. Supplementary support means of undergraduate students in EMI program

The data highlights a predominant reliance on digital tools among students from both institutions, with Google Translator and online dictionaries being the most frequently utilized resources. For instance:

Akita University, student 1: *If I do not understand something in the class, I use online dictionary. Most of the time I look up some terminology translation. It is always available and easy;*

Akita University, student 2: *I use google translate if I do not understand what is written in book or if I cannot say something in English;*

Approximately a quarter of Uzbek students opt to seek help from their peers. In contrast, a mere 10% of Japanese students turn to their peers for academic support. Interviews with Japanese students revealed a sense of shyness or apprehension about their pronunciation or the potential judgments of their peers, which might hinder their inclination towards seeking peer assistance

Strikingly, none of the Japanese students surveyed express a preference for seeking guidance from their teachers. For instance:

TSAU, Student 1: *If I do not understand professors instructions or given home assignment, I ask help from my English language teacher. She most of the time willing to assist me.*

TSAU, Student 2: *Some of our teachers offer their help through short extension lectures or after classes. They provide instructions and explanations in uzbek. Where we can ask our questions in uzbek language as well. Sometimes I cannot ask my question during the lecture. I worry about my classmates reaction to my question.*

Furthermore, it is noteworthy that Japanese students exhibit a tendency to allocate more time to task preparation and recording lectures for later review compared to their Uzbek counterparts. This inclination suggests either a heightened sense of independence and confidence in English Medium Instruction (EMI) classes among Japanese students or a cultural reluctance to openly seek assistance.

4. Discussion

This study observed the early stages of undergraduate level English-medium instruction programs at three universities: Tashkent State Agrarian University in Uzbekistan (TSAU), Akita University in Japan, and Tokyo University of Agriculture and Technology (TUAT) in Japan. The primary objectives were to analyze EMI programs designed for domestic students and compare the results to understand how program implementers address linguistic challenges.

Regarding research questions number one and two: What are the main challenges in transitioning to the EMI program, and how can we overcome them? What aspects of Japanese

experience with EMI would be suitable to apply to higher education in Uzbekistan? Transitioning to EMI programs involves addressing several significant challenges related to language proficiency, curriculum development, cultural resistance, resource allocation, and assessment. Literature reviews and results of data analyses conducted across three universities revealed English language proficiency as the most vital factor in the successful implementation of the EMI program.

Based on literature review, we can say EMI programs are not new to Japanese universities. The Japanese government has implemented extensive educational policies to expand the implementation of EMI throughout the country. In Japan, EMI has been a growing trend over the past 20 years. Figures from MEXT show that as of 2005, approximately 1/3 of universities offered some kind of EMI program by 2023. this number reached more than 300 (MEXT 2006, MEXT 2021, Asahi Shimbun 2023). In contrast, in Uzbekistan, EMI programs are relatively new phenomena, especially for public ones. Tashkent State Agrarian University (TSAU) began practicing English-Medium Instruction (EMI) programs in the year 2000.

Low English proficiency among EMI program students also presents considerable difficulties. Lecturers need more preparation time to master the terminology and vocabulary of teaching subjects in English. Consequently, preparing teaching materials in English takes longer than in Uzbek and Japanese. This is consistent with what Airey (2011) and Pilkinton-Pihko (2011) found in their research.

Linguistic difficulties in EMI courses highlight the necessity for educators to develop diverse instructional strategies and perhaps use visual aids to convey difficult concepts effectively. Beyond improving their English language proficiency, they also need to develop suitable pedagogical skills to facilitate classroom interactions (Brown, 2017). Moreover, in Japan, the majority of EMI teachers find PD (professional development) programs beneficial in obtaining desired pedagogical skills. EMI-related PD courses in Japan are provided in-house by universities for their own professors (Belarga 2019, McCarty 2020).

Findings from many previous studies also consider language difficulty a major challenge. Specifically, lecturers reflected that students did not fully understand the lectures given in English. Consequently, it is found that the teaching style becomes monologue and there is less interaction in EMI classrooms (Vinke, 1995; Klaassen, 2001; Airey & Linder, 2006).

Studies by Byun et al. (2013) revealed that even in classrooms composed of students with relatively good command of English, a few students experienced difficulties with the language. No matter the English environment created by peers, they need additional support.

At TSAU, the redesigned English classes, English for Academic Purposes (EAP), have not significantly alleviated these challenges. EAP courses at TSAU are less comprehensive compared to those at Japanese universities. TSAU should adopt a similar approach to Japanese universities by ensuring that EAP classes thoroughly cover listening, speaking, reading, and writing. This holistic approach can better equip students to understand lectures, engage in discussions, and complete written assignments effectively.

In Japan, universities like Akita University and Tokyo University of Agriculture and Technology have implemented comprehensive EAP courses to support their EMI programs. These courses typically focus on all four language skills—reading, writing, speaking, and listening—to ensure students can fully engage with the academic content delivered in English. For instance, the curriculum often includes specialized vocabulary, academic writing techniques, and presentation skills, which are essential for participating in discussions, understanding lectures, and completing assignments (Ruegg, 2021).

The third research question is: What are the collaboration benefits between content and English language teachers in the implementation of EMI courses? deals with collaboration challenges and benefits between content and language teachers.

Effective collaboration requires significant time for planning and coordination, which can be difficult to find within busy academic schedules. This often leads to insufficiently integrated courses (Macaro & Tian, 2020). Most of the teachers from all three universities indicate time as a big obstacle to collaboration.

Another significant challenge that hinders effective collaboration is language teachers' poor knowledge in the content area. Evans and Morrison (2011) state that both sets of teachers may require additional training to effectively collaborate. Content teachers may need to improve their understanding of language teaching methods, while language teachers need to familiarize themselves with subject-specific content.

Collaboration encourages professional growth for both content and language teachers. It provides opportunities for mutual learning and sharing of best practices, which can improve teaching effectiveness and job satisfaction (Macaro, 2018).

Most of the language and content teachers in the study believe in the positive outcomes of cooperation, both for lecturers and students. Joint efforts in curriculum design and delivery can lead to more engaging and interactive classes. When content and language objectives are aligned, students are more likely to participate actively and improve their academic performance (Kong, 2014).

5. Conclusion

The results of this study indicate that for an EMI program to be successful, the English language competency of the content lecturers is just as crucial as that of the students. The study observation suggests that fostering collaboration between content lecturers and language teachers is one of the most effective strategies for addressing linguistic challenges in the EMI program. Implementing team-teaching methods where language teachers and content teachers work together can address both content and language learning needs. This collaboration can enhance the integration of language support within content courses (Ishikawa, 2020).

Drawing from the Japanese experience, a variety of supplementary activities have been recommended to reduce linguistic barriers for students, including English language workshops, training sessions, online platforms, extracurricular courses, and offline resources. Incorporating technology and online resources can provide additional language support and create more interactive and engaging learning environments. Online platforms can offer language practice opportunities and resources tailored to specific academic fields (Ishikawa & Jenkins, 2019). Additionally, the observation of joint Seminars conducted entirely in English highlights the benefits of interdisciplinary collaboration and scholarly exchange, offering students invaluable opportunities for research exposure, peer learning, constructive feedback, and networking. Developing robust English for Academic Purposes (EAP) courses that focus on academic language skills necessary for understanding and producing academic texts is vital. These courses should cover all four language skills—reading, writing, speaking, and listening—to support students comprehensively (Kubota, 2015).

By combining these strategies and granting teachers the autonomy to contribute to the EMI implementation mechanism based on their needs and experiences, TSAU can cultivate a supportive and inclusive learning environment that benefits students, educators, and the broader academic community.

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