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Designing Faculty Development Programs by a Team from Different Majors

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Abstract: This study investigated how three faculty members and an external lecturer selected training content and implemented teaching methods for faculty development (FD) to ensure learning opportunities for faculty members at science universities. Qualitative analysis revealed the following three points: (1) the lack of a clear image of the target participants causes discrepancies between participant needs and the FD seminar planners; (2) the faculty developer (FDer) is apt to "chase after two hares," when seeking student-centered teaching style and instructors' language skills improvement; and (3) FD seminars should be focused on a specific topic to be more attractive to the target participants.

Keywords: Professional Development, English Medium Instruction, Faculty Developer, Steps for Coding and Theorization

1. Introduction

Internationalization has been vigorously promoted in Japanese higher education through government-led policies such as the Global 30 Project and the Top Global University Project (MEXT, 2014). Japan's Ministry of Education, Culture, Sports, Science and Technology (MEXT) has been providing support to improve the international competitiveness of Japanese higher education through its "Super Global University (SGU)" program, which focuses on 13 top universities (Type A) that conduct world-class education and research, and 24 globalization-driving universities (Type B) have been leading the globalization of Japanese society since 2014. The selected universities have provided their students with globalization-oriented education and research by fostering students' global responsiveness and further accelerating exchanges and collaborations with world-class universities. SGU-adopted schools; however, they must meet the goals established in "common outcome indicators," such as international students as a percentage of all students, the rate of courses taught in foreign languages, a flexible academic calendar (introduction of the quarter system), and various organizational and curricular reforms. To achieve these indicators and demonstrate their internationalization initiatives worldwide, top universities held workshops in English by invited lecturers from leading overseas universities and launched joint research projects in cooperation with overseas partner universities. Furthermore, English-medium instruction (EMI) is encouraged to attract talented international students and researchers, and both existing and newly hired faculty members are increasingly required to "teach in English." At the Tokyo Institute of Technology, more than 90% of graduate school courses are taught in English to comply with the SGU outcome indicators. The Center for Innovation in

Teaching Language (CITL), to which the authors belong, has invited lecturers from overseas partner universities (University of Queensland) and English-language institutes in Japan to hold training sessions to promote the use of English in class.

2. FD Seminar with Flipped Learning Material

Preparation for FD Seminar

The theme of the FD training in FY2022 was “Acquisition of knowledge and skills for practical graduate school lectures in English (EMI).” As shown in Table 1, preparation for the FD training started in April 2022. Faculty member A was in charge of the FD training content, creating teaching materials, and conducting the training with an external Instructor B.

Table 1. *FD Training Project Members and Roles*

	Role	Specialty	Age, Years at CITL
Faculty A	Planning FD seminar	Educational Technology	50s, less than one year
Lecturer B	Lecture	English Teaching	40s, not applicable
Faculty C	Supporting FD seminar	Informatics	60s, more than 30 years
Faculty D	Supporting FD seminar	Science Education	40s, about one year

2.1 Team for FD Seminar

Initially, only Faculty Member A and external Lecturer B, who were in charge of the training, consulted with each other and decided on the FD training content. For example, the range of sessions on (a) the concept of lesson planning, (b) assignments and homework, and (c) how to start a class were planned as English lecture basics. Additionally, two lectures on strategies to promote active learning among students were given at different language levels to accommodate various learning styles as interactive sessions. They will also touch on a class environment in which students can easily ask questions to stimulate interaction among teachers and students and methods for verifying results (Kato & Oishi, 2022 a; 2022b). To design an effective FD training program to promote specialized education in English, internal meetings were held not only including Faculty A and external Lecturer B, who are foreign language education specialists but also other full-time CITL faculty members (C and D) who have experience in specialized higher education in science. They discussed “what kind of training would be acceptable to science faculty” and “what kind of content would interest science faculty who are busy with research, enabling them to participate without creating a burden” with Faculty C, who has experience teaching specialized fields in English, and Faculty D, who had attended classes in his university’s doctoral program. Based on the results of this discussion, the person in charge of planning (Faculty A) developed the FD courses and publicized them within the university. Despite multiple publicity campaigns, however, fewer than 10 participants attended. Unfortunately, the project was not of interest to science faculty members.

2.2 Research Question

This study aims to clarify the decision-making process of planning and operating FD training programs for EMI courses and develop knowledge for effective planning and implementation of FD training at science universities with a strong research orientation. In particular, the authors sought to elucidate how a newly appointed Faculty Developer

(FDer, Faculty A) searched for clues to establish FD training tailored to universities with solid research activities through discussions with other members (Faculty C and D). The question we have to ask here is what kind of FD training content and implementation methods are acceptable for faculty at science universities. In addition, this issue examined building collaborative relationships among faculty members and problem-solving teams, which were discussed in previous studies (Kato et al., 2023a; 2023b).

3. Research Method

3.1 Participants

The subjects of this study were three faculty members at a science university and one external lecturer. As shown in Table 1, Faculty members A and D were newly transferred from other universities. Hence, they needed more information on the roles of faculty members in research-oriented science education at their home universities and how to manage graduate classes using English. Faculty A was in charge of this training course, and Faculty C and D belonged to the same organization. Faculty A had approximately ten years of experience as an FDer, and Faculty D had previous experience as a professor at the information processing center of another university and has been involved in educational improvement and evaluation at the Center for educational technology since last year. Alternatively, Faculty C is an experienced researcher who transferred from a specialized department to an education-related center within the university. He has teaching experience at the undergraduate and graduate levels in his area of expertise and is familiar with the university's situation.

3.2 Qualitative Analysis Method (Steps for Coding and Theorization)

In this study, the authors attempt to explore and structure the issue of FD training in science universities using Steps for Coding and Theorization (SCAT), a qualitative research method, to explore how the "desirable training style" was determined in small-group discussions. The authors then conducted a qualitative analysis using SCAT proposed by Otani (2011) to clarify the process of discussion among the trainers on how to proceed with "FD training for promoting English language teaching at science universities." SCAT is an analytical method providing a roadmap for discovering potential meanings in language records collected through observation and interviews and for developing new concepts. In addition, qualitative research methods aimed at hypothesis generation are considered suitable for exploratory investigations to obtain helpful information to overcome the current situation (Fukushi & Nago, 2011; Kato et al., 2023a; 2023b).

3.3 Data Analysis

The first author transcribed the audio recordings. The transcripts were analyzed using SCAT, a sequential, thematic qualitative data-analysis technique (Otani, 2008; 2011). It includes coding steps from open to selective, storyline creation using final selective codes, and creating theories from the storyline. Accordingly, each utterance of faculty members was considered to be a single recording unit. These recording units were then classified into categories and subcategories based on the similarity of their semantic content, with different themes extracted following the exercise. This approach was selected for its explicit analysis process, which integrates qualitative data analysis with theoretical coding, and for its efficiency and validity of theorization using relatively small-scale data (Otani, 2008). This analysis covered the language records of a December 19, 2022, meeting. The recording time was 53 minutes and 12 seconds. Faculty A was the meeting facilitator, and three faculty members expressed their opinions on "In what type of FD training course content and implementation would science faculty members be

interested in participating?" according to the interview guide in Table 2. The verbal recordings of the meetings were divided into segments based on the SCAT analysis procedure, resulting in 301 segments. Some segments (8 segments, 28 seconds) were excluded from the analysis because they included reports of FD training at other institutions attended by Faculty D. There were 293 total segments.

Table 2. *Interview Guide*

1	How to teach a specialized class in English at a science university.
2	How to promote active learning and other student-centered classes.
3	What kind of FD training content and implementation methods are acceptable for faculty at science universities?
4	What is the role of an FDer? Did she promote participants' reflections?

4. Results

Qualitative analysis identified the main categories and subcategories in Tables 3 and 4. Examples of each aspect of the nine main themes are provided below, with the subcategories and main categories denoted by angle brackets (<…>) and square brackets ([…]), respectively. In the following paragraphs, double quotation marks ("…") denote representative descriptions, and the numbers inside brackets denote unit numbers for each participant in Table 1. At the preparatory meeting for the FD training on December 19, 2022, faculty members at CITL expressed their opinions on the "ideal FD training program" based on their own experiences and the situation of their organizations.

The research question "In what type of FD training course content and implementation would science faculty members be interested in participating?" prompted us to aggregate five itemized subcategories into two main categories: [FDer Losing the Way] and [Clear and Simple Course]. As shown in Table 3, the first main category included the following three subcategories:<Targets are blurred>, <Pursuing two hares>, and <Discrepancies in training content>. The second main category [Clear and Simple Course] clarified that FD training should be <clear vision of training courses> or deal with <Simple Skill Training> that focuses on language skills, as shown in Table 4.

Table 3. *Subcategories of Problems with FD Training Courses*

[**FDer Losing the Way]**	
<Targets are blurred>	I had the idea that I should be teaching more about teaching strategies, but Instructor B was more interested in discussions, how to teach (language activity), icebreaking, holding a clinic, and so on. B was more focused on activities, such as how to teach discussion, icebreaking, etc. (186: A).
	If you put two things in, you end up with a different target audience, and It's a bit of a blur, and I think it is more for people who are already using English or are thinking about using it, or know how to use it. (234:D).
	(omission) It might be an overstatement to say that this is a bit of a niche, but we are aiming at that audience, so it's not a bad direction to take. It's not a bad direction to take, and it's excellent. It's not a bad direction to take. (270:D).
<Pursuing two hares>	(They may not go to FD training.) They may only be able to make it to this level if they learn how to communicate well, speak, explain, and give presentations in English, which may be an overstatement. You Can't reach this level unless the participants clear the primary level. (218:D)

	(omission) My impression is that it's trying to have both, and that is why the ARCS model that I mentioned earlier when it tries to have both, becomes too much like this, and that is fine if time permits. It would be better if I narrowed down the target of the learners and the goal of where the learners will reach so that the number of participants is also narrowed down, but it would be more apparent. (236:D)
<Discrepancies in training content>	I wonder how it would work in this situation. So, we should have some specific specialized lectures. I do not know. I do not care if it is a video or something, but he (Lecturer B) does not specialize in that (science) field. (188:C)
	I don't think it would be a good fit (to bring lesson plans) to have them do a mock class and hold a clinic. It might be possible to do what I mentioned earlier. It will still be okay if it is the kind of group-work lecture I mentioned earlier. (192:C)

Table 4. *Subcategories of Ideal FD Training Courses for a Science University*

[Clear and Simple Course]	
<Clear Vision of Training Courses>	Yes, it would be nice to have a demonstration. So, it would be nice to have a demonstration. Like in the sciences, we are doing that kind of interaction with math or something like that. (23:C).
	One example of a non-native but foreign-style class based on current trends is a class in which students participate. If we connect this to a discussion of how this type of class style could be introduced, it would clarify what the teacher learns. Since it is pretty clear what the teachers will gain from this FD training, even considering the time constraints, it would be better to focus on such a specific topic and not make it too much. (121:D)
	That is not the point; that is not possible. I am sorry. Let us give up on that, but we do have group work, so I think we should try to improve the English group works. I am sorry, but I cannot do that. (229:C)
<Simple and Focusing Training>	I cannot say. Many things can be said in Japanese but not in English. (57:C)
	I have been working on this since April or May, and recently I have been reflecting on whether I overdid it a bit. I could have done it sooner if I had used a better lecture method like that of English-language institutes. (209: A).
	That should not be possible. I am sorry. I have given up on that, but we have group work to improve the English group work. I am sorry, but I am afraid that is not possible. (229:C)

1. Conclusion

This qualitative and exploratory study intended to define how faculty developers at a CITL design practical training courses for professors and how they would adjust the plan to meet participants' needs and the situation at science universities.

First, in preparation for this FD training course, the FDer led the FD training to promote EMI in specialized classes at science universities and asked an external lecturer, Lecturer B, to prepare teaching materials and conduct the training. However, Faculty A and Lecturer B, who specialize in foreign language education, did not fully understand the specialized education at science universities. Therefore, a further discussion involving Faculty C and D regarding suitable FD training was conducted, which organized a team from different major fields.

Second, Faculty A reflected on her own struggle to design and implement successful FD training courses at a science university. Although she was eager to implement good FD courses at a science university, she did not find the solutions

convincing. For example, Faculty A stated, “Instructor B was more interested in discussions, how to teach (language activity), icebreaking, holding a clinic, and so on” (unit 186). In the meeting, Faculty C was hesitant to set the hard-burden courses under the strong recommendation and pressure to eager in high-level research, saying, “I don't think it would be a good fit (to bring lesson plans) to have them do a mock class and hold a clinic” (unit 192).

Finally, the research question prompted us to aggregate five items into two main categories: [FDer Losing the Way] and [Clear and Simple Course]. The first main category included the following three subcategories: <Targets are blurred>, <Pursuing two hares>, and <Discrepancies in training content>. As shown in Table 3, for newcomer Faculty A (FDer) at CITL, the target audience and content for FD training were unclear at a science university. She then planned the “dual pursuit” FD seminar to improve both educational methodology and English language skills. However, this has created a mismatch with the "training needs" of science faculty. These three subcategories are summarized as "FDer Losing the Way.” It was suggested that training be reconstructed as a [Clear and Simple Course]. It was also clarified that FD training should have a <clear vision of training courses> or deal with <Simple Skill Training> that focuses on only language and classroom communication skills. These two subcategories were conceptualized as tips for FD training course improvement.

There were limitations to conducting an analysis of only one discussion, the findings of which might be helpful for future qualitative studies that would require clarity and requirements for successful FD courses at science universities.

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