Scaffolding As a Way to Conceptualize Teaching and Inform University Faculty Development

Fumi Takegami

Abstract

This study is about pedagogy and takes the stance that professional development (PD) should be an ongoing process in one's teaching career in primary, secondary and tertiary education. The emphasis is on the role of PD of faculty at university. Notably, PD is conceptualized differently in primary and secondary schools (where it is often mandatory) than at university. For example, PD is referred to as faculty development (FD) at university, which often involves a less structured and participatory developmental approach conducted on a volunteer basis. For purposes of this study, FD signifies PD at university because it is the term that is commonly used in Japan where the author teaches. Importantly, the focus of FD in this study is on development of pedagogical knowledge: on ways to help instructors as specialists in their fields convey their subject knowledge effectively in the classroom. Second, the need for FD will be made by pointing out some limitations that emerge when instructors heavily rely on traditional lecture-oriented instruction. This will be made clearer in a discussion of two contrasting teaching approaches depicting the lecture format as monological and social constructivism as dialogical. After making the argument for creating a more dialogic interactive atmosphere in the class, the role of scaffolding will be explained as an effective approach in FD to help teachers conceptualize their pedagogy in ways that better inform their instruction. The study will include practical examples within an interconnected series of lessons using scaffolding techniques that are documented from an actual course taught by the author. Survey results from the students taking the course targeting the helpfulness of scaffolding are presented. Finally, a proposed FD framework designed to help instructors conceptualize and integrate scaffolding into their teaching is presented.

Key words: professional development (PD) / faculty development (FD) / pedagogical knowledge / scaffolding / dialogism / monologism

In support of effective FD at university

PD at all levels involving teaching staff of primary and secondary schooling through FD at university will lead to improvements in practice. Although participation in PD at the primary and secondary levels is expected and built into the school structures, FD at universities on the other hand is less so. Many universities do not adequately "prepare prospective academic faculty for the responsibilities of college and university teaching" (Behar-Horenstein, Garvan, Catalanotto, Su, & Feng, 2016, p. 52). If this is the case, then faculty are left on their own to figure it out. Although a learn-by-doing experiential approach is not so unusual, and teachers at all levels will develop their personal theories of teaching built on personal knowledge over time (Kumaravadivelu, 2006), relying only on implicit theories of teaching informed by trial and error through the course of one's teaching career have limitations. If teachers do not have access to professional theories of teaching presented in the literature or in FD sessions, then their instruction becomes static. In other words, through gaining further knowledge of professional theories, teachers are able to conceptualize their teaching in ways that better inform their personal theories of teaching (Freeman, 1996).

An example of falling into a static state can be drawn from second language acquisition research in the concept of *interlanguage*, which depicts the journey on a spectrum the learner takes from their native language (L1) toward learning a foreign or second language (L2). Along the journey to attain the target language, if learners do not acquire proficiency in the formal rules or structures of L2, and merely rely on their intuitions informed by their native (L1) grammar, then their development will be fossilized. In this manner, the interlanguage model could be applicable to FD. If teachers solely rely on their intuitions formed by experiences (personal theories) without being advanced by formal knowledge (professional theories), then their development will be also fossilized. Thus, when teachers are left alone to figure out how to convey course content, they will resort to conceptualizing their instruction from personal theories that are frozen in time, because the theories are often rooted in their experiences as students in university lecture-oriented classrooms (see Schon, 1983, *apprenticeship of observation*).

Lecture as monological approach vs social constructivism as dialogical approach

At university, the traditional approach to instruction in classrooms has been through lectures as a means to deliver knowledge. The lecture format is seen as an efficient way to

transmit a fixed amount of information to the students. Students are expected to have the matured study skills to modify their behavior in ways that allow them to synthesize the large body of knowledge coming at them, further research it and report on it. In taking this approach, expectations are put on the students to cleverly interpret or catch the fixed or full meaning of what is in the teacher's mind, or passively accept what the teacher is explaining (Nystrand, 1997). However, in non-laboratory classrooms that do not apply a learn-by-doing approach, such as in Humanities, many reflective teachers at university, after using the lecture-oriented format, may be experiencing an increasing gap between the content of what they are lecturing about and what their students are understanding. They may wonder as Dick Allwright (1984) did in his article titled *Why Don't Learners Learn What Teachers Teach? — The Interaction Hypothesis*. According to Allwright, learners reported different versions of what was being taught. He added this occurred because learners filter the information according to their own perceptions. He pointed out that we need to consider what learners bring to the process "…by which different learners take different things from the sum total of learning opportunities that each lesson offers" (p.5). Nonetheless, on the other side of the equation Allwright acknowledged that teachers play a powerful role in the process of classroom learning. He argued for more dialogic approaches, claiming that instruction and activities the teacher chooses which produce interaction with and among students are central to the learning process and would narrow the gap between instruction and student comprehension.

In relation to the widening gap addressed above, there are various pedagogical explanations for this between what teachers teach and learners learn. First, the lecture format is monological. It is teacher-centered as the focus is on the instructor and there is a distance, not only physically, but mentally between teacher and students. Bakhtin (1984) argued that in a monological approach the discoursal space is fixed; it is a one-way delivery of information by the instructor, the possessor of knowledge, who then passes it on to those that either previously misunderstood or do not know it. Wells was critical of relying heavily on the lecture type format because there is an assumption that that knowledge as truth is something that can be objectively passed on through transmission "… in which a closed and unquestioned body of information…is imposed on passive and supposedly, receptive students" (1999a, p.53).

The limitations of the lecture monolog can further be seen when comparing it to a dialogical approach to classroom learning. For Bakhtin, the nature of knowledge building is

addressed in his use of the term *dialogism*, referring to a shared or co-constructed discourse (i.e., dialogic interaction) to create meaning. He states, "Truth is not born nor is it found inside the head of an individual person, it is born between people collectively searching for truth, in the process of their dialogic interaction" (1984, p.110). Therefore, the power of a dialogical approach is that it provides an open discoursal space for all to participate in the co-construction of meaning. It creates a socialized learning environment that is enriched by recognizing the voices of the participants whereas *monologism* "denies the existence outside itself of another consciousness with equal rights and responsibilities" (1984, p. 292). In turn, through a dialogic approach the social worlds and the students' lived experiences enter into and contribute to classroom discussions as students interact with class materials allowing their tacit understandings, a rich source of unrevealed knowledge, to emerge (Nonaka & Takeuchi,1995).

Bakhtin's concept of dialogism supports a social constructivist approach to teaching and learning. In the book, *Dialogic Inquiry*, (1999a) and in a related article (1999b),Wells reconceptualized the role of dialog in education. He applied the ideas of Bakhtin, and Lev Vygotsky (1978), the author of social cultural theory (SCT), whose views provided a major underpinning of social constructivism. Arguing against the fixed, objective view of knowledge put forth by the positivists view of learning grounded in the scientific method that disregards the sensory subjective view and its contribution to knowledge building, Wells offered the following distinction of the social constructivist view of knowledge: It is "constructed and reconstructed between participants in specific situated activities, using the cultural artifacts at their disposal, as they work towards the collaborative achievement of a goal" (Wells, 1999b, p. 140).

The co-construction of knowledge is reflected in Wells' reference to *dialogic inquiry*. He emphasized the need for more constructive conversation with teachers and students, which he referred to as *dialogic teaching*: creating an interactive learning process where knowledge is co-constructed between teacher and students; and students with students. To Wells, curriculum development and teaching should focus on learning as a dynamic, dialogic, co-constructed and socially interactive, knowing process (Dewey, 2007(original1938), also see Takegami, 2022) rather than having curriculums and instruction prioritize a one-way, presentation type, transmission of knowledge approach through recitation and lecturing. Wells further added it is the responsibility of teachers as professionals to conceptualize their instruction in ways that produce dynamic teaching by finding the nec-

essary mediating tools to facilitate their learners to be more openly engaged in activities during the knowing process to achieve learning goals (1999b). In this paper, it will be argued that this is the role that scaffolding can play in FD.

Scaffolding in FD

> *Many of us who teach in higher education do not have a teaching background,*
> *nor do we have experience in curriculum development. We know our content*
> *areas and are experts in our fields, but structuring learning experiences for*
> *students may or may not be our strong suit.*

--Dr. Vicki Caruana, assistant professor at Regis University, College
for Professional Studies, School of Education & Counseling.

Scaffolding can be conceptualized as a means to structure students' learning experiences in ways that assist them to reach the target of a lesson, course goals and their learning potential. Scaffolded activities can also make classroom learning more socially interactive as well. The term scaffolding entered into educational research with a study in elementary school by Wood, Bruner, and Ross (1976). They applied the scaffolding metaphor, which is used on building sites as a temporary or moveable platform to support workers as they modify or erect a structure, to the domain of learning to depict the various steps or support adults provided to children while doing joint problem-solving activities. Because instructional scaffolding involves "guidance by others" i.e., the teacher, a key factor is that it brings socialization into the learning environment (Stone, 1998, p. 351).

The concept of scaffolding in education emphasizes the importance of social interaction and is linked to Vygotsky's SCT. Taking the position that learning itself is a highly social activity, Vygotsky found it emerges as a result of an interactive process with one's social environment. Primarily, from a very early age, learning is initiated on an interpersonal level as children interact with others. He especially placed importance on interactions with more knowledgeable others (MKO). Then, from these externally-driven dialogic encounters, learning is enhanced as the child internally processes information at the intrapersonal level. The cyclical, interactive social nature of learning in SCT is expressed in the view that the development of language and thought are simultaneously interrelated. Notably, in SCT, language plays a dual role. It is a psychological tool that not only expresses thoughts, but through social interaction, language is a mediating force for cognitive stimulation.

The theoretical grounds depicting the social nature of learning in SCT was shown in Vygotsky's conception of the zone of proximal development (ZPD). Vygotsky's portrayal of learning as a social activity that further requires assistance from MKOs underpins the ZPD. In the framework, learning development emerges on a vertical scale. The bottom line of the ZPD marks what learners can do on their own without assistance. The aim of the ZPD at the top of the framework marks the learners' learning potential. Vygotsky proposed that getting learners to reach their potential development occurs with the assistance of a MKO, i.e., the teacher. Thus, in theory, Vygotsky was able to argue that learning in an external environment (e.g., the classroom) should be socially constructed, dialogic and guided. This position has major implications for classroom learning. It suggests that a heavy reliance on lecture-oriented instruction limits dialogic interaction among students whereas the inclusion of social interactive activities to discuss course content guided by MKOs – including valuable exchanges with the teacher in "instructional conversations" (Tharp & Gallimore, 1988, 1989) – would further enhance opportunities for learning. Although Vygotsky's contributions were significant for the field of education, his interest was in psychological development of children, and his focus was not on the details of how types of assistance within ZPD would be realized in classroom instruction (Wells, 1999b). This was the role of educational researchers.

Ever since Wood et al. introduced the term scaffolding in education, researchers have been trying to unpack the concept. van de Pol, Volman and Beishuizen (2010) offer a detailed investigation of the various descriptions and frameworks applied to scaffolding, but they acknowledged there is no consensus on how scaffolding should look in the classroom. Moreover, they pointed out that there is a critical debate over using the metaphor that makes a broad claim about support for knowledge if "[e]ach student's building is different" (p.274). Thus, the use of the term "support" is very broad. Should everything a teacher does, such as giving summative feedback like error correction in marking papers or recasting a student's response or correcting a student's misunderstanding in response to a question be called scaffolding?

To address this question, van de Pol et al. did provide a valuable contribution to the broad definition by stating scaffolding should occur as steps to accomplish a *task*, which according to Lee (2000) includes:

(1) a classroom activity or exercise that has (a) an objective attainable only by the

interaction among participants, (b) a mechanism for structuring and sequencing in-
teraction, and (c) a focus on meaning exchange (p.32).

To further draw a link to a task and the role of scaffolding, van de Pol et al. added the
importance of an MKO stating, "In general, scaffolding is construed as support given by a
teacher to a student when performing a task that the student might otherwise not be able to
accomplish" (2010, p.274).

Although strongly in support of the concept, Tharp and Gallimore had trouble with
the term "scaffolding". They felt it was too broad and should be modified:

> [T]he field has advanced to the point that a more differentiated concept can be devel-
> oped. For example, scaffolding suggests that the principle variations in adult actions
> are matters of quantity – how high the scaffold stands, how many levels it supports,
> how long it is kept in place. But many of the acts of the adult in assisting the child are
> qualitatively different from one another (1988, pp. 33-34).

They modified the scaffolding concept with their term "assisting performance". Tharp and
Gallimore wanted to avoid overquantifying the concept, which would give it an image of
objective, standardized steps that would be prescribed to teachers to follow, and this would
lead to dehumanizing the concept. Instead, in their framework they recommended that
teachers take the position of particularity to be contingent on the needs of the particular
students in a particular course. So, they modified the scaffolding concept of building sup-
port taken from the construction domain and transferred it to a more humanistic domain,
conceptualizing the concept as assisting rather than supporting (McFarlane, Ismail & Rah-
man, 2008). Furthermore, Tharp and Gallimore opted for the term assisting because they
believed it was truer to the notion of a more interpersonal, co-constructed approach that
enables teachers to guide their students. In their book *Rousing Minds to Life: Teaching,
Learning and Schooling in Social Context* (1988), and their article *Rousing Schools to
Life* (1989) they largely draw on ZPD and posit that learning is optimized when teachers
not only assess students (e.g., testing for comprehension), but assist them in their learning
development. They gave three maxims for a contemporary definition of teaching (1989,
p.22), which imply *teaching is scaffolding*:

- Teaching must be redefined as assisted performance.
- Teaching consists of assisting performance.
- Teaching is occurring when performance is achieved with assistance.

In their framework, they list six types of assisting performances: *modeling*, meant the teacher as the expert would provide explicit imitative behaviors and strategies for doing a task that students would internalize for appropriation; *contingency management*, referred to teacher's understanding of various levels of students and knowing when to praise them to motivate them, *feedingback*, occurred when teachers give guided comments, written or oral, on student performance; *instructing*, the most common role of teachers is to give directions or suggestions setting up or conducting an activity, *questioning*, included not only questions to assess comprehension of the given course material, but also framing questions in ways that have the students challenge their thinking by going beyond the content that is presented to them; *cognitive structuring* is the most difficult to put into practice illustrated the important role the teacher plays for structuring a task in ways that assist students to internalize how to think about and perform a task (Tharp & Gallimore, 1988; also see Colby & Atkinson, 2004; Thompson, 2013). For example, a teacher introducing a critical thinking task about a topic would begin to structure it in ways students could cognitively visualize strategies for performing the task by telling them the value of thinking of both sides of an issue before taking a stand, and to make a list of pro and con points about the topic. Moreover, the teacher could add when you present your stance, you are also better prepared to respond to an opposing view.

The four categories represented the various teaching ways teachers could apply to assist performance within the ZPD. They are detailed with qualitative examples in their book and addressed in their article as well. For purposes of this paper, Tharp and Gallimore's work is worthy of mention as they took a Vygotskian view and strongly supported the need for teachers to utilize a student-centered approach providing the necessary steps to assist the learners in ways that engage them from previously being spectators to now becoming participants in their learning process (1988). Although their focus was on elementary school teaching, the spectator view of learning, which Dewey previously in similar critical way referred to as the Spectator Theory of Knowledge (1938/2007), could also be applicable to lecture-type format of instruction, which puts students in a passive rather than an active learning role in classroom instruction.

A working assumption of what characterizes scaffolding

In this study, assisting performance is subsumed under scaffolding. The latter term is still preferable because of the rich interpretation the metaphor allows for in the domains of teaching and FD — that activities with tasks, lessons or learning goals need to be designed with pedagogically supportive steps and social interaction is crucial to knowledge building. Importantly, the concept takes place within the student's ZPD. It is guided with necessary steps of assisting the student to eventually reach the learning potential goal and to perform a task, automatically, which Tharp and Gallimore referred to as the state of *automatization*, when a student is able to internalize the higher learning goal objective of doing a task without assistance. van de Pol et al. (2010) offered three common characteristics that qualify as scaffolding. This study will draw on them in several scaffolding activities within a model lesson, and then later in a proposed FD framework shown further below. The three common features are contingency, fading and transfer of responsibility (van de Pol et al, 2010, pp.274-275).

Contingency means that in order for students to be motivated to accomplish a given learning task, the teacher needs to be aware of their levels so that he or she can determine what types of scaffolding are needed and when and where to give them the assisted steps. In other words, support is contingent on beyond the level of what the learners can do on their own. van de Pol et al. (2010) suggest diagnostic testing would be one way to determine the student's current competence levels. However, attractive as that sounds, primary and secondary school teachers, including university teachers do have the time to run diagnostic tests. In this paper, another more practical solution would be to respect the teachers intuitive sense making skills based on practical experiences and reflections that have informed them of what their students can and cannot do. To clarify, a parallel can be drawn in second language acquisition studies with the concept of caretaker speech, also referred to as motherese. The term is used because it is similar to the ways adults modify their speech in ways for children in L1 to understand difficult concepts, such as shortened sentences, slowing the speech with repetitions and simplifying vocabulary and grammar. Foreign language teachers are also able to adequately use caretaker speech as well in L2 learning; for the most part instructors of all subjects have acquired the remarkable awareness skills to know what their students can and cannot do on their own. This intuitive sense will come in handy to determine the necessary contingency steps of scaffolding that need to be done in order

to meet the learning task goal.

Fading and *transfer of responsibility* are the final two common characteristics and they are interrelated. They are part of the same process leading to self-regulated learning of the student. Fading occurs as the teacher pulls away a particular scaffolded support, after knowing the student is ready to move the next step. As the student accomplishes the feat of each scaffolded step, his/her self-regulation of their learning increases. Finally, *transfer of responsibility* or automatization takes place when the student is able to perform the final task, automatically without assistance.

Through operationalizing contingency, fading and transfer of responsibility, the teacher is able to support the learning of their students as they advance within their ZPD. Importantly, learning can be optimized when teachers, as reflective practitioners, are able to draw on their heightened sense of awareness of the students' ZPD and assist them [students] in their performance. Next, the study will move on from discussing theoretical features of scaffolding of what it is and why it should be implemented to a practical example of how it can be implemented and what it looks like in a university lesson.

A scaffolded lesson at university

The following series of scaffolded tasks in Table 1. were conducted by the author in her oral presentation course.

- The students were 3rd year, English majors. There were 29 students in the course. The timeframe for the following series of task activities was four, 90-minute classes.

- ZPD Learning Potential Objective Goal: to develop students' oral communication skills by taking part in a critical thinking task, looking at both sides of an issue that culminated in expressing their ideas in a panel discussion.

- Students worked individually and collaboratively. To accomplish the task, activities were scaffolded through the following steps from 1 to 4. After the author reflected on the lessons, step 5 was added as a proposed idea for future classes. In Table 1, the activities are presented in a top-down order and in Figure 1, the flow of the activities are inverted to illustrate them within the ZPD framework.

Table 1.

Top-down flow of scaffolded activities (see appendix for details of activities)

Step	Learning purpose	Scaffolded Activity	Students' (Ss) Outcomes
1	Generate topics to discuss.	Use mind mapping handout to help generate Ss' ideas.	Topics are formed.
2	Gather information on the topic from both sides of the issue to further critical thinking.	*Teacher models searches on the Internet on how to look for topic information. **Use pro and con handout to record your information.	*Further develop searching skills. **Learn to sort data.
3	Understand the relationship between a main idea and supporting detail.	Use language work handouts to see relationships between main idea and supporting details, and types of supporting details (e.g., statistics, expert opinion).	Learn to organize data for presentations.
4	*Explain panel discussion format. **Present ideas in a panel discussion. *** Self-reflection to further automatization.	*Practice (rehearse) presentations with your group **Panel discussion presentations *** Self-reflection activity worksheet.	*Feedback for presentations. **Reach the final goal of 'learning by doing' and self-reflection to achieve automatization.
5	Write a critical essay making the argument for the side you chose.	Use argument model to write seven-paragraph essay.	Expanded learning to further conceptualize data from panel presentations.

Explanations of how the activities were carried out in a series of four lessons are presented below:

- Lesson one

Step one involved activating student background knowledge (their tacit knowledge of a topic). Students were put in groups of threes. A mind map was used as a scaffolding technique to generate their ideas. In step two, after deciding on group topics for the panel discussions and which side the students were on, the teacher (the author) modeled several ways to search for information (i.e., on the Internet) showing them language phrasing to get appropriate search outcomes. Then, the students were given a pro and con worksheet to begin finding and then sorting information about both sides of the topic. The author used cognitive structuring by telling the students that to better prepare for their side of the discussion it will be useful to know the arguments against their position.

- Lesson Two

Students brought the information they found to share with other group members on their team. Next, step three included language work by introducing students to strategies to present their ideas. The students were given scaffolded exercises to establish an understanding of the relationships between main ideas and supporting details, and types of supporting details. A worksheet was provided to organize main ideas, supporting details and visuals to present their ideas. Students were also asked to choose presentation order.

- Lesson Three

Preparations for actual panel discussion were initiated in step 4. First, students were given time to rehearse for the final presentations. Presentations were carried out in practice among team members. Students could receive valuable individual feedback on their output as they presented their ideas as well as getting feedback from the other participants (see Swain for mediating output hypothesis, 2000).

- Lesson Four

Step 4 concludes with transfer of responsibility. Students participated in the final panel discussions. They presented on their own within their team presentations. Therefore, the students were able to achieve their learning potential objective of having them think of a topic, research it critically from both sides, gather information, synthesize it, and present it publicly in an oral presentation format (see survey further below).

(Note: After reflecting on the lessons, the author has included step 5 to be conducted at the conclusion of the lesson. The seven-paragraph argument model essay shown in the appendix could be given to students to model as a scaffolding framework to follow to write out their ideas from their oral presentations.)

Figure 1

ZPD Learning flow with scaffolding help of MKO to reach learning potential goal
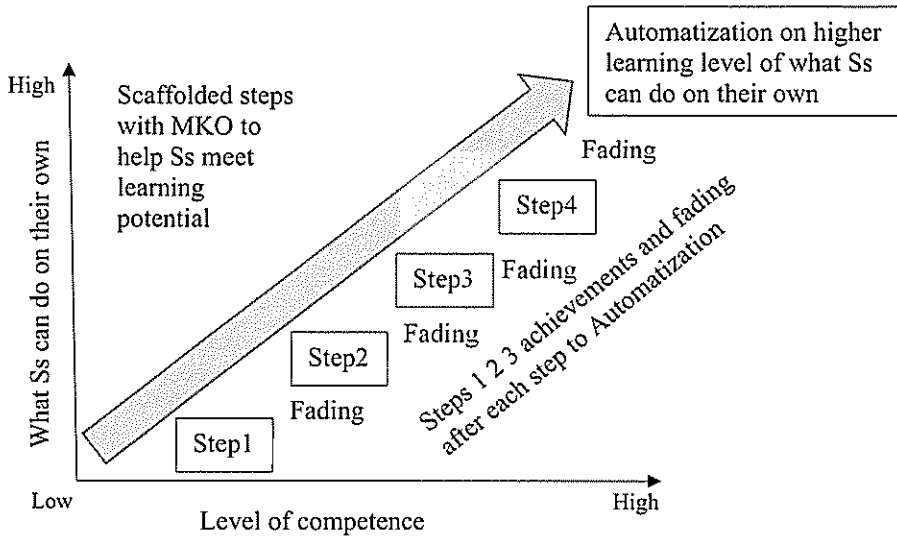
*Note.*This model is produced by the author, summarizing the learning flow withing the learners' ZPD adapted from Zone of Proximal Development Victorian State Government Education and Training (2016).

The above illustration Figure1. depicts the learning flow within the learners' ZPD. Although it is difficult to account for each individual learner's ZPD, there is the unified goal in getting students in the class to reach the learning objective of satisfactorily taking part in choosing, selecting, gathering, sorting and presenting their data in the panel discussion. Planning started at the top by deciding on the desired learning potential goal. Then in a bottom-up manner, several careful scaffolded steps were incorporated in activities as supports for students to arrive at the desired higher learning potential goal. Throughout the steps, a dialogic, social constructivist, student-centered approach was taken. Because of highly responsive classroom interactions, the instructor could assess student achievement at each step. The process of fading occurred with the successful completion of each step until the final learning potential goal was reached upon completion of that larger task. When this was achieved, transfer of responsibility had taken place in the form of automatization because students have mastered the task. If given future presentation-type tasks, it could be

expected that students would be able to accomplish them with less scaffolded help. In other words, preparing for a topic and presenting it is what students can now do on their own.

Survey results showing how students benefited from scaffolding

The scaffolded activities above were given to show real examples in a university classroom over the course of four lessons in practice. Next, students, who took the course, were given a brief questionnaire (N=29) to gather feedback on the value of the scaffolded activities. The results are presented below.

In the first question, the students were asked:

1. How much did the activities leading to the final panel discussion performance help you to complete the task?

Not helpful	Less helpful	So-So	Helpful	Very helpful
0	0	6	12	11

Note. N =29.

The results show that more than three-fourths of the students (79%) felt the scaffolded activities leading to their final panel presentation were supportive in assisting them to reach the goal of the task.

The next question has particular relevance to university classroom instruction:

2. Have you experienced difficulty with university classes because there were not enough steps to help you reach the goal of the target task (for example, the panel discussion)? Please explain.

Yes (N=22)	No (N=7)
• *In some classes, we had to do everything from beginning (starting from planning) by myself and submit them, I did not know how and what to do. (最初から自分で計画を立てて提出をするように言われてもどうして良いのかわからないクラスがありました)* • *In some classes, teachers told us the steps but they did not explain the details.* • *Classes move on to the next class without understanding what we should do in the first class. (最初の授業で何をするのかよくわからないまま次に進んでしまったクラスがあった)* • *Some teacher told us roughly to do this and that and do it by yourself. (大まかに "これをしてあれをして、そのあとは自分でやってね" と指示される先生もいらっしゃいました)*	• *Teacher assisted us how to do something.* • *I thought it was enough.* • *Good enough.* • *Appropriate*

The results of question one, indicated that more than three-fourths of students reported the assistance they received was beneficial to reaching the learning goal of the task. The results of question 2, correspond to almost the same number of students in question 1 who wished they could receive more scaffolded steps to assist their performance in mastering a given task in university classes. There were total of 17 "Yes" explanations and 4 "No" ones. Three representative examples giving explanations for the why students thought there were not enough steps and all four responses, which were short, for why students felt there were enough steps, are provided.

The responses to the next question about group work were informative regarding the benefits of designing collaborative tasks when doing scaffolding as seen below.

3. How helpful was working with your group to complete the task?

Not helpful	Less helpful	So-So	Helpful	Very helpful
0	0	3	9	17

Note. N=29.

The benefits of designing collaborative scaffolding activities are seen in the above results. Almost 90% of the students found collaborating with students to be useful, with more than half finding collaboration in activities to be "very helpful".

Finally, as the purpose of scaffolding activities is to offer supporting steps and fading them until automatization is reached, the following question was asked:

4. If you were asked to do a panel discussion again would you be able to use the same steps?

Yes	No
19	10

Note. N =29.

The results showed that almost two-thirds of the students felt that if they were given a panel discussion activity in the future, they could self-regulate achievement of the task because of their newly acquired learning skills. Thus, student responses were instructive as useful feedback for the teacher (the author) of the course. The respondents mostly indicated that scaffolding activities were effective in assisting their performance in meeting the overall learning objective and for developing the necessary skills to reach their learning potential. In addition, a majority felt they would be able to carry out similar future tasks with less needed support. Notably the results also showed that the amount of support they received to assist their performance in preparing and performing in the panel discussion task was almost equal to the amount of support they wished they could receive in other university classrooms.

Broad implications about the results cannot be made because of the limited number of respondents regarding one course. However, the results may be informative to FD, if they are transferable and have resonance with other instructors who may be either experiencing similar situations in their classrooms or are noticing the need to make changes in their instruction. For example, the responses to questions 2 and 3, might also be encouraging for university instructors, especially in Humanities, to integrate social interaction activities into their instruction blending it with the lecture-style format (see next section). In addition, answers to questions 1 and 4 would reveal the importance of including scaffolded activities in instruction to help students reach their learning potential. If teachers are open to using scaffolding in their teaching with including more social interactive or dialogic activities, then ways to integrate them in lessons would be a fruitful role for FD.

Scaffolding in FD at University: A proposed framework

If teaching itself can be defined as scaffolding as suggested by Tharp and Gallimore above in their rephrasing of the concept as "assisting performance", then it should be incorporated into the design of FD sessions with faculty members. The following proposed framework is an example of how it could be conducted. In this paper, the decision was made not to carry it out in a workshop's session with others at the initial stages (see below). The reason is that university teachers teach in a different educational culture than in primary and secondary schools, where teachers work together in shared rooms and participate in collaborative and often mandated lesson study PD research. In lesson study, referred to as *jugyokenkyu* in Japan, where it originated, teachers work together, especially in elementary and junior high schools. They go through a lesson cycle of stages setting a goal, planning a lesson, teaching the lesson and then reflecting on it (Lewis, Perry, & Murata, 2006). During the actual teaching of the lesson, called a research lesson, other teachers come to the class, observe the lesson and then participate in a post lesson reflective discussion.

The process of lesson study is highly collaborative and shared publicly among other teachers from other schools. However, within the educational culture of a university, faculty members are autonomous. They have their own offices; there is almost no team teaching, and very little observing of their classes from other teachers. In consideration of the culture of autonomy at university, the proposed model (see Table 2) is designed to be between a FD coordinator (FDC) and a faculty member (FM) as the selected candidate. *Identify → plan → act → see → self-regulate* (Ipass) criteria formulate the flow of the model.

Table 2

Proposed Ipass FD framework focused on scaffolding

Ipass	Scaffolding	Roles of FDC and FM	Scaffolding Activities
Step One (Identify)	Dialogic inquiry within FM's ZPD (Contingency)	FDC meets with FM	A brainstorming activity is given to gain access to FM's tacit (personal theories of teaching) knowledge and to diagnose what FM needs

Step Two (Plan)	Introducing scaffolding to reach learning goals of students in lesson(s)	FDC works with FM to provide explicit theoretical knowledge of scaffolding and to plan attainment of instructional learning goals (preferably three or four lessons)	A set of coordinated scaffolding activities are planned to arrive at the desired learning potential goal of students sought by FM
Step Three (Act)	Video of lessons and FDC observations documented	FM conducts classes with scaffolded activities and FDC observes	*FM's tacit knowledge and explicit knowledge of scaffolding are combined and put into action. **FDC can observe the classes or can watch video recordings of the classes
Step Four (See)	Feeding back through reflection discussions	FM with FDC reflects on classes for further improvement.	Through dialogic post lesson discussions, knowledge of scaffolding is allowed to emerge and be internalized for future development.
Step Five (Self-regulate)	Self-regulation is sought (Fading and transfer of responsibility)	FM and FDC work together throughout the process of planning and instruction of coordinated activities.	With the completion of each activity, support is taken away as FM assimilates scaffolding techniques with the larger goal of full automatization.

The five-step Ipass framework applies the three common characteristics for a scaffold activity, and the conceptualizations of dialogic learning, in this case for teacher learning, that were presented in this paper.

- In step one, dialogic inquiry immediately begins. Through the socialization process the FDC and FM allow the latter's valuable personal theories of teaching to emerge and become explicit to both parties as a starting point, and at the same time provide diagnostic data to identify areas to inform the former for contingency supervision.

- In step two, professional knowledge of teaching focusing on scaffolding is introduced to FM, and scaffold activities are planned to meet the lesson goals. Because

teacher development, like any kind of learning, is a process, at least two or four lessons are involved in the FD. This will allow time for the FDC and FM to work through the Ipass framework.
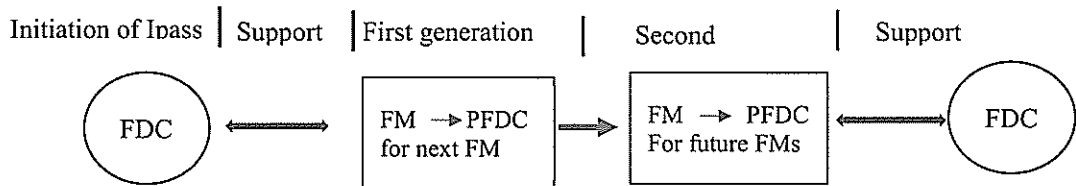
- In step three, the co-constructed ideas of the FDC and FM are put into practice (action). Three salient factors emerge during actual implementation of planned ideas (How it is done). First, the combination of ideas by both parties furthers development, not only for the FM, but the FDC as well. Through dialogic inquiry both parties gain because their tacit knowledge is brought to the surface and made explicit. Second, the learn-by-doing approach, firmly rooted in the democratic ideals of educational philosophers like Dewey (1938/2007) and Freire (1972), and supported by constructivist approaches, is grounded in the view that learning is a co-constructive, participatory and active process that occurs when learners are actively engaged with their environment. The FM benefits from this experience. Third, the maxim that *seeing is believing* applies because teachers will adopt changes in their instruction when they believe or see what can work in practice (Guskey, 2002). Therefore, video recordings to use after lessons for stimulated recall are useful. At this stage, it is also necessary for the FDC to observe the co-constructed lessons between the FM and the former. This point is addressed in step four during the reflection post lesson stage.

- In step four, through the dialogic inquiry that arises between the triangular features of input coming from the (i) FDC and (ii) FM as they discuss (iii) the activities provide invaluable data because now explicit knowledge is being internalized by the FM for future pedagogical knowledge growth. In short, the learning cycle through the process of dialogic inquiry creates an implicit to explicit to implicit knowledge building process (see Nonaka and Takeuchi's SECI model for an account of this process; and Takegami (2021) for an overview of the model).

- In step five, the final goals of the FM's ZPD are reached. Through the fading process, the FM is able to assimilate stages of scaffolding into his or her teaching. Finally, the *transfer of responsibility* manifests when the FM is able to fully grasp the concept of scaffolding and how to apply it to instruction when called for.

There are two significant points to be made about implementing the Ipass framework. First, FDCs are themselves part of the faculty or university. Their role as the primary co-ordinator to initiate the FD Ipass framework could be because of their subject knowledge background in pedagogy. Another possibility is that they are faculty of an educational center on campus assigned to teaching development. As stated earlier, FMs in other subject areas rely on their own personal theories of teaching that are a rich, but hidden source of tacit knowledge, which Polany (1966), described as knowing more than we are able to tell about what we know. Moreover, when this pedagogical knowledge remains tacit, it cannot be shared. Hargreaves (1999) wrote, "Teachers in a school are often collectively ignorant of the knowledge that exists among themselves; in consequence, they cannot share and draw upon that knowledge" (p.124). Hargreaves called for the "social distribution" of this teaching knowledge, which would be the role of FD, to make it explicit. Following Hargreaves, when tacit pedagogical knowledge of instructors is brought to the surface through being combined with the professional theories of teaching and learning of the FDC, it enriches the FM's learning potential during FD. With the assistance of the FDC combining his or her professional pedagogical knowledge and experiences, FMs are able accommodate or assimilate the concept of scaffolding and respective techniques into their teacher cognition. Then, through putting their revised teacher thinking into action they are eventually able to implement scaffolded activities on their own through self-regulation. As automatization sets in, sustainability in FD emerges because FMs can take on the role as a peer (P) FDC to implement the Ipass framework with other members of their faculty.

To illustrate the principle of sustainability, the FDC initiates FD with the first FM, who then can take on the role of PFDC for the next FM and so on. Thus, sustainable FD is enacted. Finally, the FDC is available at both ends of the FD sustainable spectrum to offer continued support (see Figure2). Support, like dialogic teaching, is also seen as a reciprocal, dynamic process of affording opportunities for continuous feedback and engagement to clarify or work out new approaches of instruction.

Figure 2

Sustainable FD Spectrum

Initiation of Ipass | Support | First generation | Second | Support

FDC ⟷ FM → PFDC for next FM → FM → PFDC For future FMs ⟷ FDC

Note. This model is produced by the author, summarizing sustainable FD Spectrum.

Second, it is important to mention the concept of blended learning. FMs are specialists in their own fields, which often require segments of a lecture-type format of instruction when called for during a fifteen-class course structure during a semester as in Japan. However, as pointed out in this paper, a heavy reliance on monologic lectures may result in having students inattentively sit through long and tiring talks. The solution is to apply *blended learning* which means using a variety of approaches, methods and techniques. The toolbox metaphor is appropriate to illustrate blended learning. When the instructors want to efficiently introduce content or need time to explain difficult or complex areas of the subject content, they have the knowledge and skills to reach for the lecture tools. On the other hand, when the instructors want students to be involved in dialogic activities to increase co-constructed engagement with content, they can reach for a different set of appropriate tools in their toolbox because they are pedagogically informed by social constructivism approaches and techniques such as scaffolding. In short, a blended learning approach would be attractive to FMs of universities who have traditionally relied mostly on lectures, but see its shortcomings, and are open to change. They would be able to enlarge their skills and knowledge of accessible tools through the type of FD suggested in the Ipass framework, which is the purpose of this study.

Conclusion

No man [woman] is an island,

entire of itself;

every man [woman] is a piece of the continent,

a part of the main…

--John Donne

[bracketed words are the authors]

The words of the great poet about the human condition hold true today. University teachers are much more autonomous at work compared to teachers at primary and secondary schools. On the one hand, autonomy is highly beneficial as it provides the space for instructors to research their fields in order to contribute to them, and to further their knowledge of their specialty areas. These features themselves lead to PD.

On the other hand, autonomy can create some limitations. The autonomous university instructor using a lecture-type format in the classroom is the expert, the knower. The instructor stands isolated, on an island at the center stage. The content is transmitted in a monologic, one-way presentation manner to an audience of receptive, but passive students. Students sit in silence. Without hearing from the students, there is no responsive understanding or ways to know if the students are engaged or disengaged with the lecture. Granted, writing assignments may be helpful to assess student understanding.

However, the value of a dialogic, social constructivist approach in the class should not be ignored. Following the cited ideas in this paper of respected scholars in education and learning development, it was shown how creating classrooms that engage and stimulate students in co-constructed activities can help them actively reach their learning ZPD potential. In theory as reported, learning is a social activity in which cognitive stimulation occurs through the medium of language. Thus, creating a learn-by-doing environment, where social interaction among learners is required to perform activities, will optimize learning.

In practice it was pointed out that learners need supporting steps to meet their learning potential. This is achieved by working with a MKO, i.e., the teacher who can provide that assistance. These steps are referred to as scaffolding. In this study, examples were given over the span of four lessons to show how a set of scaffolding activities could be applied in a university classroom to meet the desired learning potential goal. In the case presented in this paper, the aim was to develop students' skills to know how to generate ideas related to course content, organize them for presentation and then finally present them both orally and in written form. The survey results indicated that the collaborative, socially constructed scaffold activities given to students to reach the final goal were helpful, could lead to automatization, and desired for in university classes.

Finally, introducing FMs to the concept of scaffolding played a dual role in this study.

First, when instructors have the appropriate pedagogical tools at their disposal, they are able to plan scaffolded activities to get students to reach a higher order learning potential goal as in the lesson examples. In doing so, they are implementing a dialogic and social constructivist approach into their instruction. Second, it was shown that introducing FMs to the benefits of taking such approaches can be realized in the FD, Ipass framework. FD means FMs gaining professional pedagogical knowledge within their ZPD. The design of the Ipass framework applies scaffolded steps that are grounded in theoretical justifications for collaborative teacher learning leading to more dialogic, and dynamic classroom environments. If applied, it will enhance FD at university in beneficial ways leading toward the implementation of more contemporary teaching and learning approaches. Thus, within a shared community of practice, instructors are no longer operating on remote islands of an archipelago. Instead, a co-constructed, scaffolded and dynamically implanted FD provides the interconnecting pedagogical bridges to all of the islands allowing university instructors to navigate their instruction in more active ways of teaching. In doing so, universities that apply robust forms of pedagogy in FD, would be known not only as research institutions, but also as teaching institutions.

The paper has presented an argument for more productive FD focusing on pedagogy, which should be a necessary and ongoing part of PD for not only primary and secondary teachers, but also for university instructors, who should have an added interest in improving their pedagogical skills besides being knowledge experts in the specialized fields. Afterall, we are not isolated and entirely autonomous; we are "a part of the main": The common denominator that links primary, secondary and tertiary instructors is that we are teachers. We have students in classrooms, who look upon us to assist them in their knowledge building process; to them we are their teachers, regardless of where we teach or what we teach. Following this maxim will always be appreciated by our students as one student wrote:

I know I am already a grown-up university student, though, honestly I am very happy to be taught the learning steps since I can feel I can achieve the goal.

References

Allwright, R. (1984). Why don't learners learn what teachers teach? 'The Interaction Hypothesis'. In Single-ton, D. & Little, D., (Eds). Language learning in formal and informal contexts. Dublin: IRRAAL.

Bakhtin, M.M. (1984). *Problems of Dostoevsky's poetics.* (C. Emerson, Ed. & Trans.). Minneapolis: University of Michigan Press.

Behar-Horenstein, L.S., Garvan, C.W., Catalanotto, F.A., Su, Y., & Feng, X. (2016). Assessing faculty development needs among Florida's allied dental faculty. *The Journal of Dental Hygiene, 90*(1), 52 – 59.

Colby, S.A &. Atkinson, T.S (2004). Assisting Performance in Teaching and Learning. *Teaching Education, 15*(4), 351-362, DOI: 10.1080/1047621042000304484

Caruana, V. (2012). Faculty Focus: Scaffolding Student Learning: Tips for Getting Started. *Higher Ed Teaching Strategies From Magna Publication.* Retrieved on Nov 4, 2021. https://www.facultyfocus.com/articles/course-design-ideas/scaffolding-student-learning-tips-for-getting-started/

Dewey, J. (1938/2007). *Logic: The Theory of inquiry.* New York: Henry Holt and Company.

Freeman, D. (1996). Renaming experience/reconstructing practice: Developing new understanding of teaching. In D. Freeman, & J.C. Richards (Eds). *Teacher learning in language teaching* (pp. 221-241). Cambridge: Cambridge University Press.

Freire, P. (1972). *Pedagogy of the oppressed.* Harmondsworth, England: Penguin.

Guskey, T. M. (2002). Professional development and teacher change. *Teachers and Teaching: Theory and Practice, 8*(3/4), 381-391

Hargreaves, D. (1999). The knowledge-creating school. *British Journal of Educational Studies, 47* (2), 122–144.

Kumaravadivelu, B. (2006). *Understanding Language Teaching: From Method to Postmethod.* London: Lawrence Erlbaum Associates.

Lee, J. (2000). *Tasks and Communicating in Language Classrooms.* New York: McGraw-Hill.

Lewis, C., Perry, R., & Murata, A. (2006). How Should Research Contribute to Instructional Improvement? The Case of Lesson Study. *Educational Researcher, 35*(3), 3–14. https://doi.org/10.3102/0013189X035003003

McFarlane, A, Ismail, I. A, Rahman, F. (2008). Assisted performance – a pragmatic conception of online learning. *International Journal of Instruction. 1*(2). 57-75.

Nonaka, I. and Takeuchi, H. (1995) *The knowledge-creating company: How Japanese companies create the dynamics of innovation.* New York: Oxford University Press.

Nystrand, M. (1997). Opening dialogue: Understanding the dynamics of language and learning in the English classroom. New York: *Teachers College Press*

Polanyi, M. (1966). *The tacit dimension.* London: Routledge

Schön, D. (1983). *The reflective practitioner.* New York: Basic Books.

Stone, C. A. (1998). The metaphor of scaffolding: Its utility for the field of learning disabilities. *Journal of Learning Disabilities, 31*, 344–364.

Swain, M. (2000). The Output Hypothesis and beyond Mediating Acquisition through Collaborative Dia-

logue. In J. P. Lantolf (Ed.). *Sociocultural theory and second language learning* (pp. 97-119). Oxford: Oxford University Press.

Takegami, F. (2021). Teacher Development Through the Metaphorical Construct of Knowledge Creation. *Journal of the Faculty of Letters Prefectural University of Kumamoto Vol.27, No 80*, 25-45.

Takegami, F. (2022) A Generic Professional Development Model for Teaching in the International Baccalaureate Curriculum. *Journal of the Faculty of Letters Prefectural University of Kumamoto Vol.28, No 81*.17-39.

Tharp, R., & Gallimore, R. (1988). *Rousing minds to life*. Cambridge, UK: Cambridge University Press.

Tharp, R., & Gallimore, R. (1989). Rousing schools to life. *American Educator, 13*(2), 20-52.

Thompson, I. (2013). The Mediation of Learning in the Zone of Proximal Development through a Co-constructed Writing Activity. *Research in the Teaching of English 47*(3), 247-276.

Victorian State Government Education and Training. (2016, October 20). Literacy professional learning resource - Key concepts - AusVELS Foundation to Level 2 - Zone of proximal development and scaffolding. Retrieved from http://www.education.vic.gov.au/school/teachers/teachingresources/discipline/english/proflearn/Pages/velszopd12.aspx.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

van Pol, J. V. D., Volman, M., & Beishuizen, J. (2010). Scaffolding in Teacher–Student Interaction: A Decade of Research. *Educational Psychology Review, 22*(3), 271–296. https://doi.org/10.1007/s10648-010-9127-6

Wood, D., Bruner, J. S., & Ross, G. (1976). The Role Of Tutoring In Problem Solving. *Journal of Child Psychology and Psychiatry, 17*(2), 89–100. https://doi.org/10.1111/j.1469-7610.1976.tb00381.x.

Wells, G. (1999a) *Dialogic Inquiry. Toward a Sociocultural Practice and Theory of Education*. Cambridge: Cambridge University Press.

Wells, G. (1999b). Language and education: Reconceptualizing education as dialogue. *Annual Review of Applied Linguistics*, 19, 135-155.

Appendixes:

1.Examples of scaffolded activities given to students according to steps

Step One: Brainstorming Activity

✧ To generate topics for our panel discussion use the mind mapping figure to write your ideas. See the example below; then discuss them with your group members:
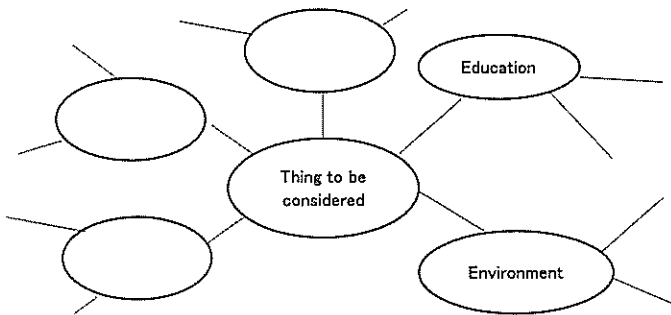
Step Two: Gather information on the topic from both sides of the issue to further critical thinking
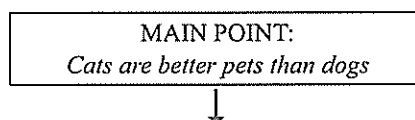
✧ In your groups, think of some pro and con arguments for the topic you chose and write them on the worksheet below:

Panel discussion topic:

Pro arguments	Con arguments
•	•
•	•
•	•

Step Three: Practice for Adding support to opinions

- Support is how you give an argument power or force. Just saying an opinion or main idea is not good enough. You need to say reasons why you believe something to give your opinion strength.
- Here are four kinds of support: examples, explanations, expert opinions and statistics. Look at the example below to see how these different types of support can be used.

MAIN POINT:
Cats are better pets than dogs

↓

| Reason: |
| This is because cats are easier to care for than dogs. |

↓

Support			
( )	( )	( )	( )
According to *PET Magazine* the cost of a pure-blooded dog costs from $950 to $2,000. On the other hand, cats are cheaper. They cost from $200 to $1,000.	My friend just got a kitten. The kitten immediately learned how to use the litter box when she was brought home. After showing her the box, she quickly learned how to use it.	Cats are easier to manage than dogs. They are low maintenance. You don't have to pay for training; they don't need to be taken outside for play or walks, and you don't need to wash them, which is a messy process if you have a dog.	In 2020, Research from Middleton University found that cats were better pets for elderly people. Their comforting behaviors like purring, rubbing against their owners, or sitting in their lap had a positive emotional effect on their owners.

Q: What kinds of support are these statements? Choose the type of support above and write it in the parentheses about each statement from:

(Examples / Explanations / Expert Opinion / Statistics (Data))

- Work together and list main and supportive arguments for your team's position.

Topic in your Group: (   )

MAIN POINT

↓

Reason

↓

(In your group, decide the four types of support and person who is in charge)

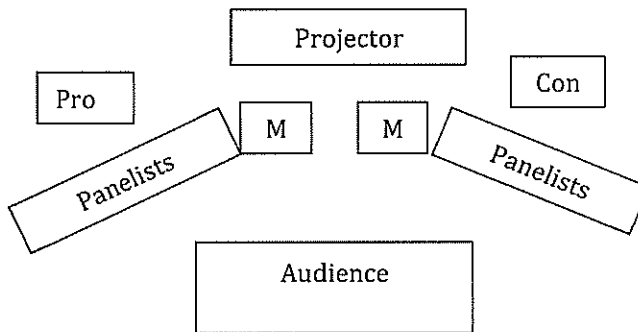| Support				
	Example	Explanations	Expert Opinion	Statistics (Data)
Name				
Contents				

- Write your main argument and supportive details. Remember to use visuals (charts, graphs, pictures)

Debate Topic (Pro or Con):

Main argument	Support	Visual

Step 4: Format of panel discussion and self reflection sheet

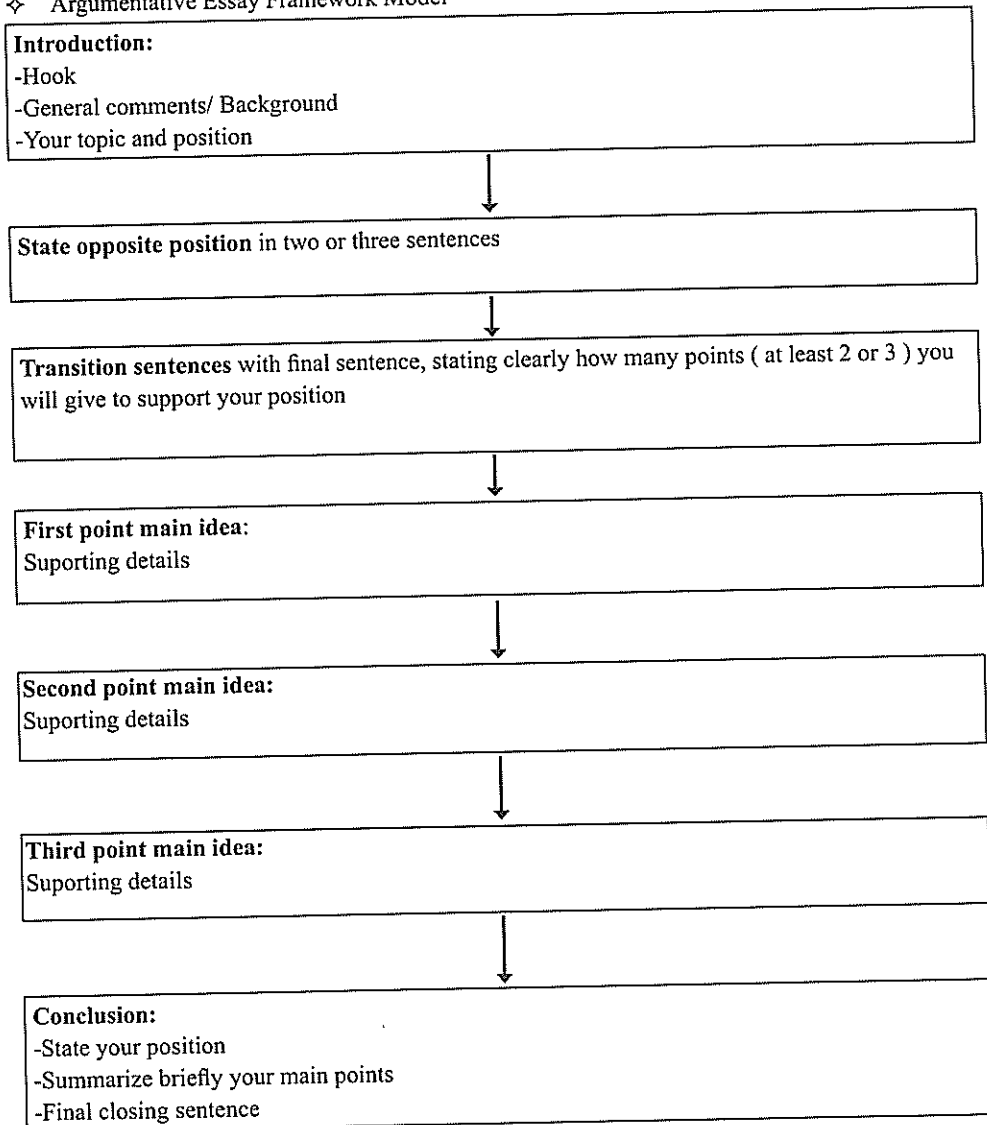❖ Look at diagram of panel discussion to visualize your performance

❖ Now that you finished your panel discussion performance, fill out the self-reflection evaluation sheet.

Panel Discussion Reflections

What we did well	What we need to do better next time
What I did well	**What I need to do better next time**

Step 5 Essay Writing

✧ Argumentative Essay Framework Model

Introduction:
-Hook
-General comments/ Background
-Your topic and position

↓

State opposite position in two or three sentences

↓

Transition sentences with final sentence, stating clearly how many points (at least 2 or 3) you will give to support your position

↓

First point main idea:
Suporting details

↓

Second point main idea:
Suporting details

↓

Third point main idea:
Suporting details

↓

Conclusion:
-State your position
-Summarize briefly your main points
-Final closing sentence

Example of Argumentative Essay Framework Model

When in Kyushu drink Shochu

Every Japanese or tourist who comes to Japan knows about its famous sake, but very few, including Japanese themselves outside of Kyushu, know much about shochu. It is surprising how few people drink shochu, which is the soul and spirit of Kyushu, where I live. In this essay, I will tell you why I think it is much better to drink shochu than to drink sake. **[Introduction]**

Of course, according to Melinda Joe (2020), a writer for Japan Times, many people will say that sake is an elegant drink. Some may say it is favored by people from 'high culture' places like Kyoto and Tokyo. They may feel sophisticated having a drink that is delicately sipped from a beautiful miniature cup with a mild fragrance and sweet taste that nicely goes with Japanese cuisine.　**[State opposite position]**

Although these points may be true, I think shochu has more favorable reasons to drink than sake. I will offer three points why shochu is better than sake. **[Transition sentences]**

First of all, as a shochu-maker group callled A hangover free-spirit (2019) reported, it never gives us a hangover. On the other hand, in my own case, I have experienced terrible next day feelings of having a headache and upset stomach after rounds of drinking sake. Why doesn't shochu give me a hangover? I think it is because it can be mixed with hot water or diluted with ice cubes and this prevents me from getting a hangover. **[First main idea and supporting details]**

Second, an advantage of drinking shochu is that it has little sugar, so it's a good diet drink whereas sake contains a lot of sugar. Therefore, shochu is healthier than sake. For example, a 60 millimeters amount of shochu has only 35 calories and in the case of sake, it has 80 calories. So, remember, when you drink sake, your calorie intake is double. **[Second main idea and supporting details]**

Finally, cost is another reason why it is better to drink shochu than sake. Shochu is cheaper than sake. Sake can be quite expensive. Moreover, because it is sweeter it is easier to drink. You might drink more sake and finish the bottle quickly, which means you would have to buy more sake and spend more money. **[Third main idea and supporting details]**

In conclusion, I think drinking shochu has more advantages than drinking sake for several reasons. It will never give you a hangover; it is a health drink, and you can save money. From these conclusions, I would like to suggest to you that if you are thinking about drinking alcohol, then it is better to drink shochu than sake. Now, after reading my argument, I think you can agree that when you are coming from within Japan or from abroad, shochu is waiting for you in Kyushu. **[Conclusion: State your position; Summarize briefly your main points; Final closing sentence]**

References

Melinda Joe (2020). *Here's what the sake and shōchū experts are drinking at home*
https://www.japantimes.co.jp/life/2020/05/09/food/sake-shochu-expert-recommendations/

A hangover free-spirit (2019)
https://mdsipandsavor.com/2019/08/a-hangover-free-spirit/