Active Learning in the Japanese Tertiary Context : Instructors Practices and Beliefs

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Abstract

This study investigated the beliefs and practices towards Active Learning (AL) of a small group of Japanese tertiary level instructors who teach lecture classes (n=35). This research has drawn results from a small online survey, and purposeful sampling with interviews conducted with instructors in various fields ranging from health sciences to science and engineering as well as EFL. Preliminary findings demonstrated that almost a decade after the introduction of AL in the Japanese tertiary context most instructors have some knowledge of the term and agree that there are merits in AL, but for various reasons are not using it in lecture classes. The lack of AL usage as well as misconceptions surrounding AL practice with Japanese instructors at the tertiary level are still evident more than a decade after the introduction of this concept. Further training is warranted with this group.

Introduction

In this study AL practice and perception of Japan-based tertiary practitioners instructing lecture classes was investigated. The perceptions and practices of AL lecturers engaged in lecture style instruction was investigated to explore their perceptions towards it. The sample includes both Japanese and non-Japanese instructors from various fields ranging from health sciences to science and engineering as well as ESL employed at the same large Japanese University. The mixed methods exploration of practices and beliefs was investigated through an online survey, and purposeful sampling with interviews conducted with survey respondents The results of research into current active learning attitudes and practices within the Japanese tertiary context was investigated with the purpose of expanding knowledge of tertiary instructors perspectives on AL practice.

＊准教授／英語教育

Literature Review

The following section will offer a review of current literature surrounding Active learning(AL). A definition of AL will be offered followed by a brief discussion of the AL situation in Japan as well as an overview of concept lecture classes the context of the current investigation.

Definition and Theoretical Perspectives of AL

The theoretical underpinnings of AL originated with cognition theorists such as Paolo Freire (1970), who laid the foundations for critical pedagogy and his opposition to what he termed the "banking" of education. Banking is a concept of education where students are perceived as an empty account to be filled by the teacher, who in turn as Friere contends (1970), "transforms students into receiving objects. The Constructivist Theory of learning on the other hand, promotes the premise that learners actively construct their knowledge through interaction with their environment and are active participants responsible for the reorganization of their mental structures, not passive recipients of information (ibid.). Looking toward Socio-constructivism, Vygotsky (1978) stresses the importance of the learners' interaction with the environment . The social interactions also play an intricate part learning as Constructionist theorists comment these interactions which may be viewed as emphasizing concepts such the concept of learning to learn (Cooperstein & Kocevar-Weidinger, 2004). These theories are found in direct opposition to Behaviorism and Cognitive Psychology, as knowledge is thought to be constructed rather than acquired (ibid).Theoretically, AL may be considered linked to both Constructivist and Constructionist views on learning as they both may contribute to collectively because constructivism endorses biological and cognitive processes, and social constructionism places knowledge in the field of social interchange (Ackermann, 2001).

Although most people in the education field have some general idea of what AL is, looking for a generally accepted definition for AL is challenging as there is no definitive definition (Ito, 2017). The lack of a clear definition may be due to the lack categorization of "active" in this educational context (Bonwell & Eison, 1991). For the purposes of this research AL will be defined as an instructional method viewed as engaging students in the learning process and is observable when students are actively engaged with the content of the course as well as with each other in ways that truly foster long-term acknowledgement of knowledge and use of critical thinking skills (Prince, 2004; Yamauchi, 2017).

AL in the Japanese Context

AL, although having been utilized for more than 30 years (Bonwell and Eison, 1991), is

a relatively new concept in Japan only gaining recognition in Japanese tertiary education around 2010 (Yamauchi, 2017). The Japanese Central Council for Education (CCE) in 2012 positioned AL as a type of learning, noting that students actively learn through various instructional methodologies such as Cooperative Learning (CL) and Project based Learning (PBL) with the purpose of developing general skills (Nakai, 2015). Unfortunately, without providing a concrete definition of AL, in Japanese tertiary education, it is often only classified by its instructional methods with many Japanese university instructors mistakenly believe that merely using CL and/ or PBL is in fact AL (Ito, 2017). This notion is further reinforced, in part, by the AL literature, but more so by the lack of proper Japanese translation for the term 'Active Learning' with many Japanese educators linking the term merely to physical activities (Taniguchi, 2013).

With regard to AL, Nishikawa (2015) contends that educators in the Japanese context tend to concentrate on methodology or learning techniques without establishing learning content, goals, and objectives. These pedagogical misconceptions have led AL to be placed in the category with the learning activities it utilizes. Therefore, AL as a pedagogical methodology to design course contents with learning goals in mind is disregarded (Kane, 2004). Historically in Japan there has been an over-reliance on teacher-centered lecture formats within tertiary education (Beauchamp, 2014).

In 2012 a report from the CCE recommended the incorporation of active-learning in lecture classes (Matsushita, 2018). The report defined as active learning as a student-centered learning methodology using methods like collaborative learning and problem-based learning with basically the fundamental goals being the development of generic skills, knowledge, and experience (Nakai, 2015). The reality is that these strong governmental suggestions have not been accompanied by assistance or support for instructors on how to fundamentally transform their current lecture classes into AL environments (Ito, 2017). As most university instructors are content specialists, they generally have little or no experience with teaching methodologies (Taniguchi, 2013).

AL instruction is also fundamentally different from the traditional lecture approach that most of these university instructors experienced as students. Therefore, without prior experience or training most lecture instructors are at a loss as to how they can transform their classes into AL environments (Ito, 2017). Nevertheless, it appears that given a choice, more often than not most instructors do not use AL in lecture classes but continue to use traditional passive methods of instruction (Ito & Kawazoe, 2015)

Lecture Classes

Lecture classes are an intricate, and often inescapable component of tertiary education (Stains et.al, 2018). A recent survey of North American tertiary curricula found that more than

half of the science, technology, engineering, and math (STEM) classes are currently taught in this format, and conceivably, a similar situation exists in the Japanese tertiary context (Taniguchi, 2013). In Lecture classes the emphasis is often placed on disseminating information for students to receive and remember. Therefore, students are rarely involved in higher-order thinking (analysis, synthesis, evaluation) during lectures (Ito, 2017). Generally, during this passive activity students are seldom engaged in activities other than listening. Thus, to gain understanding only through lectures may be considered an ineffective method to learning as it is very difficult to evaluate students' level of concentration during instruction (Prince, 2004).

The average tertiary level lecture is between 60-100 minutes, but previous research (Stuart & Rutherford, 1978) has suggested that student concentration during lectures begins to decline after 10-15 minutes. Therefore, it is questionable as to how much knowledge students are gaining from traditional lectures. Nevertheless, lecture classes particularly in the Japanese tertiary context are often mistakenly considered as an approach for maintaining student attention with difficult or perceived uninteresting material (Bligh, 2000).

The reality is that generally lecture classes do not allow for student-centered learning. Rather, they require students to achieve rote-memorization of perceived relevant facts which does not promote deep learning, or the involvement of AL (Matsushita, 2018). Strong evidence has been accumulated to promote the concept that active learning methodology can be much more effective than traditional lecture formats. Researchers (Dori & Herscovitz, 2005; Ito, 2017) have reported the benefits of AL with evidence to support the concept that active learning students achieve higher conceptual understanding compared to other students who studied the same courses in traditional learning approaches such as lectures.

The usage of lecture classes in tertiary education may be viewed as receiving a mixed reception with some researchers dismissing the lecture format entirely, commenting that the absence of engagement with critical thinking skills in lecture classes deems teaching STEM subjects through this platform as "unethical" (Waldrop, 2015). Conversely other researchers (Bean, 2001) comment that AL and lecture classes are not mutually exclusive, citing merit in lecture instruction to promote AL if the students prepare prior to the class, actively participate in class discussions, and take good notes lecture classes may be beneficial. Reinforcement for this concept may be found with several studies into AL implementation in tertiary lecture classes with STEM subjects. Results from these studies found that students produced higher levels of understanding of the material covered and cognitive involvement when instruction included AL approaches. (Barak, Harward, Kocur, & Lerman, 2007)

Research Questions

Based on a thorough review of the literature the following research questions were developed:

1. To what extent is AL used in Japanese tertiary lecture classes?
2. To what extent do the perspectives of tertiary lecture instructors support the findings reported about their AL practice in lecture classes?

Study Design

To answer the research questions posed, the current study employed an explanatory sequential design mixed methods methodology conducted in two phases (Creswell, 2002; Tashakkori & Teddlie, 1998). In the first phase, numeric quantitative data was collected and analyzed from a questionnaire distributed to lecture instructors teaching in a large Japanese university (n=35). In the second phase qualitative data, utilizing purposeful sampling with four semi-structured interviews was conducted in order to explain the statistical results in more depth. Specifically, the factors that contributed to lecture instructors of AL practice were investigated. The rationale for utilizing this explanatory sequential design study (Creswell, 2015) was that neither quantitative nor qualitative data could solely explain the phenomena in the study. Therefore, combining both quantitative and qualitative approaches in a single study provided a more complete detailed picture of lecturer AL practice in the Japanese tertiary context.

First Phase

Participants and Procedures

The study involved 35 lecture instructors from various fields ranging from health sciences, to science and engineering and EFL who were teaching classes ranging from 50-300 students at the same large Japanese university. The instructors ranged in age from 33-69 years old and had teaching experience of 5-40 years. They were all full-time faculty members.

A self-reporting online questionnaire designed by the researcher was distributed with the instructors' consent granted. Additionally, as the researcher was a faculty member, no further permission was deemed necessary. The questionnaire was anonymously administered but all recipients agreed to be contacted for follow-up interviews and provided email addresses and other contact details.

The rationale behind the choice was that self-reporting questionnaires may provide a great deal of quantitative data as well as permit generalization of the findings. As the respondents themselves are much closer to the subject under investigation than perhaps other individuals, the information they give tends to yield more accurate findings than observations or interviews alone may not provide (Aiken, 2000). In this investigation each question was limited to one construct

so as not to confuse participants as often this is viewed as a flaw with utilizing self-reporting questionnaires (de Leeuw, Hox, & Dillman, 2008).

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Data Analysis and Results

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Basic statistical analysis was conducted and with regard to the first research question "To what extent is AL used in Japanese tertiary lecture classes?" findings demonstrated that 66% or 23 instructors perceived themselves as utilizing AL, 28% or 10 instructors reported they sometimes used AL and 6% or 2 instructors said they often used AL. (See figure 1). With regard to the first research question: "To what extent is AL used in Japanese tertiary lecture classes?" Results demonstrated that only 34% of the instructors surveyed perceive themselves as using AL in their lecture class to any extent. In the next section qualitative data with interviews were performed in order to gain "thick, rich" findings (Creswell, 2015).
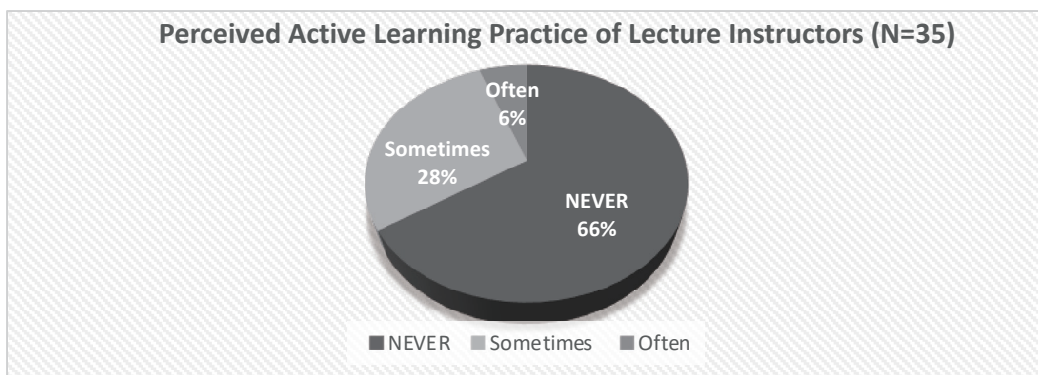

Perceived Active Learning Practice of Lecture Instructors (N=35)

Often 6%
Sometimes 28%
NEVER 66%

■NEVER ■Sometimes ■Often

Figure 1 Results Perceived Active Learning Practice of Lecture Instructors

Second Phase

Procedures

Due to the explanatory nature of the second phase of this mixed methods study, participants from the quantitative phase were enlisted for semi-structured interviews focusing on one case for each group. Intrinsic Case Study (Stake, 1995) with localized mixed methods over time in order to inform local practice was incorporated into this phase of the study, with data triangulated. Consideration of the case selection was considered the first link between the quantitative and the qualitative phases of this mixed methods sequential explanatory design including a two-stage case selection procedure (Hanson, Creswell, Plano Clark, & Petska, 2004).

The following three groups were determined as lecture instructors who used AL often, sometimes, and never with one case for each group purposefully selected. From the quantitative sample in the first phase interview participants were selected using purposeful sampling based on

their answers to open-ended questions from the questionnaires used in the first phase with purpose of ascertaining the reasoning behind instructors perceptions with regard to AL practice in their lecture classes.

The interviewed instructors were volunteers and were interviewed at their convenience. Audio interviews lasting no longer than 30 minutes each were conducted in individually with open-ended questions, recorded, transcribed, and coded (Saldana, 2021). The interviews were conducted in English and each instructor interviewed assigned a pseudonym (see Table 1). The transcriptions were checked for accuracy by listening to the audio and then compared with the transcribed text. Three main themes were identified; class size, training, and student acceptance of AL.

Table 1 Participant Demographic Data

Instructor (pseudonym)	Age	Subject taught	Years teaching	Number of students per class	Class number per week	Perceived AL Usage
1(Mariko)	55	Biology	20	55-80	2	Never
2(Takehiro)	40	Engineering	8	55-290	4	Sometimes
3(Kentato)	44	Organic Chemistry	19	50-70	2	Often

Interview Participants (pseudonym). Instructor 1 (Mariko)

Mariko was between 50 and 60 years old and is Biology Instructor, teaching two lecture classes per week to first year students. Her class size ranged from 55-80 students. She has been teaching for more than 20 years and she claimed to never use AL of her lecture classes.

Instructor 2 (Takehiro)

Takehiro was 40 years old and an Engineering Instructor, teaching four lecture classes per week to first and second year students. His class size ranged from 55-290 students. This was his ninth year teaching and he claimed to use AL in about half of his lecture classes.

Instructor 3 (Kentaro)

Kentaro was 44 years old and an Organic Chemistry Instructor, teaching two lecture classes per week to first, second and third year students. His class size ranged from 50-70 students. He has been teaching for 19 years and he claimed to uses AL often in his lecture classes.

Interview Results and Discussion

The three cases are described as follows:

Class Size

The three instructors interviewed all commented that class size played a part in their AL practice. In Mariko's case class size was an important reason why she didn't use AL in her classes although she commented that if her classes were smaller, she would consider it as she stated:

"No way can we have AL in classes that are a big as mine it would be chaos" " … it would be impossible to have all of my students talking at the same time student maybe if the classes could have less students maybe in the future but not now." (Mariko)

Although Takehiro and Kentaro both practice AL to a certain degree in their classes they seem to agree to a certain degree with Mariko's opinion stating:

"I like to use group discussions and other group work but this class on Friday has almost 300 students so I soon gave up trying for AL. It is impossible with huge classes like those, but on Thursday it is easier to do some AL activities because the numbers are manageable." (Takehiro)

"I am not an expert but I don't think AL is possible in all classes because I don't think I could use AL with bigger classes than I teach now." (Kentaro)

These findings seem to align with the literature citing large class size as a barrier to instructor AL practice (Prince, 2004)

Training

Both Kentaro and Kentaro commented on the necessity and benefits of in-service training.

"If it is possible, I'd like to have some class or FD session about AL because I am really not sure every time that my is AL right or not. I think that it would help me." (Kentaro)

"To tell the truth I have never attended a class or seminar about AL. I think that if I could learn more deeply about AL and get some tips it would be helpful… I could more frequently use it and be sure I am doing things in the right ways." (Takehiro)

Kentaro and Takehiro's comments are not unusual in the Japanese tertiary context. Researchers (Nakai, 2015) have reported Japanese university instructors comment their students seem to participate in activities such as group discussions or projects, and are practicing some form of 'active' learning but at the same time they question if the students are learning the necessary content sufficiently. The apprehension on the part of instructors suggests that perhaps misunderstandings exist with regard the construct of AL. At the very least more training is warranted as researchers also caution that Japanese university instructors follow the trend of employing AL approaches and tend to be under the impression that the implementation of AL

itself is the ultimate goal of higher education (Tsuchimochi, 2016).

Mariko commented that she had attended a workshop at one point in her career. About the workshop she said:"…it really didn't apply to me and my classes because I have too much information to give the students and besides AL takes a long time to prepare and do. To tell the truth, I don't have time. Maybe other faculty can do it but I don't know how." (Mariko)

With regard Mariko's comments they are often are echoed with many instructors as Faust and Paulson (1998) have commented, "University faculty sometimes feel that although active/cooperative learning may work in some fields, it probably will not work in their field."

Students' Perception of AL

The third theme that resonated with the lecture instructors was students acceptance or perception of AL. Although Mariko does not practice AL, in her opinion her students are passive learners preferring traditional lectures and referred to traditional testing as an expected outcome of her class. She commented:

"Japanese students like to watch if you understand what I mean. I am not sure if they would like me doing AL because they have to pass the test…"(Mariko)

Mariko's comments were not unexpected in light of the high-stakes testing climate in the Japanese educational context (Ozaki, 2010). The ability of AL methodology to prepare students for exams is often a dilemma for Japanese instructors because regardless of the method of instruction, receiving passing grades on standardized tests looms at the end of the course with "correctness" the only standard (Dosa & Russ, 2016).

Takehiro conversely discussed his students' process of students moving from passive learner to more active ones albeit hesitantly with:

"In the beginning I think it was strange and they were a bit shy because usually they are told to be quiet right… I also think they were a bit afraid to give an opinion or idea, so maybe they had an odd feeling but now they seem to enjoy doing the activities, especially even the quieter students… not many students are asleep so that's one good thing, right?" (Takehiro)

Kentato seemed to agree with Takehiro's opinion of students enjoyment and concentration during his commenting :

"My students seem to like my classes… they are doing the activities…not just sitting looking at their phones… I think that they like AL." (Kentaro)

These comments seem to align themselves with research in the Japanese tertiary context discussing the benefits as of AL methodology (Ito, 2017; Yamauchi, 2017).

Conclusions and Further Implications

The purpose of the present research was to investigate the factors that influence lecture instructors usage of AL. Findings from mixed methods research with a small group of lecture instructors demonstrated that although there is an awareness of the benefits of AL, these instructors cited large class sizes, doubts of students' acceptance, and lack of training, leading to a lack of confidence in implementation as reasons for their underusage of AL in lecture classes. These findings were found to be in agreement with current literature stating that further training is necessary for the promotion of AL methodology in the Japanese tertiary context. The small population size of this study may be considered a drawback therefore implications for further research would be to increase or expand the sample size to include other tertiary institutions.

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