Cultural Challenges in Adapting Lesson Study to a Philippines Setting

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Promising improved student and teacher learning, Japanese lesson study has attracted many international educators to try to implement it in their own contexts. However, a simple transference model of implementation is likely to meet difficulties. Key determinants of any adaptation will be differences between existing conventions of pedagogy and of teacher professional development in Japan and the adapting country. These conventions will be reflective of underlying cultural differences. This paper reports a study the adaptations required to increase the transferability of Japanese lesson study for use in the Philippines. Hofstede's dimensions of national culture are utilised to identify and analyse the incongruences in cultural orientations between Japanese and Philippine teachers, which may explain the adaptations needed in order to implement lesson study in Philippine schools. Sensitivity to cultural challenges during the process of adaptation should increase the chances of successful implementation to the benefit of Philippine teachers.

Keywords: lesson study · adaptation · dimensions of national culture · teacher learning · practice-oriented professional development

Japanese Lesson Study

Consistently performing well in international education surveys such as the Trends in International Mathematics and Science Study (TIMSS), Japan has the reputation of having one of the stronger and better mathematics education programs in the world. Stigler and Hiebert (1999), in the book *The Teaching Gap*, attribute this to Japanese lesson study, or *jugyokenkyu*, a school-based collaborative professional development activity that dates back to 1872. For the past decade, lesson study has attracted international attention and has inspired many international educators who believe that lesson study offers incremental but continuous improvement in teachers' teaching capacity (Fernandez & Yoshida, 2004; Lewis & Tsuchida, 1998; Stigler & Hiebert, 1999). Lesson study has spread to many countries such as the United States, Canada, Australia, Latin America, and Thailand. In the United States alone, over 400

schools are engaged in it (Chokshi, 2002). However, lesson study still remains new to educators in a lot of countries outside Japan.

Although there have been several efforts to introduce lesson study to some Philippine schools (including one by the authors), these attempts to make lesson study a permanent fixture in schools' teacher professional development program have been unsuccessful. This may be attributed in part to the fact that these attempts used a simple transference model and in part to the fact that there was no attempt to adapt lesson study to a Philippine context.

Enculturation Versus Cultural Barriers

Japan is considered as a high-context culture (Hall, 1984; Hofstede, 2001; de Mooij, 2010; Hofstede, G., Hofstede G. J., & Minkov, M., 2010). This means much meaning and information is drawn from the context or internalised by people instead of making them explicit—much is read between the lines, thus, making it inaccessible for an outsider (Hall, 1984; de Mooij, 2010). With lesson study originating from Japan, a simple transference model of implementation of lesson study is likely to meet difficulties by ignoring some important cultural barriers (Hofstede, 2001; de Mooij, 2010; Hofstede, G., Hofstede G. J., & Minkov, M., 2010). Furthermore, although there is a substantial literature on lesson study (Fernandez & Yoshida, 2004; Isoda & Olfos, 2009; Lewis, 2002), most authors deal with either the structure of lesson study or accounts of their personal involvement in lesson study, which has led to lesson study having several transmutations (Inprasitha, 2011; Isoda, 2011; Isoda, Stephens, Ohara, & Miyakawa, 2007; Pierce & Stacey, 2011; Watanabe, 2002). How to promote successful enculturation of lesson study is rarely discussed.

The central goal of the research reported this paper was to examine the conditions that might promote the transferability of Japanese lesson study as a professional development program for teachers to a different national context like the Philippines. While there have been many attempts to translate Japanese lesson study in other countries, these have tended to rely on a simple dissemination model with no attempt to adapt the program to increase its cultural compatibility. This paper aims to identify the key elements required for a successful transfer of lesson study and to investigate the manner in which any adaptations undertaken address particular cultural challenges. With teaching and learning—which are profoundly cultural activities—being at the heart of lesson study,

discerning and understanding how teachers in other countries would respond to Japanese lesson study is crucial (Stigler & Hiebert, 1999).

It is essential at this point to clarify what is meant by "culture". In this paper, "culture" is defined to be "any aspect of the ideas, communications, or behaviours of a group of people which give them a distinctive identity and which is used to organise their internal sense of cohesion and membership" (Scollon & Scollon 1995, p. 127). In an education system, one might expect culture to contribute to the forms of acceptable pedagogy, social conventions governing classroom behaviour and practice, and even the forms taken by programs of teacher professional development. Culture will influence the nature of the relationships and interactions between teaching colleagues in schools as well as between teachers and their students. A professional development program such as Japanese lesson study needs to integrate all these culturally grounded elements. As such, it is naïve to imagine that a program developed in one culture can be employed in a different culture without adaptation. This paper is concerned with the nature of the adaptations required for Japanese lesson study to be used with Philippine teachers; and, particularly, with the cultural challenges addressed by such adaptations.

The research aimed to answer the following questions:

1. What are the cultural considerations affecting the successful transfer of lesson study?
2. What adaptations may be necessary to facilitate the successful implementation of lesson study in the Philippines?

To inform our discussion we will refer first to the findings of Hofstede's comparative analyses of national groups, and we will draw upon some preliminary findings of our own using a *Values Survey Module for Teachers 2012* (VSMT12), which was adapted from Hofstede's *Values Survey Module 2008* (VSM08, Hofstede, Hofstede, Minkov, & Vinken, 2008). Our adaptation, the VSMT12, was given to junior high school teachers in Japan and high school teachers in two schools in the Philippines, to identify teachers' possible inclinations and attitudes towards lesson study and its core components. This was intended to identify the cultural orientations of Philippine high school teachers towards Japanese lesson study that could either promote or hinder its successful adaptation. Cultural orientations are evident in the pedagogical traditions of the school community and in assumptions and practices regarding teacher professional development.

To this end, Hofstede's dimensions of national culture, namely power distance, individualism versus collectivism,

masculinity versus femininity, uncertainty avoidance, and long-term orientation, will be used to identify potential challenges that may be encountered when introducing lesson study in a non-Japanese context (Hofstede, Hofstede, & Minkov, 2010). These dimensions will be explained later in the paper. These cultural challenges will be manifest in differences in pedagogy and in approaches to teacher learning. Identifying and understanding these cultural challenges should allow a more strategic attempt to transfer lesson study into other contexts and increase the chances of reaping the benefits of lesson study.

Understanding the Nature of Lesson Study

At the outset it may be necessary to clarify some misconceptions about lesson study as reiterated by Fujii (2013). First, lesson study is not observing a live lesson. The latter is but a component in the lesson study process through which the teachers' capacity to design and execute a lesson are tested. Though observing a live lesson could provide much information on teaching capacity and classroom dynamics, lesson study covers more than this, interweaving the entire range of processes involved in creating a good lesson. Second, lesson study is not a workshop. Workshops are for skill learning, so they are usually focused on building one skill or several discrete skills. Participants are mostly novices so at the end of a workshop success is based on whether participants have acquired the skill or not. Lesson study is more than acquiring skills. It is about establishing a way of doing things, a habit of teachers working together to plan teaching in order to promote deep mathematical learning among all students. Furthermore, novices and experienced teachers benefit from lesson study because of the collaborative nature of the process. Learning of participants is not just one way. Last, lesson study is not about improving a single lesson. Through lesson study, the process of improving a single lesson is expected to influence other lessons of the teachers who participate. Lesson study is about building pathways for ongoing improvement of instruction (Lewis, Perry, & Hurd, 2004).

Lesson Study is a Cycle of Plan, Do, and See

What needs to be clearly understood is that lesson study is a cycle of Plan, Do, and See (Fernandez & Yoshida, 2004; Hart, Alston, & Murata, 2011; Inprasitha, 2011; Lewis, 2002). Lessons are planned, demonstrated and discussed. The results of one cycle will be the basis for revisions for the next cycle. Thus, a

better lesson is created at the end of every cycle. This is shown in Figure 1.

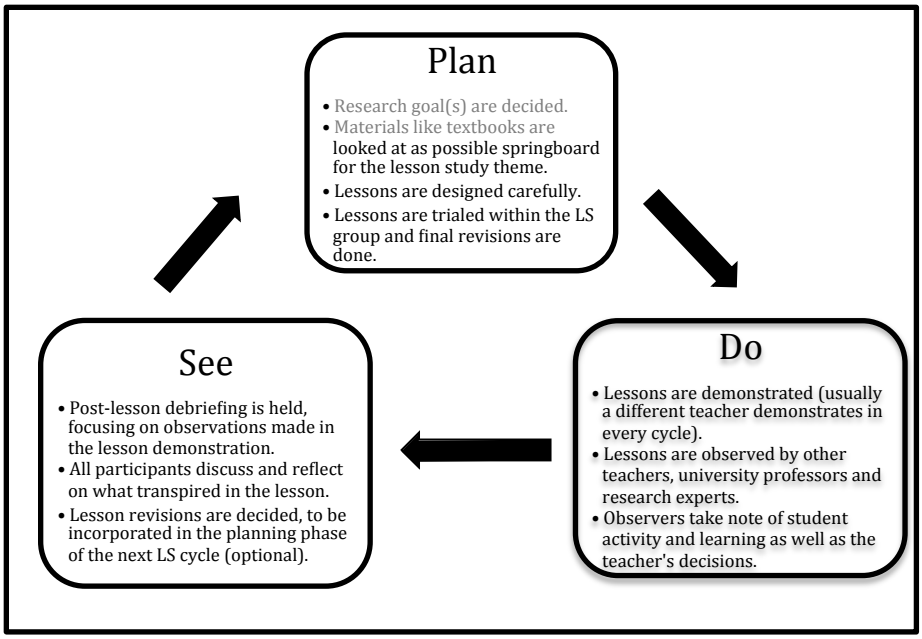

Figure 1. The lesson study cycle (adapted from Hart et al., 2011; Inprasitha, 2011; Fernandez & Yoshida, 2004; Lewis, 2002).

Planning. Teachers spend a long time in the planning phase. The school and the lesson study group determine and focus on a particular research goal, which is usually about a particular goal of education or a current national debate on education (Lewis & Tsuchida, 1998). This phase also involves researching for materials (*kyozaikenkyu*) that could serve as a springboard for the lesson study theme. In designing the lesson, even the smallest detail of the lesson are discussed; for example, which numbers to use in the lesson and why these numbers should be used instead of other numbers, and blackboard design. Furthermore, it is crucial for the teachers to anticipate students' answers. Sometimes this will be based on the past knowledge of the more experienced teachers. In any event, the range of possible anticipated responses will be incorporated into the lesson plan. They also deliberate about what possible misconceptions could arise and how these misconceptions can be prevented or addressed during class. Teachers also spend time trying the lesson within the lesson study group. This allows the teachers, especially the novices, to be more comfortable in observing the lesson and to know what to expect.

Doing. This phase involves observing and recording the lesson demonstrations, making notes on student activity and learning along with the teacher's decisions. As one teacher of the lesson study group demonstrates the lesson, other teachers who are part of the lesson study group take on other tasks such as documenting the class (video recording, taking of photos of blackboard design and student artefacts, etc.); or recording of student participation, student-to-student interaction, or any other issue of interest to the lesson study group. There are also invited observers such as university professors, research experts, and—during district level or prefecture level lesson study projects—even teachers from other schools. They are expected to act as resources to support the teachers engaged in lesson study in their schools.

Seeing. A debriefing meeting or panel discussion is usually held right after a lesson demonstration. In this phase, participants discuss and reflect on what transpired in the lesson demonstration, based on their observations. The demonstrating teacher starts by presenting the rationale behind the topic choice and lesson design. Observers are then encouraged to comment on the strengths and weaknesses of the lesson. It is crucial in this phase that everyone understands that the focus of the discussion is on the lesson itself and on what the students did and learned, not on evaluating the teacher who taught the lesson. All suggestions and comments made during this phase will serve as the basis for the retention or revision of parts of the lesson for the next cycle. Note that the goal of lesson study is not to come up with perfect lessons but to further understand how students learn, and of how to improve learning through refining and testing teaching approaches.

Lesson Study is a Long-term Professional Development Activity

Lesson study doesn't stop after one or two cycles. Since teachers face different experiences and challenges in their classrooms, they meet recursively to discuss, possibly similar, topics in varying contexts (Isoda, 2011). This allows teachers in the group to take on different roles and levels of participation. Furthermore, lesson study goes beyond the group of teachers in a particular lesson study cycle. This makes it non-restrictive, especially for newcomers or novice teachers, and allows it to build up a pool of lesson study experts as a resource for the future.

Lesson study requires a certain level of understanding and commitment from all its stakeholders. These include the principals and district administrators, heads of departments, and teachers of all ranges of experience. "It is focused on

building collective capacity over many cycles— not directed at rapid change of individuals or solving problems in the short term" (Stephens, 2011, p. 119). Changes are incremental and continuous.

Lesson Study is a Collaborative Activity

Lesson study is a collaborative activity (Fernandez & Yoshida, 2004; Lewis & Tsuchida, 1998; Stephens, 2011), typically done by a group of teachers with support from school administrators and guidance from university professors and research experts. It is crucial that outside researchers see the lesson with the perspective of the teachers in the lesson study group, and that these teachers also see the lesson from the perspective of a researcher analysing students' understanding (Isoda, 2011). Furthermore, individual teachers, as well as other participants, are assumed to exercise self-reflection within this collaborative model.

Assumptions Underlying Attempts to Implement Lesson Study Outside Japan

Based on their experiences implementing lesson study outside Japan, researchers such as Fujii (2013), Isoda Arcavi, and Mena Lorca (2007), and Lewis (2002) make certain assumptions that are useful in pointing out particular challenges likely to be encountered in adapting lesson study for use in the Philippines. These are examined below.

Lesson study as professional development is assumed to be transferable. Lesson study is seen as something that can be replicated, so long as the same procedures are done. Since it was highlighted in Stigler and Hiebert's *The Teaching Gap* (1999), there has been a proliferation of resources written by Japanese and other leaders of lesson study in English and other languages (Fernandez & Yoshida, 2004; Inprasitha, 2011; Isoda, Arcavi, & Lorca, 2007; Lewis, Perry, & Hurd, 2009). Countries such as USA, Canada, Australia, and Thailand have used these materials to try to replicate lesson study in their schools, using tasks from Japanese research lessons or teachers' own lessons. Japanese professors and lesson study experts go abroad to demonstrate the lesson study process. One of the authors had the opportunity to observe lesson study in Japan and to try lesson study in his school in the Philippines. However, as to be expected, lesson study met with different kinds of reception from teachers and faced several challenges, such as sustainability.

Teachers and schools are assumed to commit to iterative cycles of improving their practice. Because lesson study is a cycle, teachers are expected to meet on a regular basis. Japanese teachers and principals see one cycle of lesson study as one step in a continuing cycle of staff development and improvement of teaching. The goal of lesson study is to build up collective knowledge over many cycles. Its focus is not on individual teachers holding all the knowledge. Furthermore, teachers who have participated in many cycles of lesson study will bring that knowledge to new schools to add to the core of knowledge already there. Lesson study can be undertaken at district and prefectural levels, deepening this sense of collective knowledge (Isoda, Stephens, Ohara, & Miyakawa, 2007).

The research and planning phase of lesson study is intended to be thorough and time consuming. The *kyozaikenkyu* phase is intended to have teachers think deeply about where particular topics fit into the whole curriculum. Teachers are also expected to examine critically a range of teaching resources before planning their lessons. As already mentioned, the lesson plan itself is intended to anticipate the widest possible range of students' responses to particular questions and to indicate how teachers will deal with these responses. Of course, some unanticipated responses may still occur and teachers will be expected to deal with them because they know what is likely to occur in their classroom (Fujii, 2013).

Lesson study is done democratically in a collaborative environment. Hierarchy is present but is not expected to determine how teachers act in lesson study. Each teacher is expected to bring a unique contribution to lesson study. Novice teachers are there to learn how lesson study is implemented and how to observe a lesson. More experienced teachers take on greater leadership roles. Principals and other school leaders are expected to play a key role in planning and integrating lesson study into the life of the school and in meeting national and district priorities. But everyone's voice is valued and respected. Every teacher is assumed to be able to engage in self-reflection and evaluation of their own teaching. This is clearly an assumption behind Isoda's *Lesson Planning Self-evaluation Checklist* (Isoda et al., 2007; Isoda & Olfos, 2009).

There is continuing support from and appreciation of the role of lesson study from school administrators. Teachers who have key roles in Japanese lesson study are given reduced teaching loads and/or time allowances to participate in lesson study. The de-briefing session is typically a whole-school event, attended by teachers who have led the lesson study, all teachers who have

observed the lesson, and by the school leaders who have assisted in the lesson study process. The outcomes of lesson study will need to be integrated into the broader goals of the school as set by the district or by the national curriculum (Isoda et al., 2007; Isoda & Olfos, 2009).

University persons and other outside people come in as resources and not as leaders. As mentioned above, teachers supported by the school administration are expected to do the main work. People from universities or from the school district come in to assist in this process. They bring wider perspectives but at no stage are they expected to direct the lesson study or to do the work that teachers themselves are expected to do (Isoda et al., 2007; Isoda & Olfos, 2009).

A lesson study group is composed of teachers with a wide range of experience. As lesson study is a collaborative activity, more experienced teachers are able to share their expertise and ideas with the novice teachers and vice versa. The lesson study situation is like mentoring where everyone is a mentor and a mentee. This allows a rich discussion during every lesson study group meeting (Isoda et al., 2007; Isoda & Olfos, 2009).

The transferability of lesson study

The transferability of lesson study has typically been in terms of a simple dissemination model. Local contexts need to be taken into account, but providing teachers with a clear understanding of the chief components of lesson study is seen to be essential and is often accomplished by means of various demonstrations of lesson study in a host country by Japanese experts. Fidelity to the original model of lesson study is often assumed to be the goal.

What this simple dissemination model fails to take into account is the extent to which lesson study reflects important aspects of culture in Japan. Discerning and understanding how teachers in other countries would respond to lesson study is crucial. In the following sections we will utilise Hofstede's (2010) dimensions of national culture to identify potential challenges associated with introducing lesson study in a non-Japanese context. Anticipation of these potential challenges should assist the researcher in his work with Philippine teachers in implementing lesson study in their schools. In the following section, we will discuss Hofstede's dimensions of national culture and link them to the key aspects of lesson study.

Hofstede's Dimensions of Culture

Hofstede defines culture to be "the collective mental programming of the people in an environment. Culture is not a characteristic of individuals; it encompasses a number of people who were conditioned by the same education and life experience" (quotes in de Mooij, 2010, p. 48). He developed the following five dimensions of national culture to elucidate basic value orientations.

(a) *Power Distance Index (PDI)*: "the extent to which less powerful members of a society accept and expect that power is distributed unequally" (de Mooij, 2010, p. 75). In large power distance cultures such as Japan, recognition of hierarchy is considered important to facilitate effective and smooth functioning of members of the organisation. In lower PDI countries such as Australia and Canada, focus is on equality in rights and opportunities and independence is highly valued.

(b) *Individualism versus Collectivism (IDV-COL)*: "… people looking after themselves and their immediate family only, versus people belonging to in-groups that look after them in exchange for loyalty" (de Mooij, 2010, p. 77). In individualistic cultures, people are more "I" conscious. One's own decision has greater value than group decisions. In collectivistic cultures, people are more "we" conscious. The mistake of one is the mistake of the group and shame is an important issue.

(c) *Masculinity versus Femininity (MAS-FEM)*: "The dominant values in a masculine society are achievement and success; the dominant values in a feminine society are caring for others and quality of life" (de Mooij, 2010, p. 79). In masculine cultures, achievement is important and must always be demonstrated. In feminine cultures, quality of life has greater value than winning. Consensus is a good thing.

(d) *Uncertainty Avoidance Index (UAI)*: "… the extent to which people feel threatened by uncertainty and ambiguity and try to avoid these situations" (de Mooij, 2010, p. 82). People of high uncertainty avoidance cultures are less open to change and innovation than those in low certainty avoidance cultures.

(e) *Long-Term versus Short-Term Orientation (LTO)*: "… the extent to which a society exhibits pragmatic future-oriented perspective rather than a conventional historic or short-term point of view" (de Mooij, 2010, p. 85). For

short-term orientated cultures, the focus is on the pursuit of happiness rather than pursuit of peace of mind.

Hofstede's study commenced in the 1980s. His research focused on comparing work-related values, behaviours, institutions and organisations across nations (see Hofstede, 2001). His landmark studies (Hofstede, 2001/2010) were based on extensive samples of participants who were employees of IBM. It may appear strange to use the employees of one multinational corporation to identify differences in national value systems. But these samples provided Hofstede with nearly perfectly matched samples from one country to another, thus making the effects of differences in nationality in their responses stand out. In his study, Hofstede (2010) came up with scores for at least 60 countries according to these five dimensions. Figure 2 shows the scores for Japan and the Philippines.

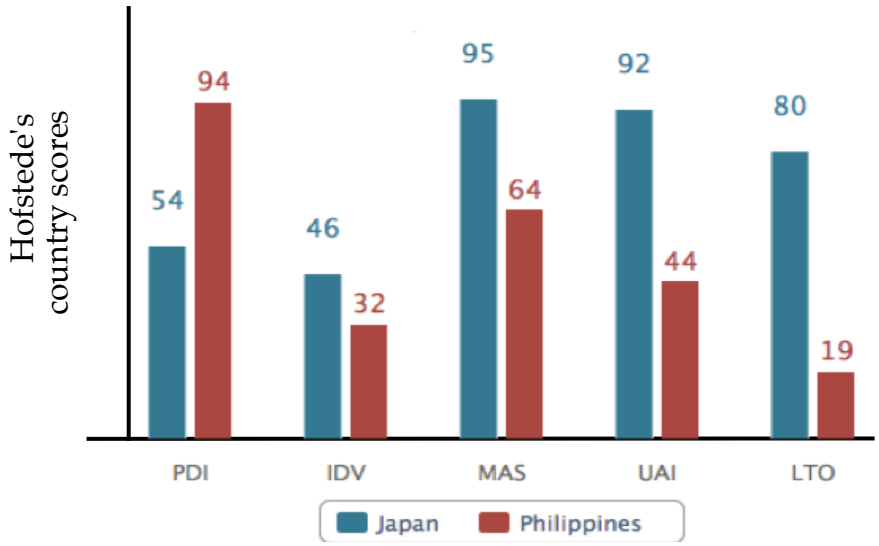

Figure 2. Comparison of Hofstede's scores for Japan and Philippines (constructed from data in Hofstede, Hofstede, & Minkov, 2010).

While there have been some critics of Hofstede's position, such as Fang (2003) and McSweeney (2002), these have tended to question the simplicity of Hofstede's methodology, the discreteness and duality of his dimensions and the validity of his findings over time given the advent of globalisation motivating change in culture. Extensive replication studies and meta-analyses of Hofstede's dimensions of national culture (e.g. Henseller, Horváth, Sarstedt, & Zimmermann, 2010; Søndergaard, 1994) have supported Hofstede's original results. In this paper, while taking note of these criticisms, we see the

potential and value of Hofstede's study to inform an adaptation of lesson study in a non-Japanese context.

Implications for Lesson Study as Seen Through Hofstede's Dimensions of Culture

We will now use Hofstede's dimensions of culture to explain why lesson study works well in Japan and why a simple transference model is less likely to be effective in the case of the Philippines.

Results for Japan. The score of 54 on PDI for Japan suggests that the Japanese are moderately hierarchical. Japanese are conscious of the way they should act with respect to their position in a social setting but, with regard to decision-making, even though the processes go through every hierarchical level, there is no "one top man" who makes the decision. Japan is also known to be a meritocracy. A position of power is given on the basis of ability. It contributes positively to the implementation of lesson study by allowing any member of the lesson study group to lead. Of course, initially the more experienced teachers are given the key roles while the novices are asked to observe and take on other roles. In subsequent cycles, other members of the lesson study group, even the novices, will be given a chance to lead the lesson study. University professors and research experts are not expected to lead the lesson study but instead provide support by sharing their expertise.

On the other hand, a score of 46 on IDV suggests that Japan is moderately individualistic and moderately collectivistic. By contrast Australia scores 90 on IDV and US 91. For Japan, this may suggest that harmony in the group is valued as much as individual opinions. Each individual opinion may be heard, but the group still comes up with a consensus. Furthermore, each member is expected to do their best for the benefit of the group, which supports their strong sense of shame for losing face. This aids in the implementation of lesson study because it is primarily a collaborative effort of the teachers, school administrators, university professors, and research experts. Different levels of participation are expected, especially from school administrators. Also, the goal of lesson study is to build a collective knowledge that may be shared with other schools at district and/or prefectural levels. Moreover, being moderately individualistic and collectivistic allows each member of the lesson study group to be self-reflective but still operating within the context of the group. "What could have I done better to improve the lesson outcome and the success of the group?" would be a typical consideration.

Looking at these two scores tells us that Japanese do acknowledge authority but they are not limited to following orders. They identify what their role in the group is and what they can do to contribute to the success of the group. This is crucial for the success of lesson study.

With a score of 95 in MAS, Japan is one of the most masculine societies in the world, thus leaning towards competitiveness, distinctively exemplified by its "work ethic". This accounts for Japan's striving for excellence and perfection in whatever is done. This is beneficial for lesson study because it requires teachers to be committed to developing their skills continuously and improving their teaching. Since lesson study is a long process and involves several cycles, teachers' interests should not waver and they must see every cycle as an opportunity to get better.

Japan is one of the most "uncertainty-avoiding" countries in the world scoring 92 in UAI. Coming from a place that is constantly threatened by calamities, they have learned to prepare themselves for any uncertain situation. All detailed facts and figures must be looked into before making any decision that contributes to the success of lesson study because the planning phase of lesson study is done meticulously and takes time. An important part of the lesson-planning phase is the anticipation of the students' responses and identification of the best way to address these responses.

With a score of 80, Japan is considered by Hofstede (2010) as one of the most long-term oriented countries, along with Hong Kong with a score of 96. This explains why Japan invests so much on research and development even during economically difficult times. Japanese prefer steady growth to sizable short-term growth. This is favourable to lesson study because it is a continuing cycle whose goal is building collective knowledge over the long term, which can be used by future generations of teachers. Furthermore, the fruits of lesson study are not immediate. They may be incremental but only as a result of continuous effort. Lesson study is an inherent part of the long-term professional development of teachers in Japan.

Results for the Philippines. Looking at Hofstede's dimensions, when applied to the Philippines, suggests where a simple transference model of lesson study may encounter difficulties.

The score of 94 on PDI makes the Philippines much more hierarchical than Japan (54) and one of the most hierarchical societies in the world along with Russia (93). In these countries, there is an inherent inequality and centralisation of power. Subordinates expect to be told what to do. It might be expected that this will pose a challenge to the successful implementation

of lesson study because the leaders might always feel the need to assert their position and dominate the process. At the same time, novice teachers might not be comfortable leading the process because of the presence of a "superior" and because they are used to taking directives. Furthermore, the lesson study group might expect the university professors, research experts, and local leaders to actually direct the process, which is not their role in Japanese lesson study.

The Philippines scored 32 on IDV, which is relatively close to Japan (46). This means the Philippines is more collectivistic than individualistic. There is a strong commitment to the "group" as exemplified by being a family-oriented society. There is loyalty to the group and everyone takes responsibility for fellow members of the group. This will be beneficial for lesson study because it starts with the forming of groups by individuals who collaborate towards the same goal. Every member can be expected to commit to the group and do whatever they can for the success of the group. On the other hand, being too collectivistic may hinder members of the lesson study group's ability to be self-reflective and to take on a high degree of personal responsibility. There may be a tendency to ask "What can the group do to have better outcomes in the lesson?" rather than "What can I do to help the group?" The latter question is key to the success of Japanese lesson study.

It is interesting to note that the scores of the Philippines on PDI (94) and IDV (32) are on the extreme ends of the spectrum. The high PDI score means that the open, collegial and democratic discussions that are typical of Japanese lesson study may not be so easily duplicated in the Philippines. However, many Filipinos profess a strong commitment to exercising democracy. Implementing lesson study in the Philippines will require careful strategies to build on this commitment and at the same time deal with a high PDI.

With a score of 64 in MAS, the Philippines is a masculine oriented society, somewhat like Japan (95). This means Filipinos are competitive and, with a high PDI, leaders are expected to be more decisive and assertive with a certain level of "work ethic" expected. This is helpful for lesson study because, as in Japan, one can expect a certain level of commitment from the members of the lesson study group to improving their craft. It is crucial though that they see they are improving in every cycle, otherwise, their commitment may start to waver.

The score of 44 in UAI shows that the Philippines has a lower preference for uncertainty avoidance, compared to Japan (92). Filipinos can be considered to be more relaxed and more tolerant to deviance from rules or principles. This might pose a challenge to the implementation of lesson study, especially in

the planning phase of the cycle. It might be difficult for them to see the importance of anticipating students' responses to the same degree of detail as is assumed in Japanese lesson study. If they find it too time consuming or difficult to implement, they might end up deviating from it entirely. On the upside, low UAI societies are more flexible and are not threatened by innovations. This is what lesson study could take advantage of since Filipinos appear more open to change.

A score of 19 in LTO makes the Philippines one of the most short-term oriented societies investigated by Hofstede. Recall that Japan scored 80 on this dimension. A low LTO will be a challenge for lesson study because of the minimal interest in research and projection of long-term objectives. As mentioned above, changes brought about by lesson study are expected to be incremental, which may not sit well with Filipinos' tendency to become impatient and preference to get quick results.

The low LTO coupled with a low UAI is likely to be the strongest barrier to a transfer of lesson study. These two factors account for one of the challenges lesson study faces in most countries, namely that of ensuring its sustainability. It is crucial to implement certain strategies to make a change in these orientations. Clearly, a simple dissemination model seems unlikely to make lesson study a worthwhile endeavour for the Philippines.

In summary, Hofstede's dimensions of culture help us to understand why lesson study works remarkably well in Japan. Japan's moderately hierarchical and collective nature allows novice and experienced teachers, school administrators, and other resource people to work effectively within Japan's collaborative environment of lesson study. Similarly, Japan's high scores on masculinity, uncertainty avoidance, and long-term orientation bolster the teachers' and school administrators' commitment to lesson study despite the demands and rigors of the process. Applying Hofstede's analysis to the Philippines allows us to see possible challenges and even obstacles in attempting to transfer Japanese lesson study to the Philippines using a simple dissemination and replication model. Being extremely hierarchical, yet having strong collectivistic leanings, tell us that despite being in a collaborative environment, domination of one or a few "superior" people and passivity of the rest are more likely to take place. The relatively high masculine orientation shows that there is a desire for improvement, but the low uncertainty avoidance and long-term orientation scores might reduce commitment to lesson study due to its arduous and rigorous nature. Table 1 below summarises the preceding discussion.

Table 1
Summary of Key Cultural Assumptions of Japanese Lesson Study as Seen Through Hofstede's Dimensions of National Culture

Dimensions of Culture	Japanese Lesson Study Assumptions	Japan	Philippines
Power Distance Index (PDI)	Everyone is given a chance to play a key role in every cycle. Everyone's voice is valued and respected	Moderately hierarchical	Extremely hierarchical
Individualism /Collectivism (IDV)	Lesson study is done in a collaborative environment. Everyone is able to engage in self-reflection and self-evaluation.	Moderately collective	Collective
Masculinity / Femininity (MAS)	There is a continuous improvement in teacher capacity. A better lesson is developed at the end of every cycle.	Extremely masculine	Moderately masculine
Uncertainty Avoidance Index (UAI)	Research and planning phase is intended to be thorough and time consuming.	Extremely uncertainty-avoiding	Moderately uncertainty-avoiding
Long-term / Short-term Orientation (LTO)	Teachers and schools are committed to continuing cycles. Goal is to build up a collective body of knowledge over many cycles.	Extremely long-term orientated	Extremely short-term orientated

This suggests the question: "If lesson study is to be implemented in the Philippines, what adaptations are likely to be needed to address these disparities in orientation while staying faithful to the principles of Japanese lesson study model?" Such a question suggests that there are, in fact, principles of the Japanese lesson study model that can be retained even after a process of adaptation for implementation in the Philippines context. This project is based on the

assumption that adaptation is possible in a form consistent with those principles.

Methodology

The study involved administration of two questionnaires to high school teachers in two provincial schools in the Philippines and to teachers in junior high schools attached to Tokyo Gakugei University (TGU). Purposeful sampling was utilised. In the Philippines, two provincial high schools were chosen because teachers in these schools are likely to have no background in lesson study. Except for one teacher, all Philippine teachers who answered the questionnaires had no background in Japanese lesson study. On the other hand, the teachers in TGU-attached junior high schools are more likely to be involved in lesson study compared with teachers in unattached schools. The Japanese responses came from five different junior high schools to meet Hofstede's questionnaire's minimum requirement of 50 responses.

Two questionnaires were designed. The Values Survey Module for Teachers 2012 (VSMT12) is based on Hofstede's Values Survey Module 2008 (VSMT08). Minor terms were changed to make it more appropriate for the teachers. For example, the term "boss" was changed to "principal or head". Also, although in later studies Hofstede (2010) talks about seven dimensions of national culture, the authors chose to include in their Japanese and Philippine versions of VSMT12 only the five original dimensions as the two additional dimensions—Indulgence versus Restraint, and Monumentalism versus Self-Effacement—were not derived from Hofstede's study. VSMT12 is therefore intended to identify the teachers' cultural orientations of power distance, individualism versus collectivism, masculinity versus femininity, uncertainty avoidance, and long-term orientation: factors that may pose as a challenge when introducing lesson study in a non-Japanese context (Hofstede, Hofstede, & Minkov, 2010).

VSMT12 was given to all teachers in the schools to complete. Below, scores from VSMT12 will be used to inform the strategies that may be used to promote attitudes conducive for lesson study. For example, if a group is very individualistic, then strategies or activities that promote a collaborative environment may need to be employed.

A second questionnaire was designed by the authors to measure mathematics teachers' perceptions of a good mathematics lesson. Specific attributes of a good mathematics lesson can be matched to similar key elements within Japanese

lesson study. Embedded in this questionnaire is what the authors believe are key aspects of mathematics teaching implied by Japanese lesson study (Fernandez & Yoshida, 2004; Lewis, 2002). One key element is taking into account the range of student responses to a mathematical task, including incorrect responses (see items 4, 5, and 8). With the exception of item 7, positive responses to all other items in Table 2 are indicative of a positive disposition to key elements of lesson study. In the case of item 7, we expect that for a successful implementation of lesson study, teachers need to be more inclined to rely on the judgment of their colleagues in determining the success of a lesson. The results of this questionnaire were intended to identify the extent of mathematics teachers' endorsement of key aspects of Japanese lesson study. With the help of Professor Toshiakira Fujii of Tokyo Gakugei University, a Japanese version of this questionnaire was developed and was piloted with some Japanese graduate students to ensure relevancy and appropriateness of the terms used, before it was given to the Japanese respondents.

Results of the Two Questionnaires

Seventy Japanese junior high school teachers participated, 16 of whom were mathematics teachers. One hundred and thirty-one Filipino high school teachers participated, 22 of whom were mathematics teachers. In the Japan sample, the non-mathematics teachers range from novice to experienced, while none of the mathematics teachers were novices. In the Philippine sample, both non-mathematics and mathematics teachers were composed of novice and experienced teachers.

Figure 3 shows the results of the he Values Survey Module for Teachers 2012 (VSMT12) that was based on Hofstede's VSMT08. It is important to note that Hofstede, in the scoring manual of the *Values Survey Module 2008* (VSM08), cautions users of VSM08 against comparing obtained scores with those that are published (Hofstede, Hofstede, & Minkov, 2010), as to be able to compare scores requires matched samples. Hofstede's published scores were obtained from questionnaires administered to employees of IBM, and the scores obtained from VSMT12 are expected to be different because they are based on teachers' responses that are likely to be different from IBM employees. However, the published scores of VSM08 were used as a guide when interpreting scores from VSMT12, so the similarities and differences between results for junior high school teachers in selected schools in Japan and high school teachers in two Philippine schools are shown below (Figure 3).

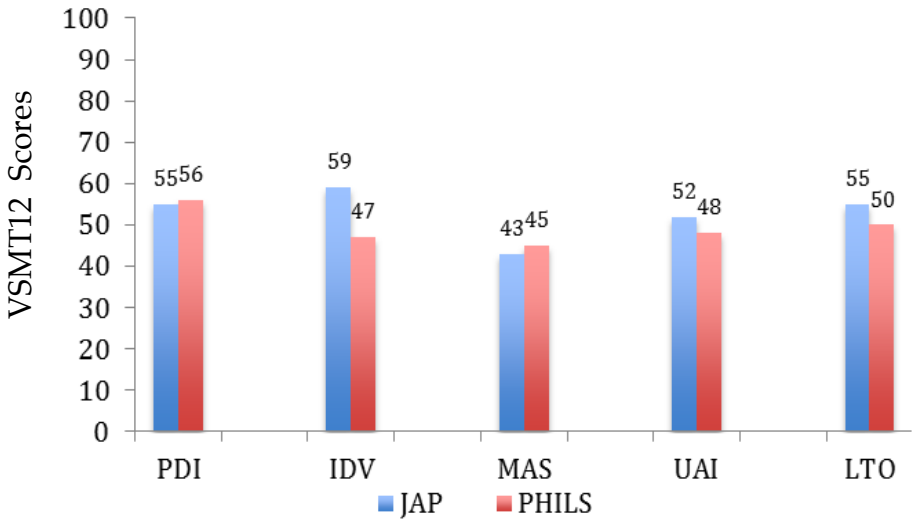

Figure 3. VSMT12 results for junior high school teachers in selected schools in Japan and high school teachers in two Philippine schools.

From Figure 3, it can be seen that the Japanese teachers in our sample tended to be moderately hierarchical and individualistic. They acknowledged positions of power but did not let these features intimidate them when in a collaborative environment: everyone's opinion or ideas should be heard. Furthermore, this sample of Japanese teachers endorsed moderately feminine qualities. This means that instead of competitiveness in a group, consensus was usually preferred and harmony within the group was generally sought. Figure 3 also shows that the Japanese teachers were moderately uncertainty avoiding and moderately long-term oriented. This means they paid attention to detail and that a certain level of commitment could be expected from them. Although in Japan lesson study is more prevalent in elementary schools, the scores obtained from the sample of junior high school teachers show an environment conducive for lesson study activities.

The scores from the Philippines show that Filipino teachers sampled were moderately hierarchical and collective. Like the Japanese teachers, though authority was recognised, it was not a hindrance for everyone to perform well in a collaborative setting. Teachers in the Philippine sample were actually more collaborative than the Japanese. This is good for lesson study because a rich exchange could be expected. Endorsing moderately feminine qualities would aid the inclination to collaboration, as harmony within the group is generally desired.

Figure 3 also shows that the sample of Filipino teachers was moderately uncertainty avoiding and long-term oriented. This is good because it means they were pre-disposed to giving attention to detail when planning. Also, a certain level of commitment could be expected of them. By being moderately feminine as well, even if they struggled with detailed work, as long as it was for the benefit of the group, they were willing to commit and go through the work, bearing in mind that they would have something to gain in the end anyway. Overall, this evidence suggests an absence of any major problem introducing lesson study to these teachers.

Japanese and Philippine Teachers' Perceptions of a Good Mathematics Lesson

Table 2, below, summarises the results of the second questionnaire (Mathematics Teachers' Perceptions of a Good Mathematics Lesson) administered to a sample of Japanese junior high school mathematics teachers and a sample of Philippine high school mathematics teachers. The percentages shown in the table gives the proportions of teachers who classified the components as *Not Important* (NI), *Undecided* (U), *Important* (I), *Very Important* (VI), and *Essential* (E). This is intended to capture teachers' attitudes towards key components of lesson study. The categories were assigned 1, 2, 3, 4, and 5 points, respectively, and the weighted means (Av) were computed.

Responses of Japanese teachers. For seven of the nine questionnaire items, at least 50 per cent of the sample of Japanese teachers rated the activities as either *Very Important* or Essential. Their comparatively low response to Item 2 (19% *Very Important* and 19% *Essential*) compared with teachers in the Philippine sample (50% *Very Important* and 23% *Essential*) on "Working with other teachers to plan a lesson" may appear strange. However, this may be explained by the fact that Japanese teachers distinguish clearly between those occasional lessons that are planned with other teachers as part of lesson study and those lessons that are part of day-to-day teaching that they are more likely to plan alone.

The sample of Japanese teachers strongly endorsed Items 1 (Researching curriculum materials), 3 (Having other teachers in the classroom to observe teaching), 5 (Writing a detailed lesson plan), 6 (Sharing successful mathematics lessons with colleagues), and 8 (Evaluating a lesson through collected samples of students' solutions). Item 4 (Identifying in advance the range of expected student responses) and Item 9 (Getting

Table 2
Mathematics Teachers' Perceptions of How to Prepare a Good Mathematics Lesson

	Japan (%) n = 16						Philippines (%) n = 22					
Items	NI	U	I	VI	E	Av	NI	U	I	VI	E	Av
1. Using/researching curriculum materials (national curriculum, textbooks, course syllabus, scope and sequence, etc.) in planning your lessons.	6	0	13	25	56	4.3	0	0	9	27	64	4.6
2. Working with other teachers to plan a lesson.	0	25	38	19	19	3.3	5	5	18	50	23	3.8
3. Having other teachers in the classroom to observe my teaching.	6	0	25	38	31	3.9	23	5	59	14	0	2.6
4. Identifying in advance the range of expected student responses, including likely wrong responses, in a problem-solving lesson.	6	0	0	25	69	4.5	0	0	50	32	9	3.6
5. Writing a detailed lesson plan addressing the range of expected student responses.	6	6	31	31	25	3.6	32	32	18	14	5	2.3
6. Talking about and sharing successful maths lessons with colleagues.	6	0	44	44	6	3.4	0	5	41	27	27	3.8
7. *Relying on my own opinion whether a lesson has been successful or not.	0	44	50	6	0	2.6	5	9	64	18	5	3.1
8. Evaluation of a lesson through analysing collected samples of students' solutions and attempted solutions.	6	0	19	31	44	4.1	0	0	9	55	36	4.3
9. Getting involved in school research.	6	6	6	19	63	4.3	0	9	36	41	14	3.6

Notes: Shading indicates combined percentages of *Very Important* (VI) and *Essential* (E) ≥ 50%.
* Lower values are important for this item.

involved in school research) were considered *Essential* by 69% and 63% respectively of the Japanese teachers sampled. In contrast, only 14% of the Filipino teachers sampled considered it *Essential* to get involved in school research.

Since lesson study is a collaborative activity, other people's opinion is as important as one's own when determining the success of a lesson. For that reason, it is important to get lower values for Item 7 (Relying on one's own opinion in determining success or failure of a lesson). It is interesting to note that in this item, the Japanese sample has 94% between *Undecided* and *Not Important*. This is consistent with their endorsement of having other teachers in the classroom to observe teaching (Item 3). Japanese teachers' moderately individualistic and collaborative orientations support this.

Furthermore, the moderate uncertainty-avoiding and long-term orientations support many of the above items. Attention to detail in lesson planning and engagement in research are strong inclinations.

With apparent cultural strength in each of the factors that would seem to suit lesson study, these data suggest why Japanese teachers seem to be able to apply the lesson study model in a relatively problem-free way.

Responses of Philippine teachers. On the other hand, at least 50 per cent of the sample of Filipino teachers rated five out of the nine items at least *Very Important*. Items 1 (Researching curriculum materials), 2 (Working with other teachers to plan a lesson), 6 (Sharing successful mathematics lessons with colleagues), 8 (Evaluating a lesson through collected samples of students' solutions) and 9 (Getting involved in school research) were rated as at least *Very Important*, with Items 3 (Having other teachers in the classroom to observe teaching) and 4 (Identifying in advance the range of expected student responses) being seen as at least *Important* by 50% or more of the Filipino respondents.

However, Item 5 (Writing a detailed lesson plan) was seen as *Not Important* or *Undecided* by 64% of the respondents in the Philippine sample, notwithstanding the fact that 73% think that working with colleagues to plan a lesson is at least *Very Important*. Writing a detailed lesson plan is clearly an aspect of lesson study where Filipino teachers may need to be convinced.

While 28% rated Item 3 (Having other teachers/colleagues observe my teaching) as *Undecided* or *Not Important*, the rest have a positive attitude towards having other colleagues observe their lessons. These teachers are likely to support lesson study, but some effort may be necessary to win over the

minority who are yet to be convinced of the value of having colleagues inside their classroom.

Filipino teachers' strong endorsement of Items 1, 2, 6, 8 and 9 implies similar support for lesson study. 87% of the Filipino teachers considered it as at least *Important* to rely on their own opinion as to whether a lesson has been successful (Item 7). It is important to note that only 56% of the Japanese teachers considered it *Important* or *Very Important* to rely on their own opinion in this regard, whereas 44% of Japanese teachers rated this as *Undecided* or *Not Important*, compared with 14% of Filipino teachers who rated it as *Undecided* or *Not Important*.

Items 3, 4, and 5 are three aspects of a good mathematics lesson where the contrast between the Japanese and Filipino teachers is most evident. Filipino teachers may need to be convinced to see the difference between lessons designed and shared by one teacher and a lesson designed and shared by a group of teachers. In introducing them to lesson study, they need to see the benefits of collaborative planning to turn it into an opportunity rather than an obstacle. It is interesting to note also that Filipino teachers, like the Japanese teachers, are high on Item 1, Using/researching curriculum materials. One needs to ask, however, if Filipino teachers who responded positively to this item had in mind the intensive kind of research that is typical of the *kyozaikenkyu* phase of lesson study.

However, despite these differences and areas of contrast between the two samples, it would be wrong to conclude that resistance to lesson study is likely to be encountered from Filipino teachers in view of their responses to Items 3, 4 and 7. In particular, we can build on their willingness to work with other teachers to work on a lesson (Item2).

Whatever the differences in the degree of support for these nine items between the two samples of teachers, Filipino teachers are generally well disposed to all key aspects of lesson study, with the possible exception of Item 5 (Writing a detailed lesson plan). However, on-going workshops and first-hand experience of working with other teachers on lesson study are expected to build on these already positive dispositions and convince Filipino teachers of the importance and potential benefits of writing a detailed lesson plan for use in lesson study. These experiences are likely to yield further improvement in Filipino teachers' attitudes towards lesson study, with consequent improved outcomes for student learning and teacher professional development.

Implications for the Transference of Lesson Study to the Philippines

Lesson study is a professional development activity for teachers that is worth emulating across educational contexts because of its distinct products, particularly improvement in teacher knowledge and capacity; improved student achievement; and a collected body of knowledge of teachers' theory and practice. However, having originated from Japan through decades of teaching practice, there are aspects of lesson study that appear to be culturally rooted, such that an uncritical transfer of lesson study into a non-Japanese context may prove to be problematic. Hofstede's dimensions of culture, as we have utilised in this study, point to a range of strategies, discussed above, which should assist in adapting lesson study successfully to a Philippine setting.

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