"Teaching for Understanding" and its implementation in Japan

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To enable youngsters to deal with the challenges and opportunities of the 21st century, educators should teach learners to tackle the unknown, not simply pass on existing knowledge. The Teaching for Understanding framework, developed through a multi-year research project based at the Harvard Graduate School of Education, helps educators design, review, and implement instruction in ways that actively engage students in learning and develop their deep, genuine understanding of the subject matter. This paper provides an overview of this framework and discusses how this framework was applied in the EFL context in Japan.

21世紀へ羽ばたくこどもたちへの教育は、既存の知識をただ次世代へと引き継ぐのではなく、未知への挑戦と未知の可能性を切り開く力を養成されるべきである。ティーチング・フォー・アンダースタンディング（悟性理解の為の教授法）は数年に渡りハーバード大学教育大学院で研究・開発された教育者への教授構造であり、指導計画、再考、そして生徒に学習意欲を持たせることによる教科への深い真の理解へ導く手段を提供する。本稿では、この教授構造の概観と日本にて外国語として英語を学ぶ生徒への適用方法を述べる。

This paper discusses the latest research in Japan regarding EFL pedagogies based on the Teaching for Understanding (TfU) framework. The roots of TfU will be described first, including an overview of how it was developed and is being taught at WIDE World, Harvard Graduate School of Education. We then investigate how the generic teaching framework is currently being crafted for and tested in the Japanese EFL context. Results from the implementation will also be discussed.

Educating for the unknown

The leading educational challenge of our day lies in preparing learners for the unknown, not just in passing on existing knowledge. Educating for the unknown requires learners to understand deeply, think flexibly, reason critically, and discover connections among disparate ideas. These are critical skills that students need in order to overcome the challenges and seize the opportunities in the 21st century world.

What learners need to develop these critical skills is a process of learning for understanding not just learning facts. Dewey (1933) described the process of learning for understanding as one in which the individual develops a well-differentiated, elaborated mental representation of the topic. Understanding results from mental acts in which a person creates, builds, and determines new relationships and connections among facts and ideas. As understanding develops, the learner's mental model of the subject matter becomes more elaborate and complex. In alignment with this view, Biggs (2006) distinguishes two levels of deep understanding: the relational level and the extended abstract level. At the relational level, a student can link and integrate several parts into a coherent whole. He has the ability to relate, to compare and to analyze. At the extended abstract level, a student has the capacity to generalize the structure beyond the information given, and even produce new hypotheses or theories. Some researchers (Perkins, 1998) view understanding more like an ability than a mental model of knowledge. Understanding is not simply constructing an idea but being able to use the idea in novel contexts. Understanding is an ability to think and act flexibly with what one knows (Perkins, 1998). With understanding, students are able to apply what they learn from one classroom to other classrooms and solve real problems in life.

The TfU framework

The TfU framework is a tool to design, revise, and review curriculum and instruction that helps students develop deep understanding. TfU was developed through a multi-year project (1989-1996) included as part of Project Zero at the Harvard Graduate School of Education in close collaboration with classroom teachers. TfU builds on over three decades of research into constructivist, student-centered, and inquiry-oriented approaches to learning and teaching.

TfU grows out of the constructivist tradition of education, which assumes that learning occurs through students' sustained effort and active engagement with authentic challenges. These challenges require students to carry out rigorous inquiry processes. The framework was designed to guide educators' efforts to design effective and efficient instruction that supports students in building understanding of important content.

TfU has four interacting elements that guide educators' thinking about fundamental questions that any educator has to consider when making decisions about what and how to teach. TfU reminds us to focus teaching decisions, whether in planning, review, assessment, or the moments of teaching, on helping students develop understanding. Each of the four elements is defined by specific criteria that remind educators how to help students develop genuine, flexible understanding of important subject matter, concepts, and topics (Blythe, 1998).

The first fundamental question for educators is "What topics shall we teach?" The answer provided by TfU is *Generative Topics*. Criteria that specify generative topics are: central to some discipline(s); engaging to students and teachers; accessible through resources; and richly connected to other valued topics and real life experience. These criteria defining generative topics remind us to select topics by how likely they are to promote valued understanding. Topics that meet the criteria well are more generative than topics that do not.

The second fundamental question is "What should students learn about those topics?" The TfU's answer is *Understanding Goals*. Criteria specify that understanding goals are: explicitly articulated so that what is to be understood about the generative topic is clear both to students and the teacher; publicly posted and referred to during instruction; and directly aimed at concepts to be understood. Criteria defining understanding goals remind us to articulate explicit goals that aim for understanding in all their complexity, to make goals public to students and

other interested parties (e.g. parents, department colleagues, administrators, etc.), and to refer to the goals regularly during instruction (e.g. in discussions, assignments, assessment, etc.).

The third fundamental question is "What will students do to learn?" The TfU's answer is *Performances of Understanding*. Criteria specify that performances of understanding are designed so that: students work actively in a novel context with the ideas and concepts to be understood; students must think in order to work with the ideas and concepts; what students do aligns directly with what they are trying to understand; and what students do demonstrates what they understand. According to Perkins' (1998) *Performance View of Understanding*, these performances engage students actively in the learning process and students develop real, deep understanding during these performances. Criteria defining performances of understanding remind us to design sequences of learning experiences throughout a unit or course of instruction that require students to engage regularly, actively, and thoughtfully with the ideas and concepts to be understood.

The fourth fundamental question is "How will we know what students have learned?" The TfU's answer is *Ongoing Assessment*. Criteria specify that ongoing assessment: occurs throughout a unit or course of instruction, not just at the end; focuses on learning and understanding, not just on judging and grading; varies by who offers it and how it is conducted; and refers to public criteria known to the students. Criteria defining ongoing assessment remind us to set up ways to check students' understanding regularly, so that we can aim instruction at the students' growing edge of learning. By regularly checking students' understanding level, we can adjust instruction so that it will help students most. TfU treats assessment as a central part of the learning process. Various people check (e.g. the teacher, the student who is learning, and/or the student's peers), both informally (e.g. in conversations, discussions, observations, or open-ended reflections) and formally (e.g. with tests or quizzes, against criteria in rubrics, or in formal reflections).

These four TfU elements interact with each other. By actively engaging students, the TfU framework builds up an active and interactive learning community between the teacher and students. Learning is not just a passive, one-directional process from the teacher to the students, but a dynamic, student-centered process with active engagement of students.

Education for Japan

The first part of this paper began with a discussion of educating for the unknown in the TfU perspective. This next section of the paper shall focus on Japan instead. How well do the pedagogical theories set forth by the Harvard Graduate School of Education match the Japanese context? What sort of research has been conducted in Japan? This section offers ideas for Japanese classrooms based on the results from these studies. We will begin with a look at a study unit that was designed specifically for the Japanese classroom. Then, we will take a look at specialized pedagogic design that was based on the results of these Japan-based studies and shall discuss the results of its implementation.

The unit of study designed for Japanese classrooms

As a student in the WIDE World course, Teaching for Understanding 1: Focus on Student Understanding, Murphy (2009a) designed a unit of study for learner training in Japan. The unit was created specifically for Japanese adult students learning English conversation. The unit's design was based directly on the standard TfU framework which incorporates (1) a generative topic, (2) understanding goals [UG], (3) performances of understanding [PoU] and (4) ongoing assessment. The unit was

implemented in Fall 2009 and produced positive results. Below are details of the four main tiers of the Japan-centric unit.

One generative topic:

- "Why is learner training important for second language learners?"

Three understanding goals for the students:

- UG1: "How do I maximize my efforts in learning a new language?"
- UG2: "If I shouldn't translate back into Japanese, what are the alternatives?"
- UG3: "How can I learn to 'feel' in English?"

Six performances of understanding (two per understanding goal):

- PoU 1 for UG1: Have students examine four different study schedules. Have students choose the best one for themselves and explain their decision.
- PoU 2 for UG1: Students create mind maps with the root word "study habits". Discuss results with partner.
- PoU 1 for UG2: In small groups, create a pro/con list on the grammar translation method used in Japan.
- PoU 2 for UG2: Hold a debate: "Should we banish the grammar translation method from Japanese schools?"
- PoU 1 for UG3: In small groups, design new ways to study English that will make you *feel* English. Present ideas and assess at the class level.
- PoU 2 for UG3: Students design individual month-long study plans. Share, assess, re-design. Trial the study plans. Present findings after the trial month.

Three types of ongoing assessment implemented:

1. Self-assessment
2. Peer to peer
3. Teacher to student

This unit was tested in three adult English conversation classes at Murphy School (Kyushu, Japan) with five to six students per class. Two of the classes were intermediate level and one was an advanced level class. They were all Japanese adult learners with moderate to high levels of motivation. All of the students had at least 6 years of formal English education in their teen years and had at least 2 years of private English conversation (*eikaiwa*) lessons in Japan.

The visible results: From the onset, the students were highly supportive of the proposed study unit and showed strong enthusiasm for its cause. In particular, the creation of mind maps seemed to be the catalyst for serious thinking and growth within all of the students. The following debates regarding the usage of grammar translation were very serious and emotionally charged, as were the small group discussions.

The reported results: As to be expected due to individual differences, the student-reported results varied from student to student. However, all of the students reported that: (a) the unit *did* help them find new ways to study English, (b) the unit helped them learn to better manage their study time, and (c) the unit was highly motivational for them. Although it is too early to assess the long-term benefits of this learner training unit, based on the positive input from the students and the collective

strength of their answerability of the generative topic post study month, the unit appears to have been successful in attaining its immediate goals.

Synthesis and implementation in Japanese classrooms

"Teaching for Understanding", "Differentiated Instruction" and results from Murphy (2009b) were synthesized into a high support teaching methodology named CREAME (Consciousness Raising, Emotions Analysis, Manipulation, and Expansion). CREAME is a seven-step process that is relatively easy to administer in classes with students from mid-teens to adults (see Figure 1). What follows is a step-by-step representation of CREAME in use (Figures 2-8), with explanations.

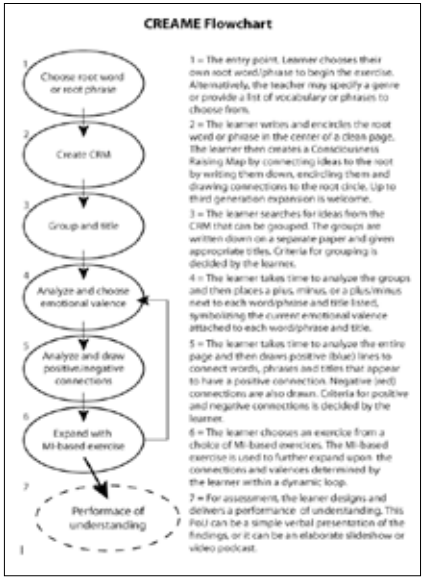

Figure 1. A flowchart for CREAME implementation

Students choose a root word that corresponds with the topic of the month. They then design their CRMs (Consciousness Raising Maps) on their own, as they wish. Students are encouraged to draw up to second or third generation connections. Figure 2 is an authentic example of CRM creation rendered during a first-year university English class in Japan.

Figure 2. Step One: The creation of a Consciousness Raising Map

In Step Two (Figure 3), students study their own CRMs and then create new categories to represent key concepts from their CRM work. Students then move words from their CRMs to fit under the appropriate categories. Students are encouraged to be creative when coming up with categories.

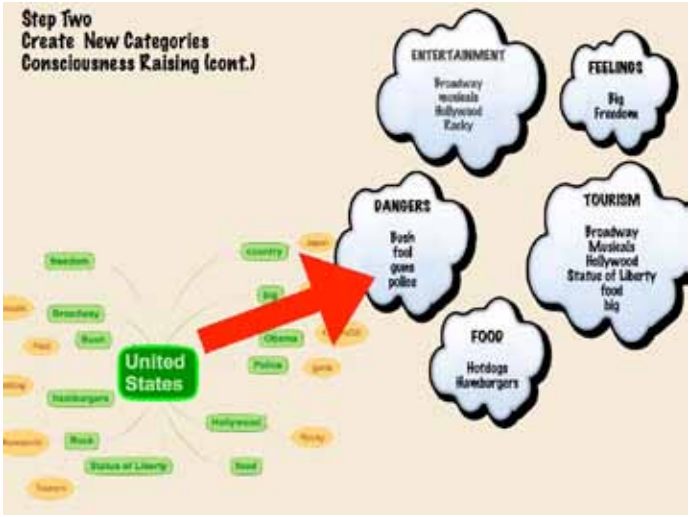

Figure 3. Step Two: Creation of new categories

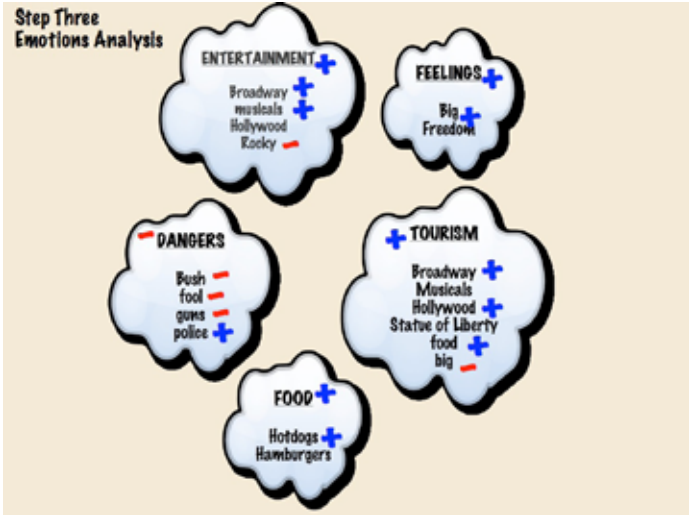

Figure 4. Step Three: Adding emotional valences

Assessing emotional valence is highly important for deep understanding of the content. In Step Three (Figure 4) the students determine their emotional valence per word and per category. This helps in the consolidation and retrieval process.

In Step Four (Figure 5) the students decide upon possible positive or negative connections between words and/or category titles. This makes the students' metacognition visible and tangible. It is a vivid and visual metaphor for the metacognition going on in the students' minds.

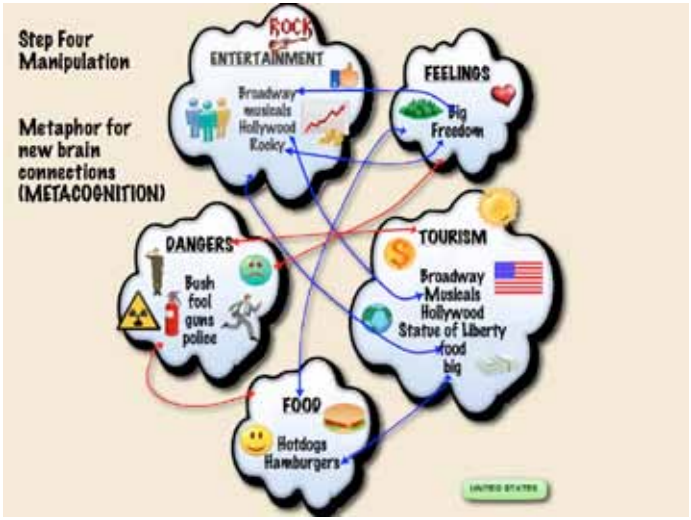

Figure 5. Step Four: Manipulation of the data

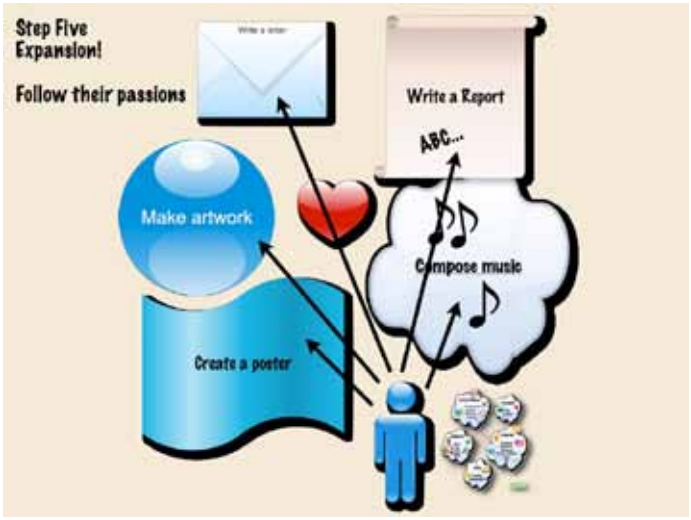

Figure 6. Step Five: Expansion (expression) of student findings

In Step Five (Figure 6), students then take their newly found connections and expand the ideas via one activity of choice. The choices are from a very wide variety of domains. Alternatively, students may opt to design their own activity. In essence, students are allowed to follow their own passions and creatively apply their new knowledge to a personally resonating project.

Negotiation of meaning is crucial for language acquisition. In Step Six (Figure 7), students negotiate meaning via a Q&A session with a partner, focusing on their work accomplished during Step Five. This is in scaffolding preparation for their final performance of understanding, a classroom presentation of this topic.

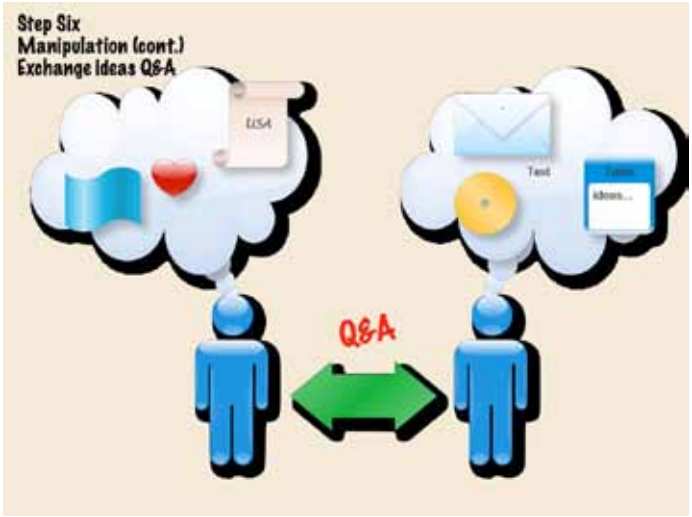

Figure 7. Step Six: Exchange ideas (Q&A) with partner

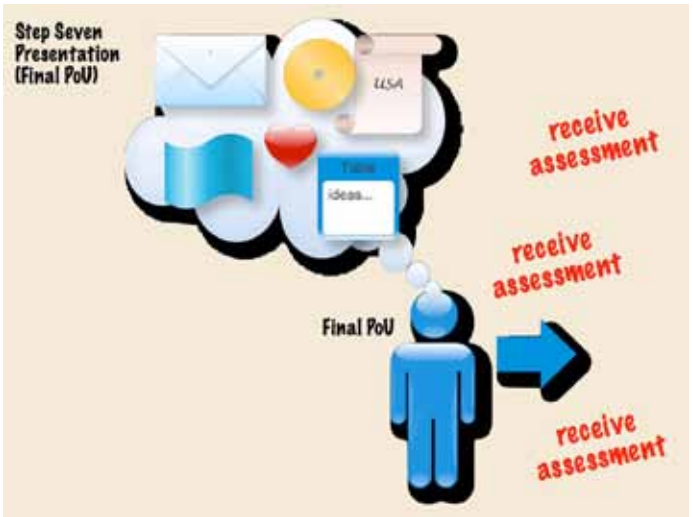

Figure 8. Step Seven: The final Performance of Understanding

In Step Seven (Figure 8), students do an encompassing classroom presentation that is assessed by peers, by the teacher, and by themselves. This is where all of their prior work becomes synthesized and hopefully helps take the student to the next level of understanding.

Results of implementation in Japanese classrooms

CREAME was tested on 100 students in three classrooms at Shimonoseki City University in Japan in 2009. CREAME is designed to have students build skills and gain a deep understanding of English usage from a student-centered and a task-based perspective. The finale CREAME session is a "Performance of Understanding" which is a class presentation covering what each student had just spent the previous 3-4 weeks working on. These CREAME sessions produced positive results after 6 months of continuous usage in the classroom. Students enthusiastically engaged themselves in a new topic every month

via these CREAME sessions. The results of an anonymous questionnaire administered in Japanese after 6 months of CREAME implementation are as follows:

1. 英語の表現がもっと自然になった
   "My English expressions naturally became more fluent." AGREE 66%
2. この教授法が楽しかった
   "This methodology was fun for me." AGREE 79%
3. この教授法で勉強を続けたい
   "I wish to continue studying with this method." AGREE 73%
4. この教授法は効果的だった
   "CREAME was an effective method for me." AGREE 77%
5. この教授法を使ったレッスンをもっと受けてみたい
   "I wish to take more CREAME-based lessons." AGREE 71%
6. お互いを評価して役にたった
   "Peer-to-peer assessment was useful." AGREE 80%
7. テキストを使った授業の方が効果的だ
   "Text-based (traditional) classes are more effective." DISAGREE 67%

As can seen in the results, CREAME was rated highly by the students tested. Most students seem to want to continue CREAME-based lessons (71%), and responded that it was more effective than their typical text-based lessons in developing English speaking fluency (67%). A very large percentage responded that CREAME was fun (79%), and interestingly, peer-to-peer assessment, which is relatively rare in Japan, received an 80% approval. The current assumption of the authors is that these high approval percentages were attained at least in part because CREAME was designed and implemented as a high support context that renders students to highly motivated states and delivers their optimal levels, and also because it integrates theory from TfU and differentiated instruction.

Conclusion

This paper has discussed TfU from its background, online presence, and implementation, to its potential in Japanese EFL classrooms. From results attained in a language school and a university in Japan, it seems that the TfU framework and its own corollaries such as CREAME have good potential for usage in Japan. The authors see this as only the beginning of Japan-based TfU research and implementation. As such, this paper marks the debut of TfU in Japan. The authors wish to continue with this research and pursue the potential TfU has for the Japanese EFL context.

Bio data

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Appendix

Online resources

- WIDE World website: <wideworld.gse.harvard.edu>