

# **Designing e-learning environments to encourage learner autonomy: Creating a framework for development.**

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## **ABSTRACT**

Foreign language learning has been increasingly influenced by constructivist approaches to learning and teaching. These approaches, placing the learner at the centre of the teaching and learning experience, requires educationalists to critically review existing teaching strategies, techniques, methods and beliefs. For Japanese medical professionals English has become increasingly important. There is growing need for these professionals to understand and use English at conferences and/or workshops, to keep up to date with medical processes and procedures published in Western medical journals and there are ever increasing opportunities to communicate with other medical staff and patients in English. However, the curricula at medical schools in Japan are so extensive that the time allocated for English classes is usually very limited, which means those classes often do not have the depth or scope to improve the English communication skills of medical students to the level necessary for their future career. This paper explores the development of a design framework that provides learners with the motivation and skills to access learning materials independent of time-tabled study. It outlines how the authors integrated a self-reflective framework and micro-credential / badge ecosystem in the learner centric courses created. It illustrates how this design framework was implemented in a medical terminology course.

Keywords: learner autonomy, learner centeredness, constructivism, micro-credentials

## **1. OVERVIEW**

Over the last three decades foreign language teaching and learning has been influenced by new strategies, techniques and methods. Increasingly there has been a growing focus on learner-centeredness and learner autonomy (Aşık, 2010). While there are differing opinions on a finite definition of 'learner autonomy' (Macaskill & Taylor, 2010) there is general agreement a common theme underpinning 'learner centeredness' are new perspectives on the role of the learner and the teacher in the leaning process (Furtak, & Kunter, 2012). These new perspectives have been influenced and shaped by constructivist views of education.

Constructivists have significantly influenced the way education is conceptualised and delivered (Posner, Strike, Hewson, & Gertzog, 1982). It has been argued the separation between knowing and doing, described by the folk categories of 'know what' and 'know how'

(Brown, Collins, & Duguid, 1989, p32) can no longer be sustained, A foundational premise of constructivism is the concept that knowledge is actively constructed by the learner, not passively received from the environment they learn within (Driver, 1989). To put it simply it appears impossible to transfer ideas, facts, processes and concepts wholesale into students' heads and expect these to remain intact or unaltered (Treagust, Duit, & Fraser, 1996). In short, the transmission of learning materials to learners does not necessarily mean learning is occurring. This concept of tutor as broadcaster is illustrated in Figure 1 below (Clayton, 2007, p10).

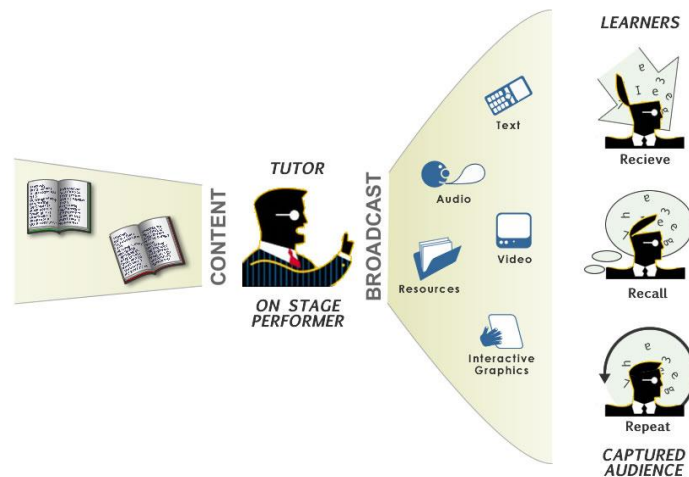


Figure 1. Tutor broadcaster.

Constructivists acknowledge learners hold views of the world and meanings for words that are intelligible, (coherent and internally consistent) plausible, (reconciled with the views currently held) and fruitful, (useful to the learner in making sense) (Duit, & Fraser, 1996). They argue that for learning to occur the learner must be reflect upon their existing views and current knowledge, evaluate these reflections in light of the context of their current learning activity, and decide, how they can reconstruct their views and knowledge incorporating the learning that has occurred (Gunstone, 1994). In short, the learner is at the centre of the learning process, tutors must actively encourage student engagement with content, they facilitate learning. This concept of tutor as facilitator is illustrated in Figure 2 below (Clayton, 2007, p11).

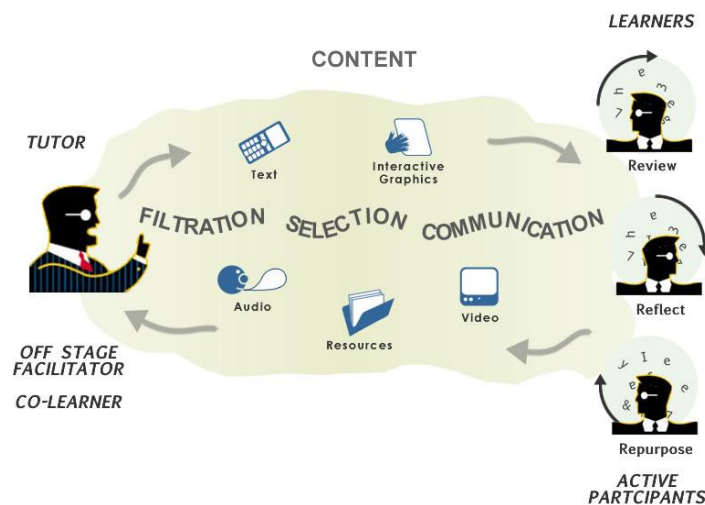


Figure 2. Tutor facilitator

Acceptance of these ideas have significantly influenced teaching and learning in English language learning (Oguz, 2013). Strategies, techniques and approaches have been rethought, focusing on learner autonomy, the ability of learners to independently identify and direct their learning, rather than the regimented accretion of knowledge (Macaskill & Taylor 2010). From this learner autonomy perspective, learning takes place as learners actively engage with ideas presented to them. Their existing knowledge frameworks mediate this engagement. This means language learning is not simply the acquisition of correct responses, a repertoire of set behaviors (Duschl, 1998). This fundamental shift, from passive acceptance of knowledge to learner engagement and construction, means there is a need to create learning environments that are supportive of learner autonomy and centred on the learners identified needs.

## **2. THE CONTEXT**

A working knowledge of English has become increasingly important for medical professionals around the world. Increasingly English is the ‘common’ language used at conferences, symposiums, workshops and medical papers. In the work-place there is growing need for them to communicate with other medical staff and patients in English (Telloyan, Iwata & Clayton 2008). However, the existing extensive curricula of medical schools in Japan mean English classes are usually scheduled only for the first 2 to 3 years of a 6-year-long programme of study. This limited exposure to English is insufficient to improve the English communication skills of students to the levels necessary for their future career. Therefore, language teachers at medical schools have been required to review their pedagogical approaches, strategically plan their English curricula, and organize how they should engage their learners to fully maximize the impact of the time allocated for English teaching (Iwata, Clayton, & Saravani, 2013).

In this modern digital age individuals constantly acquire skills, knowledge and capabilities in both formal and informal settings. Often this learning is facilitated through, and with, information and communication technologies (Clayton, Iwata, & Elliott, 2013). Since 2008 formal English language learning sessions at Shimane University has been supported by the Learning Management System (LMS) Moodle. While learners acknowledge the ‘blended-learning’ approach is effective and motivating for their English study (Iwata, Tamaki & Clayton, 2011), these courses have often been ‘course-bound’ and have not been used informally out of time-tabled sessions. It was decided the courses needed to be re-designed to suit students’ needs and align with learners’ current capabilities. This re-design was focused on:

- Helping learners identify and engage with the suitable level of information and in appropriate level of activities, and
- Encouraging learners to independently engage with the review materials identified and participate autonomously in practice activities.

It was anticipated this re-design would actively encourage learners to engage independently with course materials outside of the scheduled time-tabled courses.

## **3. THE DESIGN FRAMEWORK**

In e-Learning environments learners have more choice in the time they learn and the place the learning will occur. While tutors design digital content and activities to achieve identified objectives, the ultimate responsibility of achieving those outcomes is transferred from the instructor to the learner. In these more personalised environments learners need to be more self-motivated and self-directed (Clayton, 2009). A fundamental criterion for the success of self-motivated and self-directed English language learning environments is the

ability of learners to make the appropriate connections between their existing skills, knowledge and experience and expected skill, knowledge and behaviours. This is achieved through the creation of self-reflective frameworks (Clayton, 2012).

A digital portfolio can be regarded as the purposeful collection of a learner's work that can be structured to exhibit the learner's efforts and achievements over time (Kim, Ng, & Lim, 2010). In accreditation environments, digital portfolios can provide a space where learners' evidence of their competencies and achievements can be stored, systematically evaluated and displayed. In essence they allow learners to illustrate, to their peers, colleagues and other stakeholders, their progress, indicate their proficiency and acknowledge their achievements.

Micro-credentials (digital badges) are increasingly being used as valid indicators of accomplishment, skill, knowledge, or interest (Clayton, 2012). It was anticipated in the new English language learning environment created endorsed micro-credentials/badges would be used for motivational and rewarded purposes. Indeed, it is argued the ecosystem created would provide a broader picture of English language learning achievement by providing the infrastructure for individual learners to demonstrate their knowledge, skills and achievements through the display of endorsed micro-credential / badge collections.

#### 4. THE SAMPLE COURSE

Medical Terminology is based upon fundamental medical terms which are frequently used and are keys to better understanding of up-to-date information about health-related issues, medical conditions, diseases, symptoms and treatments. The Moodle quiz functionality was used to create a self-reflective framework to enable learners to determine their current level of competency in medical terminology. Learners were asked to reflect on the target skills and then respond to the questions. A sample of 3 of the 10 questions is illustrated in Figure 3 below.



Figure 3 Self-Reflective Framework

When the learner has responded to all the questions they are provided with specific advice on which module(s) to review and which competencies they need to develop. This is illustrated in Figure 4 below.

I have a good understanding about basic structures of medical terms, prexies, word roots and suffixes.

Select one:

- a. Strongly agree You can skip module 1 and try other modules.
- b. Agree
- c. Partially agree
- d. Disagree

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I can recognize basic body parts.

Select one:

- a. Strongly agree
- b. Agree
- c. Partially agree I advise you try module 2 for review.
- d. Disagree

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I can recognize basic names of the skeletal system.

Select one:

- a. Strongly agree
- b. Agree
- c. Partially agree
- d. Disagree Please try module 3 for review.

Figure 4 Framework Feedback

As the learner reviews the self-identified modules they are presented with a range of specific quizzes, developed in the Moodle LMS, to check their vocabulary and understanding on the topic. This is illustrated in Figure 5 below

Lifesaver\_Unit04\_マッピング

指定された番号の部位を表す単語を選びなさい。

Choose:  
 pancreas  
 prostate  
 kidney  
 duodenum  
 appendix  
 ovary  
 testicle  
 spleen  
 gall bladder  
 esophagus  
 Choose...

Figure 5 Assessment example


When learners successfully complete the requirements of the module tests identified, they are awarded, using the Moodle LMS badge functionality, the associated module 'micro-credential / badge'. This is illustrated in Figure 6 below

**Badge details**

Name: Badge for Module 4

Description: This badge is issued for your successful completion of module 4.

Created on: Wednesday, 19 February 2014, 2:53 PM

Image: 

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**Issuer details**

Issuer name: Managed Virtual Learning Environment

Contact: admin@elearning.ac.nz

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**Badge expiry**

This badge does not have an expiry date.

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**Criteria**

Users are awarded this badge when they complete the following requirement:

- ALL of the following activities are completed:
  - "Quiz - Short Test for module 4: Spell Out"
  - "Quiz - Short test for module 4: Matching"
  - "Quiz - Short Test for module 4: Dictation"

*Figure 6* Badge example

When learners have completed the requirements of all the module badges they are awarded a “course credential” which means they have successfully completed this basic medical terminology course. All the badges learners have earned have been design to be displayed in a learner portfolio. This will serve to increase learner accomplishment and satisfaction, but can also be used to demonstrate to their peers, family members and others what they have learned, rather than what was taught.

## 5. SUMMARY AND FUTURE DIRECTIONS

This paper has argued that over the last three decades foreign language teaching and learning has been influenced by constructivist strategies, techniques and methods. This has meant there is a growing focus on learner-centeredness and learner autonomy. The paper illustrated the unique challenges Japanese English language teachers in a medical university are facing. It illustrated how the authors applied unique design ecosystem, based on self-reflective frameworks, digital portfolios and micro-credentials. It demonstrated first, how a self-reflective framework, where learners are able to make meaningful connections between their current skills/levels and the learning activities offered on available courses, was designed to help learners learn not only independently but also autonomously. Secondly, how the use of micro-credentials, confirming learning achievement, could help to motivate them toward further autonomous study.

However, the authors are conscious that further investigation on how self-reflective frameworks actually help learners identify the skills required and the appropriate course/module level and how the use of micro-credentials helps them to be motivated to

study autonomously is required. As more learners participate in courses based on the use of self-reflective frameworks, portfolios and micro-credentials the authors intend to develop of measures to evaluate the success of these environments. The results of these evaluations will be valuable in monitoring the effectiveness of the courses in enhancing learner independence, autonomy and their acquisition of knowledge and skills.

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