# ACQUIRING ENGLISH IN A CONSTRUCTIONIST ENVIRONMENT: A CASE STUDY

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**Abstract**

This qualitative exploratory research focuses on a case of a seven-year-old learner studying in a constructionist classroom. It aims at exploring how the psychological and social environment in a classroom influences a young learner's learning of 'English as a Foreign Language' (EFL). Studying the psychological environment of the classroom, this study covers the effect of activities on the learner's emotions, feelings, attitudes and motivation. The study of the classroom's social environment looks at the effect of activities in the class on the learner-peer interactions and learner-facilitator interactions. The data comes from the participant's journals, learner logs, classroom observations and in-depth interviews. The findings reveal that topics covered in the class and facilitator-designed activities which were personally evocative and meaningful to the learner made the learner feel more connected and related to her learning environment. Building artifacts not only helped the learner to externalise and internalise her learnings but also encouraged interactions between learner-peer and learner-facilitator. These classroom interactions and the learner's positive feelings, attitude, emotions and motivation helped the learner to build her understandings about the new English words introduced in the class and to recall, understand, and use some of those words in her communication.

**Keywords:** constructionism, constructivism, sociocultural theory, learning environment and interactions

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## INTRODUCTION

Young learner classrooms and their environments have a deep impact on the learning cycle of individuals in the long run. Research studies show that after the age of 12 years, it is more difficult to learn a foreign language (Illig, 1998). The role of environment in stimulating cognitive development in children's brain is immense (Young, 1996).

The theory of constructionism provides a learning framework in which the learners are central in the process of learning. They are seen as the builders of their own knowledge. Cameron (2001, pp.19-20, cited in Dickinson, 2010) in his study has mentioned some principles with respect to foreign language learning by young learners such as: "Children actively try to construct meaning; they need space for language growth; Language in use carries cues to meaning that may not be noticed; Development can be seen as internalizing from social interaction and, Children's foreign-language learning depends on what they experience." These principles show the significance and necessity of having a learning environment for young learners which provides them opportunities to collaborate and use language more meaningfully and to get more space for language growth.

Appropriate learning environments can help in the process of knowledge building. Ackermann (2001) in her study mentions that knowledge is context dependent, and personal experiences facilitate the construction and re-construction of knowledge. Project Lighthouse was introduced in Thailand as an educational intervention with an aim of changing the mindsets of people about education by introducing examples of robust learning environments. The basis of its learning philosophy was constructionism. Constructionism provided an unconventional or alternative learning approach in a context where the education lacked in its processes critical thinking skills, problem-solving skills, meaningfulness and connection with learners. The Thai education system went through a reform starting in 1996 to keep pace with the changing world and its demands. The education reform encouraged lifelong learning and a learner-centered approach of learning. English was made a compulsory subject to learn in schools from the primary level onwards in order to make Thai people more adept at the English language so that they could deal better with the information-based economy. During this period of reform 'Darunsikkhalai School for Innovative Learning' (DSIL) was established in 2001 as one of the programs of 'Project Lighthouse'.

As constructionism was introduced in Thailand as a learning intervention, it was interesting to observe and find out how it could influence the young learners' learning of EFL as English was an important facet of the education reform. A research study was therefore conducted with the youngest-age group classroom at DSIL, which contained ten learners aged 6-7. This paper is a part of the ongoing research of young learners' learning of EFL in a constructionist environment. The focus of this paper is on one extreme-case learner whom the researcher observed for 12 weeks. It aims to answer the research question, "How the constructionist learning environment may have influenced a young learner's learning of EFL"

## LITERATURE REVIEW

Constructionism is a learning theory and a strategy for education (Papert, 1993). Ac-

cording to Fosnot (2005, cited in Berland, Baker & Blikstein, 2014) constructionism is mainly constructivist in nature with a mix of concepts from Piaget's constructivism and Vygotsky's sociocultural theory.

It is similar to constructivism in which learning means "building of knowledge structures and reconstruction of knowledge rather than transmission" (Harel & Papert, 1991, p.1). In constructionism, individuals create their own personal understandings of the world from their experiences (Resnick, 1997; Williams & Burden, 1997) whereas in constructivism context, social interactions and cultural processes are considered primary factors in meaning making. Constructivism describes and considers the role of an individual's cognitive processes as most important in perceiving the world or meaning making (Young & Collin, 2004). These cognitive processes take place within an individual's mind wherein the individual is involved in the process of assimilation, which means merging new experiences and knowledge structures with the pre-existing "units" of knowledge, or blocks of knowledge, in our minds called schemes in order to adapt to the environment and accommodation which means making changes to the schemes to fit a new situation or environment (Piaget & Inhelder, 1969 cited in Young & Collin, 2004).

In constructionism, building of knowledge structures "happens especially felicitously in a context where the learner is consciously engaged in constructing a public entity, whether it's a sand castle on the beach or a theory of the universe" (Harel & Papert, 1991, p.1). Sharing something tangible or shareable helps learners to externalize and internalize ideas (Papert, 1990). A learner externalizes by showing or talking about his shareable product and internalizes by getting feedbacks on it from others. This process of externalisation and internalisation is a cognitive developmental cycle. The constructionist cognitive developmental cycle is more social in nature, and development of knowledge happens through these social interactions (Gasper, 1999 cited in Young & Collin, 2004).

Artifacts or shareable products could be made on the computer or built using any other medium such as clay, songs, pictures, acting etc. Harel & Papert (1991) in their study mention that computers provide a wide range of contexts for constructionist learning; otherwise, any tool or medium could be used that helps learners to create artifacts which are socially and personally meaningful.

Socially relevant and personally meaningful artifacts have been found to be beneficial for learners in the process of learning. This way learners can ascertain even more complex content in connected and meaningful ways (Berland et al., 2014). Furthermore, it helps increase the learners' understanding about the artifact (Ackermann, 2002 cited in Ang, Wilson & Zaphiris, 2005). In her study, Resnick (1994 cited in McVey & Molnar, 2003) found that learners understand artifacts better by building them. With the software LEGO/logo, learners can create or build their own creatures and control their behaviour through making a computer program; furthermore, learners can observe and experiment simple emergent behaviours of animals. Through other programs such as Star Logo, Agar and SimAnt, the learners can observe the social behaviour of insects. It can be seen how constructing artifacts can help learners to discover emergent animal behaviour and social behaviour and start making sense of the concept of emergence.

Papert was the developer of the learning theory of constructionism and was associated with MIT Media Lab. The MIT Media Lab later developed some programs like 'Media Moo', a "text-based, networked, virtual reality environment" for media researchers, and 'Scratch', a visual programming system for learners, facilitators and parents keeping in mind the constructionist learning theory (Brennan et al., 2009). 'Scratch' enables people to program games, music, stories and animations on the computer by placing the program command blocks as pieces of a jigsaw puzzle. A learner gets an opportunity to explore and share with others his/her ideas and imaginations while working on it. Learners using Scratch projects as a medium can externalise and internalise their constructs and creative expressions through an online community of more than 500,000 registered members (Brennan, Monroy-Hernandez & Resnick, 2010). These projects are shareable online; furthermore, they can be commented on through forums and chat rooms present in the gallery. However, in this study, Scratch was used to create stories by the learners individually to help them crystallize their imaginations, improve their problem solving skills and have fun working with it. They exchanged their ideas informally with friends while building their Scratch projects and finally presenting them to everyone.

In addition to the above-mentioned aspects, collaboration plays an important role in constructionism. In constructionism, interaction and exchange of ideas with others lead to the development of new ideas (Bhattacharya & Han, 2001 cited in Benton et al., 2016), hence collaboration plays an important role in the process of learning. It gives learners an opportunity to decentre and look at a problem or a situation from someone else's point of view. However, since children are still in the process of learning how to collaborate with each other, they may require help to resolve and negotiate disagreements (Hoyles, 1985 cited in Benton et al., 2016). In their research, Benton et al. (2016) found that pair work or collaboration encouraged discussions in learners. Pairing the more able learners with the lesser able ones provides support to the less capable ones. Also, without the facilitator's intervention, learners can make individual discoveries through observing their peers' work. This is also in line with Vygotsky's sociocultural theory, in which social interactions are significant in the process of learning. Scaffolding "through problem solving under adult guidance or in collaboration with peers" (Vygotsky, 1978, p.86 cited in Cazden, 1997, p.303) is considered important in the process of learner development in the zone of proximal development. In both Papert's constructionism and Vygotsky's sociocultural theory, social interactions are significant in the process of learning or cognitive development; however there are differences with respect to the role played by computers in the learning process (Ackermann, 2001).

Constructionist learning environment has been adopted and experimented with in different contexts. According to Bhattacharya & Han (2010), a project-based approach can be used to implement constructionism. Since they are both learner centred and provide autonomy to learners, it makes the learners more responsible for their work, and it engages learners in real-world tasks that are personally meaningful to them. In a study about the success of project-based learning in EFL classrooms in Thailand, it was found that project-based learning helped improve the

speaking abilities of the learners. They could pronounce more understandably and correctly. They learned how to maintain interpersonal skills, using communication techniques. The success of the subjects is attributed to the freedom that they got in the choice of their topics and in making their own plans (Kettanun, 2015). Another study (Newprasit & Seepho, 2015) shows how integrating project-based lessons into regular foreign-language teaching situations of first-year students improved their English language skills with respect to speaking, reading, grammar and vocabulary. The reason behind this improvement is attributed to the integration of the content of their English I course into the project, extra language exposure, carefully designed project content and outcome, teacher support, and authentic use of language. In order to use vocabulary, speaking strategies, grammar, and reading passages in the projects the students had to do an in-depth study of their course books. The students felt confident taking responsibility in their learning after the introduction of PBL, and they showed enhanced teamwork, decision-making and problem-solving skills.

The pedagogy of learning in the classroom being studied is based on the theory of constructionism. Since constructionism is informed by the various learning theories reviewed above such as constructivism, socio cultural-theory and project-based learning, the process in which the learner constructs her understandings and what she constructs would be informed by using these theories.

## THE STUDY

This is a case study of a seven-year old girl named Jenny. She was in the second trimester of her first year in DSIL in 2012 when the research was conducted. Below are details about Jenny's classroom structure, reasons why she was chosen as a case for this study and her project.

## Context of the Study

DSIL provided mixed-age classes and learning was conducted based on constructionism. There were 3 levels of learners in the school – New Learners (6 - 10-year-olds, level 1 to level 5), Intermediate (11 – 14- year-olds, levels 6 to 9) and Pre Advanced Learners (14-18-year-olds, levels 10 to 12). The learner levels were determined based on their age and abilities. The word 'ability' is used here in a much broader sense. The criteria for level 1 learners were: being able to work with, understand, and conduct basic communication with their peers and facilitators in Thai /English. The school tried to keep a mixed-age classroom with less difference in ages. For example, 6-8-year-olds could be in level 1 or level 2 classrooms, depending on their abilities.

The school time was divided as follows: Project (50%), Thai, Math and English (30%) and Art, Sports, Club and Reading time (20%). English had been integrated into all 'New Learner' project classes starting from the New Learner level 1.

The school used a project-based approach of learning in a large part of its school time (50%) and concentrated on the process of learning in its Project class. Furthermore, various academic topics from Math, Science and Thai to English were integrated into the Project class. The topics and sub-interests were mapped according to the learners' interests and choices.

A Project class consisted of at least one Thai and one foreign native English speaking facilitator. The main responsibility of both facilitators was to facilitate different learning activities in the class. The core responsibility of a foreign facilitator was to facilitate the use of English in the classroom, helping the learners in their learning process and integrating topics from Maths and Science into their project. The Thai facilitator's responsibility included helping the learners with their projects and integrating Thai and other subjects in it. Both facilitators also engaged in other activities such as in the project-selection process, project planning, sending observation reports (biweekly), following up on learners' journals, giving feedback to learners, designing and conducting classroom activities and games and conducting reflections on the learners' work. EFL had been integrated within the level 1 project class of the current study. It was integrated with the goal of making the young learners more motivated to speak and use English. All the English activities were designed according to the project theme of the learners' choice. The new vocabulary introduced was project-theme specific. This helped the learners to communicate better with their foreign facilitator who was in charge of covering the project in English. It also helped them to find more comprehensive information on the internet. English was used in more meaningful and authentic ways by the learners. There were various task-based activities done to facilitate a practical application of English in the class, such as-cooking, games, singing and dancing, colouring pictures, paper craft, group discussions, net browsing to research information and journal writing and reading. These activities gave an impetus to communication in English.

The other subjects (Thai and Maths) were not project based, although they had some elements of constructionism in them such as collaborative activities. These subjects and their content were predetermined based on the national curriculum while the facilitators designed the method of imparting it, which was a mix of instructionist and constructionist methods.

**Participant**

Jenny was in the youngest age group classroom of the school (level1). She was considered as an extreme case because even though she was rarely heard speaking in English, she showed interest in learning English. She followed up on comments given by the foreign facilitator in her journal regularly, whether it was a suggestion made about correcting spellings of days of the week, instructions given about the next journal writing in Thai or even tenses corrected in the sentences written in the journal. Even though the facilitators had set up three days for journal writing in English and two days in Thai, she mainly used English in her journals. She tried to acquire English in the project class by writing down in her journals the new words she heard or learned in the English session. Sometimes she also got clarifications from her more English-proficient friends when she didn't understand something.

**Classroom Project- Project BOB (Beetles, Oceanography and Bananas)**

Projects were chosen based on learner interest, and the learning design was based on what, when and how the learners wanted to learn. "Project BOB" was conducted during

the data-collection phase. The process of learning began with learners selecting their own projects through individual mind maps and presentations. Through negotiations between learners and facilitators, it was decided to link all the mind maps and to choose the three most interesting topics for learning. The learners chose Beetles, Oceanography and Bananas as their learning themes. The Project was hence named BOB. The learning plan was created during a discussion with the learners and facilitators. It included planning what to learn and where they wanted to go for their field trips. The learners voted by raising hands and talking about their interests. Learning in the project constituted researching information, collaborating, constructing artifacts based on the learning themes, sharing and reflecting. The exhibition of the project in the last week showcased what the learners had learned in the project throughout the term. It was also used as a platform for observing the learners' progress and evaluating them.

**Data Collection**

The data was collected using field observations, semi-structured interviews of the learner, learner logs and journals. Consent from parents and facilitators was taken for the study. 12 weeks (17 September, 2012- 4 December 2012) of unstructured, non-participatory observations for 64.42 hours were done in order to examine the social environment (interactions) in the class and the activities.

Jenny was interviewed 4 times during the term. The semi-structured interviews were used as a main tool for examining learner learnings, feelings, emotions, attitudes and motivation. These interviews were conducted in Thai and the translator helped with translating questions and answers. Each interview took about 15 to 20 minutes.

Learner journals were free form and written on a daily basis. The journals were written from week1 of the project until week 12. It was up to the learners to write about any topic they wished to communicate or reflect. The facilitators had suggested that they write two Thai journals and three English journals a week, however, the learners mostly wrote according to their desires.

Learner logs were designed in order to capture the learner's learning and to triangulate learner feelings and interactions. The researcher had to use daily journals written by Jenny to obtain the data because Jenny discontinued filling in the learner logs after a month. The learner log had different sections to find out about what the learners learned in English, what they had learned on that day, what they had made, how they felt after a project activity and their interactions with the facilitators and peers. Jenny was told that she could write in Thai/ English or draw pictures for descriptions. The parents were requested to not help the learners in writing learner logs.

**Data Analysis and Discussion**

The researcher started by looking into the unstructured observations to find critical incidents with respect to Jenny's interactions, learnings, feelings and emotions and used it to triangulate with the data from interviews, learner logs and journals. The data will focus on how Jenny constructed her knowledge about the sea – her concepts about the sea and her word meaning constructions. Jenny nominated ocean as the project she wanted to do for exhibition and she seemed to enjoy learning about it the most. The incidents below

are short narrations of different activities that Jenny did in the classroom and how she accomplished those activities and constructed her concept and word meanings.

**Jenny's concept construction**

**Sea bottle activity of 25.10.12**

The classroom observations showed how Jenny constructed her understandings of the sea from the sea bottle activity.

On the day the sea bottle was made, Jenny and the other learners were given a book by the facilitators about oceanography with pictures of the sea in it. They were asked to draw and colour a picture of the sea for the background of the sea bottle. Jenny drew a scene of the ocean as a background picture. She also made some sea animals which could be inserted inside the bottle. The picture attached to the model had a drawing of a sunken ship, seaweeds, and starfish in love with each other, octopuses, crabs, jellyfish, shrimps, squids, a shell, clown fish and turtles. Learners had the choice to make a scene according to their imagination. It was an activity designed by the facilitators but the learners had freedom to choose and design their own sea bottle backgrounds. All the learners could easily draw sea pictures. It was simple yet interesting as it involved individual imaginations. It helped in personalising each sea bottle. This activity made learners interact with each other.

The environment of the class buzzed with learners asking questions about the sea to the facilitators and getting help from them. They also had opportunities to listen to each other's questions and answers, which might have helped in building their individual understandings about the sea.

Jenny hardly ever spoke to the foreign facilitator; however, because she was so interested in making jellyfish legs and making a sea bottle with animals in it she communicated with the foreign facilitator for help. There was also support openly extended by the facilitators making themselves approachable. Jenny went to the foreign facilitator and said, *"I want to make a jellyfish."* The foreign facilitator showed her how to cut the legs of the plastic jellyfish. It was interesting to see how Jenny wanted and was able to later independently make the jellyfish legs after initially being assisted by the foreign facilitator. The observation data also revealed Jenny's internal motivation and interest as she went to the foreign facilitator and said, "*I want to make a jellyfish."*

There was a positive learning environment in the class, where learners talked about their sea bottles and even adored each other's works. They added colours to the water in the bottle to make their sea and then made sea animals. Jenny was privy to this environment which probably made a positive impact on her. During the activity she spoke out loudly expressing her emotions in front of her friends, saying, "*sanook*", meaning "fun".

Design projects which were open ended and looked over by facilitators promoted "active engagement", "collaboration" and "contribution" in learners (Harel & Papert, 1991 cited in Ackermann, 2010, p.5). In this case Jenny was engaged. She concentrated on the activity, went to the facilitators to learn how to make jellyfish legs, took interest in marking her sea bottle with her initials (observation dated 25.10.12), made more jellyfish legs, even said it was fun and collaborated and contributed in making the sea background with her friends on that day. Her

learner log of 25.10.12, when the sea bottle activity was done, also shows a happy face option chosen by her under the section which showed her feelings for that day's project class. The picture made by her in the learner log also shows a girl with a happy face and two ocean bottles with jellyfish, a turtle, a sea snail and a shrimp.

Jenny's sea model shows her personal construct about the sea. It is a place with many sea animals, such as starfish, crabs, jellyfish, shrimps, squids, shells, clown fish and turtles. Some animals in the sea eat other animals, such as squids eating shells. Also, while some animals could be seen on the surface of the sea there were some others such as starfish that were bottom dwelling sea animals. There were sunken ships inside the sea with animals floating around them. The sea also consisted of sea weeds.

Before the sea bottle activity began, there had been other activities done about the sea animals' food chain and problems and solutions of the ocean. The learners had even seen videos about sea pollution and how jellyfish and other sea animals were affected. All of these could have helped the learners to understand sea life better. Jenny's indirect interactions with her classmates when they spoke about the sea animals they wanted to put inside the bottles, such as sharks and jellyfish, or when they asked the facilitators about different sea animals might have given her more ideas about the sea.

**Food chain activity and 3D sea activity-9.10.12 to 11.10.12**

The activities about building a food chain on a piece of paper and a 3D sea model on a board using paper cutouts and cotton began simultaneously, sometimes even overlapping.

The stories about Jenny's food chain model and the 3D sea model started almost hand in hand. It shows her constructions about sea life and how she might have created those understandings using the internet, books and getting help from friends and facilitators while building her food chain picture and 3D sea model.

The Thai facilitator told them that she would let them create a private sea with sea weeds, rocks, fish, jellyfish and sharks, all as options for the learners to include. Their seas would be in 3D and the facilitator even explained the difference between 2D and 3D to the learners. The 3D models were to be made in groups of three. After finishing, each group had to present their models to the class. When learners engage in the construction of anything shareable, they "internalize what is outside and externalize what is inside" (Papert, 1990, p.3).

The learners researched information from the internet, discussed it amongst themselves and with their facilitators and then built food chains of animals before they could make their own 'private sea'. In a group discussion, Jenny expressed that she liked sea lions, dolphins, Nemo (the animation film character) and starfish. She liked starfish because they look like a stars. She liked dolphins because they can talk with humans (she mentioned in an informal chat with the researcher that she had seen a program about dolphins on television before).

The Thai and foreign facilitators, through a combined brainstorming activity and encouraging them to research on the computers for more information, got the learners to create eating habits of animals (herbivores, carnivores and omnivores). The learners continued to draw their sea animals and increased the

number of animals they wanted in their sheets. This activity went on for a few days after which the learners were encouraged to start cutting out fish shapes with paper and filling them with cotton fillings to create 3D images for the 3D model. The learners were also engaged in watching videos about the sea life, reading books, having presentations about sea problems and solutions as they worked on their models and browsed the internet.

Jenny's food chain model on the paper had pictures of various sea animals with descriptions of each animal in Thai. Along with her two friends she had found this information on the internet as per observation dated 9.10.12 and discussed it. The facilitators had helped them browse the internet. Jenny received help from her facilitators and peers while making artefacts. Scaffolding from facilitators in any form, whether it was internet browsing or cutting jellyfish legs, helped in her learning.

It can be said that Jenny constructed her understandings about the sea life using books, computer and interactions with peers and facilitators. She found information about starfish from Wikipedia, while her friends had found information about other animals. During a discussion on 9.10.12, Jenny mentioned that penguins were eaten by polar bears. Through her peers she got additional information about the penguins also being eaten by sea lions (observation dated 9.10.12); the facilitators, while discussing about the food chain through a movie story (Finding Nemo), gave the concept of big animals being eaten by small ones and that everything that died was eaten by some other thing (observation dated 9.10.12).

***Jenny and her groups' information about sea animals in the food chain model made on the paper (Translated from Thai to English)***

*The Starfish are the enemies of conch shells.*

*Sea lions eat penguins. They are lovely and smart.*

*The Sea horses eat shells, shrimps, worms and crabs. They don't have a backbone, like a sponge.*

*Whales eat sea lions and small fish. Their enemies are humans and sharks. They are also an endangered species.*

*Penguins eat fish. Sea lions are their enemies.*

*Dolphins are smart.*

The evidence of Jenny's constructions about the sea is also clearly visible in the story that she created of her choice in the Scratch program about four fish and a shark. The shark in her story tries to kill the small fish. Creating a story on Scratch might have helped Jenny to 'externalise' and 'internalise' her thoughts and experiences about the sea world as she shared them with her friends and facilitators while building the story during many weeks of the Scratch program and finally presenting it.

For Jenny, some animals in the sea were smart (can even communicate with humans), such as dolphins; some had backbones while some did not; some ate plants, some meat and some ate both. The eating habits of animals were also shown in her 'fishing game' model that she chose to create for the exhibition on her own.

**Jenny's word meaning construction**

The data below is from the interviews, learner logs and journals with Jenny, which help in understanding her word meaning constructions. Jenny's construction of word meanings is revealed in instances when she could recall, understand and/or use ocean-related words newly introduced in the classroom through different activities, and in other contexts.

When asked during her interview on 17.10.12, without having to give much thought she could recall these two animal names as her favourite English words and could understand the question without any help from the translator.

> **Researcher:** *Okay starfish and dolphin. Anything else?*
> **Jenny:** *(quiet.)*
> *(The translator told the researcher that she was thinking)*
> **Researcher:** *Okay think. Take your time. No problem.*
> *(Jenny says poo in Thai)*
> **Translator:** *She said…*
> **Researcher:** *(interrupts) I know poo (in Thai poo means crab.*
> **Jenny:** *Crab! (in an excited tone)*

Several activities covered in the class showed Jenny's relatedness with these animals as seen in the data from the observations. In fact, starfish and dolphins were also a part of her 3D model and the sea bottle model. Dolphin was also in her food chain sheet. In this excerpt she also showed an understanding of the word "crab". She was very proud and happy to have translated this for the researcher.

In providing constructionist learning, Papert (1993, p. 104) emphasized the significance of connectionism. In this context, the topic about ocean which was chosen by Jenny's friends and had caught her interest could help her to explore more sea animals, their eating habits and their appearances. Jenny could connect and relate with the topic and therefore probably remember the names of sea animals too.

In summary, classroom activities engaged Jenny and increased her interest for starfish and dolphins, which also then became her favourite English words. She liked these animals, played the role of a dolphin during journal reading and sharing time and had friends who played other sea animals such as jellyfish and crab. These words were perhaps personally evocative for her. Every model of her showed one or both of these animals. The ocean was an evocative topic for her, so she made a Scratch story of her choice about the ocean and also a fishing game of her choice to present at the exhibition. She could relate, make connections with sea animals, recall, understand and also use these words in her communication.

Jenny understood and learned the meaning of the word 'problem' which had earlier been covered in the class under a topic called 'problems and solutions of the sea' on 22.10.12. She later also used it in collocation with the sea in her learner log on the same date. In groups the learners discussed the problems and solutions of the ocean and could use any medium such as internet or books to find information. Jenny gave a presentation with her classmate about it. The facilitators had written on the whiteboard the words 'Problems' and Solutions' in English. The learners had copied that down from the board into their project notebooks. Even though Jenny spoke Thai and her friend used English

during the presentation, the topic and the words related to it may have left a mark in her mind. She mentioned the word in her learner log the same day because it may have triggered her interest. In her interview dated 5.11.12 she could understand a question in English which contained the word 'problem', and responded to the question correctly by answering Tsunami (in Thai), a problem of the sea.

Her learner logs show the use of the word 'sea' in different contexts and the way she collocated it indicates her construction of the word 'sea' which was a part of the project theme.

> learned… **about sea's problem**
> watch **sea turtle's video**
> Thai facilitator taught **sea's problem**
> Work I did with my friends? **Watch sea turtle** Today **I learned …sea life**
> **Teacher taught…sea life**

Learner logs show that she could collocate words well and connected the words she learnt in the class to express her thoughts. The contexts in which words were used were also correct.

### Findings

The results from the incident observations, interviews and journals indicate that the learner could comprehend, recall and collocate some words related to the ocean which had been introduced in the classroom. The details of the findings show how the constructionist learning environment (psychological and social) may have had an effect on the learner's English language acquisition.

### Feeling of connectedness and personally evocative learning environment

The learner was granted choice and freedom in the class from the point of selecting a project of her interest to planning lessons and activities. Choice and freedom was provided within a carefully designed structure by the facilitators. While the learners chose what they wanted to learn, the facilitators decided the suitable type of activity for that age group, keeping in mind the individual learners' interests.

The learner had played the character of a dolphin during journal reading time while her friends played other sea animals such as jellyfish and crabs. Those were her favourite English words she had mentioned in her interview dated 17.10.12 and in her group discussion dated 9.10.12. These animals constantly appeared in all her artifacts too. The learner could recall and show an understanding of the two words 'starfish' and 'dolphin' in her interview dated 17.10.12. She had also shown an understanding of the word 'crab' in the same interview when she told the researcher that 'poo' meant crab. Learners interacted with each other during journal reading time, using their sea animal names which were chosen by them and provided by the facilitators. These words were perhaps personally evocative for Jenny and she connected with them and the topic. Her feeling of connectedness, relatedness with the topics and her interactions with peers through these animal names might have helped her to recall and understand these sea animal names in English.

## Collaborative interactions

The facilitator designed activities creating a collaborative and interactive environment in the classroom which encouraged the learner to build her understandings about the sea life and to acquire new vocabulary. The learner actively participated in all the sea-related activities. During the sea bottle activity on 25.10.12, she even used the English language with her foreign facilitator to ask for help in making a jelly fish. This was made possible due to the nature of the activity in which the facilitators worked with the learners and helped them if needed. The learners in turn were encouraged to make the best of all potential collaborations in the environment.

The discussions and presentations which happened in both Thai and English in the classroom during the activity about 'problems and solutions of sea' in groups might have helped this learner to comprehend the meaning of 'problem' and use it in her learner log again. She used the word 'problem' in her learning log as a new word learnt on that day. Later during an interview on 5.11.12 she could also recall the word and answer questions related to it without requiring any translation. The meaningful tasks and interactions between peers and facilitators may have helped the learner to build her understanding of the word 'problem'. The learner also used the word 'sea' in different contexts and tried to collocate it in her learner log such as 'sea life'. The facilitator had earlier covered topics about sea life and sea problems and shown videos about sea animals such as sea turtles. The learner was privy to all these activities and had interactions with the foreign facilitator and peers when these topics were covered. She had also worked on different activities which required research with respect to sea animals and sea life with her peers in groups. All of this may have given her an understanding of using the word 'sea'.

## Implications

This study may benefit learners, facilitators and other educators in better understanding the importance and role of artifact building in the process of learning. As mentioned by Harel and Papert (1991), learners learn by making or building their own artifacts and then sharing them with others. These artifacts should be personally meaningful and socially relevant to the learners. Learners should be provided with the materials they require for their artifact building and helped according to their needs. A wide range of resources provided to the learners for their learning, such as computers, books etc, will help them to explore their learnings more independently.

Moreover, the findings of this paper focus on how mediation in the process of learning can help in giving impetus to interactions between learners. This may be valuable for educators who want to facilitate the learning process through hands-on activities. According to Ackermann, (2004) and Williams & Burden (1997), mediation is important in the learning process and facilitators could help in providing it .Furthermore, Ackermann (2004) mentions the relevance of cultural artifacts in mediations. The materials used for learning in the class should be a part of the environment or context of learning. This could give an impetus to interactions between members of the class (Papert, 1980). The use of art and craft activities for learning mediation by facilitators and learners may help the learners to express themselves better.

## CONCLUSION

It can be seen through this study how in a constructionist classroom a Thai learner had an opportunity to use English through internalizing and externalizing individual ideas and expressing them through different mediums. Immersion in activities that are real and meaningful may help learners build their comprehension and use of English as a foreign language. Facilitators can provide a constructionist classroom environment, giving the learners more control of their learning by providing sufficient choices and opportunities. This will allow learners to explore their interests and to try out different ways to achieve in their learning.

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