Enhancing Language Learning using the Theory of Variation

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Abstract

The study is on the use of Throw Back Time (TBT), an interactive digital board game aimed at teaching grammar tenses and aspect. The game exclusively designed according to the Theory of Variation (Marton & Booth, 1997). Four patterns of variation including contrast, separation, generalization, and fusion were used. The study employed a qualitative content analysis in illuminating the principles of the Theory of Variation (ToV) in the design of the grammar exercises in the game. Hence, the study suggests that the elements in the (ToV) governing the tasks in the game delivers positive outcomes to help learners learning grammar.

Keywords: Grammar; The Theory of Variation; Interactive; Digital learners

1.0 Introduction

The study is a continuation from the researcher's previous research on the use of digital board game using the Theory of Variation (ToV) to enhance grammar. The last research clarified the use of contrast and fusion elements from ToV to support three types of questions in a digital board game Throw Back Time (TBT). The current study, however, describes the use of separation and generalization elements in developing two other types of questions in TBT.

Globalization has prompted the improvement of education in many developing countries. In Malaysia, the Education Blueprint (2015-2025) has been established and one of the aims is to incorporate technology into the teaching and learning environment. This transformation focuses on three aspects that include ICT-enabled learning, the blended learning models and online learning which mainly designed to prepare learners for the new challenges in the 21st century. Technology is greatly emphasized here due to its promising value in teaching and learning (Sanchez & Olivares, 2011; Klopfer et al., 2011; Bazzaza et al., 2016; Krasniuk & Kryvych, 2016). However, technology savvy alone is inadequate to prepare learners for the future.

To meet the demand of a challenging workforce in a developing country such as Malaysia, the tertiary level learners need to be proficient in the English Language as it is the prime business language (Shuib, 2013; Shuib, 2015; Ganapathy et al., 2016; Rozina et al., 2017; Mahalingam, 2017). Proficiency in a language entails having the knowledge of the grammar rules, an important requirement in mastering the language (Larsen-Freeman, 1991; Larsen-Freeman, 2015; Harmer, 1991; Chomsky & Halle, 1991; Ur, 1996; Matsumoto & Dobs, 2017; Bikowski, 2018). To achieve this mastery is unfortunately not an easy task as grammar is often a problematic component for learners of English a second or foreign language to acquire (Embi & Amin, 2010; Matsumoto & Dobs, 2017). Grammar is full of rules that can be overwhelming for learners to learn and memorize while teachers often take the conventional approach in explaining the detailed practices to the learners.

The need for a more intriguing approach to the teaching of grammar where content can be acquired naturally and enjoyably has led to the use of technology. The researcher had developed an interactive digital board game via mobile technology called Throw Back Time (TBT). The Theory of Variation (Marton & Booth, 1997) supports the development of the game. According to Marton and Booth (1997), the fundamental aspect of learning is for students to notice the critical issue through variation and not sameness. This principle is the essence of the Theory of Variation that acts as a guiding principle in the design of grammar questions in the game that was used as a teaching aid in this study to teach TESL Foundation students Universiti Teknologi MARA (UiTM Dengkil). The items were arranged in a manner that the characters, actions and events in the sentences remained constant, still, the linguistic and discourse aspect of the sentences varied to ensure learners discerned the critical features related to tenses and aspect. The development of the questions for the game was outlined. It ultimately investigates if the game can create a stimulating and non-threatening setting to learn and improve their knowledge of grammar tenses and aspect. TBT is a digital board game where players have to correct errors of grammar tenses and aspect. Elements of challenge, competition, motivation and reward

are included in the game to create a fun and engaging learning environment.

There are several studies in language learning and grammar that have successfully benefited from the Theory of Variation. The studies include teaching reading (Tong, 2012), writing (Thorsten, 2015), present tense (Annie, 2011), present perfect (Annie, 2011; Roy, 2014), adverb (Roy, 2014), present continuous (Lindström, 2017) and present perfect (Ott, 2017). However, many other studies that utilize the Theory of Variation focus on natural science class (Lo, 2012; Ott, 2017) and not many studies have focused on tenses and aspect (Ott, 2017). To address the gap, the researcher had used the elements in the theory to design grammar tenses and aspect questions in the TBT game.

2.0 Literature Review

The Theory of Variation propagates that students comprehend, experience and think differently on a specific aspect of the world due to their background knowledge and current understanding (Marton and Booth, 1997). Students have different ideas and expectations of what educators deliver. Therefore, variations in learning outcomes are necessary. Thus, educators should plan their teaching approaches in an intended way (Marton & Tsui, 2004).

Accurately, educators should meticulously plan on what to teach (the object of learning) and introduce appropriate teaching approaches that are capable of holding students' interest. "An object of learning is a specific insight, skill, or capability that the learners have to acquire in a lesson or during a limited sequence of lessons" (Marton & Pang, 2006, p. 194). The concept asserts that all intellectual actions should focus on an object. Learning is often about acquiring knowledge, and we cannot deviate from considering what to teach. Thus, variation should be used as a guideline so that the "object of learning" is exposed in an intended way. Students should have a chance to concentrate on the critical elements independently or cooperatively using the variation model (Bowden & Marton, 1998). Essential aspects that have yet to be discerned by students are known as critical aspects. The essential elements are connected to the object of learning and to the students who are involved (Marton, 2015). It is vital to search for these essential aspects of teaching purposes. The critical aspects of this study are in understanding the usage of grammar tenses and aspect.

Different sequences of variation occur through a variety of combinations and structures. Students will then be able to concentrate on various aspects of the object of learning. The various elements can be materialized by varying one or a few elements and keeping certain aspects unchanged. For students to notice and discern the structure that we want them to learn, it has to vary against an invariant background. In short, what we want the students to learn (the object of learning) is contrasted with what we do not.

Different teaching materials that educators keep in the classroom and the approaches they utilize will affect what and how learners learn (Bowden & Marton, 1998; Marton, 2015). Several studies by Marton and Morris (2002), Marton and Tsui (2004), Annie (2011) and Lindström (2017) believe that educators who use the Theory of Variation are likely to be successful in teaching compared to those who do not use the theory. There are four patterns of variation that include contrast, separation, generalization and fusion (Marton &

Runesson, 2003). Each model indicates different things, for example: Contrast – determining variation between two values - Separation – setting apart aspect with varying values from invariant aspects - Generalization – allowing varied appearances of the same value - Fusion – having several critical elements at the same time (Marton et al., 2004, p.16-17).

The study by Annie (2011) gives some examples on the patterns of variation: students can be presented with the "past tense" by comparing and contrasting the past tense with the "present perfect aspect" in the capacity of tense variation. Next, students can separate the past tense and the present perfect aspect by varying the use of sentences using different time markers and contextual clues. The separation will enable the students to generalize various features of the tenses and their connection with other invariants. Lindström (2017) who teaches present progressive highlights that by comparing two tenses simultaneously in a different way, the meaning of present progressive more apparent to learners and enhances their possibility to learn two tenses at the same time is better than one. Thorsten (2015) believes that the elements in the variation theory help teachers to prepare an adequate pedagogical design which assists learners in learning. However, Lo, (2012) stresses that using the features of variation cannot guarantee learning discernment. Teachers firstly have to find learners' problems in learning and assist them in establishing powerful ways of seeing the relevant elements of what to learn that at the same time will help them to improve their difficulties in learning.

3.0 Methodology

The study used a qualitative data analysis where a content analysis was employed to clarify how the elements in the Theory of Variation supported the design of the questions in the digital board game. Each type of question in the game was described according to the specification taken from the theory including the elements of contrast, separation, generalization and fusion. Each item helped to support the tenses and aspect grammar questions in TBT game.

The sample population for this research was selected based on a purposive sampling of the Teaching English as a Second Language (TESL) Foundation Programme students of Universiti Teknologi MARA (UiTM) Dengkil Campus who enrolled into the programme in May 2016. There were 47 subjects in the group that were randomly grouped into 23 pairs, with one participant having to work alone. Each pair was given a seven-inch tablet to play the game during the ten weeks of the experiment. The instrument is the digital board game Throw Back Time (TBT) uploaded in the tablet. TBT consists of 664 grammar questions, and the questions were adapted from UiTM textbooks. The content development of the items and the game had gone through, systematic, rigorous and appropriate assessment evaluation in the preliminary work of the research. Firstly, the questions were edited by an experienced English language acquisition and grammar professor. Secondly, during the developmental stage of the questions in the TBT, the researcher also sought the advice and worked closely with the expert of the Theory of Variation, Professor Mun Ling Lo from Hong Kong University via email. Each type of question was checked, commented and

amended by Professor Mun to ensure that the questions complied with the specifications of the theory. The specifications include the elements of contrast, separation, generalization and fusion. Thirdly, two experts in Computer Science and Mobile Learning were also assigned to examine the design of the digital board game. Their comments and suggestions helped further in improving the design of the game. The feedback from the expert on the Theory of Variation and the input from the expert on Computer Science and Grammar were essential in the study. The feedback and input ensure that the game content was in line with the principles of the theory, the game design, the learning approaches and the language acquisition.

The case study involved first semester TESL foundation students of UiTM Dengkil. Hence, the generalization of the findings should be evaluated within the confines of the setting of the study.

4.0 Findings

There are 664 sets of questions in the digital board game based on six formats, and for this paper, the researchers only highlight on two formats, which include *choose a similar sentence with the given one* and *what is the rule of the pair?* In *choose a similar sentence with the given one*, learners have to choose a similar sentence, from the four options that carry the same usage as the one given. An example is illustrated below in Figure 1:
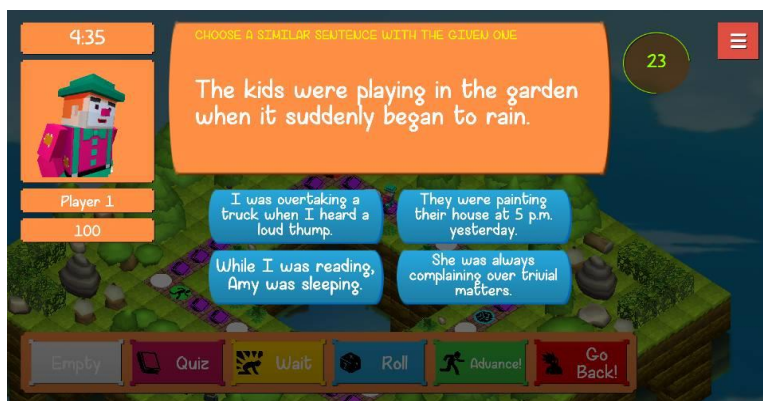

Figure 1: Choose a similar sentence with the given one

Here players have to choose a sentence with the same usage from the one given. Anexample of the feedback is below in Figure 2:

Figure 2: Feedback on the answer

The players can simply click for the answer and explanation or feedback if desire as shown in Figure 2

4.1 The rationale for using the elements from the Theory of Variation

The following section will unfold the rationale on what are the elements used to support the design of *What is the similar sentence with the given one*?

i. The patterns of variation involved (Marton et al., 2004, p.16 - 17)

Separation - separate aspect by varying values from invariant aspect

Generalization - allowing varied appearances of the same value

Ii.The patterns of the questions: Different sentences of the same category (past progressive). Learners have to choose one sentence of the same category that has the similar usage with the one provided.

Iii .Invariant: Here the aspect of past progressive is kept constant.

iv. Variant: The sentences vary.

v. What is expected to be discerned by learners?

a) To provide variations in the different usage of past progressive, learners are able to separate the correct answer (the examples) from the incorrect ones (non-examples) and at the same time, generalize the usage of each one.

b) To understand that past progressive serves different usage.

vi. What are the elements used that support the design of the questions?

Learners who see the options of different sentences from the same category (past progressive) may perceive them as an unseparated whole for example, they might know that the sentences are in past progressive form without realizing that each sentence carries different usage. Hence, to assist learners to separate the sentences from the same category, they must be exposed to different usage that each sentence carries. Once learners understand the different usage of past progressive from the same category, they may be able to discern the dimension of variation that takes place with different usage as

value. We cannot assume that learners will discern an object without knowing how different it is with other object, or in what capacity of variation it stands. The idea is to provide sentences that are in the same category, so that students can make certain generalization and contrast it with other options that vary in usage. In doing so, learners may be able to separate the usage that does not apply.

The examples of the sentences from the same category (past progressive) that serve different usage are explained below:

i.   *I was overtaking a truck when I heard a loud thump*.

(It explains the use of the past progressive with the simple past to talk about an ongoing action that was interrupted by another action. The use of the simple past is for the interrupting action.)

ii.   *While I was reading, Amy was sleeping*.

(It explains two simultaneous actions in progress in the past.)

iii.   *They were painting their house at 5 p.m. yesterday.*

(It describes a specific time in the past.)

iv.   *She was always complaining over trivial matters.*

(It shows irritation or negative behaviour.)

Here, the aim is to let learners to identify and to tell apart the different usage of past progressive.

4.2 "**What is the grammar usage of the pair of sentences?"**

Next in "*What is the grammar usage of the pair*?" players have to decide on the usage of the sentences given (see Figure 3).
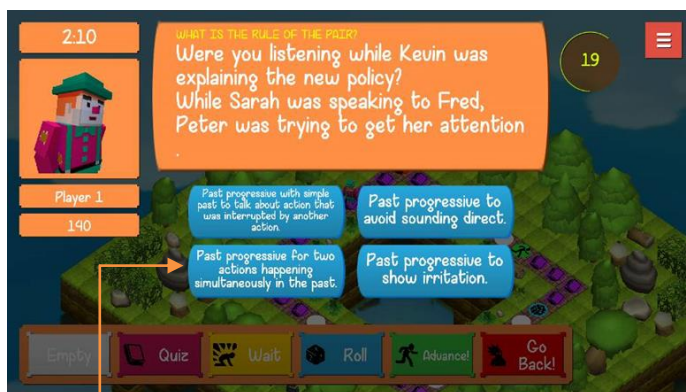

Figure 3: What is the rule of the pair

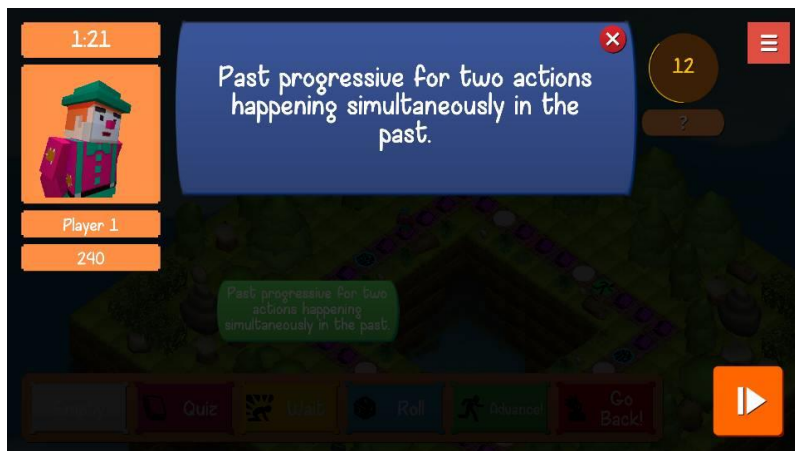Figure 4 reveals the feedback of the right usage of the sentences.

Figure 4 :the feedback for the grammar usage of the pair of sentences.

In Figure 3, both sentences are in past progressive form and they serve a similar usage. Therefore, learners have to find one usage from the answer options that is from the same category. The answer options are based on the different usage of past progressive. For example:

•   Past progressive with simple past to talk about an action that was interrupted by another action.
•   Past progressive to avoid sounding direct.
•   Past progressive for two actions happening simultaneously in the past.
•   Past progressive to show irritation.

The first and the second formats are similar in objective that is to get learners to discern sentences of the same categories that carry different usage. The second format is to reinforce that each tense and aspect carries different usage. When the learner is able to see the different usage from the same category (past progressive) by contrasting the options of usage with one another, we can assume that the category is separated from the usage and an element of variation is extended.

The answer that is in the similar category of:

Were you listening while Kevin was explaining the new policy?
While Sarah was speaking to Fred, Peter was trying to get her attention is listed below:

Past Progressive for two actions happening simultaneously in the past.

The following section explains the rationale for the second format according to the elements in the Theory of Variation:

i. The patterns of variation involved:

Separation - separate aspect by varying values from invariant aspect

Generalization - allowing varied appearances of the same value

ii. The patterns of the questions: Different usage from the same category for example past progressive. Learners have to choose the correct usage of the sentences given from the same category.

iii. Invariant: The category (past progressive) is similar.

iv. Variant: Here, the variation takes place in the grammar usage of past progressive, only one function fits the pair.

v. What is to be discerned?

a) To recognize and discern different usage of past progressive.

b) To recognize the correct usage so as to show the series of events in the context.

vi. What are the elements used that support the design of the questions?

Similar with the first format, learners might perceive the same category as an undivided whole earlier, but after realizing the value (usage) and its dimension of variation, learners should be able to see the value separately, switching it or even labelling it. The category is clearer by extending the dimension of variation that is a value. Here, the value is different usage from the same category that makes up past progressive. Since each tense and aspect has different usage, the aim is to get the learners to understand each usage of the sentences from the same category better. In other words, different sentences from the same category serve different purposes.

5.0 Discussion

With the element of generalization, learners were exposed to at least one other value in the same dimension of variation. For example, in teaching simple present, teachers expose learners to other value of simple present in the same dimension of variation that is simple present carries different usage (to describe perceptions, mental state, emotion, senses, schedule, illness or to show fact). If learners are given a sentence in simple present for example:

I understand the situation

And are asked to choose the correct usage of simple present by the given options below:

To express situation

To describe mental state

To show possession

To describe perception

The different usage of simple present is clearer to them. Here, separation occurs when learners are able to separate the usage that do not apply. This is to allow learners to see varied appearances of the same value and to see the difference as meaning comes from the differences and not from the sameness (Ott, 2017). Widening a dimension of variation (different usage) of simple present helps learners to understand better and when they encounter other tenses and aspect in the future (present progressive, simple past or past progressive), they will be able to formulate them along this dimension of variation and understand the connection among these values as each tense and aspect carries different usage.

6.0 Conclusions

A content analysis was used to describe how the elements in the Theory of Variation supported the design of the questions in TBT. The use of the elements in the Theory of Variation guided the researcher to design the learning materials in TBT and allowed learners to experience the variation of critical features (what makes tenses and aspect difficult) for effective learning. The Theory of Variation provides an alternative means for teachers to teach a challenging subject like grammar. The important term highlighted in the theory is ways of seeing. To assist learners in understanding a subject matter, we must first help learners to develop powerful ways of seeing to improve learning. The powerful ways of seeing can be achieved by helping learners to focus on certain important features of grammar tenses and aspect to enhance learning. Governed with a structured cycle of research lessons, the theory presents a solid base for preparing teaching and learning activities to suit learners with different learning needs. The fact that TBT game via MALL comes with principles and reliable teaching methodology enables new possibilities in grammar learning. However, this study only highlights on form focus activity through meaningful learning. Communicative activities should be included in future studies to further enhance grammar learning.

Acknowledgement

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