

THE EFFECT OF COMPUTER-BASED INSTRUCTIONAL GAMES IN TEACHING
SUBJECT VERB AGREEMENT

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TEACHING SUBJECT VERB AGREEMENT

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DEDICATION

I dedicate this thesis to my beloved family which have been part of my life and have been so close and nearest to me that I found them whenever I need. Your unconditional love has motivates me a lot. Thanks for pray day and night that make me able to get such success.

My humble effort I dedicate to my husband and kids whose their love, affection and encouragement always be along with me during the time in completing this thesis writing.

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ABSTRACT

The purpose of this research is to investigate the effect of using instructional video games in terms of students' attitude and meaningful learning process when using instructional games to learn how to follow the Subject Verb Agreement (SVA) rules, to study the effect to their academic achievement, and to find out the relationship with students' attitude and meaningful learning with academic achievement. Therefore, a total of thirty students of Year 3 from a primary school in Kluang were selected as respondents. The instruments used in this research are questionnaire and a set of instructional video games. The items in questionnaire are related to investigate about students' attitude and meaningful learning process towards learning using video games. A pilot test was carried out to six respondents from different year 3 classes from the school with Cronbach's Alpha Reliability Coefficient value at 0.869 which is a high level of reliability. Results obtained from the questionnaire support the proof that instructional video games does have positive effect towards students' attitude and meaningful learning process. The same set of evaluation test were used in pre and post test give the results obtained from Paired Samples t-Test ($M=38.9$, $SD=12.8$, $t(29)= -16.33$, $p < 0.05$) shows that the results was significant which suggest that when students play instructional video games, the marks they get increases. But, when it comes to Spearman's Correlation between attitude and meaningful learning with the academic achievement, the results show that there are positive weak correlation for attitude and negative weak correlation for meaningful learning.

ABSTRAK

Kajian ini bertujuan untuk mengkaji kesan penggunaan permainan video berpengajaran dari sudut mengenalpasti tingkahlaku pelajar dan proses pembelajaran bermakna terhadap pembelajaran topik *Subject Verb Agreement* (SVA), mengkaji kesan permainan video tersebut terhadap pencapaian akademik dan menganalisis hubungan antara tingkahlaku pelajar dan proses pembelajaran bermakna terhadap pencapaian. Oleh itu, seramai tiga puluh pelajar tahun 3 dari sebuah sekolah di Kluang telah dipilih sebagai responden. Instrumen yang digunakan dalam kajian terdiri daripada soal selidik dan siri pembelajaran permainan video berpengajaran. Item dalam soal selidik pula berkaitan dengan mengkaji tingkahlaku pelajar dan proses pembelajaran bermakna pelajar terhadap penggunaan permainan video. Kajian rintis terhadap enam responden yang terdiri daripada pelajar tahun 3 dari kelas berbeza dari sekolah yang sama memberikan nilai koefisien Alpha cronbach yang tinggi iaitu 0.869. Keputusan yang diperoleh dari soalselidik menyokong bahawa penggunaan permainan video berpengajaran dapat memberikan kesan positif terhadap tingkahlaku dan proses pembelajaran bermakna para pelajar. Selain itu, satu set soalan pengukuhan telah digunakan dalam ujian pra dan pos. Keputusan yang diperoleh dari Ujian t berpasangan ($M=38.9$, $SP=12.8$, $t(29)=-16.33$, $p<0.05$) menunjukkan terdapat keputusan yang signifikan di mana apabila pelajar menggunakan permainan video berpengajaran, markah yang diperoleh juga meningkat. Namun, keputusan Korelasi Spearman antara tingkah laku dan pembelajaran bermakna dengan pencapaian pelajar menunjukkan korelasi positif yang lemah pada tingkahlaku dan korelasi negative yang lemah untuk pembelajaran bermakna.

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LIST OF ABBREVIATIONS

| | | |
|--------|---|--|
| CAL | - | Computer Assisted Learning |
| GPA | - | Grade Point Averages |
| TICCIT | - | Time- Shared, Interactive, Computer Controlled Information Television |
| KPM | - | Kementerian Pelajaran Malaysia |
| SVA | - | Subject Verb Agreements |
| SPSS | - | Statistical Package for Social Science |

CHAPTER I

INTRODUCTION

1.1 Introduction

Nowadays, technology plays important role in giving contribution to enhance educational system. It is undeniable that technology have had facilitate human in many ways. It might lead to positive or negative impact, but we our ownself as a user should be wise in making decision. Long time ago, educational facilities were very limited, many inventions had been done and still continuous till now to create new technologies to helps educator.

Few years ago, under Smart School Project (1997), the Ministry of Education had transforming the educational system in Malaysia moving away from memory-based learning to meaningful learning process by providing facilities and new technologies to school and students not only for those in Smart School but students in rural area in peninsular Malaysia, Sabah and Sarawak also can enjoy the benefits of having computers and internets to gain knowledge. Therefore, lots of courseware is provided to school in terms of alternatives of having interesting ways of learning whenever there is no internet connection at school.

Some of the advantages of having Computer Assisted Learning (CAL) in education is it is an interesting and fun ways to gain knowledge as it is a combination of graphics, animations, sounds and videos (Baharuddin et. al, 2008). Besides that, according to Taylor (1980), computers in education can be classified into three types which are tutor, tool and tutee. Thus, those types of CAL can suit pupils' different types of learning styles. Other than that, according to Baharuddinet. al (2008) CAL can provide more than one senses in learning such as sight, hearing and speaking which can avoid students from being bored during the lesson. CAL also gives chances to students in individual learning and they can also repeated the lesson few times and controlling the speed of the lesson as they preferred. This also gives advantages to shy students to learn independently.

Technology alone won't make the learning effective and meaningful. Theory and strategies used behind the CAL will affect the way how the knowledge delivered by the educators and received by learners. According to Von Glaserfeld (1991), the concept of constructivism is based on few assumptions which are knowledge can be formed by individuals who take their own initiatives; the aim to form knowledge is to adapt oneself in the environment and the process of knowledge formation is the result of individual experience.

According to Csikszetmihalyi (1990), One of the most famous and entertaining ways of learning is using instructional games strategy to deliver knowledge. The advantage of having games in lesson is it is motivating (Costable et al, 2003) and according to Csikszetmihalyi (1990) it is challenging because when we play games, we are aiming to win. So that, the students will try harder until they can win and unawares in the same time, they will learn lesson. Normally, learning language in conventional ways are very bored unlikely when playing games students can practice various skills such as speaking, writing, reading and listening which can also encourage them to create a meaningful learning language especially in writing, interacting and communicating with others. In the easy, relaxed atmosphere which is

created by using games, students remember things faster and better (Wierus and Wierus, 1994).

People learn to speak and write in English through lots of English materials such as storybooks, books, movies, songs and many more. Nevertheless, the basic thing one should know before they can construct from simple sentences to complex sentences is they must master in Subject Verb Agreement rules. According to Choy & Clark (1994), it is part of grammatical and fundamental skill one can learn to obtain correctness in language. In all formal use of English, the agreement of the verb with its subject must be strictly adhered to (Bachelor & Haley, 1949).

1.2 Background of the Problem

Since English has been widely used not only in our conversation but also in our daily communication either written or spoken, the importance of write or speak in English correctly shouldn't be regarded as petty. People need to master in Subject Verb Agreement rules in order to write smoothly and speak fluently. Impact from it, failure in mastering the rules may lead students feel easily demotivated and shy because they think people will laugh at them. Hence, they will not interested in learning English Language at all.

Furthermore, students will only actively participate in the language learning process if they have positive attitudes. Learners with positive attitudes towards learning second language are more at an advantage compared to those with negative attitudes (Holmes, 1992; Littlewood, 1984; Spolsky, 1969; Norlida, 1997). It is also supported by Littlewood (1983) that they will lose interest towards learning since

such attitudes produce an obstacle in the learning process and prevent them from obtaining new second language knowledge.

Attitude is regarded as one of the key factors that contribute to second language learning achievement (Spolsky, 1969) in (Ee, 2010). Students depend on their attitudes to actively participate in language learning process. There are two types of attitude change towards language learning which are positive and negative. According to Parilah (2002), Malaysian students' show poor effort in learning English even though the importance is generally acknowledged by them. She examined the attitudes, motivation and individual characteristics and concluded that the low achievers recognised the importance of English for instrumental purposes and regarded its use, standard and status positively but they did not really display positive attitudes towards learning the language whereby only little effort was spent inside and outside the classroom to improve their proficiency.

In English Language, grammar rules are very important and have to be mastered by all learners. In the topic of Subject Verb Agreement, the subject must agree with the verb. Singular subject is followed by singular verb and, plural subject takes a plural verb. This rule only applies in Simple Present Tense. On the other hand, in Simple Past Tense, the main verbs, 'was' and 'were' need reconsideration. This is the general rule for subject-verb agreement, which is also represented by its sub-rules. As a result, based on the observation, it is obvious that students made mistakes in both general and sub-general of subject Verb Agreement in their writing (Kamaruzaman and Surina, 2009). It is clearly stated that students fail to follow the rules and make major mistakes in forming sentences.

Furthermore, sometimes the way educators deliver knowledge to them is not in interesting way or in conventional way, which also known as "chalk and talk". Pupils will surround with boredom and of course they won't interest in learning English Language. According to Shehenaz (2004), students were not very involved

in learning when taught using ‘chalk and talk’ and they feel relieved from boredom when not using ‘chalk and talk’ by going out on field trips and explore lesson activities in classroom. This was totally different with people long time ago, which doesn’t mind about the way their teachers teach because at that moment, technology is not as good as now whereby people nowadays are familiar with. Eventhough educators have transform from conventional teaching and learning method into integrating technologies with education by using Powerpoint, web, CD-ROM and so on, but it still end up with “sit and listen”, which is totally against constructivism principles which is not a meaningful learning process. This might be due to failure in conducting suitable learning CAL materials which didn’t developed according to correct teaching and learning theories and strategies.

Compared to CAL, which integrates computer in education based on suitable learning theories and strategies , pupils can take for granted to use it as an alternative in gaining knowledge meaningfully. According to Katty (2008), learning will occur when the knowledge is made meaningful to students. Meaningful learning is the construction of new meanings demands the integration of new knowledge related concepts and proposals (Joseph et al. 2001) and according to Antoni (2011) it must be real and long term learning. In order for students to learn meaningfully, they must be fully engaged in a meaningful task (Jonassen et al. 2008) such as through educational-based computer games.

Based on Game Designer’s definition, game is an interactive structure of endogenous meaning that requires players to struggle toward a goal (Costikyan, 2002). Hence, games can be designed for instruction, but only if they are designed to support specific instructional objectives and are incorporated logically into an instructional program (Hays, 2005). The Folks Model divides games into four non-exclusive categories which are games of skill, games of chance, games of strategy, and simulation games (Robert, 2005). Educational game types can be classified into five categories which are mini games for young children, simulation games, off-the-shelf games, game-like enhancements for learning material, and competitive

educational games (Kickmeier-Rust et. al, 2007). Therefore, this research is based on simulation type of game. Leemkri, et al (2000) and Bright and Harvey (1984) discussed the characteristics of games into five including voluntary play, some goal state that must be reached, constraints and rules, competition and specific context.

Through this research, by providing game to teach pupils Subject Verb Agreement rules, I am expecting those pupils who still not master in Subject Verb Agreement rules can at least differentiate noun and verb because this is the basic way to master the rules.

1.3 Statement of the Problem

Pupils might show their response towards education through their attitudes such as they feel demotivated and not interested in learning English especially when they don't understand the language. The lack of vocabulary and grammar mistakes will lead them feel shy when they make mistakes because they have set in their mind that people will laugh at them. This is supported by Manasreh (2008) through his survey's results that show most students think learning grammar is essential in learning English language but the students worry about their mistakes and shy when speaking English. Thus, they will feel not confident in conversation with others or else they won't try to write or speak in English at all. Besides, they also have limitation of English sources.

According to Mustafa and Hamin (2010), one of the common problems faced by students is the interference of mother tongue language which causes lack of vocabulary what else if some teachers teach English using their mother tongue language. But, in the other side, some teachers might have to take this solution to

avoid their pupils from not understanding the lesson. Thus, students fail to master in English language and have poor command of the target language.

Compared to the use of any media such as CD-ROM or games, the students need to find out the meaning of words they don't understand. This will automatically increasing the contact exposure of the language in their lesson. In this case, the function of teachers are as a facilitator to guide and help students when necessary because the students itself have to construct their own language through their experiences using the CAL materials.

Therefore, this research will explore the use of computer-based instructional game for learning Subject Verb Agreement in order to enhance students' performance in forming sentences based on Subject Verb Agreement rules. A simulation type of game based on Gee (2004) principles of games for learning, which are divided into three major sections consist of empowered learners, problem solving and understanding has been used as medium and guidance to select the computer-based instructional game. In addition, according to Nguyen and Khuat (2003), it will also motivate learners interest in learning English Language especially when they can construct their understanding in writing and speaking confidently in a relaxing and enjoying ways of learning. Obviously, it will arise their enthusiasm to learn English Language.

1.4 Research Objectives

The main purpose of this study is to see the effect of using instructional video games in learning how to follow the rules of Subject Verb Agreement (SVA) for

young learner aged 9 years old who still cannot understand the topic in conventional ways of teaching method. Specifically, the objectives of the study are as follow:

- i. To identify students' attitude when using instructional games to learn how to follow the Subject Verb Agreement rules.
- ii. To explore whether the use of game can provide meaningful learning process to the students.
- iii. To study the effect of instructional game towards students' academic achievement.
- iv. To analyze the relationship between:
 - a. students' attitude and academic achievement and
 - b. meaningful learning process and academic achievement after learning through educational games.

1.5 Research Questions

In this case, based on the objectives, the following research questions were established in order to gain information and findings related to the problems.

- i. What is students' attitude when using instructional games to learn how to follow Subject Verb Agreement rules?
- ii. Does the use of game can provide meaningful learning process to the students?
- iii. Does game affect students' academic achievement?
- iv. Is there any significant relationship between :
 - a. students' attitude and academic achievement and
 - b. meaningful learning process and academic achievement after learning through educational games

1.6 Significance of the Study

This study has been conducted to 9 years old pupils in Kluang district who still cannot understand the rules of Subject Verb Agreement. Those in rural and suburban areas having problems in learning English as second language especially in forming sentences. These may lead them fail to speak in English correctly and fluently. Few questions may be concerned and purpose to fulfil are whether playing games can motivate pupils to learn English especially understanding the Subject Verb Agreement rules effectively, how do the use of games can provide meaningful learning process to the pupils and do this type of method has an effect by increasing 1pupils' academic achievement.

This research might anticipate with number of results or outcomes. The hypothesis from the study is that there is significant relationship exist between the use of instructional games towards the attitude and achievement of learners to get a meaningful learning process in order to increase their academic achievement. The pupils are also expecting to master the Subject Verb Agreement rules after they have played the game few times because they will definitely get used and understand better the rules of Subject Verb Agreement.

The research findings significant to students in terms of exposing students to an alternative ways in learning English language so that they can learn meaningfully and show positive attitudes and motivated to learn during the lesson when they are more confident. Other significant learning benefits of computer simulation games have been found to include use of metacognition and mental models, improved strategic thinking and insight, better psychomotor skills, and development of analytical and spatial skill, iconic skills, visual selective attention, computer skills and etc (Pillay et al. 1999, Kirriemuir 2002, Ko 2002, Green and Bavelier, 2003).

Since the role of teacher as facilitator in order for students to learn meaningfully, therefore the significant of this research towards teachers are it can encourage collaboration and support meaningful post-game discussion (Kirriemuir, 2002), it can cater different learning styles (Sedidihian, 1994, Kirriemuir, 2002) via graphics (Berson, 1996), expose students to different people and perspectives (Berson, 1996), and it put the students in the role of decision maker and push players through harder challengers whereby they learn through trial and error (Mitchell and Smith, 2004). In addition, simulation game also gives instant feedback and risk free environment which invite exploration and experimentation, stimulating curiosity, discovery learning and perserverance (Kirriemuir, 2002). Therefore, the findings of this study may help teachers to practice alternative ways of teaching and learning process using instructional procedures and materials so that the learning process are more effective and meaningful.

Government had prepared and spend millions of Ringgit Malaysia to provide lots of facilities and infrastructures to school for computerization teaching and learning whereby computer technology had integrated in Malaysia school curriculums as an exertion to inculcate and encourage positive desire and attitude in technology development. School culture must change from just depend memory education to high thinking, creative and sympathetic by using the latest technology (KPM, 1997). Therefore, the significant of this research in order to support the government suggestion are to ensure the teaching and learning process is more effective, efficient and flexible.

1.7 Rationale of the Study

Games are fun and children like to play them. Through games children experiment, discover, and interact with their environment (Lewis,1999). Games have lots of advantages and many studies show that learning English through games is one

of the effective ways of learning language. Part of it, it also can attract students in relaxing and fun way of learning, thus can help pupils retain new vocabulary and grammar easily. Games add variation to a lesson and increase motivation by providing a plausible incentive to use the target language. For many children, between four and twelve years old, especially the youngest, language learning will not be the key motivational factor. Games can provide this stimulus (Lewis, 1999)

Besides that, they are highly motivating and entertaining, and they can give shy students more opportunity to express their opinions and feelings (Hansen, 1994). This can give great opportunity for those who are afraid of being laughed at by others.

A game must be more than just fun, should involve 'friendly' competition, keep all of the students involved and interested, encourage students to focus on the use of language rather than on the language itself and give students a chance to learn, practice, or review specific language material (Tyson, 2000).

1.8 Limitation of the Study

Not all pupils face problems in forming sentences. Normally, people in urban areas who get used to speaking in English as a medium in conversation will easily speak and write in English fluently which is in contrast with those in rural areas and some in suburban areas. Therefore, this study is concerning students who live in a suburban area which is located in Kluang, Johor.

This research did not consider demographic factors such as gender, race, and family background whereby the number of male and female respondents and, Malay,

Bumiputera and Indian students are in equivalent. Besides that, this research also did not care about the respondents' family background such as their parents' occupation and their origins. This research is a small scale of research whereby only a class from Year 3 from one school in Kluang has been selected as respondents.

Undoubtful there are lots of courseware provided to school by the Ministry of Education. But, the main problem in applying the method in teaching pupils Subject Verb Agreement is that in those CD-ROMs there is no specific topics focusing on identify nouns and verbs and following the Subject Verb Agreements rules. Normally, they will divided the topics accordingly based on textbook, chapter by chapter and only few activities related to Subject Verb Agreement rules such as fill in the blanks, choose the correct answers and answering direct questions. Therefore, this research was focusing on computer based instructional games based on simulation type and principles.

1.9 Definition of Terms

There are few terms had been used in this research whereby they relate with each other. They are Computer Assisted Learning, Constructivism Theory, Instructional Game, Simulation, Subject Verb Agreement, Meaningful Learning, Performance, Attitude and Motivation.

1.9.1 Computer Assisted Learning (CAL)

CAL refers to instruction or remediation that use computer in teaching and learning which can exists in programmed instruction or discovery teaching and

learning form (Baharuddin et al. 2000). In this research, CAL refers as selected instructional video games from educational websites to learn English language.

1.9.2 Constructivism Theory

Constructivism Theory assumed that knowledge will not exist outside the mind, but can be created in the mind based on actual experience (Mok, 2006). The constructivism theory that has been considered in this study is simulation game and meaningful learning principles.

1.9.3 Instructional game

Instructional game is software designed to increase motivation to learning by adding game rules and/or competition to learning activities which is use as a learning tool during teaching and learning (Baharuddin et al, 2008). In this study, instructional games is referred to few set of video games from websites which are Balloon Game, Ice Cream Game, Viper Game, 2Bee or Nottoobee Game, Take-It Game and Space Game.

1.9.4 Simulation

Simulation is analogy of real world situation (Prensky, 2001), Simulation game is an elaborate type of role-playing, gaming, and socio-drama in which learners simulate models of real-life situations (Jones et al. 1994).

1.9.5 Subject Verb Agreement

Subject Verb Agreement according to Kamaruzaman and Surina (2009), the subject must agree with the verb whereby singular subject is followed by singular verb and, plural subject takes a plural verb.

1.9.6 Meaningful Learning

Meaningful learning is a process whereby the pupils realize the aim of lesson and understand the learning materials are useful to learn. If the pupils were to know only how to learn by heart, then the result of their learning will be rote memorization and is not meaningful. (Ausubel, 1961). In this research, it is referring to meaningful learning process suggested by Jonnassen (2008). The process suggested by him is intercorrelatedly active, constructive, cooperative, authentic, and intentional engaging in the learning process.

1.9.7 Performance

The performance of students' academic achievement is the level of proficiency one has achieved. As in this research, students' performance is measured on how well they can master Subject Verb Agreement rules.

1.9.8 Attitude

Attitude is a mental and neural state of readiness, organized through experience exerting a directive or dynamic influence upon the individual's response

to all objects and situations with which it is related. In layman terms, attitudes are a set of beliefs the learners have towards the use and learning of the target language or towards the speakers of that language. These beliefs are translated into expression of positive or negative feelings towards that language. The perceptions of the people speaking the language and culture towards the target language also have an effect on learners learning that language (Ee, 2010). In this research, researcher is concerning on students' attitude towards learning subject verb agreement rules using instructional video games.

1.10 Summary

Therefore, the next chapter will discuss on problems in learning English Language as second language and suitable learning theories that can enhance students' understanding in order to learn meningfully with the use of technology in education. In addition, this research is based on computer-based instructional game of simulation game whereby certain game principles and designs will be discussed in order to preview the effectiveness of using simulation game towards students' attitude and academic achievement performance.

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