

## **Learner-Centered Language Learning Strategy in Digital Environment: Its Effect to Students' Vocabulary, Collaboration and Independence**

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### **Bio-profile:**

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### **Abstract**

Three-dimensional virtual (3D) environments provide EFL students with a rich and dynamic multimodal understanding of vocabulary. This study aims to explore implementing a 3D vocabulary learning strategy for young students on EFL vocabulary. The relationship between two facets of learning – autonomy and collaboration – has been studied in particular to investigate the consequences of this process's social-cultural nature. An almost theoretical research paradigm explores the effect of 3D virtual space experiences, learner influence, and cooperation on language learning. The findings demonstrated the favorable impact of virtual environments on the

development of vocabulary. Specific and simultaneous autonomous usage that conflicts with the program's architecture structure has encouraged vocabulary retention rather than instruction. Importantly, pair analysis has found that survival improved more rapidly than human activity. Successful vocabulary teaching in a 3D environment is demonstrated by students' autonomous administration and their positive contact with these items and close collaboration with the employees.

**Keywords:** *Virtual environment, learner autonomy, collaboration, vocabulary, Virtual Reality, IT, VEs, Language Learner Autonomy*

## **Introduction**

In the past decade, I.T. developments have expanded funding and expanded the number of language learning opportunities and schooling opportunities. Digital environments (V.E.s) have been a useful technique since the early 2000s, as technology offers plentiful opportunities for learners to interact through audi, test, and video based communicatin channels. However, which allowing language-learning systems to mimic real worlds in which visual, textual, and auditory interfaces help users observe, explore, and obtain multimodal feedback. Such virtual worlds have evolved from simplified representations of shared reality in complex environments with the advent of technology. For starters, e-mail tandem learning provides language students versatility and text-based online contact networks (Warschauer, Turbee & Roberts, 1996). Interactive material helps users change circumstances or roles according to their preferences (Gardner & Garcia, 1996). Virtual worlds (V.W.s) and new game technologies currently common create permanent V.E.s in which the users of avatars play their part (Peterson, 2011). Latest Virtual Reality (V.R.) putting viewers in V.E.s of ground-breaking, first-person immersive systems (Garcia-Ruiz & Edwards, 2008).

V.W.s are time-kept domains managed by powerful database servers that allow users to join and depart at will. Even after users leave these regions, the V.E.s continue to work, and other users who enter or enter later can use it. V.W.s are typical manifestations of second Life: the Active Realms and the Warcraft Realms (Peterson, 2011). Such games can be played on wear-free mobile devices, and the third party would be omniscient. The V.R. entertainment software increases the realism of visual and auditory sensory input by integrating wearable devices. This V.R. feature's

fundamental aim is to network or play, while implicit and indirect learning can be accomplished with space for the use of language. (Sadler, 2012). Behavior. In addition to games, V.W.s can be used for language learning and other educational purposes. Software incorporating critical features of V.W.s (e.g., E.D.s or multimodal presentations) have been able to generate personalized tutorials, which serve as interactive sources of language elements such as vocabulary, to understand them better. Tutorial packages have features that optimize the opportunity to understand as students follow a new task and study terminology relevant to thematic contexts. 3D multimodal meaning and type data help these projects, which contributes to an advanced vocabulary learning system. Based on these V.W. characteristics, this paper aims to decide how much EFL students can learn their vocabulary using a 3DVW vocabulary system.

Among the wide applications areas that Virtual Reality (VR) can have a major impact, One is Education, lthough tutorials for the virtual world should encourage language teaching by rich contextualization through simulation and multimodal input, it is also expected to lead to a more inclusive learning and learner cooperation. Understanding language is only defined by learners' intention to navigate the environment, which transforms the study of vocabulary into a learning mechanism centered on learners. However, educational programs are also used as a supplement to teaching for instructors in their regular classes. This may be because of a strict curriculum or shortage of funding, which may enable teachers to pursue a traditional teaching style and take jobs so the whole class may practice on the 3-screen. Learner-centered and student-centered approaches vary in the extent to which students autonomously control the learning experience. The second aim of the thesis is to determine how an interpersonal difference, namely teacher-centered versus learner-centered approaches to 3DVW instruction, makes it possible for students to understand EFL vocabulary broadly.

Furthermore, cooperation with a partner may help to facilitate sense searching and develop the learning of terms in navigation. Whereas the social culture hypothesis indicates that good understanding occurs in social communities, it is uncertain whether a social component of the term learning implemented in a V.E. lesson program will have a different learning result. The third issue addressed in the analysis is why the 3DVW vocabulary system is more effective than individualism for peer collaboration in a collective organization.

### **Multimedia models of learning and vocabulary acquisition**

It has been shown that multimedia tools are successful in second language learning and proposed by many scholars (Tsai 2004; Chang 2006). Graphical software has been developed to improve vocabulary learning by enhanced visual, graphic, and audio entry through text, picture, video, and 3DVW (Wang, 2003; Lin, 2009). Dual coding theory (DCT) (Paivio, 1986) explains the beneficial influence of visual feedback on vocabulary growth. It reveals the text's development as constructing two mental representations: the spoken and the nonverbal. If information is written in both formats, referential relations improve all types of information (Paivio, 1986), enhancing quality and alertness compared with data coding on the same system. The interconnection between visual, verbal, and audio input often makes it possible for students with comparatively low cognitive ability to learn in a contextualized way (Folse 2006; Walters 2006; Webb 2008). Mayer (2001) has also incorporated DCT for second language learning into the Generative Theory of Interactive Learning (GTML). The theory splits the oral system into two classes, L1 and L2, with four familiar pictures. Both language systems are integrated by translation to add to the L2 scheme. The information (Paivio and Desrochers 1980) and language learning (Mayer 2001) are supported by improved processing and storage. Hong (2010) thus notes that the multimedia system would facilitate language learning by increasing learner interest, inspiring learners, encouraging diversity in education, identifying productive and experiential modes, and enhancing technical and research skills.

### **The use of the 3D virtual world as a language-learning tool**

The central feature of the V.W.s, the virtual 3D environment, has been seen in several ways to make language learning simpler. The 3D world that simulates real or imagined situations for experiential word-learning helps children understand, understand, and grow their word knowledge (Lin, 2010). Secondly, Avatar's new individual increases the fun factor and reduces anxiety because of mistakes in real social contexts, especially for EFL students who may be vulnerable to an affront in their language ego (Jung, 2002). In reality, in several cases, the almost genuine realistic experience can occur without strict time limits that pertain to proper face-to-face interaction (Jung, 2002; Chang & Ho, 2009). In a 3D virtual environment, these motivational tasks are more significant than traditional classrooms to create learner awareness and cognitive dedications.

### **Language autonomy and computerized learning**

Learners' autonomy has been increasingly widespread in language education and learning for over three decades (Holec, 1981). The learner's autonomy includes the opportunity to assume responsibility for instruction, including the setting of goals, the assessment of material and development, the evaluation of approaches and strategies to be used, the monitoring of the learning process, and an analysis of the results obtained. In a similar vein, Benson (2013) identified control in three levels: the power of learning management, control of cognitive processes, and control of materials. Benson states that the three levels of learning autonomy should be developed first by designing, arranging, and assessing learning at the first level, fostering learners' participation in language input, expressing their expertise, and consolidating metacognitive information at the second stage. It merely presupposes and implies that a pupil has a strong psychological link with their academic environment and resources. The ability for autonomy can be seen not only as students understand but also as learning is being translated into broader contexts. (Small, 1991). Little (2002) called for a more comprehensive approach to learners' autonomy and said that self-employment requires experience, an optimistic viewpoint, and a desire to communicate with others. Students were allowed to make their own decisions, they were monitored, and more relaxed and satisfied (Lepper, 1985; Cotterall, 1995). Indeed, evidence indicates that a computerized world full of interactions, information, and individualization can increase student-language comprehension, encourage interaction and communication and strengthen learner autonomy in a learning setting (Benson, 2013; Schwienhorst, 2002, 2008). In other words, immersive multimodal software systems are capable of improving students' language skills and promoting and growing their organization's meaning through interaction and cooperation with their peers. The idea of partnership with pairs has been widely discussed in ESL / EFL learning (Webb, 1982; Johnson & Johnson, 1990; Nunan, 1992; Zurita & Nussbaum, 2004). Some possible advantages of pair work have been established (Johnson & Johnson, 1990 and 1999). Secondly, when students work together, they can exhibit positive interdependence since they share a similar purpose. Secondly, students should accept obligations not only for the sake of accountability but also for society, which will allow high-level students to cooperate and promote the understanding of low-level citizens. Finally, shared interest and uncertainty should be encouraged, which leads to a supportive environment for good learning.

Despite the opportunity to facilitate learner management in language learning through technology-enhanced tools, experimental studies on these findings are still scarce in virtual environments. One example is the Collentine research (2011), which examines the connection between autonomy in surfing V.W.s and written follow-up correspondence from Spanish students as L2. It was shown that during a 3D discovery test, the autonomous gestures of students significantly influenced the accuracy of the findings L2 input and thus influenced the consistency and complexity of their written follow-up. Reinders and White (2011) sought observational research on the autonomy of language learners by V.W.

### **Effects of the Virtual Environment on Development of Language**

In addition to increasing education quality, several tests have shown virtual environments that have beneficial effects on the learners' oral language skills. The teamwork in the virtual environment – be it Second Life or recordings – has been noticed by Canto, Jauregi and van den Bergh (2013) to boost Japanese college students' performance in oral study. Second Life was also carried out in a college with Chinese international students who studied Mandarin in Taiwan. In the recorded debate in the classroom, it was discovered that the second life experimental group offered more class lectures and open answers than the control group, who used the same material as the teacher. The improvement in talk continuity during the study has helped improve the oral test success and positive testing attitude at the end of the sessions. In recent times, the author and collaborators discussed the effect of a meta-analysis on the language learning of 3DVWs. The study successfully analyzed 13 primary studies between 2008 and 2019 and found a vital effect ( $d = .832$ ) of 3DVW on language learning. A medium to high effect ( $d = .739$ ) was noticed for vocabulary training, which shows that applications for 3DVW help improve L2 vocabulary learning. Research has shown in particular that the creation of 3DVWs supports learners' autonomy (Yeh & Lan, 2018).

Despite the promising ability of 3DVW to facilitate vocabulary acquisition, only a few studies have followed the experimental versus control group method to permit intergroup comparison, which exposes superior effects of 3DVW (Chung, 2012; Ali Mohsen, 2016; L) since only a few 3DVW trials are possible with experimental population configuration versus control,

In a teacher-centered environment with no benefits of 3DVWs, a prior study has often never compared the effects of teacher-centered 3DVWs. In comparison to two forms of student teaching, 3DVW can be used as a platform for students. This is especially true in traditional classrooms based on Asian students.

Therefore, the analysis of 3DVW's effect on vocabulary growth can not be complete without comparing it with the third form of use — the student-driven approach.

The inquiry includes the use, individualistic, mixed, and presentation of 3DVW vocabulary systems in three different cases, as contrasted with teacher-led vocabulary education without 3DVW's assistance. This is definitely important if the effects of a 3DVW system based on the instructor are to be evaluated in order to illustrate how much 3DVW architecture goes well beyond a traditional methodology without 3DVW components. The inclusion of the 3DVW group of teachers also facilitates a collective evaluation framework to display the effect of an affiliation of 3DVW teachers in both person and peer modes of study in 3DVW environments. Due to its emphasis on social and cultural elements of user interfaces and its role in incorporating 3D virtual worlds into a classroom, teacher work is important and fundamental, as pedagogy and not technology influences the progress of language learning (Liou, 2012; Wang and Vásquez, 2012).

In brief, the present study is intended to address the above void, comparing the outcomes of a longitudinal review of vocabulary learning with the impact of different pedagogical techniques. The effects of 3DVWs conducted by classroom teachers must be explored in a 3DVW setting with respect to independent and interdependent autonomy. In this study, students' autonomy is evaluated by the presence / absence of a supervisor (i.e. teacher-centered versus student-centered condition) and the presence/absence (i.e. independent function versus pairing) of a peer indicates two separate forms of autonomy that is both autonomous.

### **Research Questions**

Three research questions explored the impact of 3D virtual reality mediation and two distinct forms of autonomous learning modes on vocabulary acquisition.

1. Will 3D virtual learning have a more influential impact than the teacher-centered approach without the advantages of 3D virtual environments?

2. Do autonomous modes of learning have more impact than the teacher-centered approach to vocabulary education in the simulated 3D environment?
3. Did the pair-work autonomous learning mode have more pronounced results in 3D simulated worlds than the individualistic vocabulary mode?

## **Methods**

### **Participants**

Ninety-six of third graduates studied in this study at four integrated groups of elementary school. With 24 pupils, the four conditions in each class – one control group, three simulated experimental conditions, one group (hereinafter V.E.), were distributed to each of the four learning environments: the matched V.E. group, the independent V.E. group and the teacher-centered V.E. Group. Prior to the intervention study, a 20-point pictorial vocabulary awareness test was administered. The words used in the vocabulary test were taken from the 80 words learned in English between the first and second school years. The findings showed that no substantial variation had been found by the use of one-way ANOVA to evaluate the means of the four parties ( $F = 0.78, p > 05$ ). All four-study subjects thus had a standard amount of vocabulary before they engaged in the systemic review.

### **Instrument and Procedure**

3D Virtual Environment Vocabulary Framework is an immersive 3D Virtual Language platform co-developed by a federal department and a local author. In an immersive forum within a local network, multimodal content is distributed (textual, pictorial, audio, and visual). Students may select their character and create a new identity to travel across the Welcoming Land area by various transport means. The program covers four topics: families, community, schools, and programs, as well as several modules of learning. The study used the airport module, one of the transport module. Although the study site was a high school in Taipei's city with an international airport, the researchers looked at the students and noticed that most children were heading to national or foreign airports. The students then grasped the situation at the airport, and the vocabulary could be considered practical. This research uses Virtual World (V.E.) rather than V.W. to refer to the education system's 3D context because schooling is perceived, and the setting exists entirely in one school's digital network.

The first two conditions were demonstrated and conducted in the daily classroom, the regulation, and the teacher's 3DVE state. Students in charge had a graphic flashcard with words inserted in the same images as students under V.E., while teachers under V.E. 3D virtual worlds were aimed at teachers who took an avatar, browsed spaces, and taps their target words for information. Both these movements were shown for the entire college on a projected projector. The other two criteria were student-centered, one 3DVE, and the combined 3DVE, and ten were applied in the simulated laboratory. In both cases, the students underwent the word learning process in the same classroom environment as the students focusing on teaching at V.E. Former students have separate access, while new students have mixed computer access. The students sat side by side, signed in, hugged one Avatar, and sailed across the room, clicked on words and worksheets together.

When it enrolled and picked as Avatar students in the individual V.E. and V.E. environments, there was the opportunity to explore six different virtual spaces at both levels of the airport. The first floor has a luggage carryover gate, check-in area, and screening room where 10 words are introduced; the second floor has a hub for shopping, a waiting area and an aviation cabin with 10 other words. Three types of information can be sent in response to each word: the English word structure, its spelling, and the background.

### **Target word selection for the study**

A timely version of the 30-points was used by the 96 participants to remove words that students were previously aware of or readily imagined based on aircrafts description terminology in the 3D segment. An item-response analysis was conducted, and ten objects were deemed eligible for withdrawal. A second round of item tests demonstrated high reliability of Cronbach's alpha value of 0.81. Twenty comparison words were used for evaluation and the two post-tests in the main study. In twenty languages, four stories (paper, table, sink, tie), five words (baggage, mirror, bathroom, sofa, T-shirts), five words (board panel, makeup, bag-cart, monitor, passenger), and three names (check-in, flight attendant, x-ray machine) and three words (automatic lock, metal detectors) with five or more syllables were all included. Both verbs were called nouns with 12 single words and 8 compounds. Two 40-minute class sessions were also splitting the 20 words into two classes to be analyzed: 10 connected to the first floor of the virtual airport in a class session,

and 10 to the second floor. The 20 words were also keywords for the 20 multiple-choice subjects' immediate post-tests. Multiple-choice components were used when the relationship between L2 children and words at the level of understanding was properly assessed (Schmitt, 2010). The factor stem indicates the desired language accompanied by four written equivalents, one right response, and three distractors. The order and sequence of the element choices varied among the two posts.

### **Map-matching worksheet, word card, picture card, and bomb-matching worksheet**

There are two worksheets for vocabulary learning: a worksheet that matched the map and a worksheet that matched the explosion. A photo card and a word card were produced to complete a map-matching workbook for each of the 20 target words. The same teacher advised all four-study groups to track the effects of teaching expertise and the inconsistencies from teachers' influence. This positions the four classes on a common point of reference to refine and describe the outcomes of the V.E. program. The worksheet was used as the first challenge for students to refer to the meaning, structure and pronunciation of words. It reveals the floor map of the airport with bomb icons at each target. Any explosives have been identified, and others have not been counted. Students were told about a terrorist threat at the airport, which was planned by identifying the designated terrorist symbols on the map to distinguish the locations with the right word and picture cards. Any student received a set of 40 cards to help complete the worksheets for the plan: 20 picture cards and 20-word cards.

An example is presented on one side of the picture card and a number that fits the chart on the other side. On one side of the text, card is a typewritten word. A worksheet for Bomb Matching was used to strengthen guidance. Divided into 13 upper and lower parts, 10 examples in the upper one were marked with a letter and ten target words with a bubble formed with a blank parenthesis next to each word to be filled with a letter designating the picture upper portion.

### **Data Collection Procedure**

Data were obtained during regular class hours within four weeks. In the first week, the researchers held an orientation session to introduce 3D V.E. to the three V.E. groups and participate in the process. The selection of student I.D. numbers from a lottery box is a spontaneous activity in the V.E. division. The researchers then offered the necessary therapies for each of the four classes in the second week in two class sessions. The three tasks included ten terms during the first part-

session, each for a length of 20, 12, and 8 minutes. The same procedure was performed for the remaining 10 terms in the second session. After a break, the immediate post-testing was done in 5 minutes at the start of the third class session. Two weeks later, another post-test was completed. Several previous retrospective vocabulary studies confirmed vocabulary retention within 1-2 days of immediate postoperative review in students (e.g. Beréndi, Csábi & Kövecses, 2008; Condon, 2008; Csabi, 2004). However, it is challenging to interpret the outcomes of these studies validly and to say the long-lasting implications of specific interference in their research. Indeed, experiments were undertaken in this way endanger instrument familiarity due to the concise post-test duration. Researchers suggested that it could take at least three weeks (Brown, Irving, & Keegan, 2008). However, the pilot analysis conducted in the current work largely ignored the maintenance effects of the V.E. system for three weeks. These results may be attributed to the sample's low average age (i.e., ten years). In short, both theoretical and pilot results led the continuing research to use a two-week interval between the immediate post-test and the postponed repair evaluation.

Moreover, the 20 words studied during the immediate post-test over two weeks were not listed or repeated in the guide in the school, and the students concentrated on in-class games and activities that were not linked to the V.E. system during the analysis. Usually, the exercises and events were carried out so that the V.E.s in the learning environment for the four study groups were not used. Ses games and activities were carried out in groups of four or six students, and we did not work together but separately. Eventually, 16 flashcards were withdrawn temporarily for two weeks to reduce the training impact on the research population.

### **Data Analysis**

The values of immediate post-test delays were measured by IBM SPSS using a 4x2 model of ANOVA with a group of subjects as an independent variable and two-time stages as an independent variable within subjects. There were more variations between groups since the group factor revealed a significant distance.

## Results

### Item response analysis of the 20-item vocabulary test

Essentially, the final set of 20 target terms for the formal analysis is calculated to predict little likelihood during the pre-test process. A psychometric analysis of the proper research results was carried out using the 3PL model of object response theory (IRT). The significances and standard deviations of the three IRT measurements of the 20-item pictorial vocabulary test. The mean test difficulty was -0.19; the average inequality was 2.67; and the average guess rate was 0.05, which was very close to zero. There was a variation for the devaluation index that decreased from zero to 0.122, and the average deviation rate was just below 0.25, while four alternatives for each test item were given. There were very few odds of the participants being correctly responded, i.e., the low chance of guessing, with the typical curves of all 20 vocabulary items. Therefore, the test values of the 96 participants could be deemed accurate and correct, and the probability of error could safely be removed in the two post-tests.

### Main effects of group and time

In the immediate post-test, a modest retention rate between a mean of 7.13 and 11.97 words and a mean of 5.42 words to 10.25 words was reached in the late post-test. Analysis of ANOVA showed a significant main effect for the Group ( $F = 3.98, p < .05, \eta^2 = .12$ ) and a significant principal effect for Time ( $F = 18.91.55, p < .001, \eta^2 < .02$ ) as well as a significant main effect for Time. In other words, substantial variations between the four classes and between the two post-test results may be found. No substantial correlation was also detected between Group and Time ( $F = 1.26, p > 0.05$ ), indicating that time variations did not vary between the four groups, and the disparity between the two post-tests did not differ between groups. In comparison, the combined V.E. group only lost a mean of 1.54 (S.E. = .38), the least of the three study groups. In a related way, the human V.E. group had fewer mean qualities of terms ( $M = -2.0, S.E. = .34$ ) and a more real, post-test mean than the teacher-centered V.E. group ( $M = -2.38, S.E. = .48$ ). The findings of the 95 % confidence intervals revealed, above all, that the paired V.E. group had the lowest attrition of verbal memory, followed by the independent V.E. group, as well as the instructor V.E. group. Essentially, of the four classes, the control group with complete instructor regulation and no V.E. mediation earned the fewest words of the four groups ( $M=7.13, SE=1.31$ ), although the number of words maintained was the least ( $M=5.42, SE=1.12$ ).

### Post-hoc multiple pairwise comparisons

The three pairs of contrasts have been tested for study question one about the impact of 3D virtual reality mediation on the immediate and delayed learning of vocabulary by students, both between the V.E. group and the control group. Since the party has the main effect, posthoc Tukey HSD experiments have been conducted for multiple pair comparisons on all post-tests. First, on immediate post-test, the matched group of VE (M = 11.79, SD = .88) the independent groups of VE (M = 10.04, SD = .881), and the group of teachers of VE (M = 9.46, SD = 1.01), both of which scored substantially better in immediate vocabulary test with all of their p-values < 0. (M = 7.13, SD = 1.31) Secondly, the dominance of the control group was preserved in the post-test delayed on the VE group (M = 10.25, SD = .97), but not the teacher-centered VE (M = 8.04, SD = .86) group, and in the individual VE (M = 8.04, SD = .86). This result indicates that the teacher-centered V.E. group's impact on the number of words remembered is close to that of the control group. On the other hand, two student-centered V.E. requirements will supplement or override the traditional teacher-centered flashcard instructions, as well as the teacher-centered V.E. implementation system. We contrasted both of the two student-centered classes, the paired V.E. group, and the independent V.E. group, with the VE-centered instructor on two positional grades, in reaction to study questions two on the impact of learning autonomy vocabulary acquisition by V.E. mediation.

The matched group VE (M = 11.79, SD = 1.88) demonstrated a slightly improved advantage in the immediate post-test than the group VE-centered instructor (M = 9.46, SD = 1.01), as the 95 % CI in that matched contrast [-5.73, -0.41] did not include zero in an immediate post-test. Likewise, during the posttest postponement, the VE group paired (M = 10.25, SD = .97) was again considerably superior to the VE group based on the teachers (M = 7.08, SD = .99), as shown by the 95-per-cent CIs without zero ([-5.75, -0.38]). But mean variations between the V.E. and the V.E. instructors did not exceed statistical significance, either in the immediate post-test (Mdiff. = .58, 95 percent CI [-3.20, 4.36]) or in the post-test delayed (Mdiff.=.996, 95 % CI [-4.62, 2.70]). To answer study question three, the two classes focused on learners were compared with 21. Although there was no substantial gap in the immediate post-test between the paired V.E. group and the single V.E. group, the paired V.E. group surpassed the single V.E. Group in the post-test period dramatically. In this clustered pair relation, 95 percent CI for immediate post-test [-5,33, 0,73] is zero, compared to the post-test [-5,12, -0,12] the area supporting the V.E. pair category

without zero inclusion. The paired V.E. group thus tended to bear more weight in class than the independent V.E. group in implementing V.E. guidance.

## **Discussion**

### ***Effects of V.E. mediation***

In brief, changes in the virtual world affect immediate, post-test performance when students behave autonomously in workplaces and in teacher-centered V.E. settings. However, when the evaluation was delayed, only the composite V.E. variables remained the same. An earlier study has scarcely looked at the effect of V.E. interference on students' language learning, and the first systematic attempt is made in the current analysis. Such results support the facilitative role of V.E. mediation by students themselves or teachers in language acquisition. In comparison to the control case, all three V.E. groups have developed in favor of the post liberation of dual-code theory (Pavio, 1986) and generative multimedia theory of learning at various stages of the V.E. system (Mayer, 2000). Multimedia feedback tends to enhance learning by the introduction of an alternative route to meaning instruction. Previous research findings suggest that the open multimedia content has a greater impact on vocabulary education in the virtual world than on a traditional teacher-oriented approach to English (Folse, 2006; Walters, 2006; Webb, 2008).

In a similar vein, incorporating the 3-D worlds with avatar navigation between facilities is part of a geographic connectivity network that can be connected to the personal interactions of an airport tour. It helps learners to cohesively exercise relationship theory (Dunas, Alexander & Crossnickle, 2013). As the link between target words is presented in three 22 dimensions, students may deduce their relative geographical position from broader 3D space when performing the Avatar for search and execution missions. This unique 3D V.E. element helps students to render integrated, functional, and interactive experiential gestures by integrating physical and mental information in the sense of experience (Kolb 2015). It is also suggested that V.E. would be a useful vocabulary-teaching tool for young learners, independent of the theory and the existing commitment consequences. While the instructor-led approach to V.E. vocabulary learning was marginal, the findings are distinct as a single study exploring the role of teacher intervention in V.E. learning. The results from this group are significant as follows. Secondly, previous research (as reviewed by the author & colleagues) never addressed the effect on teachers or students of the cumulative

presence of everyday classrooms. This flexible situation is typically influenced by practitioners from substitute computer labs to tight teaching schedules.

Moreover, several research studies compared VE-centered student learning with traditional teacher-directed teaching as a control mechanism, which included elements that disputed the results.

Furthermore, this comparison discusses two distinct influences in a single shot: E.V. and student association versus traditional and instructor's direction. The inclusion of a V.E. group in this analysis taught the role of V.E. and the effect of instructor instruction, enabling a more in-depth review of teacher outcomes engaging in a V.E. program. Thirdly, in the past V.E. language research was primarily based on sociocultural elements of user experience. The current process enables VE-centered teachers and students to collectively access and track the search process and to analyze the search results collectively by introducing a potential mode of social-cultural engagement to V.E. The unorthodox use of technology, multimedia input, and collaborative meeting with teachers and students in schools could be better than classroom flashcard preparation as a teaching tool. It is also recommended that vocabulary instructors adopt vocabulary-learning systems such as the study. The traditional application of vocabulary can be applied to flashcards or blackboards and V.R. elements can be used to enhance language interpretations. The addition of a V.E. to the language classroom is gaining attention due to the innovative adoption of an electronic whiteboard. Consequently, language teachers will navigate the seas by incorporating a V.E. into their creations. "Language teachers will explore how to establish and manage 23 unique factors that contribute to improved learning and training standards," as Gao (2019) puts it (p. 165) about the department of language education. The move will be achieved by the use of the current V.E. scheme to fund education.

### **Effects of Learner Autonomy on Vocabulary Learning in 3D Virtual Environments**

Only the pair feature V.E. condition surpassed the teacher-centered state in both late experiments. On the contrary, the individual V.E. criteria did not differ in any post-test from the teacher-centered situation. The learner agent then only functions while another human is present. These findings were partially verified in the previous studies on how a virtual world can facilitate learning in a digital environment (Jung, 2002; Schwienhorst, 2002; Garcia-Ruiz & Edwards 2008). However, the results do not align with the results of Hitosugi, Schmidt, and Hayashi's (2014), which suggest

that ART practice is not an alternative to explicit vocabulary instruction. This discrepancy can be explained by the strong locus of the aims and improving ways of this study, on the one hand, and the implicit existence of the vocabulary of Hitosugi et al.'s review (2014). The results suggest that joint self-reliant use fixes the software's interface complexity and improves vocabulary retention.

The current qualitative study has shown that V.E. has a more significant influence on the teacher-centered traditional situation without V.E. (Lan, 2015; Lan, Hsiao, & Shih, 2018a; Lin, 2010). The present research is advancing on this idea by demonstrating that the individual V.E. condition was as good as the VE-treatment based on the instructor. This is because the effect of the apprenticeship on the particular V.E. condition is accounted for by the benefits obtained by the V.E. condition of the teacher. In other words, instructor help with an unambiguous interpretation should be accompanied by a reduction in the right of the school to use the V.E. system, which in all the post-tests as individualistic V.E. culture resulted in a similar outcome. In brief, teacher-led V.E. vocabulary workshops in tandem with straightforward implementation and contextualized instruction may be an alternative for individual vocabulary learning.

### **Effects of Pair Work**

The results indicate that the V.E. status of the pair feature would reach the V.E. 24 individual level after the test, but not after the test. Their study reveals collectively that words learned through consultation with teachers or individualistic tests in the virtual world can be lost quicker than words learned by peer work by teachers. Not only the V.E. group was paired higher, but also even less word turnover was seen than the single V.E. party. One possible explanation is that mixed study with three networks (i.e. family, peer, and virtual) may contribute to greater cognitive analysis and a greater involvement of students than individual learning research. Nevertheless, the autonomous supervision of all student-centered classes in the teaching process seems to have given more priority to the commitment of the learner and seems to have led to improved cognitive development. In contrast, pair students can have advantages, which are not accessible to individual students. They also have a chance to discuss their questions and review their solutions with study colleagues (Ellis, Gibbs & Rein 1991; Schwienhorst 2002; Zurita & Nussbaum 2004). By contrast, the help given by the workers can be more dependent, precise and reliable than that given by a lecturer as a whole (Slavin 1978; Vygotsky 1978).

For these reasons, the superior performance of the paired V.E. team was more evident in the late post-test. Therefore, pair work in V.E. applications may play a more vital role than social labor. We conclude by outlining crucial facets of mutually controlled learning in a virtual environment that does not take account of the human VE-learning type, i.e. encouraging positive interdependence, shared accountability, and scaffolding learning (Ellis et al. 1991; Schwienhorst, 2002; Peterson, 2012a, 2012b) and subsequently closing the study discrepancy. In summary, this study indicates that it is easier for students to communicate with peers rather than behave in isolation in a virtual environment to affect their autonomy.

### **Pedagogical Implications**

This result points to the usefulness of action in the virtual vocabulary environment and the positive role of pairing experience in promoting the production of EFL vocabulary at the primary level for children. Many suggestions are often collected for integrating virtual environments into the classroom. Second, immersive training reality apps that incorporate language in multiple forms may be designed to get children into practical vocabulary learning in line with textbooks' lessons. Such projects, as suggested for Jung (2002), Garcia-Ruiz, and Edwards (2008), can be extended in 25 unique contexts, simulating the actual reality of teens, creating interactive ways of contact, utilizing interactive media to encourage awareness, and defining the manufactured identities of avatars. Teachers should be exposed to educational opportunities both in the school and for children in and out of the school. In particular, a student-centric strategy would be pursued to facilitate learners' accessibility through the usage of virtual reality language learning systems. Training should be offered during use to enhance the quality of navigation and foster schemes and peer interactivity (Wang & Vásquez, 2012).

Furthermore, pair study, especially in school settings, is advised to foster a healthy attitude and encourage vocabulary growth through peer interaction. Finally, the effects of this study suggest that teachers play a redefined function in language learning virtual reality sports. Ideally, teachers can take on the role of mentor or facilitator as an instructor's oriented teaching is only needed during the initial course of instruction where the students are in a virtual environment. If students are conscious of the game code, guidance for navigation, and goal, teachers will study independently. As facilitators, the student pairs are monitored to ensure that their partners perform

together and reassign their partners if necessary. Teachers may often interrupt if students are unwilling to carry out communication and learning tasks during the assigned time.

## **Conclusion**

Finally, the higher intermediate findings of learner autonomy in the paired job situation represent contemporary learning theory as fundamentally social (Vygotsky, 1978). Devolving other people, including peers and instructors, not just in conventional classrooms but also in the interactive environments we build, use, and play every day, as this study illustrates. This study aims to clarify the feasibility of learning autonomy and collaboration in the virtual environment, a transformation in teacher learning technology.

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