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Teaching Strategies for Improving the Vocabulary Mastery of Balinese Traditional Medicinal Plants among Teenagers in Denpasar, Bali, Indonesia

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Language is closely tied to people's environment, and it is highly correlated with ethnobotany and eco-linguistics. In Bali, Indonesia, the elements of direct contact with nearly inexistent medicinal plants are crucial from the standpoint of eco-linguists, therefore, it is essential to revitalize attempts to conserve the rare plants and prevent the gradual extinction of biodiversity and genetic loss of cultural resources by integrating vocabulary learning in the school curriculum. However, there is a lack of literature detailing the effective training approaches that are required to improve the mastery of the vocabulary of Balinese indigenous medicinal plants in junior high schools. Thus, the objective of this research paper was to explore the teaching strategies for promoting the vocabulary mastery of Balinese traditional medicinal plants among teenagers in Denpasar, Bali, Indonesia. The study adopted a qualitative research design, which involved group interviews with four purposefully sampled teachers from Usada Sari of the student class VII SMP Negeri 8 Denpasar. Four themes were identified, which represented the instructional approaches used to foster the mastery of vocabulary in the studied school.

Key words: *Vocabulary, language, school, teaching strategies, medicinal plants, indigenous knowledge.*

Introduction

Rapid changes observed in the world, including the technological revolution, globalization, marked population explosion, and effects of climate change, have all resulted in massive human mobility, enhanced interactions, and the appearance of multicultural communities (Hawkins et al., 2014; Torres-Avilez, Medeiros, & Albuquerque, 2016). Similarly, the above changes have caused a gradual loss of traditional knowledge of cultural aspects, mainly information and vocabularies on medicinal plants. As stated by Saslis-Lagoudakis et al. (2014), conventional knowledge is shaped by inter-cultural diffusion, heritage, and constant contact with the natural environment. Additionally, the capacity to learn and handover skills and facts to a new generation influences the preservation of a community's culture and language. Furthermore, conveyance of traditional knowledge buttresses both sustainable conservation and a fast shift in cultural features, thus allowing populations to modify survival strategies and reside in diverse habitats (Saslis-Lagoudakis et al., 2014).

According to Quave (2014), traditional knowledge is particularly fundamental in the present era, when the global population is resorting to alternative treatments, especially the use of medicinal plants to manage the mounting cases of infectious and non-communicable diseases. For instance, in Bali, Indonesia, herbal drinks, are commonly taken for either healing or leisure purposes (Sujarwo, Keim, Savo, Guarrera, & Caneva, 2015; Sõukand, Quave, Pieroni, & Pardo De Santayana, 2011). In these scholars' viewpoints, ethnobotanical studies exploring other herbal therapeutic drinks and beverages apart from teas are scarce, although native medicinal knowledge in the country is relatively widespread, due to the extensive multiplicity of homegrown cultures. The affluent traditions and ethnobotanical information from an aboriginal ethnic community in Bali is called *Aga, which* represents an illustration of the diverse heritage.

As per Sujarwo et al. (2015), the Balinese have used more than 500 types of herbs to treat various diseases; nonetheless, the country has been experiencing a gradual extinction of biodiversity and genetic loss of cultural resources as a result of shrinking numbers of habitat wildlife and destructive human practices, such as deforestation and the encroachment of water sources. Similarly, Bali is becoming a multicultural society with a distinct belief system marked by people advancing towards globalization. In environmental science, it is apparent that the multiplicity of the cultural system is more flexible than a single-structure framework. Thus, Indonesia's Man and Biosphere (MAB) National Committee requires the preservation of biodiversity and the associated cultural values of sustainability that are only accomplished when incorporated into the local practices and traditions. Such integration endeavours are in congruence with the United Nations Educational, Scientific, and Cultural Organization (UNESCO's) Main Line Action (MLA) that bridges the gap between cultural multiplicity and biodiversity (Suweta, 2013). In this author's perspective, the preservation of language on biodiversity cannot be delineated from the cultural role. Quave (2014) expounds that the latter

cannot be disconnected from the conservation of plants that are on the verge of extinction, particularly in instructing vocabulary associated with Bali's ecosystem.

Rare medicinal herbs require heightened scholarly focus and preservation as they not only influence the health, environment, religious, and economic growth of a place, but it also determines the occurrence of lexical extinction (Quave, 2014; Suweta, 2013; Hawkins et al., 2014). Existing pieces of literature also suggest that a language is a form of cultural and social practice, and when combined with the comprehension that every tradition comprises various antecedents, namely: religion, art, income, social, equipment, science, and language, it becomes clear that the latter plays a core function in shaping peoples' world views. As a matter of fact, language can be considered as a vehicle of ethos or culture on its own. Besides, botanical expertise is currently in high demand to tackle environmental and biodiversity threats, and yet, the supply of competent botanists is declining at an increasing rate, possibly owing to the ineffective teaching approaches employed when instructing plant vocabulary.

According to a study cited in Quave's (2014) book, botany education has been dropping since the early 90s, leading to the extinction of crucial infrastructure that is required to promote training on medicinal plants. Besides, institutions of higher education continue to do away with indigenous botany subjects and Herbaria are being disbanded as plant science is incorporated into multidisciplinary courses. A study by Bernett (2014), found that people are not equipped with the necessary competencies and knowledge to fill crucial employment opportunities in resource management and science. In Bali, the preservation of indigenous plants and medicinal herbs depends on the inclusion of plant vocabularies in the educational curriculum, especially at the high school level. It also relies on the teaching strategies employed by instructors to ensure that students have grasped the vocabularies and learned the disparities between plants.

Brief Review of Literature

Existing empirical studies highlight the significance of teaching vocabulary in learning programs. In this case, the mastery of vocabulary implies the capacity to identify words and relate the meaning with a specific mix of the terms. Patahuddin, Syawal, and Bin-Tahir (2017) used the expression "without grammar, very little can be communicated, but without vocabulary, nothing can be conveyed" to emphasize the essential role of teaching lexis in classrooms (pp.128). These authors conducted a longitudinal survey to determine the strategies employed by English Foreign Language (EFL) students in improving their English vocabulary at a junior high school in Parepare, Indonesia. The results illustrated that the sampled learners adopted a myriad of strategies, encompassing practicing English pronunciations, working on assigned tasks, memorizing, dialogue practice, performing English translation activities, and engaging in writing exercises. Moreover, the EFL students learned English vocabulary via

watching and listening to movies and songs, respectively, reading English dictionaries and texts, and taking part in Internet-based English games.

Sarani and Shirzaei (2016) describe vocabulary as a vital part of language proficiency that enables students to apply proper reading, speaking, listening, and writing skills when conveying information. These authors matched Iranian postgraduate and undergraduate EFL students' espousal of vocabulary proficiency approaches, their motivation levels, and the gender disparities with respect to the use of lexical learning strategies. The outcomes of the quantitative investigation showed a substantial difference between undergraduate and postgraduate EFL respondent's utilization of vocabulary learning techniques, as well as a statistically significant difference between genders. The authors concluded that knowledge of diverse English vocabularies heightens the confidence of EFL students, as it eases their communication strategies. As such, it is a crucial component in acquiring a foreign or second language.

As indicated earlier, vocabulary plays a key role in one's capacity to master a language. For instance, Zhang (2015) suggested that since lexis mirrors a person's linguistic and cultural identity to a large extent, it is an elementary determinant of learning a foreign language. These scholars explored the influence of such factors as mother tongue context on vocabulary acquisition efficiency and identified the strong vocabulary learning approaches for Chinese EFL students. The findings suggested that in order to remove the cultural distance between Chinese and English languages, students should initially be exposed to Chinese (first language) writings of famous literal works, including ancient Greek mythology, the Holy Bible, and Shakespeare's drama, to allow them compare lists of universal networks or cognitive typologies of meaning with certain texts in English. The authors identified various techniques espoused in acquiring English vocabularies, comprising causal, approachable, opposite, and classified associations.

In a similar investigation, Hassan and Abubakar (2015) conducted a case study to explore the learning strategies that Kurdish EFL students adopted to enhance their mastery of English vocabulary. The concluding remarks of the research illustrated that vocabulary acquisition is critical to mastering and speaking a second language. Among the Kurdish learners, the effective ways of grasping English terminologies included listening to English music and watching movies. Novianti (2017) used the Vocabulary Level Test (VLT) to explore the university learners' mastery of vocabulary in Indonesia and the associated learning interventions. The author noted the utilization of lexical learning interventions, encompassing etymological familiarization, synonym search, inferring from context, and word analysis as the important tactics that users can employ to figure out the meaning of unfamiliar written texts. While 42% of the sampled students in Noviant's (2017) research mastered English vocabularies by checking the meanings of difficult terms in the dictionary, 90% learnt by watching and listening

to movies and radio, and 25% learnt by writing useful words in a book and used those terminologies in their communication.

While the studies reviewed so far have examined the methodologies espoused by students in learning vocabularies, Alqahtani (2016) investigated the approaches embraced by instructors to teach English terms to Saudi apprentices. The author suggested that since English tutors want their students to master English lexical items, then the latter should be ready to learn, practice, and revise to avoid the chances of misremembering. Therefore, teachers may employ such approaches as the use of realia, demonstrations, and visual aids to assist students in recalling the terminologies, since objects in learning serve as cues for remembering lexical words. Similarly, Alqahtani (2016) recommends that instructors draw objects representing words on flashcards or on teaching boards to help learners to match the meaning and the vocabulary. Other teaching techniques reported by Alqahtani (2016) include the espousal of illustrations and pictures, contrast, enumeration, and gestures or mimes.

From the appraised pieces of literature so far, none have focused on strategies used to foster the acquisition of vocabularies on medicinal herbs; however, it is apparent that the latter is fundamental in learning and recalling new and complex terms. This should be the case in learning botanical words and having the subsequent ability to preserve essential medicinal plants. For instance, Straus and Chudler (2016) outlines that the introduction of ethnobotany, which refers to the empirical sphere that explores a culture's customs, knowledge, and utilization of plants, in the classroom is a valued approach that can be used to involve science students in classwork. As per these authors, curricula and classroom practices can be developed in a way that offers the learners a chance to enhance their science literacies. Straus and Chudler (2016) propose the employment of laboratory demonstrations of medicinal herbs as a way to create opportunities for learners to carry out reliable scientific experiments with actual chances for innovative exploration. Similar findings were reported by Van Horne and Bell (2015), which stated that incorporating empiricism into the schoolroom is the advisable approach for learners to practice central disciplinary ideas, participate in scientific activities and engineering experiments, and possibly making significant contributions to both their communities and to the field of science.

Straus and Chudler (2016) recommend the use of online-based resources to assist tutors in elementary and secondary schoolrooms to integrate learning practices and lessons to train students on medicinal herbs. Although the study did not focus specifically on vocabulary acquisition, it identifies the Fair Tropical Botanic Garden webpage as a potential avenue for students and instructors to access teaching resources, homework ideas, handouts for apprentices, and age-appropriate lab investigations. For instance, on the website, the ethnobotany course entails the description and scope of the unit, and it explores the approaches in which people utilize medicinal herbs for therapeutic, nutritive, and leisure purposes. In this

view, instructors may utilize classroom assignments to link ethnobotany to conservation by describing the indigenous and botanical names of the plants, the identifying features, and the probable medicinal values. On the other hand, the learners can prepare various forms of medicinal extracts and conduct plant-pigment chromatography experiments, or even perform basic tests for antimicrobial properties of the herbs. The online courses entail the repetitive use of medicinal herb-related terminologies, which enhance the mastery of vocabularies, while the espousal of laboratory experiments increases student engagement and motivation by heightening their curiosity and interest in the science-based tasks.

Other studies recommend the adoption of student-centred strategies that involve active-learning pedagogies and provision of feedback (Connell, Donovan, & Chambers, 2016). In these scholars' standpoints, active-learning approaches are envisioned to engage apprentices in knowledge construction, and they differ from conventional tutor-centred teaching strategies that place emphasis on the transfer of trainer knowledge to the learners and depend on passive student participation. A diversity of active-learning initiatives can be embraced in fostering the mastery of medicinal herbs vocabularies, including problem-based learning, minute papers, and think-pair-share techniques. Freeman et al. (2014) conducted a meta-analysis to test the hypothesis that lecture methods are less effective than active-learning pedagogies in improving student outcomes. From the gathered data, Freeman and associates (2014) recommended that scholars in classes that incorporated active-learning techniques performed better than learners in schoolrooms that only relied on lecture teaching methods. The authors submitted that active-learning pedagogies involve dividing students into small manageable groups, which encourage teamwork and enhance student confidence.

Newmaster, Ragupathy, Berg, Sharmugarajan, and Balasubramaniam (2014) adopted an experimental research design to explore the most effective teaching strategies to preserve indigenous traditional knowledge among students in India. The outcomes illustrated that there is value in taking into account substitute instructional methods and perspectives, especially active-learning approaches, to sustain conventional aboriginal vocabularies and culture for thousands of years. The research found that didactic lecturing is predominantly employed in large, first-year college courses, although it is disapproved in a scholarly body of literature on pedagogy (Asyiah, 2017; Susanto, 2017). Notably, the espousal of teaching objects should be at the centre of indigenous training. This entails including students in community activities and inquiries, which facilitates the open sharing of information and critical appraisals among the learners. Similarly, Newmaster et al. (2014) found that fieldwork is a core element in vocabulary acquisition, especially in science-based courses like biology. In these authors standpoints, language is constructed in a social research setting, where the learners serve as active respondents in the designing, renovation, and detangling of words as they attempt to construe the occurrences around them.

Apart from active-learning, other pedagogies proposed in the existing pieces of literature to improve mastery of vocabularies and medicinal herbs' terminologies in Bali include the use of school gardens. In a pilot study, Shakya and Gurung (2014) engaged 15 schools in Kathmandu Valley, Nepal, and examined if students can exploit the power of creativity in developing and decorating herbal gardens, and in the process of this learn the vocabularies related with medicinal herbs. With the assistance of their instructors, the young learners chose and planted gastronomic and therapeutic herbs, profiled the plants, prepared posters, wrote stories and poems about the shrubs, and tried out recipes with the plants. The project sponsor, International Centre for Integrated Mountain Development (ICIMOD), maintained that through the incorporation of the conservatory garden concept into the school curriculum, teachers allowed for the continuity of indigenous knowledge and language, as well as enabling the preservation of medicinal plants.

According to Shakya and Gurung (2014), a school herbal garden mirrors the ancient culture of preserving and utilizing plants and their products for cooking and health care. According to the World Health Organization, 80% of the global population uses medicinal herbs as their primary form of pharmacological therapy, and there is a rising demand for alternative medicine from Asia and the Himalayas in the world herbal market (Shakya & Gurung, 2014). However, as outlined in the introduction section, whereas the need for medicinal herbs is on the increase, the culture and traditions associated with them are deteriorating. Thus, Shakya and Gurung (2014) suggest that establishing herbal gardens in schools offers a chance to cultivate herbs for local and commercial purposes while disseminating knowledge of their identities, uses, and traditional importance, and subsequently, conserving plants that are on the verge of extinction.

Statement of Problem

As demonstrated in the available empirical studies, the Balinese have embraced numerous plant species to control and cure various types of ailments for decades. However, Indonesia is slowly facing the issue of the extinction of biodiversity and hereditary loss of indigenous resources due to the adverse reactions to human activities, like clearing of bushes to accommodate the growing population (Sujarwo et al., 2015). In addition, Bali is progressively becoming a multicultural business hub owing to the increasing number of foreigners settling in the region, which has led to the widespread adoption of western cultures and the gradual loss of Balinese knowledge of vocabularies on indigenous plants. The reviewed pieces of literature show that schools can play a major role in the teaching of vocabulary relating to medicinal plants and the preservation of the culture of a community. However, the studies have focused on English vocabularies, and have highlighted the significance of the latter in learning and using first or second languages (Patahuddin et al., 2017; Sarani and Shirzaei, 2016; Wardani, 2015; Alqahtani, 2016; Novianti, 2017). Other investigations have suggested the espousal of active-learning pedagogies, but they were conducted in countries other than Indonesia and involved

the examination of science-based subjects and not on the subject of herbal vocabularies (Connell et al., 2016; Newmaster et al., 2014; Freeman et al., 2014). Similarly, Shakya and Gurung (2014) proposed the establishment of school gardens but the research was a pilot study, and it does not provide comprehensive information on the most effective teaching strategies that can be embraced by the teachers. Besides, this study was conducted in Nepal and not in Bali. This highlights the need to conduct a qualitative investigation to determine the required instructional techniques which can be employed in Bali to preserve the Balinese vocabularies and indigenous knowledge on medicinal herbs.

Study Objective

The objective of the study was to explore the teaching strategies for improving the vocabulary mastery of Balinese traditional medicinal plants among teenagers in Denpasar, Bali, Indonesia. Specifically, the research paper sought to:

1.) Find out explicit learning strategies employed by teachers to promote the mastery of vocabulary of indigenous medicinal plants in Denpasar, Bali, Indonesia.
2.) Establish the impediments that teachers face in Denpasar, Bali, Indonesia in implementing the instructional strategies intended to foster mastery of vocabularies on indigenous medicinal plants in Denpasar, Bali, Indonesia.

Methods

The research design refers to the study framework that guides researchers on how to gather, manage, and analyse data (Harwell, 2014). The outline enables scholars to collect rational responses in line with the study inquiries. There are three major types of research frameworks, namely, quantitative, qualitative, and mixed methods. According to Harwell (2014), quantitative techniques capitalize on independence, replicability, and extrapolation of research outcomes. Quantitative research designs necessitate empiricists to delineate their perceptions, encounters, and biases to assure objectivity during the performance of the investigation and to draw impartial conclusions (Salvador, 2016; Noyes et al., 2019). Regularly, quantitative approaches are deductive in nature as interpretations of tests of statistical suppositions result in general extrapolations about the features of the population (Powoh, 2016). Harwell (2014) adds that they are also regularly marked by the assumption that, autonomous of human view, there is only one truth.

Qualitative techniques, on the other hand, concentrate on the exploration and comprehension of the thoughts, perceptions, attitudes, and encounters of informants (Noyes et al., 2019; Salvador, 2016). In Harwell's (2014) interpretation, the major characteristic of qualitative

inquiries is the presence of numerous socially construed truths. They enable scholars to conduct comprehensive research of the phenomenon of interest, via the use of interview, ethnography, focus group discussions, grounded theory, and action research (Harwell, 2014; Powoh, 2016). Often, qualitative investigations are carried out in naturalistic settings, whereby the researcher's line of questioning is flexible and directed by the respondents' comments, that in some cases are utilized to build explanations of their perspectives and opinions.

Lastly, mixed-methods involve the combination of both quantitative and qualitative methodologies in the collection and analysis of data in ways that seemingly complement the limitations of the two in addressing the research inquiries (Noyes et al., 2019). Mixed methods are often utlised when expounding and building on conclusions of one procedure, testing the congruity of outcomes obtained through disparate measuring tools, and when illustrating how the findings from one approach can influence subsequent conclusions or methods drawn from the upshots. As outlined by Harwell (2014), the central philosophy behind the mixed methods research framework is that several types of data should be gathered with dissimilar processes and techniques to ensure that the approaches used in the research reflect the non-overlapping weaknesses and complementary strengths of the qualitative and quantitative research designs, thus, enabling the investigators to offer acumens that cannot be reported when only either qualitative or quantitative information is collected. Unlike quantitative studies, mixed-method inquiries are firmly entrenched in the evaluation literature, with scholars identifying triangulation as the primary purpose of mixed research procedures. According to Brannen (2015), triangulation evaluates the reliability of results like those acquired via diverse data collection methods such as focus group discussions, interviews, and surveys. This enhances the likelihood that threats to interpretations will be controlled.

Since the primary aim of the present research paper was exploratory, a qualitative exploratory research framework was found to be appropriate since it did not seek to obtain numerical data as in the case of quantitative studies, while mixed methods would be uneconomical. Four teachers from *Usada Sari* school were sampled to take part in a group semi-structured interview that lasted for two hours. Instructors teaching class VII in the school were purposefully selected as they were taking part in environmental conservation interventions in Bali, and they had an awareness in Indigenous Balinese curative herbs. The interview transcripts were coded and triangulated to expose the shared views, experiences, thoughts, and suggestions regarding the teaching techniques to prevent lexical extinction and loss of aboriginal knowledge of restorative thymes. According to existing pieces of literature, thematic analysis allows scholars to identify, evaluate, and document the core patterns that emerge from exploratory stories (Castleberry & Nolen, 2018).

Once the interview responses had been transcribed, the participants were given the transcripts to counter-check the contents and, consequently, guarantee the reliability and trustworthiness

of data. Besides, the research maintained a reflective journal which was referred to for the clarification of terms and reactions during the transcription, triangulation, and coding stages. The research paper was designed in a manner that considered the ethical principles of confidentiality, anonymity, and informed consent. In addition to assuring the respondents that their participation was on a voluntary basis, the author used pseudonyms R#01, R#02, R#03, and R#04 to ensure their inconspicuousness. Furthermore, the transcripts and recordings were kept in a lockable cabinet to assure the confidentiality of data.

Findings

Three out of the four interviewees (R#01, R#03, R#04) were female and one was male (R#02), who had a total of twenty-five years of experience in teaching plant-associated courses in Bali, Indonesia, including R#01 (6 years), R#02 (8 years), R#03 (5 years), and R#04 (7 years). Regarding their interest in partaking in the conservation interventions of Balinese culture in the arena of medicinal herbs, the informants had a sum of fifteen-years. With respect to the research questions on the teaching strategies that are necessary for fostering vocabulary proficiency on medicinal plants, four themes were identified, namely Word Walls, school gardens, online games, and field experiments (see table 1).

Table 1: Summary of the Teaching strategies to foster mastery of vocabulary

Respondents	Teaching strategies to foster mastery of vocabulary				Challenges faced in the implementation of teaching strategies.
	Word Walls	School gardens	Online games	Field experiments	
R#01	x	x		x	Unaffordability of field experiments, computers, and school gardens.
R#02			x	x	Unaffordability and the over-reliance on conventional instructional techniques.
R#03	x	x		x	The dependence on basic teaching techniques, like reading and memorizing.
R#04		x	x	x	Memorizing results in forgetfulness.

Discussion

All the respondents unanimously perceived field experiments as the most influential teaching approach to prevent the extinction of Balinese medicinal herbal vocabularies. This is evidenced in Newmaster et al.'s (2014) publication, submitting that fieldwork is a fundamental element in vocabulary acquisition. These authors' sentiments are supported by Rioux, Ewing, and Cooper (2018) who cite that embedding indigenous knowledge into the school curriculum and involving learners calls for culturally receptive pedagogies that entail visiting communities and fieldwork practices. According to Rioux et al. (2018), the adoption of field studies, particularly in training teenagers on traditional medicinal herbs, shifts the attention from instructing the students about the indigenous plants to teaching through it as learners acquire herbal vocabularies faster through experiential practices.

Similarly, in field experiments, educators can valorise the dissemination of cultural knowledge using language, and thus, the sampled respondents showed that a pedagogically effective field study intended to train teenagers in traditional vocabularies of Balinese therapeutic plants should espouse local language to integrate aboriginal comprehension. R#03 contends that "the use of Balinese lexis allows traditional knowledge systems to flourish, consequently creating a dialectal association between knowledge and language that endures to serve as the wellspring." R#04 indicated that "teachers with interest in ethnobotany need to recognize and learn communication tactics, which are inclusive of the apprentices' first language to offer the students an entry point into mastering vocabulary on Balinese indigenous medicinal plants." The above respondents' views are in congruence with Conte's (2019) arguments that language is the key mechanism of communication in any setting since words preserve identity, culture, traditions, and stories. Additionally, first dialects epitomize the generational hand down of cultural beliefs and customs, and thus, edification ought to be a source of the renaissance of the indigenous identity.

The second most popular teaching method for enhancing mastering of Balinese medicinal plant vocabularies is the establishment of school gardens, with 75% (R#01, R#03, R#04) supporting the strategy. As illustrated in the reviewed literature, the introduction of herbal gardens creates an opportunity for teachers to disseminate ethnolinguistic principles to their students, while also supporting the cultivation and preservation of the Balinese medicinal herbs from the risk of extinction (Shakya & Gurung, 2014). The above argument is reinforced by Burns and Miller (2012), who submit that school gardens not only underwrite the expansion of sustainability interventions for indigenous herbal plants, but they also serve as wealthy avenues through which school children and communities can participate in sustainability education. The latter entails acquiring the skills, vocabularies, knowledge, and values that shape an individuals' behaviours and interests in ethnolinguistic preservations. In the current study, the interviewees supporting school gardens unanimously indicated that teaching gardens ameliorate the socio-

cultural and environmental difficulties associated with untenable suburbanization. Development is attributable to the loss of indigenous traditions and Balinese language, and therefore, learning gardens create a pro-active mechanism for young people to participate in comprehensive conservation initiatives and to take part in resolving the complex challenges. For instance, pupils learn how to cultivate and prepare traditional medicinal herbs, as well as comprehend the benefits and the value of indigenous knowledge and expressions.

As described earlier, vocabulary is the core of every language, and without it, nothing can be conveyed. Besides, lexis principally bridges the four linguistic proficiencies enabling students to write, read, speak, and listen (Sarani & Shirzaei, 2016). According to respondents R#02 and R#04, the mastery of Balinese medicinal herbal vocabularies is the hallmark of the learner's level of understanding Balinese culture and language, and thus, the espousal of online games plays an essential role in fostering an individuals comprehension, recollection, and dissemination of the aforementioned lexis. The perspectives of the above interviewees are evidenced in AlNatour and Hijazi's (2018) work. As per the scholars, with the employment of internet-based games, the instructor can design diverse contexts whereby learners have to apply the vocabularies to convey, and express their personal views. Besides, digital gamification is associated with many benefits, including escalating the level of students' self-confidence and motivation since learning occurs in a less serious environment than in classrooms (McLaren, Adams, Mayer, & Forlizzi, 2016; Banfield & Wilkerson, 2014; Denham, 2018). Secondly, online plays allows for apprentices to grasp novel words in a naturalistic way as games cause amusement which stimulates a person's interest in what they are learning (de-Marcos, Garcia-Lopez, & Garcia-Cabot, 2016; Welbers, Konijn, Burgers, Vaate, & Eden, 2019; Kapp, Blair, & Mesch, 2014).

As per AlNatour and Hijazi (2018), since gamified lessons are entertaining and exciting, online competitions are exhilarating and may enhance students' interactive skills, and foster team spirit, which are the key principal components that are necessary to contextualize knowledge. Derakhshan and Khatir (2015), performed an integrative review of existing literature to find out the impacts of utilizing games on improving mastery of vocabulary in English as a second language. Although the authors grounded their appraisal on paper-based plays, the outcomes show that games are beneficial and successful in promoting the acquisition of lexical terms by increasing motivation, creating collaborative teaching context, and improving communicative abilities. The authors, however, suggested that the effective mastery of lexis through gaming is contingent on the teachers' ability to identify the appropriate games that allow students to reflect on and expound the gaming process. In fact, vocabulary mastery may not occur when the learners are not provided time to think about it (Sun-Lin & Chiou, 2019; Clark, Tanner-Smith, & Killingsworth, 2016; Sánchez-Martín, Cañada-Cañada, & Dávila-Acedo, 2017).

In a similar investigation, Hidayat, Kramat, and Benowo (2016), carried out a Classroom Action Research (CAR) with the objective of improving the mastery of English lexis among pupils in a junior high school in Gresik, Indonesia. The researchers found that, at the baseline, the comprehension and recollection of English vocabularies were extremely poor among the respondents, since the teachers had relied heavily on conventional instructional techniques, mainly the use of dictionaries to counter-check the meanings and spelling of English words. In addition to the learners' lack of English dictionaries, the tutors were faced with a difficult task translating the English words to indigenous language. Nonetheless, the introduction of word games significantly enhanced the mastery of the second language as the gamification heightened the students' level of motivation to learn, and helped them to easily memorize the English lexis (Kuo & Chuang, 2016; Toda, do Carmo, Silva, & Brancher, 2014; Alsawaier, 2018). Bakhsh (2016), states that even though the word structure represents "the skeleton" of a language, vocabulary is the essential component and the basic determinant of mastering it. Thus, the espousal of games to teach lexis is important for second language learners as they bring in enjoyment and increase interest in knowledge acquisition, as well as motivate the application of the mastered vocabulary in a confident and inventive approach (Yildirim, 2017; Hanus & Fox, 2015; Attali & Arieli-Attali, 2015). This indicates that the use of conventional teaching strategies may not help foster mastery of vocabularies on the Balinese medicinal herbs among teenagers in Bali in the current generation. Therefore, the application of word games and online plays will stimulate their fascination towards the Balinese language, and subsequently, aid in the ethnolinguistic preservation.

Existing pieces of literature have already demonstrated the positive effects of gamification in student performance (Buckley & Doyle, 2016; Sailer, Hense, Mayr, & Mandl, 2017; Hulse et al., 2019; Halloluwa, Vyas, Usoof, & Hewagamage, 2018). For instance, Jagu, Boti, and So (2018) conducted a quantitative study to test the impacts of gamification on pupil academic outcomes and noted that plays are intended to be entertaining, fun, and motivate desirable experiences even in less-fascinating tasks, therefore, heightening intrinsic motivation and making class activities more elaborate and enjoyable. In addition, gamification promotes teamwork and competitive spirit, consequently, fostering knowledge acquisition (Azcarraga, Garcia, Copianco, & Nfable, 2015; Buckley & Doyle, 2016; Banfield & Wilkerson, 2014). Hwa (2018) concluded that multi-media and game-based techniques are more successful in grasping the learner's attention in the classroom than conventional approaches, like a lecture, reading, or memorization activities.

The last teaching method identified by 50% of the respondents (R#01and R#03) is the espousal of word walls to improve vocabulary proficiency of teenagers in Indonesia. These participants argued that Bali has thousands of traditional plants which are utilized as medicinal herbs. This suggests that the introduction of ethnobotany in junior high schools necessitates the instructors to teach several complex terminologies on a daily basis, and thus, the use of word wall practices

enthuses active student engagement. R#03 submitted that signals such as pointing to the key botanical word during field activities or in classroom lessons confer pictorial support that is beneficial for the learners. The above expressions are in line with Sekyewael's (2014) findings, which showed that interactive words walls display well-chosen vocabularies that enable tutors establish a basis for student comprehension of the contained lexis. They also reinforce terminology-learning mechanism by emphasizing prefixes, suffixes, root words, and their meanings that aid learners in decrypting the meaning in a sentence apart from heightening their awareness of the link between the vocabulary and connotation of the words.

Fulford and Daigle (2017) add that word walls are applied successfully in various academic institutions to boost visual vocabulary. R#03 stated that "I target to have at least Balinese medicinal herbs' names on my classroom wall so that all my learners can identify by the end of 2019." Such initiatives enhance the mastery of vocabularies at a faster rate, and it will facilitate the progressive teaching of Balinese indigenous knowledge of conventional therapeutic plants and the preservation of Balinese vocabularies. Nonetheless, as illustrated in the reviewed literature, most of the basic teaching methods to foster vocabulary proficiency among students encompass the use of dictionaries, reading, listening, and memorization of words. However, these have been disregarded by the interviewed respondents citing that such techniques are ineffective in enabling the recognition, memorization, and long-term recollection of complex Balinese lexical on traditional medicinal plants. The listed teaching practices are limited in their efficacy by their lack of stimulation of interest and inspiration to acquire knowledge.

Conclusion

From the reviewed works and the interview responses, it is apparent that the **s**trategies that were used for encouraging the acquisition of vocabulary associated with traditional medicinal plants in *Usada Sari* of student class VII SMP Negeri 8 Denpasar were word walls, school herbal gardens, and field experiments. It is apparent that all the four approaches work hand in hand with basic vocabulary learning techniques traditionally employed to foster the comprehension of second languages, namely, using dictionaries, watching movies and listening to songs, reading books, and memorizing keywords. The four identified teaching practices, however, have the common features of boosting morale through active engagement and incentivizing learning through entertaining practices. It is apparent from the study that attracting the attention of teenage scholars and involving them in the schoolroom is an uphill task that compels the instructor to devise ways that spur their intrinsic impetus. In this context, word walls may act as graphic organizers that boost vocabulary acquisition and relate the visualized lexis with the meanings.

Online gamified lessons allow for students to receive feedback, which serves as a beneficial way of enhancing active learner participation and interaction in the classroom. School gardens, on the other hand, improve students understanding of indigenous plants' vocabularies by mirroring the ancient culture of preserving and utilizing plants and their products for cooking and health care. Lastly, field experiments have the same effect as school gardens and online games as they augment intrinsic inspiration to study and preserve Balinese language through teaching teenagers by engaging them in fun outdoor learning activities. The major impediment to improving mastery of Balinese medicinal plants vocabulary faced by teachers is the use of conventional instructional techniques and high cost of technologies. Although the presented findings are significant in adding knowledge to the existing literature, the current research was limited by the small sample size. The researcher of this study, therefore, recommends that there is a need for additional studies on the same subject using a larger sample.

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