

Journal of Science and Sustainable Development (JSSD)

Volume 10

2022

Number 2

7SS/V; 2304-2702 (Print)

: 2414-4479 (online)



An International Journal of Ambo University

Journal of Science and Sustainable Development

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Journal of Science and Sustainable Development (JSSD)

Ambo University

Ambo University which was founded in 1939 is one of the oldest higher learning institutions in Ethiopia. The primary objective of the University is to promote and advance academics and research in all aspects of sciences to contribute to the sustainable development of the country. Among the various ways of promoting academics and disseminating research outputs are publishing the **JSSD, Ambo University Newsletter, various books and proceedings**. Ambo University is known for frequently organizing international conferences, workshops and public speeches as means of promoting academics and research ultimately contributing to better understanding of new and available technologies at local, regional and international level. Financial support for various researches being conducted by the University staff is provided by the ministry of education and other external funding agencies such as Ethiopian Institute of Agricultural Research (EIAR), Ministry of Science and Technology (MoST), Institute of Biodiversity Conservation (IBC), International Livestock Research Institute (ILRI), private agencies such as Agri-share Ethiopia. Ambo University, therefore, would appreciate and acknowledge all article contributors, financial assistance providers, and reviewers showing willingness to contribute for the sustainable publication of this imperative journal.

The current, biannual journal and the quarterly newsletter exist to advance scholarly discourse about scientific research, academic knowledge and extracurricular activities taking place in the University as well as in other scientific institutions. The journal considers articles from a wide variety of interest areas and from a wide spectrum of disciplines. Manuscripts are usually reviewed within one-to two months of submission. It is not possible to promise automatic acceptance of the manuscript. Based on the reviewers' comments, the Editorial Board deserves the right to reject manuscripts that are not up to standard. Authors are advised to strictly follow the *instructions for authors* as a mere deviation from the basics of the Journal format can lead to automatic rejection of the manuscript without going in depth into it.

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- To produce a publication that is credible and informative which will serve as a medium for professionals in science and related fields to interact and share information and knowledge for the purpose of the advancement of the scientific community and sustainable development.
 - To promote the effective teaching of science, technology and management; identifying problems and developing solutions through dissemination of new information from researches align in the direction of solving the basic need of the country.
 - To contribute to the pool of scientific information by providing (creating) more access for researchers to have their original scientific work relevant to the need of the country and the world at large.
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All portions of the manuscript must be typed **double-spaced** and all pages numbered starting from the title page.

The **Title** should be a brief phrase describing the contents of the paper. The Title Page should include the authors' full names and affiliations, the name of the corresponding author along with E-mail and P.O.Box address.

The **Abstract** should be informative and completely self-explanatory, briefly present the topic, state the scope of the experiments, indicate significant data, and point out major findings and conclusions. The abstract should be 200 to 250 words in length. Complete sentences, active verbs, and the third person should be used, and the abstract should be written in the past tense. Standard nomenclature should be used and abbreviations should be avoided. No literature should be cited.

Following the abstract, about 3 to 5 **key words** that will provide indexing references should be listed.

A list of non-standard **Abbreviations** should be added. In general, non-standard abbreviations should be used only when the full term is very long and used often. Each abbreviation should be spelt out and introduced in parentheses the first time it is used in the text. Only recommended SI units should be used. Standard abbreviations (such as ATP and DNA) need not be defined.

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The **Discussion** should interpret the findings in view of the results obtained in this and in past studies on this topic. State the conclusions in a few sentences at the end of the paper. The Results and Discussion sections can include subheadings, and when appropriate, both sections can be combined.

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Tables should be kept to a minimum and be designed to be as simple as possible. Tables are to be typed double-spaced throughout, the captions. Each table should be numbered consecutively in Arabic numerals. Tables should be self-explanatory without reference to the text. The same data should not be presented in both table and graph forms or repeated in the text.

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Examples:

Abayomi (2000), Agindotan et al. (2003), (Kelebeni, 1983), (Usman and Smith, 1992), (Chege, 1998; Chukwura, 1987a,b; Tijani, 1993,1995), (Kumasi et al., 2001)

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- Moran GJ, Amii RN, Abrahamian FM, Talan DA (2005). Methicillin-resistant *Staphylococcus aureus* in community-acquired skin infections. *Emerg. Infect. Dis.* 11: 928-930.
- Chikere CB, Omoni VT and Chikere BO (2008). Distribution of potential nosocomial pathogens in a hospital environment. *Afr. J. Biotechnol.* 7: 3535-3539.
- Pitout JDD, Church DL, Gregson DB, Chow BL, McCracken M, Mulvey M, Laupland KB (2007). Molecular epidemiology of CTXM-producing *Escherichia coli* in the Calgary Health Region: emergence of CTX-M-15-producing isolates. *Antimicrob. Agents Chemother.* 51:1281-1286.
- Pelczar JR, Harley JP, Klein DA (1993). *Microbiology: Concepts and Applications*. McGraw-Hill Inc., New York, pp. 591-603.

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Dog husbandry practices and associated public health consequences in Ambo town, Oromia, Ethiopia

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Abstract

Dog owning is a common practice in Ethiopia, including Ambo town. Information on dog population and husbandry practices is essential to access poor husbandry practices that could increase the risk of dogborne diseases in Ethiopia. A cross-sectional study was conducted to assess the husbandry practices of dog owners, dog population characteristics and associated public health consequences in Ambo town. Two hundred dog-owning households were randomly selected and interviewed face-to-face. A pre-tested structured questionnaire was used to obtain information on household and dog demographic characteristics and husbandry practices. The collected data was analysed using STATA version 14 and logistic regression was used to assess the risk factors. Out of the 200 households, 83% keep local breeds of dogs, and of the 277 owned dogs, 74% were male. The primary purpose of keeping dogs is for security reasons (83.5%), and about 73% of the households keep only one dog, and the maximum number is five per household with an average number of 1.4. In 62% of the interviewed households, dogs have free access to the outdoor environment. Dogs don't have separate houses in 54.5% of the households, and most of those who have doghouse clean it less frequently or not at all. The most common means of dog feces disposal was into an open hole (47.5%) and thrown into the environment (23.0%). About 66% of households had never dewormed their dogs, and around 69% had never vaccinated their dogs. The overall result of the dog husbandry practice evaluation showed that about 63% of the dog-owning households had poor dog handling practices. Multivariable logistic regression analysis revealed that the elementary educational level of the householders, female sex, and local breed of owned dogs are associated with poor dog husbandry practice. The current dog husbandry practices in Ambo town had a public health risk related to dog-borne zoonosis. Therefore, awareness regarding responsible dog ownership and improving dog husbandry practices are needed to intervene in dog-related zoonotic diseases for the community owning dogs.

Keywords: Ambo, Dogs, Husbandry practices, Risk factors, Zoonosis

Introduction

Dogs are the most common animal species kept in households around the world. In many industrialized countries, dogs are important for humans as pets or as part of the family (McNicholas *et al.*, 2005; Chomel and Sun, 2011). Dogs are kept for various reasons, such as companionship, security, pleasure, protection, and comfort (Podberscek, 2006). In

many developing countries, data on dog ownership and population is scarce. However, the purpose of keeping a dog is not entirely different, and it is believed to be for companionship, security, and breeding purposes (Awah-Ndukum *et al.*, 2004).

Pet ownership is common throughout the world (Murray *et al.*, 2010). Perrin (2009) estimated that 56% of Canadian homes have at least one

dog or cat. Ethiopian dog population is not known, however, the number of dogs in Ethiopian households is increasing, and many families keep one or more dogs for either hunting or guard purposes. In Ethiopia, increased numbers of dogs are seen around abattoirs, butcher shops, marketplaces, and streets (Yacob *et al.*, 2007).

Mental and physical benefits of pet ownership have been reported, particularly among children, the elderly, and mentally retarded individuals (Reaser *et al.*, 2008; Friedmann and Son, 2009). However, despite these benefits, there are also potential health hazards associated with pet ownership and contact. Dogs serve as companion animals and probably have the closest contact with man, which increases the risk of zoonosis compared to other domestic animals because dogs are known reservoirs of zoonotic diseases. Dog-borne zoonosis is an emerging public health issue, especially as dog ownership increases and pet definitions expand to include new and exotic animals. Still, in the Ethiopian context, pets include mainly dogs and cats. In Ethiopia, many pet owners are often unaware of the risks pets may pose and, as a result, engage in husbandry and hygiene practices that increase the likelihood of acquiring diseases (Angela and Yvonne, 2012; Negash *et al.*, 2014).

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the likelihood of acquiring diseases (Angela and Yvonne, 2012; Negash *et al.*, 2014).

People can acquire pet-associated zoonotic organisms through the skin and mucous membranes (via animal bites, scratches, or direct or indirect contact with animal saliva, urine, and other body fluids or secretions), ingestion of animal fecal material, inhalation of infectious aerosols or droplets, and through arthropods or other invertebrate vectors (Mani and Maguire, 2009). Although any exposed person can become infected with a zoonotic pathogen, risks are particularly high for those with a compromised or incompletely developed immune system, such as the young (< 5 yrs.), elderly (≥ 65 yrs.), pregnant, and those with immune function-reducing conditions or treatments (e.g., diabetes, cancer, infection with human immunodeficiency virus (HIV), chemotherapy) (Abbas *et al.*, 2007). The increased disease risk for children is additionally imparted through closer physical contact with household animals, reduced hand hygiene, and behaviors that include pica and exploration of the environment through mouthing. In addition to children, other members of the family could also be at risk because dogs often have frequent, close interactions with all household members, such as licking hands and sleeping in beds (Westgarth *et al.*, 2008), which can further increase pet-associated disease risks. In urban areas, where hygienic practices are poor, dog feces represent an important pollution factor. In addition, wind can carry and spread viable pathogens present in dog feces, contaminating food, which may later be a source of infection (Tarsitano *et al.*, 2010). Parasite eggs can also be carried into human houses if adhered to shoes or animals' paws (Deplazes *et al.*, 2011).

Despite the high risk for dog-associated disease risk in people, pet husbandry practices have not been thoroughly investigated in Ethiopia. Studies in different parts of the world have noted the frequency of close contact between pets and people (e.g., licking of hands and sleeping in household member beds) (Overgaauw *et al.*, 2009). Moreover, pet ownership patterns practiced by individuals (Ramon *et al.*, 2010), poor husbandry and

health care practices within pet-owning households (Volk *et al.*, 2011), and poor hand hygiene (Overgaauw *et al.*, 2009) pose a higher risk of disease (Leonard *et al.*, 2011). In Ethiopia, little attention is given to dog husbandry practice, and there is low awareness of different dog-related zoonotic diseases (Negash *et al.*, 2014). Considering the limited information on dog husbandry practices and the risk of zoonotic disease in Ambo town, the objective of this study was to assess the dog husbandry practices, the dog population characteristics and associated public health consequences in Ambo town, Oromia, Ethiopia.

Materials and methods

Description of Study Areas

This study was conducted in Ambo town, situated at 8°56'30" - 8°59'30" N latitude and 37° 47'30" - 37°55'15"E longitude in central Oromia, Ethiopia. Ambo town is the administrative center of West Shoa zone, located 114 km west of Addis Ababa. The altitude of the area ranges from 1380-3030 meter above sea level (m.a.s.l), characterized by a mid-altitude, which is locally named *Bada-dare*. The temperature ranges from 15°C-29°C with an average temperature of 22°C. It receives a mean annual rainfall ranging from 800-1000 mm with an average of 900 mm. The highest rainfall concentration occurred from June to September, and the mean monthly relative humidity varies from 64.6% in August to 35.8% in December, which is comfortable for human life and livestock production (CSA, 2021).

Study population

The target population were households in Ambo town and dogs managed under different systems. The study population consisted of dogs-owning households in Ambo town who managed dogs under indoor and outdoor management systems.

Study Design

A questionnaire-based cross-sectional survey was conducted on two hundred participants selected from dog-owning households in Ambo town. A structured questionnaire was prepared in English and later translated into the local language (Afaan Oromo). The questionnaire was pre-tested in one of the kebeles out of the selected once on 5% of the sample size, and necessary amendments were made before the start of the actual study. The questionnaire targeted to obtain information on dogs' sex (male, female), housing status (indoor, outdoor), breed of dog (local, cross or exotic based on the information obtained from the owners), vaccination status (vaccinated, not vaccinated), purpose of keeping (companion, security, both), and feeding (commercial canned/ dry food, home-cooked dog food, home cooked human food, raw meat, leftover), presence of doghouse (present/absent), practice of doghouse cleaning (no dog house, frequency of cleaning of doghouse present), presence of specific defecation area (present/absent), dog feces disposal practice, contact while handling sick or dead dog, and deworming practices.

Sampling Method

There are six *Kebeles* (the smallest administrative structure) in Ambo town, of which two were selected randomly using a lottery system for this study. The sample size was calculated using the formula given by Arsham (2002), $N = 0.25/SE^2$, where N = sample size and SE (standard error = 5%). Accordingly, the calculated sample size was 100, which was doubled to 200. Two hundred dog-owning households were selected from the two kebeles (100 for each) assuming that the dog ownership in the two kebeles is proportional. Since there is no dog ownership registration in the country, ownership was verified by house-to-house surveying as some dogs spend most of their time out of home, a household is considered as the owner of a dog when they claim ownership of at least one dog, even if they do not provide basic needs such as feed and shelter as described by Gebremedihin *et al.* (2020). During the questionnaire survey, every other household-owning dog was included until the proposed sample size was achieved. From the family, preferably the head

of the household, is interviewed, but in the absence of households any member of the family above 18 years of age is considered.

Data Collection

The questionnaire data was collected using face-to-face interviews, which consisted of three parts. The first part captured information on household demographic characteristics such as gender, age, religion, and level of education of the household head. The second part explores questions related to the demographic variables of the owned dogs, such as number of dogs per household, sex, breed, and reason for keeping dogs. The third part focused on management practices such as housing, feeding, and watering dogs, presence of fixed defecation area, cleaning of dog feces, disposal of dog feces, disposal of dead dogs, and health management practices such as deworming, vaccination, handling of sick dogs and veterinary care when sick were included. Management practices such as housing, dog house cleaning, dog feces disposal, that could favor dog-borne zoonosis in humans were addressed.

Ethical approval

All the participants in this study were treated according to the ethical standards of Ambo University, and the protocol was assessed and approved by the Ambo University Research Ethics Review Committee. The participants were informed about the purpose and the methods of the study. Verbal consent was obtained from each participant before the commencement of the study.

Data management and analysis

Data generated from the questionnaire survey were entered into Microsoft Excel 2010, cleaned, and coded, while statistical analysis was performed using the Stata® software package (version 14.0; Stata Corporation, College Station, USA).

Descriptive statistical analysis, such as frequency, was applied to summarize the data regarding the demographic variable of dogs and households, and the findings were presented using tables and figures. The responses to the dog management questions were scored 1 when the answer was correct and it received 0 when the response was wrong based on the risk of the dog management practice on the health of the household/community or on the dog itself. The outcome variables were then the sum of the scores to practice questions ($n = 11$). Consequently, the maximum achievable score was 11, and the lowest score was 0. Finally, the outcome variable was categorized as good practice when the score was above the average and poor when it was below the average score. Logistic regression was applied to assess the association between household and dog-related demographic variables (independent) with the level of dog management practice (dependent variable). Univariable logistic regression was computed using the crude odds ratio and p-values. Those non-collinear variables with p-value < 0.25 were selected for multivariable logistic regression to identify predictors of risky dog management practices. The odds ratio (OR) and the 95% confidence intervals (CI) were calculated, and $\alpha = 0.05$ was considered in all the analyses.

Results

Socio-demography characteristics of the dog-owning households

Out of the 200 dog-owning households, 112 (56%) were male-headed, while most of them were above the age of 40 years old (44.5%). Regarding the religion of the dog-owning communities, the majority of them were Christians, which are 192 (96%) out of the 200. With the education level, more than half, 56.5%, had attended elementary education level, while 22.0% and 21.5% had secondary and diploma/degree level education (Table 1).

Table 1. Socio-demography characteristics of the dog-owning households

| Variable | Category | Frequency | Percent |
|-------------------|-----------------|-----------|---------|
| Gender | Male | 112 | 56.0 |
| | Female | 88 | 44.0 |
| Age | <30 years | 42 | 21.0 |
| | 30-39 years | 69 | 34.5 |
| | >40 years | 89 | 44.50 |
| Religion | Christian | 192 | 96.0 |
| | Muslim | 4 | 2.0 |
| | Others | 4 | 2.0 |
| Educational level | Elementary | 113 | 56.5 |
| | Secondary | 44 | 22.0 |
| | Diploma & above | 43 | 21.5 |

Demographic characteristics of the owned dogs in the study areas

As described in Table 2, of the 200 households, most of the households keep local breeds of dogs (83.5%), and the rest are crossbreed (8.5%), both cross and local (7.0%) or pure exotic breeds (1.0%). Of the 277 owned dogs recorded in this study, most of them are male (74.0%), and the remaining 26% are female. In the study area, more individuals kept

dogs for security reasons (83.5%), whereas only a few (9.5%) of the owners kept dogs for companionship and (7.0%) for both security and companion reasons. With the number of dogs kept per household, 73% of the households keep only one dog, 18.5% keep two, 6.0% keep three, 2.0% keep four, and 0.5% keep five dogs with an average of 1.4 dogs per household.

Table 2. Characteristics of dog population owned by households in Ambo town

| Variables | Category | Number | Percent |
|----------------------------|----------------------|--------|---------|
| Breed of dog | Exotic or cross | 19 | 9.5 |
| | Local breed | 167 | 83.5 |
| | Local and crossbreed | 14 | 7.0 |
| Sex of dog | Male | 205 | 74.0 |
| | Female | 72 | 26.0 |
| No. dogs per household | One | 146 | 73.0 |
| | Two | 37 | 18.5 |
| | Three | 12 | 6.0 |
| | Four | 4 | 2.0 |
| | Five | 1 | 0.5 |
| Reason for keeping the dog | Companionship | 19 | 9.5 |
| | Security | 167 | 83.5 |
| | Both | 14 | 7.0 |

Exotici breed are dog breeds that are pure exotic, crossbreed are those exotic breed of dogs hybrid with the local and local are pure indigenous dog breed of Ethiopia

Dog husbandry practices in the study area

Out of interviewed households, 62.0% of them allow their dog free access to the outdoors either during the day or night. Of the 200 households, 70.5% of households provided their dogs with home-cooked human food. In contrast, 17% of the households provided leftover, 6.5% home-cooked dog food, 3.5% raw meat from a butcher without cooking, and only 2.5% provided commercial dry food. In this study, 54.5% of households did not have a specific separate house for dogs. Most of the households that have houses for their dogs cleaned the dog's house once in one to two weeks (23.0%), and the rest cleaned in more than two weeks. The most common

means of dog feces disposal was into a hole (47.5%) and thrown into the environment (23.0%). About 66.5% of households never dewormed their dogs, whereas 23.5% reported deworming at least once a year, and 7.0% had dewormed for more than two years. In most of the households, 69.5% reported that they did not vaccinate their dogs. About 87.5% of households reported that their dogs did not have a specific area to defecate. None of the dog-owning households had vaccinated their dog for rabies in the last two consecutive years (Data not shown). In this study, the most common means of disposal of a dead dog is to throw it into the environment 45.5% (Table 3).

Table 3: Dog husbandry practices in related questions to assess the risk of zoonotic disease.

| Question | Response | Numbers of Households (%) |
|--|--|---------------------------|
| Way of dog-keeping | Indoor only | 76 (38.0) |
| | Loose either during the day or night | 124 (62.0) |
| The feed type provided to the dog | Commercial dry food | 5 (2.5) |
| | Home-cooked dog food | 13 (6.5) |
| | Home-cooked human food | 141 (70.5) |
| | Raw meat | 7 (3.5) |
| | Leftover | 34 (17) |
| Water source | Pipe water | 165 (82.5) |
| | From it found (no pipe water provided) | 35 (17.5) |
| Practice of cleaning doghouse/feces | Have no doghouse | 109 (54.5) |
| | Less than once a week | 46(23.0) |
| | More than a week or when dirty | 45(22.5) |
| Deworming | Every six months to one year | 53(26.5) |
| | More significant than two years/vet | 14 (7.0) |
| | None | 133 (66.5) |
| Vaccination | Yes | 61 (30.5) |
| | No | 139 (69.5) |
| Fixed area for defecation | No | 175 (87.5) |
| | Yes | 25 (12.5) |
| Disposal of dog feces | In waste desposal hole | 95 (47.5) |
| | No cleaning | 59 (29.5) |
| | Throw into the environment | 46 (23.0) |
| Treatment of sick dog | Local treatment | 109 (54.5) |
| | Veterinary clinic | 91 (45.5) |
| Contact while managing diseased dogs. | By bare hand | 44 (22.0) |
| | Use protective materials | 64 (32.0) |
| | Do nothing | 92 (46.0) |
| Disposal of dead dog | Hole | 86 (43.0) |
| | Take to disposal area | 23 (11.5) |
| | Throw to the garbage for hvena | 91 (45.5) |

Logistic regression analysis for risk factors associated with poor dog husbandry practices

The result of the current study showed that 126 (63%) of the dog-owning households had poor dog-handling practices. The result of the logistic regression analysis is presented in Table 4. A total of 8 independent variables were analyzed, of which six were passed for multivariable logistic regression. Two of the variables namely age and religion of the households were excluded from the multivariable logistic regression for the p-value

>0.25. The multivariable logistic regression analysis showed a significant association ($p < 0.05$) between the educational level of the householders and the sex and breed of owned dogs with poor or risky dog management practices compared to their counterparts. Consequently, dog owners with an elementary education level and those owning only female dogs had significantly poor management practices compared to those better-educated people and those owning only male dogs. Households keeping only local breeds of dogs had poor management practices compared to those keeping exotic or cross-breed dogs.

Table 4. Logistic regression analysis of poor dog handling practice and risk factors

| Variable | Category | No. HH with Good practice | Univariable logistic regression | | Multivariable logistic regression | |
|----------------------------|-----------------|---------------------------|---------------------------------|---------|-----------------------------------|---------|
| | | | OR (CI) | p-value | OR (CI) | p-value |
| Gender of HH | Female | 35 (39.8) | Ref | | | |
| | Male | 49 (43.8) | 1.05 (0.59, 1.87) | 0.869 | | |
| Age of HH | <30 years | 28 (66.7) | 4.73(2.08, 10.79) | 0.000 | | |
| | 30-39 years | 23 (33.3) | Ref | | | |
| | >40 years | 33 (37.1) | 1.21(.60, 2.41) | 0.593 | | |
| Religion of HH | Christian | 78 (40.6) | Ref | | | |
| | Muslim/Others | 6 (75.0) | 1.74 (0.42, 7.19) | 0.442 | | |
| Educational Level of HH | Elementary | 19 (16.8) | Ref | | Ref | |
| | Secondary | 26 (59.1) | 7.16(3.20,15.98) | 0.000 | 7.51(3.06, 18.45) | 0.000 |
| | Diploma/Degree | 39 (90.7) | 33.60(12.67,89.09) | 0.000 | 46.33(14.88,144.21) | 0.000 |
| Breed of dog | Exotic/Hybrid | 14 (77.8) | 5.44(1.85, 16.04) | 0.002 | 6.90(1.78, 26.80) | 0.005 |
| | Local and cross | 8 (53.3) | 1.83(0.63, 5.31) | 0.266 | 2.81(0.63, 12.50) | 0.174 |
| | Local | 62 (37.1) | Ref | | | |
| Sex of the dogs | Female | 3 (18.8) | Ref | | | |
| | Male/Female | 14 (26.9) | 2.10(0.42, 10.57) | 0.368 | 3.31 (0.35, 31.22) | 0.296 |
| | Male | 67 (50.8) | 5.83(1.27, 26.69) | 0.023 | 16.34 (1.95, 37.20) | 0.010 |
| No. of dogs per HH | One | 71 (48.3) | 3.62(1.42, 9.26) | 0.007 | | |
| | Two | 8 (22.9) | Ref | | | |
| | Three or more | 5 (27.8) | 1.83(0.47,7.20) | 0.370 | | |
| Reason for keeping the dog | Companionship | 14 (77.8) | 5.44(1.84,16.03) | 0.002 | | |
| | Both purpose | 8 (53.3) | 1.83(0.63,5.31) | 0.266 | | |
| | Security | 62 (37.1) | Ref | | | |

Ref: Reference, HH: households, No: number, OR: Odds ratio, CI: Confidence interval

Discussion

In this study, the population of local breed of dogs owned per household were more than that of cross-bred or exotic breed of dogs, which is similar to the report of Negash et al. (2014). A report from Cameroon showed a low population of local breed dogs. The population of male dogs in this study was higher than that of females, which is supported by different studies, indicating the preference of male dogs for security and guarding purposes (Njong et al., 2012; Negash et al., 2014; Gebremedhin et al., 2020b). The predominance of male dogs over female dogs could be explained by the fact that female dogs have disturbing behaviour during mating season. Dog owners prefer male dogs because of unwanted pregnancies in females as well.

In the study area, most of the households kept dogs for security purpose, which is in line with what has been reported by Zewdu et al. (2010) from Ambo. However, according to the report from northern Ethiopia by Negash et al. (2014), the number of dogs kept as companions was higher than in the present study. Also, Njong et al. (2012) from West Africa reported a lower number of dogs used as companionship compared to the current finding. With regards to the dog keeping practices in the present study area, most dog owning households kept dogs free in the outdoor for at least half of the day as it was reported by Zewdu et al. (2010).

According to the current result, many of the dogs were fed with home-cooked human food and leftovers. In contrast to this, the report from Ontario, Canada, by Stull et al. (2013) showed the majority of the dogs were provided with commercial canned/dry food. However, the difference in the feeding style might be due to the levels of education, standard of life, income, availability of the feeds, and the value of the dogs in the household.

According to the previous study result from the current study in the area, the households cleaned their dogs' houses at intervals of 1-2 months (Zewdu et al., 2010), but in the present study, many households' clean dogs' house once in two weeks. The difference between

these findings could be the result of veterinary health intervention and increased awareness of zoonotic disease. However, a study conducted in Ontario, Canada, revealed that the majority of households clean doghouses on a weekly and daily basis (Stull et al., 2013).

In the absence of proper health management of dogs, it is believed that dog feces could carry infectious agents that could be pathogenic to other dogs, animals, and humans. Most households declared that dogs did not have a specific area to defecate, which means the dog feces contaminate the household's compound or even the outside environment, as most dogs get free access to the outdoors. A similar finding was also reported from Cameroon (Njong et al., 2012). Moreover, in the current study, the most common means of dog feces disposal for households who have a doghouse is into an open hole or to an external environment. Reports from various parts of the world show the presence of several types of microorganisms potentially pathogenic for humans in dog feces. Diarrhoeagenic bacteria such as *Campylobacter*, *Salmonella*, *Yersinia* and *E. coli*; and protozoa such as *Giardia*, *Toxoplasma*, *Leishmania* spp., *Cryptosporidium*; roundworms such as *Toxocara canis* and antibiotic-resistant bacteria such as methicillin-resistant *Staphylococcus aureus* pose threat to public health (Bianciardi et al., 2004, Lefebvre et al., 2008, El-Tras et al., 2011, Cinquepalmi et al., 2012, Marami et al., 2021, Gebremedhin et al., 2019, Gebremedhin et al., 2020a, Gebremedhin et al., 2021a, Gebremedhin et al., 2021b). When dog feces are left on the ground, it will pollute the water supply, rivers, streams, creeks, and other local waterways, which could be a potential route of infection to people or animals drinking the contaminated water. Moreover, the contamination of the environment with dog feces could also create an unpleasant odor, which is not comfortable for people. Hence, dog feces and other biological waste need to be appropriately disposed of by burning, incineration, burying, etc., to altogether avoid access to people or other animals.

According to the result of the present study, most of the dogs were not dewormed, but

reports from Cameroon indicated that most of the dog owners deworm their dogs at least once a year (Njong *et al.*, 2012). Regular deworming of dogs could not only improve the health of dogs by controlling parasitic infections but also avoid zoonotic parasitic infections such as *Toxocara canis*, *Echinococcus granulosus*, *Anchlostoma caninum*, etc. In fact, deworming dogs depends on the economic status, availability of veterinary services, and awareness of the households about the zoonotic disease of dogs.

According to the current study findings, the major risk factors for poor dog management practices in the study area were the level of education, sex of the dog, and purpose of keeping. The association of poor dog management practices with less educated households implies a positive effect of education for better awareness of hygienic practices and zoonotic diseases (Adesokan *et al.*, 2018). This indicates the possibility of educating the dog-owning community to improve the poor practice. On the other hand, households keeping male dogs had better management practices compared to female dogs. This could be probably related to the purpose of keeping dogs, as male dogs are preferred to female dogs by the owners because of the disturbing behavior of female dogs during breeding periods by groups of male dogs, and males are also chosen for better guarding (Gebremedhin *et al.*, 2020b).

Consequently, male dogs could have less access to the outside, and most of the time, they had separate houses for living and were provided with appropriate feed and better health care service. One report from Kenya explained the preference of male dogs for better guarding and hunting. Thus, there is a tendency to provide better husbandry practices for male dogs (Kitala *et al.*, 2001).

In relation to the breed of dogs, people keeping only local breeds of dogs demonstrated poor dog husbandry practices compared to those keeping either cross or pure exotic breeds of dogs. This could probably be related to the value of dogs, as exotic or crossbreeds are mostly purchased and are kept more as

companion pets. The ownership of such dogs could also be related to the economic level of households because they are mostly hand-fed and are not able to search for their food outdoors as the local breeds of dogs do.

On the other hand, the majority of the dogs in the study area were not vaccinated, when combined with the free access to the outdoor environment probably for searching food and coming back home could increase the public health risk. In this situation, dogs having access to outdoor environment might have contact with wild canids such as foxes and hyenas during the night, which implies the risk of diseases like rabies to the dog-owning households as well as to society (Gebremedhin *et al.*, 2020b). A systematic review conducted in Ethiopia recently demonstrated a significantly higher prevalence of rabies in Ethiopia, which is estimated at 32%. This high prevalence of rabies is associated with an increasing number of stray dogs in Ethiopia, coupled with a lack of dog vaccination practice and low public awareness (Belete *et al.*, 2021).

Generally, the present study revealed a higher proportion of dogs in the study area have free access to an outdoor environment, no vaccination, no deworming, and no separate house. The dog feces cleaning and disposal practices are non-hygienic, indicating a possible risk of dog-borne zoonosis in the area. Consequently, the dog handling practice in the study area is poor, implying that it is risky for people who own dogs and the neighboring communities due to the possibility of dog-borne zoonosis. As a limitation, the sample size is relatively smaller, which might have affected the precision of our estimates, which uncovered a wider confidence interval. It is believed that the economic status of the household could affect the dog management level, and the reluctance of the participants to disclose their monthly income limited the number of possible predictors.

Conclusion

In this study, dog husbandry practices are noted to be poor, which is likely to favor the spread of dog-related zoonotic diseases to humans.

Most households allow their dogs to roam outdoor freely, especially during the night, and most dogs do not have separate housing. Little attention was also given to the proper disposal of dog-related wastes, which is a potential threat to the spread of zoonotic infection. The veterinary service provided to the dog is very minimal as the majority of the dogs were not vaccinated or not dewormed. Risk factors, such as lower level of education, owning female dogs, and keeping dogs only for security purposes, are identified as being associated with poor husbandry practices in the study area. Therefore, awareness regarding responsible dog ownership and farming practices to intervene in dog-related zoonotic diseases is needed for the community owning dogs. Further surveillance of dog-borne zoonosis is suggested at the nationwide level for well-versed intervention of dog-borne zoonotic diseases.

Acknowledgments

The authors greatly acknowledge the dog owners who volunteered for the interview, genuine responses, and let us visit their homes.

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Effects of Speed Reading Techniques Training on Students' Reading Comprehension

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Abstract

The main aim of this study was to examine the effects of speed reading training on the improvement of the students' reading comprehension. To achieve this objective, experimental research design was employed and two sections of freshman social science students of Ambo University 2022/23 entry were randomly selected and assigned to experimental and control groups. Then, reading tests adopted from different speed reading training books were administered as pre-tests and post-tests. The analysis of pre-test data showed that the students in both groups were at the same level in their reading speed and reading comprehension skills initially. Then, the same contents of the reading were taught to both groups. However, the experimental group students were given intensive training for 16 hours in 8 weeks on how to improve their reading speed and their reading comprehension. On the completion of the training, a post-test was given to both groups. The collected data were analyzed using Mann-Whitney U and Wilcoxon Signed Rank tests, and the result of these analyses revealed that the post-test scores of the experimental group in speed reading and reading comprehension activities were statistically significantly different from their pre-test score and the control group's post-test scores. Hence, it was noted that the speed reading techniques training had a statistically significant improvement in the experimental students' reading speed as well as reading comprehension scores. Based on these key findings, it is recommended that speed reading techniques lessons and exercises must be incorporated into students' textbooks and course books and given to students at all levels so that their reading speed and comprehension improve.

Keywords: Speed reading; Reading techniques; Training; Reading comprehension

Introduction

The Essence of Speed Reading

Reading speed is a kind of reading that emphasizes speed without leaving an understanding of its aspect of reading (Rasinski, 2014); Buzan, 2006; Hutaaruk, 2020; Martiarini, 2013). Rasinski, (2014) adds that reading speed is a collection of reading methods that attempt to increase rates of reading without greatly reducing

comprehension or retention, and it helps us to read and understand text more quickly. Rasinski claims that the faster readers are, the better they comprehend. Similarly, Sutz and Waverka (2009) define speed reading as the process of seeing, decoding words, and comprehending a text quickly. Meanwhile, Bapitha and Gunasekaran (2019) state that readers can get efficiency and attention through the printed line in speed reading. Furthermore, readers can use speed reading to increase their reading rate, comprehend a text quickly, and absorb information precisely and rapidly

compared to their previous reading speed (Choiriningtyas, 2018; Rizkoh, 2014; Tanjung, 2017). The goal of readers is to read fast and comprehend the contents of the text.

Speed reading prioritizes pace by using eye movements and not making sounds. As stated by Sutz and Waverka (2009), speed reading includes seeing the words, identifying and recognizing the words, as well as understanding the meaning of words faster and in silence. The purpose of speed reading is to obtain accurate and comprehensive information in a short time (Soedarso, 2006; Wainwright, 2006). Speed reading requires a very high pace, usually by reading sentence by sentence and paragraph by paragraph, not reading word by word (Sutz and Waverka, 2009). The benefit of speed reading is that it sorts out and masters important information quickly. Therefore, learning to read with the speed reading method will be beneficial for students to find out topics in reading texts, find out other people's opinions, get something important, and save reading time (Hidayati, 2019).

One of the aspects to measure reading fluency is reading speed. Reading rate or speed is defined as the measure of the number of words someone can read in a minute and inscribed as words per minute (wpm). Research by Bell (2001) asserts that good readers can achieve reading speed up to 350 wpm, fair readers read at 250 wpm, and slow readers acquire 150 wpm. For EFL or ESL learners, these numbers certainly cannot be used as a benchmark because English is not their primary language. According to Nation (2009), with easy reading materials that include no unfamiliar vocabulary or grammar, the average reasonable reading speed goal for FL and SL learners is 250 wpm. Furthermore, Nation also stated that 150 wpm is a good oral reading speed and around 500 wpm is a good skimming speed. He also indicated that reading at rates below 100 wpm is considered too slow and might have a detrimental effect on understanding.

The Significance of Speed Reading

Speed reading provides many benefits to EFL Learners. For instance, speed reading helps a

reader to sort out and master important information quickly. Therefore, learning to read with the speed reading method will be beneficial for students to find out topics in reading texts, find out other people's opinions, get something important, and save reading time (Hidayati, 2019). Besides, by having speed reading skills, students enjoy reading more and more because they can get familiarized with the materials they are reading in a short time when performing speed reading. It makes them more likely to read for pleasure (Karim, 2022). Abdelrahman and Bsharah (2014) confirm that having an appropriate technique of speed reading made it possible for students to comprehend a text easily and improve their academic achievement. Several studies also revealed that speed reading could enhance readers' text comprehension (Bell, 2001; Dyson and Haselgrove, 2001). Furthermore, Tanjung (2017) found that students' reading speed and comprehension have a close relationship. The most recent study conducted by Hutauruk (2020) also confirms that speed reading is one of the techniques that may help readers improve their reading ability in understanding a text. Studies have also shown that readers with knowledge and speed reading skills would perform better in college and even have fewer behavioral problems (Ford, 2005).

When readers are to read some texts, for instance, articles and books but have minimal time to read them all, speed reading is highly recommended to gain the key information and save time. According to Browning (2003), there are several benefits of EFL learners having speed-reading skills; namely, EFL learners will save time in reading the text, speed reading will help them to be more focused on the main information in a text, the EFL learners may improve their reading ability and academic grade. Since reading is an activity to comprehend written text, it can improve readers' reading comprehension; readers can boost their understanding by applying the speed-reading technique. Generally, readers would like to comprehend passages they are reading without losing the meaning of each word and concept they do not understand.

Nowadays, the most frequently used language skill in reaching rapidly developing information is reading speed. Obtaining information that is rapidly increasing day to day requires the speed of reading and the level of comprehension to increase as well. It can be said that the information can be reached in a short time and more effectively with an increase in this way (Durukan, 2013). Reading speed is increasingly necessary as progress is often dependent on the ability to deal with growing amounts of written material (Alafaj and Alshumaimeri, 2011). Humboldt State University Library (2004, as cited in Alarfaj and Alshumaimeri, 2011) points out that the amount of information released over the last fifty years exceeds that released over the last five thousand years and the amount of scientific written information published in one year would keep one person reading for 450 years. Therefore, this proliferation of information and written materials that require speed reading calls for the necessity of providing learners with skills that enable them to absorb a rapid flow of information in a short time.

A faster reader has better comprehension than a slow reader because of a working memory that fades out after some limited time. A slow reader begins to forget what he has read around the beginning of the reading while reading long texts because a working memory lasts only for a short time (Adams and Dorcheh, 2014). This implies that a fast reader has better comprehension because he/she can answer reading comprehension questions before the information is lost because of the short span of the working memory. According to the European Business Centre (2008), speed reading has effects on comprehension not only because of the effect of working memory but also because the human mind needs to comprehend much faster than the information received through reading. In more clear words, slowness in reading reduces comprehension because the speed of comprehension so much exceeds the speed of reading. According to this article, therefore, the mind begins to think of other issues when it is given information slower than it requires. In such cases, the mind begins to daydream while the reading is taking place to satisfy its quest for more information quicker

than what the reader is providing it, and that disturbs the flow of information and affects comprehension. This implies that speed reading positively influences comprehension. Improving the speed of reading keeps the mind busy with analyzing the reading material and in turn, enhances comprehension.

In the good old days, life was very orderly, quiet and calm and we had enough time to do whatever we wanted to do. We had not to rush to work through traffic snarls, rush back, watch TV, do the dishes, teach the children and go through so many chores around the house at top speed. So we had enough time to read; whether it be books, studies or magazines (Michigan, 2004). Michigan adds that in the present day, life is such a rush that we have no time to read. Hence, the need to read newspapers, magazines, novels or just satisfy our hunger for knowledge, information or just enjoyment at a faster speed and understand what we are reading is all the more felt. Therefore, reading is very essential in our daily activities. Specifically, it is the most important skill needed for success in an academic context.

Even though speed reading is a point of concern and given importance in other parts of the world, hardly any research has been done on speed reading in our country. In the Ethiopian context, English is given as a foreign language in all grade levels including kindergarten, and students are expected to read lengthy texts and do comprehension questions, especially in secondary and tertiary levels. And yet, from experience, it is evident that many students, including those in colleges and universities, find it difficult to read fast and comprehend texts. This is true with most of the English as a foreign language (EFL) learners. In support of this reality, Karim (2022) argues that, nowadays many EFL learners have problems comprehending the texts they are reading. In addition to learning English as a subject or a course, secondary and tertiary-level students use English as a medium of instruction to study other subjects in Ethiopia. Hence students are expected to make extensive readings in English to be successful in their

academic work. More importantly, university students engage in much demanding and time-consuming activities. For example, they engage in laborious reading activities for example study for their exams, prepare assignments, read various reference books to enrich their understanding of their studies, prepare for presentations, and other similar tasks related to their studies. These tiresome and time-consuming reading tasks call for the need for speed reading for the students' academic success.

In addition to their academic studies, students also inevitably engage in attending various social media to quench their information needs which is also time-consuming. The findings of the study done by Kolhar et al. (2021), revealed that among 300 subjects, a total of 290 students (97%) used social media applications. According to this study, regarding the purposes for which social media platforms were used, only 1% (n = 3) of the students used social media for academic purposes. In contrast, 35% (n = 105) of them used social media to chat with others, 43% (n = 129) of them browsed social networking sites to pass the time, 57% (n = 173) of the students reported that they were addicted to social media. They were more likely to use such technologies to have fun and pass time than for learning purposes. It is apparently impossible to prevent students from doing so. Rather, it is better to enhance their efficiency in reading speed skills to absorb much information relayed through different media options in the short time they have. Therefore equipping students with the speed reading skills that help them to complete their multi-faceted academic works expected of them efficiently overcoming time constraints is fundamentally important. Accordingly, it is argued that reading speed is an area of learning that requires utmost and urgent attention because it affects not only reading for pleasure but reading for information in content areas of study. Thus students' reading speed can determine their academic success. With this regard, the researcher observed that the students' reading rate was slow and their comprehension was very low. They failed to finish their reading passages in the expected

time and dealing with reading comprehension activities properly.

The intriguing significance of speed reading skills in solving the students' time constraints resulting in academic success and enjoyment in extensive reading, the prevailing and pressing problem in the area as well as the existing research gap in the area initiated the researcher to conduct the present study in the topic. Therefore, the researcher was interested in conducting experimental research to find out if speed reading training significantly improves the students' reading speed and comprehension attempting to answer the research questions and check the hypothesis "Can reading speed enhance students' reading comprehension?"

H₀= There would not be any significant difference between the reading comprehension mean scores of the experimental and the control group in the pre-test condition.

H_a= There might be a significant difference between the reading comprehension mean scores of the experimental and the control group in the pre-test condition..

Methodology

As stated earlier, the objective of this study was to explore the effects of speed reading techniques training on the improvement of the students' reading comprehension. Hence, the experimental research design was employed. Creswell (2012) states that an experiment is used when there is a need to establish possible cause and effect between the independent and dependent variables. The independent variable in the present study is speed reading techniques training whereas the students' reading comprehension scores are the dependent variable. This study involved the assessment of the students' reading speed and the identification of the effect of speed reading techniques training on the improvement of the students' reading comprehension. Therefore, the determination of the effect of speed reading training on the students' comprehension performance involves a pre-test to find out the students' current status and a post-test to

evaluate the effectiveness of the training in causing the required improvement.

The subjects of the study were first-year students of Ambo University in the 2022/23 academic year. Ambo University is one of the universities in Ethiopia located in the western part of the country 120 km away from Addis Ababa, the capital of the country in the Oromia regional state, West Shoa Zone, Ambo town. The university was preferred as the site for the study because the researcher observed the speed reading and comprehension problems among the freshman students of the university as he offered the communicative English course for fresh students a year before starting doing the research.

The samples of the study were two sections (experimental and control groups) randomly selected from first-year students of Ambo University. The assignment of the groups was also done in a similar way to randomization. The subjects of the study were 40 (30 male and 10 female) students in the experimental group and 44 (31 male and 13 female) in the control group.

Two reading tests which are different but of similar difficulty levels were employed as pre-test and post-test to collect pertinent data for this study. The pre-test was given before the provision of training to identify the students' current level of reading speed and comprehension while the post-test was given after the intervention to evaluate the effectiveness of the training in improving the students' speed and comprehension. The reading tests were adopted from a speed reading training book written by Michigan, (2004), and they had nearly similar numbers of words and equal levels of difficulty.

The data were collected from the subjects in the following order. First, the students' speed reading in words per minute (WPM) and reading comprehension scores were identified by giving pre-tests for both groups. The subjects first read the text just to be familiar with it. Then they were allowed to read the test for the second time during which they were made to register their starting and ending times

of the reading on the space provided for that purpose and submit it. After submitting the text, the students were given a reading comprehension test to do just from what they had already read. To obtain the subjects' reading speed, the researcher divided the total number of words covered in the text by the length of time used to complete the reading in minutes. The reading comprehension scores of the subjects were obtained by counting the correct items and converting them into percentage.

After identification of the students' level of reading comprehension scores which were meant to know if the training would be able to bring about a statistically significant improvement after the training, the treatment was given to the experimental groups. The students of the experimental group were given special training on speed reading techniques which included reading word chunks instead of isolated words, widening visual spans, minimizing individual word fixations, getting rid of vocalization and avoiding regressions by using a finger or a pencil for smooth movement on the line being read or using a white paper card to cover the already read part and to move down the text.

The training was given for eight weeks for 2 hours (120 minutes) each week, and that made the total of 960 minutes (16 hours). At the end post-test was given to both groups to compare the subjects' scores on both dependent variables.

Because the data were quantitative in nature, the data analysis required computation of the numerical values obtained from the pre-test and post-test results to know the mean and median score differences within and between the groups before and after the experimental treatment. More specifically, non-parametric tests - the U and rank scores from Mann-Whitney and Wilcoxon Signed rank statistics respectively and Z scores and effect sizes from both were utilized using Statistical Package for Social Sciences (SPSS) version 25 because the study involved computation of both parametric and non-parametric data.

Before going for the actual analysis of the data to compare the pre-test and post-test scores within and between the groups in order to see the effect of the intervention on the students' scores, it was mandatory to choose the appropriate test statistics first. That is determining whether the data were parametric or nonparametric because parametric data requires parametric testing and nonparametric data requires nonparametric testing (Orcan, 2020). Therefore, checking the normality assumption was one of the critical steps for mean comparing studies. Garth (2008) warns that considering parametric data as non-parametric data and vice versa is a dangerous mistake that forces a researcher to misinterpret the test results. Therefore, the pre-test and the post-test data obtained from both groups were checked for assumptions of normal distribution using the Kolmogorov-Smirnov test, Shapiro-Wilk test, skewness and kurtosis values, visual inspection of the histogram, normal Q-Q plots, and box plots of the dependent variables (Razali and Wah, 2011; Orcan, 2020). Accordingly, the normality of distributions of

the pre-test and post-test scores of both groups were found to violate the assumption of normal distribution as a result of which non-parametric tests were utilized.

Results

The Effect of Speed Reading on the Students' Reading Comprehension

First the reading comprehension scores of the two groups before the intervention were compared to see if the two groups were initially at similar levels of proficiency. But, before doing that, the tests of normality of distribution of the data and homogeneity of variance of the groups were checked using both statistical and visual methods. All the tests showed that the data for reading comprehension of both groups violated the assumptions of normality. Hence, non-parametric tests were utilized to test the research hypotheses.

Experimental VS Control Group's Reading Comprehension Pre-test Scores

Table 1. Reading Comprehension Pre-test Score Ranks

| Students' Group | N | Mean Rank | Sum of Ranks |
|-----------------|----|-----------|--------------|
| Exp. Group | 40 | 39.85 | 1594.00 |
| Cont. Group | 44 | 44.91 | 1976.00 |
| Total | 84 | | |

Table 1 depicts that 40 participants in the experimental group and 44 participants in the control group took the pre-test on reading comprehension and their mean ranks were

39.85 and 44.91 respectively. It is observed that the groups' mean ranks are numerically different - greater for the control group. Whether this difference was statistically significant or not is indicated in Table 2 below.

Table 2. Mann-Whitney Test Groups' Statistics on Reading Comprehension Pre-test Score

| Reading comprehension pre-test scores | |
|---------------------------------------|----------|
| Mann-Whitney U | 774.000 |
| Wilcoxon W | 1594.000 |
| Z | -.977 |
| Asymp. Sig. (2-tailed) | .328 |

a. Grouping Variable: Students' Group

To examine the difference between the experimental and the control group reading comprehension performance before the intervention, the Mann-Whitney U test was performed. The test revealed no significant difference between the experimental group pre-test score (Median = 65, n = 40) and the control group (median = 70, n = 44), $U = 774.000$, $Z = -.977$, $p = .328$, the Effect size(r) = .106. Hence the H_0 was retained and the H_1 was not supported.

This shows that the experimental group students' reading comprehension score was not different from that of the control group. From this, it can be concluded that the two group students were initially at the same level in their reading comprehension performance.

Next, the two groups' post-test scores were compared to precisely determine if the

intervention brought about a statistically significant difference in the reading comprehension performance of the experimental group. Before doing that, however, whether or not the data met the requirements of parametric assumptions was examined using different mechanisms and found to violate the assumptions. Based on the results the non-parametric tests were considered to test mean differences (Razali and Wah, 2011, Orcan, 2020) because departure from the normality for any of the independent samples indicates that the parametric tests should not be used (Rietveld and van Hout, 2015).

Experimental VS Control Group Reading Comprehension Post-test Scores

Table 3. Mann-Whitney U Test Ranks of Experimental and Control Group on Post-test Reading Comprehension Scores

| Participants' Group | N | Mean Rank | Sum of Ranks |
|---------------------|----|-----------|--------------|
| Experimental Group | 40 | 52.19 | 2087.50 |
| Control Group | 44 | 33.69 | 1482.50 |
| Total | 84 | | |

Table 3 depicts that 40 participants in the experimental group and 44 participants in the control group took the post-test on reading comprehension and their mean ranks were

52.19 and 33.69 respectively. It is observed that the groups' mean ranks are different - higher for the experimental group. Whether this difference was statistically significant or not is indicated in Table 4 below.

Table 4. Reading Comprehension Post-test Score Mann-Whitney U Test Statistics

| | Reading comprehension post-test scores |
|------------------------|--|
| Mann-Whitney U | 492.500 |
| Wilcoxon W | 1482.500 |
| Z | -3.545 |
| Asymp. Sig. (2-tailed) | .000 |

a. Grouping Variable: Students' Group

To examine the difference between the experimental and the control group reading comprehension scores after the intervention, the Mann-Whitney U test was performed. The test revealed a statistically significant difference between the experimental group post-test score (Median = 80, n =40) and the control group (median = 70, n = 44), U= 492.500, Z = -3.545, p< .001, with a medium effect size(r) = .38. Hence the null hypothesis

was rejected and the H1 was supported. From this it is evident that the intervention caused a statistically significant improvement in the students' reading comprehension scores.

To further investigate if the training brought about a statistically significant change in the control groups' reading comprehension, the group's post-test scores were compared to its pre-test scores using the Wilcoxon Signed rank tests as follows.

Table 5. Experimental group's reading comprehension scores descriptive statistics

| Test Condition | N | Mean | SD | Minimum | Maximum |
|------------------|----|-------|-------|---------|---------|
| Pre-test Scores | 40 | 63.00 | 13.81 | 20.00 | 80.00 |
| Post-test Scores | 40 | 80.00 | 14.67 | 40.00 | 100.00 |

Table 5 depicts that the experimental group's mean score in the pre-test was 63 and 80 in the post-test. The difference is 23 which is very huge. From this, it is evident that there is a big

difference between the group's pre-test and post-test mean scores. Whether the difference is statistically significant or not is indicated in Table 6 below.

Table 6. Wilcoxon Signed Ranks Reading Comprehension pre-test vs. post-test Score

| | N | Mean Rank | Sum of Ranks |
|----------------|-----------------|-----------|--------------|
| Negative Rank | 3 ^a | 10.50 | 31.50 |
| Positive Ranks | 33 ^b | 19.23 | 634.50 |
| Ties | 4 ^c | | |
| Total | 40 | | |

- a. post-test scores < pre-test scores
- b. post-test scores > pre-test scores
- c. post-test scores = pre-test scores

The Wilcoxon Signed Rank test was run to check if the experimental group's reading comprehension post-test scores showed improvement as compared to their pre-test scores. As can be seen in Table 6, it is clearly

indicated that only 3 subjects had their scores declined while 33 individuals got their post-test scores increased. On the other hand, the scores of only 4 students remained unchanged.

Table 7. Wilcoxon Signed Rank Test Statistics of Experimental Group Reading Comprehension post-test Vs. Pre-test Scores

| | post-test scores - pre-test scores |
|------------------------|------------------------------------|
| Z | -4.788 ^b |
| Asymp. Sig. (2-tailed) | .000 |

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

As can be seen in Table 7 above, the Wilcoxon Signed Rank test revealed that there was a significant positive change in the post-test, $Z = -4.788b$, $p < .001$, with a large effect size(r) .535. Hence the null hypothesis which states that there would not be a difference between the pre-test and post-test scores was rejected and the H1 which states there may be statistically significant change in the group's post-test scores was supported. From this, it is evident that the intervention brought a statistically significant improvement in the experimental students' reading comprehension scores.

Discussion

The objective of this study was to examine if speed reading techniques training is able to bring a statistically significant improvement in the students' reading rate and reading comprehension scores in the Ethiopian context. To that end, first, through the analysis of the groups' pre-test, it was checked that the students in both experimental and control groups were at the same level in their reading speed and reading comprehension scores before the intervention. Accordingly, it was found out that the students in the groups were not statistically different on the variables initially. So, any difference after the intervention should be attributed to the speed reading techniques training. Hence, the post-test was given to the subjects in both groups after the intervention, and the findings have been discussed as follows.

To check whether the intervention brought about a statistically significant improvement in the target group's reading comprehension scores after the intervention, both within-group

and between-group comparisons were performed. The between-group comparisons were used to compare the experimental group's mean scores with that of the control group in the post-test condition. The within-group comparison was utilized to compare the experimental group's pretest score with its own post-test score to see if the changes were positive or negative.

First, a between-group comparison was run comparing the experimental group's reading comprehension pre-test mean score with that of the control group to check if the two groups were at the same level in their reading comprehension skills initially. Since the data violated the parametric assumptions, the non-parametric alternative for the independent samples t-test (Mann-Whitney U test) was utilized. The test revealed no significant difference between the experimental group's pre-test score with $p = .328$ implying rejection of the alternative hypothesis and retention of the null hypothesis. The results of this study are in line with the previous studies done by

Abdelrahman and Bsharah (2014), Chang (2010) and Álvarez-Peña and Castañeda-Junco (2021).

Next, the post-test scores of the experimental group (80) and that of the control group (68.86) were compared to further check whether the intervention statistically improved the experimental group's reading comprehension score. The Mann-Whitney test $p=.001$ showed that the difference was statistically significant. Lastly, the within-groups comparison was run to compare the pre-test and post-test reading comprehension mean scores of the experimental group, and the test result indicated that the score increased from 63(pre-test) to 80(post-test). The Wilcoxon Signed test revealed that the difference is statistically significantly different with $p< .001$ and a confidence interval of 95%. The finding of the present study is in agreement with the findings of the previous studies reported by Garaibah (2003) and Alarfaj and Alshumaimeri (2012) the study which found a positive relationship between the speed of reading and

comprehension. Garaibah (2003) found statistically significant differences between the averages of pre and post-test performance in comprehension for the experimental group that was trained in fast reading.

The present study is also similar to the study by Abdul-Rab, Alward, and Abdul Hamid (2022) in which the researchers tried to find out if Speed increasing Software increases the reading speed and comprehension of EFL undergraduate students at a Saudi Arabian University and many other studies by Soysal (2015), Kacar (2015, Ilter (2018, Mergen (2019) and Durukan (2020).

Based on the findings, it is evident that the difference observed in the reading comprehension mean score of the experimental group is highly attributed to the speed reading techniques training. Therefore, the answer to the research question "Can speed reading training improve the students' reading comprehension?" is Yes.

technique effectively works in the context of our country.

Conclusion

From his teaching experience, the researcher observed that most students are slow in reading texts, comprehension activities and figuring out meanings appropriately which inspired him to think of the techniques that could improve the students' reading speed. In his search for literature, he also failed to find any study done on the topic. Hence, he decided to do research to bridge the research gap observed. Therefore, the researcher took over the project intending to find out if the speed reading techniques that are suggested by many researchers out of Ethiopia could work for our students with different economic, cultural, family and linguistic background in improving their reading speed, reading comprehension and word recognition skills. Accordingly, the finding showed that the training of speed reading techniques could significantly improve students' reading comprehension. This implies that speed reading techniques training has a positive effect on the students' reading comprehension and that the

The study will have a significant contribution to different parties. First students at all levels especially those at the secondary and tertiary levels will benefit because it will aware them to evaluate their level of speed reading and encourage them to step forward to take action towards improving their speed reading by following the techniques. As university students engage in reading lengthy books, doing assignments, studying for exams, preparing for presentations as part of their duty, and attending different information through various social media platforms for entertainment and personal needs, usually in time constraints, speed reading helps them to cover all of their activities effectively. Besides, the study can make any individuals who do not feel contented with their current reading speed to further develop and be more successful in their reading activities. On the other hand, it serves curriculum developers, syllabus designers, and textbook writers as input to incorporate speed reading activities that help learners flourish. Suggestions for future studies

could be conducting similar research for students of other educational levels such as primary and secondary; and conducting a correlational study to investigate the relationship between reading speed and comprehension, academic achievement, retention and reading enjoyment.

Based on the conclusion it is recommended that speed reading techniques lessons and exercises must be incorporated into students' textbooks and course books and given to students at all levels so that their reading speed, which is the basis for academic success and reading fluency improvement.

Acknowledgment

We would like to thank Ambo and Dilla universities for sponsoring this study.

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The Effect of Reading Strategy Training on Students' Reading Comprehension Performance

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Abstract

The study was intended to investigate the effect of reading strategy training on students' reading comprehension performance. To attain this objective, a quasi-experimental research design with quantitative approach was used. Participants in this study were 84 Ambo University first-year students. These participants were categorized into the treatment group (TG) and control group (CG). Reading comprehension tests were given to participants in both groups before and after the training to examine whether their reading comprehension performance was significantly different or not. Using the independent samples t-test and SPSS version 25, the reading comprehension test results were quantitatively calculated. The pre-test results showed that there was no statistically significant mean difference in reading comprehension performance between the TG ($M = 45.52$, $SD = 16.75$) and the CG ($M = 47.31$, $SD = 17.17$). $t(82) = -.482$, $P = .631$ (two-tailed) in which $p > .05$. In the post-test results, the independent t-test revealed a statistically significant mean difference in reading comprehension test performance between the TG ($M = 59.10$, $SD = 16.01$) and CG ($M = 48.86$, $SD = 15.81$). $t(82) = 2.948$, $P = .004$ (two-tailed), $p < .05$. In this regard, TG participants outperformed CG participants. According to the study, teaching students reading strategies improved their reading comprehension performance. The improvement achieved by participants in the TG suggests that training in reading strategies had a positive impact on their reading comprehension performance. Hence, the result of this study could be used as a reference by English teachers, students, and other researchers.

Keywords: reading strategies; reading comprehension performance; pre-, while- and post-reading strategies

Introduction

Reading is one of the four basic language skills that a person can acquire in his or her life. Various scholars define reading differently, keeping the common elements in mind. For example, Grabe (2009) defines reading as the process of receiving and interpreting information encoded in language through the medium of print. According to Grabe and Stoller (2011), reading is a cognitive process that consists of a text, a reader, and a reading

situation in which comprehension is achieved. It is the product of the interaction between written information, readers' previous knowledge, and the strategies they employ to bring them together (Zafarian and Nemati, 2016). From these definitions, reading is an activity that requires the interaction of the reader, the linguistic knowledge, the reader's background knowledge and the written text to arrive at the intended comprehension.

Comprehension is at the heart of every reading process formally exercised in educational institutions, such as schools, colleges, and universities. Since English is used as a medium of instruction in Ethiopian universities, students are exposed to reading all courses designed in English for the success of their academics. Hazzard (2016) states that reading provides significant contributions to the success of learners in completing their studies. Reading also helps learners to develop simultaneously with other language skills such as writing, speaking and listening (Haupt, 2015) and keeps individuals informed, up-to-date, and thinking (Castillo and Bonilla, 2014).

Students are required to construct the meaning of a text using a range of reading strategies in a highly strategic process. Reading strategies are the most significant elements that facilitate reading comprehension (H. Ahmadi et al., 2021). In this context, they are purposeful, conscious actions and procedures taken by readers for meaning construction. Good readers have proper knowledge about the strategies they use and apply them appropriately and effectively (Par, 2020). To do this, students have to be aware of and use reading strategies based on their reading purpose.

The study of reading, specifically, reading comprehension and its instruction has been an active and ongoing area of research. However, reading comprehension problems have not been solved yet. The researcher's many years of English language teaching experience, information obtained from their colleagues and students' exam results indicated that secondary school and university students have problems in reading texts written in English. Among those problems, factors related to the knowledge and usage of reading strategies are taken into consideration in this study. Knowledge and application of reading strategies change learners' reading behaviour and help them repair their insufficiencies in text comprehension (Raju and Dasai, 2020).

Without effective reading strategies, students mostly face reading comprehension difficulties (Al-Jarrah and Ismail, 2018). For this reason, reading strategies training is required to make

them aware of and use reading strategies to become successful readers. Strategy training is the explicit teaching of how, when, and why students should employ language learning strategies to enhance their efforts at reading language program goals (Karbalaei, 2011). Reading strategy training results in adequate self-monitoring and regulation (Raju and Dasai, 2020). According to Al-Jarrah and Ismail (2018), lack of such training significantly adversely affect reading comprehension performance among EFL learners in higher institutions. In light of this, Cekiso (2012) suggests that English teachers should give students training in reading strategies to help them become strategic readers. Al-Jamal et al. (2013) recommend following and using proper strategies to attain the desired goal rather than focusing on assessment as a tool to enhance comprehension skills.

This study focuses on dealing with the factors contributing to poor reading comprehension performance that are related to reading strategies, specifically, the knowledge and application of different reading strategies. In relation to this, the researcher observed that English teachers have not developed practice of planning to teach and train their students on how to use reading strategies to perform reading comprehension activities and exam items. The teaching materials prepared for students seem not encourage language teachers to provide reading strategy training for students. Some reading activities given in the reading sections are not supported by strategies that help do those activities. These may not make students to give due attention to the use of reading strategies.

Some local studies in the area of reading were conducted and a few of them were selected for the purpose of this study. A survey study conducted by Yohannes (2013) revealed that cognitive and meta-cognitive reading strategies were used in English classes at a moderate

level; however, the proportion of students who are successfully using cognitive as well as meta-cognitive strategies is lower than anticipated. Mebratu (2014) examined the effects of cognitive reading strategy training on the comprehension skills of Goro Secondary School EFL students and found that students' reading comprehension skills are improved through cognitive reading strategy training. Tesfu (2015) studied the impact of strategy training on grade 11 students' reading comprehension performance, and concluded that most students struggle with reading comprehension due to their limitations of using reading strategies. Benti et al. (2017), investigated the effect of reading strategy training on grade nine students' academic reading achievement and found that students in the experimental group who received reading strategy training performed better than those in the control group.

The local studies discussed here are conducted in the area of reading. However, students' reading comprehension problems have not been solved yet. Moreover, those studies did not focus on the effect of reading strategy training

Materials and methods

Setting of the Study

This study was conducted at Ambo University. It is one of the Ethiopian government universities located in the western part of Addis Ababa, the capital city of the country, at a distance of 120 km. Ambo University was selected for the current study because the researcher has closely worked in this university and observed students' problems related to reading in his ten years teaching experience in this university.

Design of the Study

Quasi-experimental research design was employed to achieve the purpose of the study. This research design, like experimental design,

on university students' reading comprehension performance. For example, studies by Yohannes (2013), Mebratu (2014), Tesfu (2015), and Benti et al. (2017) focused on secondary school students. Moreover, none of these local studies described the dependent variable under discussion in the way that was carried out in this study. The current study, however, is planned to investigate the effects of reading strategy training on Ambo University first-year students' reading comprehension performance. The training mainly focused on the selected reading strategies used in the pre-, while-, and post-reading phases. The study is also different in the research objectives, research setting, research participants, and the design and methodology used to undertake the study. The study also attempted to investigate the issues that were not addressed by those reviewed empirical studies, and thereby it filled the felt gap. On this fact, the specific objective of this study was to examine whether reading strategies training brings any significant difference between participants in the treatment and the control groups in the pre-test and post-test on their reading comprehension performance.

tests causal hypotheses. In this research design, the treatment and the control groups were used. The researcher formed the two groups based on the number of students' sections he was assigned to teach. From the two sections, one section was the control group and the other one was the experimental group. A quantitative research approach was used in this study. The data which were gathered through the pre-test and posttest were all in all quantitative. These data were organized for quantitative analysis.

Sample and Sampling Techniques

The participants for this study were eighty-four first-year/freshman social science stream students at Ambo University taking the course 'Communicative English Skills I' in the 2013 E.C (2021 G.C) academic year. They were obtained from the 20 sections of first-year social science stream students. In Ethiopia, first

year students are those who completed their grade 12 education and received passing grades, allowing them to be enrolled in various Ethiopian universities. The selection of these participants was purposive because the researcher has observed and recognized reading comprehension problems of first year students have faced in this university. In quasi-experimental research design, the samples were not chosen randomly (Creswell, 2009), rather the samples can be taken purposively based on the need of the research. However, random assignment in this design is possible, including full classes of students to the treatment and comparison groups (Creswell, 2012). Accordingly, the researcher was assigned to teach the course for two sections of the students, i.e., sections 13 and 14. Each of the sections consists of 42 students. Since the quasi-experimental design was employed in this study, section 13 was assigned as the control group and section 14 was assigned as the treatment group based on Creswell's (2012) view that says random intact group assignment into the treatment and control groups in the quasi-experimental design is possible.

Data Collection Instrument

Data collection is one of the most important stages in conducting research. It is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables the researcher to answer the stated research questions, test hypotheses, and evaluate outcomes (Kabir, 2016). Reading comprehension tests were used to attain this objective. A fifty-items multiple choice reading comprehension tests (pre-test and post-tests) prepared from two reading passages were given for both the control and experiment groups before and after the intervention to examine their reading comprehension performance. The objective of providing these tests in the study was to find out if there was any significant difference between participants in the treatment group and the control group in the reading comprehension performance before and after the provision of reading strategy training. The rationale of providing pre-test on reading comprehension is to assess the students' prior knowledge and

skills in reading and understanding texts before the intervention. The rationale of providing post-test on reading comprehension is to evaluate the students' reading comprehension performance after the intervention.

The Provision of the Training and the Materials

Reading strategies training was offered to the treatment group of first-year social science stream students at Ambo University in order to achieve this objective. The training was required to create students' awareness of reading strategies and make them use a variety of them in the reading process. The training was also planned to help students know what to do when they face challenges in the reading process and become effective in their reading. Therefore, reading strategy training was intended to investigate its impact on students' reading comprehension performance.

Regarding the provision of the training, the researcher prepared the training manual for the students and training guidance for the teacher. The training manual was designed in connection with the review of related literature. The material contains the highlights of reading, reading comprehension, the reading strategies in general, and the strategies that are used in the three-phase-approach of teaching reading in particular. Moreover, the material contained three reading practice passages accompanied by activities. The main emphasis of the training manual was on the reading strategies used in the three-phase-approach to teaching reading, which may be mentioned in one way or another in the cognitive and metacognitive strategies. Some of the strategies selected from the pre-reading phase are prediction, establishing a purpose for reading, previewing vocabulary, building up background knowledge, and brainstorming. These strategies are basic for actual reading. Strategies such as identifying main and specific ideas, inferring from the text, recognizing the writer's purposes, rereading, and note-taking are chosen from the while reading phase. Strategies such as summarization, retelling, and evaluation were selected from the post-reading phase. The

training took 10 weeks or 30 hours (three hours per week).

In this training, the Cognitive Academic Language Learning Approach (CALLA) instructional model was used. It is an instructional model aimed at accelerating the academic achievement of foreign/second language learners. CALLA was selected for this training because it is an instructional model designed to increase the achievement of English-language-learning (ELL) students and other students who are learning through the medium of a foreign/second language (Chamot and O'Malley, 1996). CALLA is important for students learning English to experience how academic language is used in a variety of disciplines by engaging them in language activities. In this context, the CALLA provides explicit and direct instructional techniques and strategies that foreign/second language learners can obtain as lifelong skills to compete as competent readers, and advocates student-centred instruction. According to Chamot and O'Malley (1996), CALLA focuses on providing students the opportunity to learn a new language independently and become self-directed learners. This instructional model has a five-stage cycle of instruction: preparation, presentation, practice, evaluation, and expansion. The current researcher followed this procedure in providing the training though these five stages do not have to be used in sequence every time in the instructional process. Each of these stages is discussed contextually in the upcoming five paragraphs.

In the preparation, the trainer-researcher identified the objectives of the lesson, elicited students' background knowledge by asking them brainstorming questions to get them ready for the next presentation stage, developed key words, and provided motivation for the students. He taught a few key words for the students' better understanding of the upcoming lesson and encouraged them to participate actively. In relation to the reading passages, the researcher asked the pre-reading activities, which were used to prepare students for the actual reading. In the presentation stage, the researcher presented new information related to the topic of the lesson in different ways. At this

stage, the researchers first helped students identify what they knew about the daily lesson contents and what gaps in prior knowledge should be addressed. Then, the day's lesson contents were presented and explained with relevant examples. The researcher modelled the processes in the teaching and allowed students to practice the contents of the daily lesson after he modelled it for them. In the third stage, the researcher used practical questions based on the contents of the lesson topic. At this stage, students were offered the opportunity to practice new strategies with authentic reading activities. In carrying out these activities, the researcher provided different learning structures that encouraged students to work cooperatively. These included pair work, group discussion (3-5 students), and reporting the discussions. In the evaluation stage, students evaluate their progress and develop metacognitive awareness of their new learning strategies and the new material they have learned. This stage of instruction is used to develop students' ability to evaluate strategies. The expansion stage provides the students with opportunities to exercise higher-order thinking skills. It is used to develop students' ability to transfer the reading strategies to the new task. In this final stage of the CALLA model, the researcher created a conducive situation for students to apply the information they obtained during the training to their own lives. In the expansion stage, students were inspired to apply the strategies that they thought to be the most effective; to transfer new strategies to different contexts; and to devise their own individual combinations and interpretations of metacognitive strategies.

Methods of Data Analysis

After the administration of the tests, data were collected and subjected to statistical analysis. As mentioned earlier in this study, quantitative data was obtained from the pre- and post-tests. A computation of means of the pre-test and post-test of participants of the two groups (control and treatment /experimental groups) were made using the Statistical Package for the Social Sciences (SPSS version 25). These data were analysed and interpreted quantitatively

using the independent samples t-test. In this analysis, the means and standard deviations of the treatment and control groups were compared. To check the differences, mean of the control group was subtracted from mean of the treatment group and divided by standard deviation of one of the groups to get the effect size based on the suggestion given by Cohen (1988). Cohen argued that the standard deviation of either group could be used when the variances of the two groups are homogeneous. In this case, effect size (ES) is a name given to a family of indices that measure the magnitude of a treatment effect. A commonly used interpretation is to refer to effect sizes as small ($d = 0.2$), medium ($d = 0.5$), and large ($d = 0.8$) based on benchmarks suggested by Cohen (1988).

Procedures Data Collection

The objective of this study was to examine how reading strategy training affects students' reading comprehension performance. Reading comprehension tests were used to attain this objective. A fifty-item multiple-choice reading comprehension test was prepared from two reading passages and checked by English language professionals for its validity and reliability. Then, a pre-test was given for both the TG and CG. The rationale for providing a pre-test on reading comprehension is to assess the students' prior knowledge and skills in reading and understanding texts before the intervention. Reading strategy training was given to the TG for ten weeks to examine its effect on students' reading comprehension performance. After completing the training, a post-test was given for both groups. The rationale for providing a post-test on reading comprehension is to evaluate the students' reading comprehension performance after the intervention. Finally, the data obtained through the pre- and post-tests were filled out in SPSS

version 25, analysed, and interpreted quantitatively using the independent samples t-test.

Results

The Effects of Reading Strategy Training on Improving Students' Reading Comprehension Performance

The researcher used the reading comprehension tests (pre- and post-test) in this study to investigate if there is any significant mean difference between the treatment and the control groups in the pre- and the post-tests on their reading comprehension performance. This was intended to answer the research question, "What is the effect of reading strategy training in improving students' performance of reading comprehension?" The results of the pre-test and post-test on reading comprehension performance were analysed and interpreted using the independent sample t-test computed using Statistical Package for Social Sciences (SPSS) version 25. The independent samples t-test (or independent t-test, for short) compares the means between two unrelated groups (the treatment group and the control group, in this study) on the same continuous, dependent variable, reading comprehension performance in this specific case.

Analysis of the Pre- and Post-tests Results of the Treatment and Control group on Reading Comprehension Performance

Table 1 shows the analysis of the independent samples t-test results of the pre- and post-tests of students of the treatment and control groups. Thus, Table 1 reveals that the summary of the pre-test and post-test results on reading comprehension performance.

Table 1. Pre-test and Post- test Results of the TG and CG Students on RCP

| Tests | Group | N | Mean | SD | t-value | Df | Sig (2-tailed) | Result |
|------------------|-----------|----|-------|-------|---------|----|----------------|-----------------|
| Pre-test | Treatment | 42 | 45.52 | 16.75 | -0.482 | 82 | 0.631 | Not significant |
| | Control | 42 | 47.31 | 17.17 | -0.482 | | | |
| Post-test | Treatment | 42 | 59.10 | 16.01 | 2.948 | 82 | 0.004 | Significant |
| | Control | 42 | 48.86 | 15.81 | 2.948 | | | |

The result of the independent t-test in Table 1 indicates that there is no statistically significant mean difference between the treatment group ($M = 45.52$, $SD = 16.75$) and the control group ($M = 47.31$, $SD = 17.17$). $t(82) = -.482$, $P = .631$ (two-tailed) on reading comprehension performance in the pre-test. The null hypothesis is accepted and the alternative hypothesis is rejected in the pre-test since $p > .05$ and the effect size (ES) is -0.1 , which is too small. The treatment group's reading comprehension performance scores are ($M = 59.10$, $SD = 16.01$) and the participants of the CG are ($M = 48.86$, $SD = 15.81$). $t(82) = 2.948$, $P = .004$ (two-tailed) in the post-test. In the post-test, the alternative hypothesis is accepted and the null hypothesis is rejected. Thus, this post-test result reveals that there is a statistically significant difference between the treatment and the control groups on the reading comprehension test ($P < .05$) and the effect size (ES) is 0.65 , which is the moderate size. The treatment group's mean scores increased significantly, from $M = 45.52$, $SD = 16.75$ (pre-test) to $M =$

59.10 , $SD = 16.01$ (post-test). In this case, the treatment group did better than that of the control group after the provision of the intervention. This implies the positive impact of reading strategies training on the improvement of students' reading comprehension performance. From this analysis, one can see that there is a positive relationship between students' reading strategies use and their reading comprehension performance. In other words, this shows that the reading strategy training has a positive impact on developing the students' reading comprehension performance. This result is supported by some previous studies.

Comparison of the TG and CG Students on the Pre- and Post-Test RCP

In this subsection, a comparison of the pre-test and post-test results of participants of the TG and CG on reading comprehension performance (RCP) was made. The comparison between the TG and CG in the pre- and post-tests is given in Table 2.

Table 2. Comparison of TG and CG Students Scores on Pre- and Post-Tests

| Groups | Number | Pre-test | | | Post test | | |
|------------------------|--------|----------|-------|---------|-----------|-------|---------|
| | | M | SD | P-value | M | SD | P-value |
| Treatment group | 42 | 45.52 | 16.75 | .631 | 59.10 | 16.01 | .004 |
| Control group | 42 | 47.31 | 17.17 | | 48.86 | 15.81 | |
| Differences | | -1.79 | -0.42 | | 10.24 | 0.2 | |

As indicated in Table 2, the pre-test and post-test mean scores and standard deviations of the treatment group and the control group were compared. The mean scores of the treatment and control groups in the pre-test were 45.75 and 47.31 respectively. The difference between the two groups is only 1.79, in which the control group is slightly greater than the treatment group ($P > .05$). Hence, the difference is not significant because the effect size is -0.1 . On the other hand, the mean scores of the treatment and control groups in the post-test respectively are 59.10 and 48.86. The mean difference between the two groups is only 10.24, in which the treatment group is greater than that of the control group ($P < .05$). Hence, the difference is significant with the effect size (ES) of 0.65, and this reveals the role of reading strategies training in improving reading comprehension performance.

Discussion

The main purpose of this study was to investigate the effects of reading strategies training on Ambo University first-year students' reading comprehension performance. This part, therefore, deals with the explanation of the results of the study in response to the research question designed on this purpose. Accordingly, the result of the pre-test indicated that statistically there is no significant mean difference between the treatment and the control groups on the reading comprehension test performance whereas the post-test results, reveals that there is a statistically significant mean difference in reading comprehension test performance between the treatment and control groups with the treatment group outperforming the control group. The current study found that teaching students reading strategies improves their reading comprehension performance. The improvement achieved by participants of the treatment group suggests that reading strategies training had a positive impact on their reading comprehension performance.

As suggested by Akkakoson (2012), reading strategies training has played a significant role in improving students' reading comprehension performance. In this sense, there is a need for teachers to improve students' reading

comprehension performance since effective reading strategies can be taught to readers to improve reading achievement. Some other experimental studies were conducted to see the effectiveness of training strategies. For example, studies using the increase in the students' strategy use awareness as the dependent variable, and they indicate the significance of the training (Bentahar, 2012; Henter, 2012). The study conducted by Doha (2013) looked at the impact of explicit instruction of reading strategies on the process of reading comprehension among EFL university students. These findings suggest that training in reading strategies is fundamental to the development of reading comprehension performance in an academic context (Grabe, 2009).

As suggested by Ahmadi and Gilakjani (2012), the diverse reading strategies students use in the reading process have a significant impact on their reading comprehension skills. This has been facilitated by the provision of reading strategies for students. As it is indicated in Table 2, the change in students' reading comprehension performance occurred due to the provision of reading strategies training to the treatment group. This implies that the provision of reading strategy training brings an improvement in students' reading comprehension performance.

The discussion was supported by the results of the research conducted so far on the same issue. In this analysis, one can see that training in reading strategies helped the students to use the required reading strategies and improve their reading comprehension tests. Regarding this idea, Medina (2012) conducted a case study on the effects of strategy instruction in English as a Foreign Language (EFL) reading comprehension course and found that the effects of the reading strategy instruction were quite useful for these foreign language readers because they improved in reading comprehension. Some other studies, for example, a study conducted on a sample of Chinese foreign language learner university students by Zhang and Seepho (2013) indicated that there was a significant positive correlation

between the use of meta-cognitive strategies and English reading comprehension.

A study by Lai, et al. (2008) indicated that instructional strategies could increase the students' comprehension. This is also supported by the experimental research conducted by Yenus (2018). Yenus examined the effects of explicit reading strategy instruction on the comprehension of Ethiopian EFL students. The results of this study showed that the students who received reading strategy instruction made greater gains in reading comprehension than those who were taught with conventional skill-based teaching. Belachew (2019) studied the effect of reading strategy training on Lalistu Wayu grade eight learners' reading ability in terms of reading speed and comprehension in Ethiopia. Then, he found that there was an improvement or progress in learners' reading abilities in both reading speed and reading comprehension because of the training given by the practitioner.

Other studies have also found that the explicit teaching of reading strategies in the language classroom has a positive impact on the reading comprehension skills of the students (Tavakoli and KooshA, 2016; Zarrati et al., 2014). Jafari and Ketabi (2012) in their study investigated the effects of reading strategy instruction on enhancing reading comprehension in Iranian English-major university students and found that the participants in the experimental group significantly did better than those who participated in the control group. However, the training should be attended carefully following the required procedures that are suggested by the required scholars. Thus, providing explicit reading strategy training to students in a well-organized and careful manner allows students to improve their reading comprehension ability. This implies the significant role of the provision of careful and well-organized reading strategies training in increasing learners' reading performance.

Conclusion and Recommendation

Reading is one of the most basic language skills. It is meaningful when it achieves its ultimate goal, i.e., comprehension. To achieve this, factors such as awareness and usage of reading strategies are required. In the academic context, this can be facilitated by providing reading strategy training for students. The current study focused on the effect of reading strategy training on Ambo University first-year students reading performance. In this study, the pre- and post-reading comprehension tests were used to investigate the impact of reading strategy training on students' reading comprehension performance. As a result, participants in both the treatment and control groups obtained similar reading comprehension scores in the pre-test. However, they scored differently in the post-test. According to this finding, participants in the treatment group who received the reading strategy training scored better in the post-test than those in the control group. This implies the impact of reading strategy training on developing readers' reading comprehension performance. Therefore, English teachers should consider the role of reading strategy training and train students to improve their performance on reading tasks. In relation to this fact, students should attend such training to be aware of various reading strategies and attempt to apply them in their reading process. Designers of reading materials should pay particular attention to reading strategies and incorporate reading activities that encourage students to use a variety of reading strategies.

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The Effects of Task-Based Language Teaching Method Training in Improving English Language Teachers' Practices of Teaching Vocabulary: Gudar Town Middle Level Schools in Focus

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Abstract

The main aim of this study was to investigate the effects of task-based language teaching method training in improving English language teachers' practices of teaching vocabulary: Gudar town middle level schools in focus. In order to conduct this study, descriptive and repeated measures designs were utilized. For this purpose, ten participants were selected by means of purposive sampling technique. Mixed method approaches were used, and the data were collected by means of classroom observations, tests and questionnaires. The qualitative data were described and analyzed thematically; and the quantitative data were analyzed by using SPSS version 25. The results of base line study indicate that before the intervention, the teachers did not follow the principles and procedures of teaching vocabulary using TBLTM. As a result, they practiced it ineffectively. That is the classroom situations were not set well to teach the lessons effectively. Vocabularies were not revised and introduced at the beginning of the lesson. Tasks were not provided for the students appropriately and learners' vocabulary retentions were not assessed well. In this context, they used lecture method, reading method and grammar translation method. After the intervention, even though there was shortage of teaching materials, they tried to follow the principles and implemented TBLTM to teach the target skill. That is, they set the classroom conditions, introduced key words of the day's lesson, explored learners' back ground knowledge, motivated the learners, gave vocabulary tasks and supervised them. In addition, they made the students to make sentences by using new words they have learned. Furthermore, the mean results of teachers' knowledge tests were increased by 20% and the grand mean of the data collected by means of questionnaires changed from 3.3873 to 4.2375. All these indicate that the treatment significantly affected the practices of teachers in teaching vocabulary using TBLTM.

Keywords: Middle level school, practices, quasi-experimental design, task based language teaching method

Introduction

Language teaching is the process of promoting and facilitating language learning. It is an activity which is intended to bring about language learning. This activity includes formal instruction or methods of training, individualized instruction, self-study, computer assisted instruction, and the use of media, such as radio or television. It also incorporates the necessary administrative provision inside or outside an educational system. These activities

set up the practice roles of language learning: the opportunities for learners to listen, think, take risks, set goals, and process feedback from the teacher and then recycle through the skills that they are trying to master. In short, language teaching is the process of enhancing learners' linguistic, cognitive, emotional and social development in language learning (Brown, 2000).

Language teaching includes teaching different skills of language. One of these is teaching

vocabulary. This is teaching all about words: the words in language or special set of words somebody is trying to know to learn. It is an activity that involves providing opportunities to interact with words, exploring their meanings, creating contexts and building words knowledge of the learners. This can be done incidentally through indirect exposure to words and intentionally through explicit instruction to specific words and word learning strategies (Richards and Renandya, 2002). In general, teaching vocabulary is enabling learners to recognize the concept of unfamiliar words, achieve a greater number of words and utilize these successfully for communicative purposes (Cahyono & Widiati, 2008).

Currently, different people in the world use English for communication, business, tourism, politics and pleasure (Setpakdee, 2018). Because of these reasons in Ethiopia, Ministry of Education (MOE) has set some basic competencies and standards of competencies in English curriculum/syllabus for grade seven and eight that need to be achieved by the students. They are required to master texts both spoken and written with the level required of them (MOE 2017). For this purpose, vocabulary is base and central to the teaching and learning of English, since it is a core component of language proficiency and provides much of the basis for how well the learners listen, speak, read and write. "It is also a base to the teaching and learning of second language as it gives learners access to all forms of communication and helps as the main key to understand all the texts" (Moeller et. al, 2009:1).

English language is one of the major and the most broadly spoken languages in the world (Marpaung, 2017). Thus, teaching vocabulary is an important issue in teaching English, since words play a vital role in using this language in the life of the learners in expressing their feelings, emotions, and ideas to others during communication in-side and out-side the classroom. In addition to this, without the knowledge of vocabulary, they cannot employ linguistic patterns in second language discourse. Because of these reasons, English teachers must teach vocabulary of the target language effectively in order to develop the

communicative skills of the learners. In relation to this, Aljabri (2004) suggests shortage of vocabulary became much of the discussion among different researchers who use English as a foreign language. It is considered to be one of the causes of the general weakness of students' levels of proficiency in English. Mukoroli (2011:1) also states "Vocabulary teaching and learning is a constant challenge for teachers as well as students. This is because historically, there has been minimal focus on vocabulary instruction in English as second language classroom". Thus, in order to solve this problem in English language, "more attention should be paid to vocabulary, and effective vocabulary teaching techniques must be utilized so as to best help learners to acquire, store and retrieve words in the target language" Yu (2020: 12).

Currently, in Ethiopia, English is used as a medium of instruction and is being taught as one of the subjects in schools starting from lower grade to higher levels. However, most of them fail to communicate in this language with the level required of them (Addis, 2019). In relation to this, Gashew (2008:vi) stated that "the present day high school and University students' poor language proficiency in this language is assumed to result from the ineffective vocabulary teaching methods, techniques and learning strategies at second cycle elementary school level". Rababah, (2005) as cited by Afzal (2019: 82) also found that "students generally face difficulty to communicate in English due to lack of vocabulary items, methods of teaching and incompatible learning environment". In addition to these, as the researcher observed at different levels of education, there were problems in vocabulary teaching and learning. That is teacher-centered methods of language teaching were used; most of the time inappropriate classroom instructions were implemented and greater attention was given for teaching the grammar of the target language than developing learners' vocabulary skill. The researcher also reviewed some research works which were conducted at international and national levels, like: Seis (2020), Lee (2017), Kulikova (2015), Ababayehu (2020), Solomon (2019), Gebremedhin (2017), Selamawit (2017) and found methodological and settings of the

researches' gaps. That is these researchers mainly used single method and carried out their investigations at secondary schools and higher institutions only. Thus, in order to fill these gaps, the researcher is interested to investigate the effects of task-based language teaching method (TBLTM) training in improving English language teachers' practices of teaching vocabulary: Gudar town middle level schools in focus.

In this research investigation, the researcher aimed to identify the practices of English language teachers in teaching vocabulary using task-based language teaching method in the classroom. For this purpose, one research question was designed. That is 'what are the practices that English language teachers employ in teaching vocabulary using task-based language teaching methods in the classroom?'

Concerning the scope of the study, the researcher used to set the boundaries and limitations within which this research work was performed. That is this research investigation was delimited to the effects of TBLTM training in improving English language teachers' practices of teaching vocabulary: Gudar town middle level schools in focus. It was also limited to six schools.

This study provides both theoretical and practical benefits for grade seven, and eight English language teachers, researchers, and other concerned bodies. That is these teachers can understand teaching vocabulary using task-based language teaching methods and techniques to enhance learners' knowledge of this skill. They can also use it as reference and read it to understand teaching vocabulary using this method. Practically, these teachers got training and can improve their practices of teaching vocabulary using the target method. In addition, this study helped the teachers to give more attention to teach this skill and enhanced them to teach the learners the strategies of acquiring new words for their future education. Furthermore, it will help the researchers and experts of language to conduct research on relevant research problems for further improvement of teachers' practices' of teaching vocabulary using this method.

Methodology of the Study

This research methodology is part of the research that supported to answer how the study could be conducted by describing necessary activities to accomplish this investigation (Cresswell, 2014 & Gamper, 2017). Depending on this idea, the researcher planned to investigate the effects of task-based language teaching method training in improving English language teachers' practices of teaching vocabulary: Gudar town middle level schools in focus.

Research Approach

Some researchers need the use of single method approach while others require the use of mixed method approaches. This depends upon the research questions they plan to answer (Creswell, 2014). On the base of these ideas, the researcher used mixed method as it helps to collect both qualitative and quantitative information by integrating the two forms of data. In this research investigation, the two approaches support the researcher in two ways. That is the first one allows the study of the phenomenon through direct interaction with the research members in their normal settings (Creswell, 2013:48). The second approach helps to examine the variable and analyze the data numerically by using statistical procedures. Because of these reasons, the researcher used these methods to explore the effects of task based language teaching method training in improving English language teachers' practices of teaching vocabulary: Gudar town middle level schools in focus.

Research Design

In order to conduct this research, descriptive and repeated measures designs were used. Because, these were appropriate for the topic in focus. In this context, these were used to know the effects of TBLTM training in improving English language teachers' practices of teaching vocabulary. That is they measured the results which an independent variable has on the dependent variables (White & Sabarwal, 2014). By using these, the researcher tried to answer the research questions by testing the hypotheses. To accomplish this work, the

researcher designed pre-tests and post-tests to see their practices and know their understanding of teaching vocabulary using the target method. Here, the dependent variables were measured once before the treatment was implemented and again once after it was implemented.

To investigate the base line study, the researcher made class room observations by preparing observation check-lists, distributed questionnaires and gave teachers' knowledge test for ten participants. Then, the researcher collected data, analyzed and discussed on them.

After the base line study, the researcher made an intervention. It is suggested that researchers can use 8-16 weeks and 30-120 minutes per day for the purpose of this activity. Depending on this idea, the researcher used 27 hours (which can be assumed as eight weeks: by considering 40 minutes per day) for treatment (Chwo, et al, 2016). In order to achieve the intended aim, regular training was given for the participants by preparing the training material on 'Teaching Vocabulary Using TBLTM. This was arranged regularly and provided for the target group at Ambo University Gudar Mamo Mezemir Campus in academic commission room. In addition, follow up and in staff training were performed at their working place to give awareness on the relationship between English syllabus, teacher's guide and student's text book for grade 7 and 8 to fill the training gap and enhance the intervention program effectively. After the intervention, post-test was administered and then, the dependent variables were measured by comparing and analyzing the results of pre- test and posttest.

Setting of the Research

Setting of the Research is the physical and social context in which the research was conducted. It was carried out in both government and private middle level schools. They are found in Ethiopia, Oromiya region, about 11 kilometers away from Ambo in Gudar town. The researcher selected these schools because of the existence of problems and the data can be easily generated there.

Sample and Sampling Technique

The subjects of this research study were English language teachers who teach at middle level schools in Gudar town. Depending on the objective of the study, the researcher selected ten teachers by means of purposive sampling technique (Cresswell, 2013). All the members participated in all conditions, since the design was repeated measures.

Instruments of Data Collection

In order to collect data for this research investigation, the researcher used the following tools. These were classroom observation and teachers' knowledge tests. Questionnaire was also utilized to triangulate the data for the study (Cresswell, 2013). In order to maintain the content validity of these instruments, the researcher developed them by reviewing relevant literatures.

Data Collection Procedures

In order to conduct the research and collect data ethically, the following procedures were used. That is the researcher made contact with concerned bodies, determined the population, collected the data that were obtained by means of class room observations. These were recorded by using Mobil Phone Infinix Smart HD. Codes were given for the data and was organized in an order. In addition, Teachers' knowledge tests were administered and questionnaires were distributed to gather data numerically. Finally, data processing, editing, analyzing and discussing were done by the researcher.

Method of Data Analysis and Interpretation

In this research investigation, the researcher analyzed the qualitative and quantitative data as follows. That is the data which were collected through classroom observations were described and narrated qualitatively. In addition, the researcher also reviewed and explored the data, created initial codes, revised and presented themes qualitatively. Quantitatively the data which were gained by means of tests and questionnaire were analyzed by employing statistical tool called SPSS version 25. The results were presented by using numbers in

the data table. Then, the researcher interpreted the data and presented quantitatively in a cohesive manner. Finally, drawing findings and conclusions from the data were made by the researcher.

Results

The main purpose of this study was to investigate the effects of task based language teaching method training in improving English language teachers' practices of teaching vocabulary: The case of six middle level schools in Gudar town. In relation to this, challenges that they faced were also studied. Depending on this, the findings of the base line study and the results of the investigations after the intervention were presented as follows.

Data from Classroom Observation

In order to investigate the effects of TBLTM training in improving English language teachers' practices of teaching vocabulary, the researcher used class room observations. These were made with ten participants by preparing observation check-lists before and after the intervention. Each session was utilized for an average of 40 minutes. In this context, the researcher observed four main types of instructional procedures that the teachers considered and followed in teaching learning process. These were: Beginning the lesson, Presentation of the lesson, Discussion of the lesson and conclusion of the lesson. Regarding the base line study, the researcher found that the teachers began the lessons in various ways. That is T1, T3 and T6 began it appropriately, T2, T4, T7, T9 and T10 did not set the classroom situations well. Specifically, T8 did not greet the learners and T5 began the class in discouraging manner. All of them presented the day's lesson without revising the previous one or the vocabulary. Concerning the presentation of the lesson, they presented the lessons by reading the reading passage and making the learners to do exercises from the student's text book without introducing key words. Only voluntary students participated to read the texts and did the tasks. Students were not motivated and organized in pair to do tasks and did not make them to discuss on the given activities in

pair or by group. In addition, they presented everything by standing in front of the students. During the discussion of the lesson, they instructed the learners to read the reading passage by giving chance for active learners. They also just read instructions and asked voluntary students to give answer for the given exercises turn by turn; and they did not move around to supervise the learners when they did tasks. When concluding the lesson, vocabulary retention was not taken into consideration and this was made inappropriately. In general, from the class room observation, the researcher found that they mainly practiced reading method, the classroom situations were not participatory and the teaching-learning processes were dominated by the teachers. All these show the teachers did not follow the principles and procedures of teaching vocabulary using TBLTM. On the other hand, the researcher observed variations among the teachers during the classroom observations. That is, to some extent, depending on pedagogical guidelines of language teaching approach, T3 tried to use TBLTM to teach vocabulary. Great variation was also observed. That is T10 taught grade eight students by preparing his own note from different related materials. He did not use student's text book and teacher's guide to teach vocabulary and focused on teaching the grammar of the target language from the beginning to the end of the lesson. This indicates that the teacher is not familiar with English language syllabus for grade seven and eight.

In general, the results of classroom observation indicate the following features. 1. Reading Method: Even though this method can be used with task based approach, the whole session should not be covered by using this method. 2. Teacher-Centered Approach: It is traditional method of language teaching method that does not encourage and engage the learners to do vocabulary tasks actively. 3. Inappropriate Implementations of TBLTM in teaching Vocabulary: Regarding this, the ways teachers practiced to teach vocabulary was antagonistic with the principles of TBLTM (except T3). 4. Focusing on teaching grammar, participating mainly voluntary students 5. Lack of helping and checking students' vocabulary retention. In addition, lack of students' text books, shortage

of resource materials and large class room size were also seen as common challenges that were gained during the classroom observation. To sum, during the observation, inappropriate implementations of teaching vocabulary using TBLTM were observed from the beginning to the end of each session.

After the baseline study, in order to see the effects of TBLTM training in improving English language teachers' practices of teaching vocabulary, the researcher made an intervention (Fraser, et. al, 2009). It is suggested that researchers can use 8-16 weeks and 30-120 minutes per day for the purpose this activity. Depending on this idea, the researcher used 27 hours (which can be assumed as eight weeks: by considering 40 minutes per day) for treatment (Chwo, et al, 2016). In order to achieve the intended goal, regular training was given for the participants by preparing the training material on 'Teaching Vocabulary Using TBLTM. This was arranged regularly and provided for the target group at Ambo University Gudar Mamo Mezemir Campus in academic commission room. In addition, follow up and in staff training were performed at their working place to give awareness on the relationship between English syllabus, teacher's guide and student's text book for grade 7 and 8 to fill the training gap and enhance the intervention program effectively. After the intervention, post-tests were carried out by the researcher (Stratton, 2019). For this purpose, class room observations were conducted, teachers' knowledge test was administered and questionnaires were distributed for participants. Then, the dependent variables were measured by comparing the results of pre-test and post-test.

To see the results of the intervention, the researcher again carried out classroom observations by using similar observation check-lists and utilized an average of 40 minutes for each session. In this context, the researcher observed teachers' practices as follows. That is when the teachers entered the classrooms, they set the classroom situations properly. After all these activities, they started revising the previous lesson, especially, the vocabulary. Then, they continued to teach the lesson by introducing the day's lesson and key

vocabulary. Next, they motivated the students and used effective techniques like asking questions, explaining the meaning of the words by using synonyms, showing them actions, encouraging them to do tasks in pairs and by groups, writing the spelling of the words and pronouncing them repeatedly, and making them to construct sentences by the new words. Because of lack of authentic material, they used available materials like: real things (especially, T7 and T9), pictures, mobile phone and printed materials (T3 and T7) to teach vocabulary. They also taught different vocabulary depending on their parts of speech (noun, adjective, verbs, prepositions...). In addition, the teachers acted as facilitators and selectors of tasks in teaching vocabulary. Even though there was large classroom size, they tried to organize the learners in pairs and by groups and made them to participant in doing tasks, supervised their activities and supported them in performing these effectively and tried to develop learners' knowledge of vocabulary skill. Furthermore, they assessed learners' vocabulary retentions by asking to tell the meaning of new words and gave them home work to make sentences by the words they have learned at the end of the lesson. All these results indicate that, the intervention that was made by the researcher improved English language teachers' practices in teaching vocabulary using TBLTM.

In general, as the result of intervention, English language teachers tried to implement TBLTM to teach vocabulary. That is they followed the principles and procedures of teaching this skill. They encouraged the learners to learn the target skill, used pictures and printed materials (Marpaung, 2017), gave vocabulary tasks for the learners individually, in pair and by group, asked them questions, practiced the students to say the words repeatedly and made them to reflect their ideas by the words they have already learned (Ut.et al, 2018).). To sum, even though there is lack of resource materials in the schools and challenges large class room size, the intervention improved the practices of these teachers in teaching vocabulary using TBLTM intervention (Fraser, et. al, 2009). The below figure 1 shows the practices of English language teachers in teaching vocabulary using TBLTM: before and after the intervention.

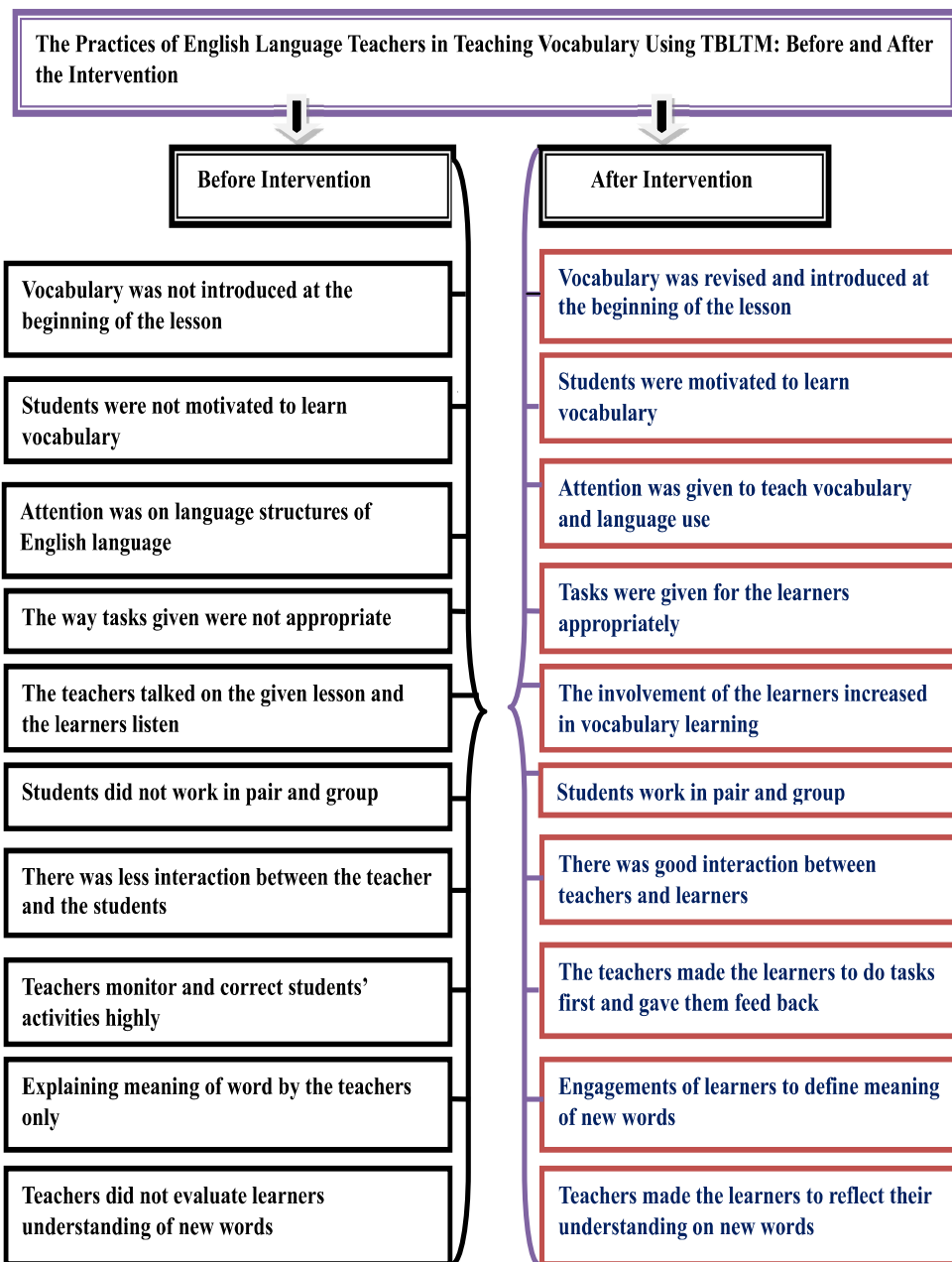


Figure1. Comparison of English Language Teachers' Practices in Teaching Vocabulary Using TBLTM: before and after the Intervention

Source: Developed by the researcher (2023).

As it was hypothesized and seen from the above figure 1, one of the tools that made English language teachers to improve their practice of teaching vocabulary using TBLTM after the intervention were regular training, follow up activities and in staff training (Workneh & Tassew,2013). That is as a result of these, teachers' practices of teaching this skill were improved. This indicates that the intervention brought improvement on the practices of English language teachers in teaching vocabulary (Fraser, et. al, 2009).

In order to teach vocabulary effectively using TBLTM, English language teachers should have the knowledge of this method. For this purpose, in order to know their understanding, the researcher gave them teachers' knowledge tests before and after the intervention and the results are shown as indicated below.

Table 1: Results of Teachers' Knowledge Test before and after the Intervention

| Items | Results of Teachers' Knowledge Test | | | | | | | |
|-----------------|-------------------------------------|---------|------|-----------|------------------------------|---------|------|----------|
| | Results of Pre-intervention | | | | Results of post-intervention | | | |
| | Minimum | Maximum | Mean | Std. Dev. | Minimum | Maximum | Mean | St. Dev. |
| Sex of Teachers | 1 | 2 | 1.10 | .316 | 1 | 2 | 1.10 | .316 |
| Results | 50 | 80 | 68 | 9.189 | 70 | 100 | 88 | 7.888 |

As it can be seen from the above table 1, before the intervention, the minimum and the mean results of English language teachers' tests were 50 and 68. But, after the intervention, the minimum score and the mean result of the teachers' tests were increased by 20%. The first results show that the knowledge of the teachers about teaching vocabulary using TBLTM is medium. This tells that they do not have detail understanding about it. On the other hand, the results of the second test were increased. This indicates that the intervention has improved the knowledge of the teachers in teaching vocabulary using the target method. In short, the intervention significantly affected the practices of the teachers in teaching vocabulary using TBLTM.

Data Obtained by Means of Questionnaire

To support and validate the data that were collected through classroom observations, the researcher also collected data from ten participants by using questionnaires before and after the intervention (Cress well, 2014). By using this tool, the researcher conducted 'How often these teachers practices teaching vocabulary using TBLTM'. Then, the data which were collected by using this tool were organized and analysed by utilizing SPSS version 25 and presented as indicated below. See table 2.

Table 2: Analysis of Data that were Collected by Means of Questionnaire before and after the Intervention

| No. | Items | Before the Intervention | | After the Intervention | |
|-----|--|-------------------------|----------------|------------------------|----------------|
| | | Mean | Std. Deviation | Mean | Std. Deviation |
| 1 | How often do you encourage or help the students to find out unfamiliar words by themselves using TBLTM? | 2.50 | 1.080 | 4.70 | .483 |
| 2 | How often do you encourage learners to make them group participant, monitor, risk-takers and innovators in your classroom using TBLTM? | 3.90 | .876 | 4.00 | .667 |
| 3 | When you teach English, how often do you practice the spelling, pronunciation, parts of the speech (noun, verb, adjectives, preposition, etc.), using TBLTM? | 3.70 | .823 | 4.00 | .816 |
| 4 | How often do you practice new words repeatedly using TBLTM? | 4.20 | .789 | 4.30 | .675 |
| 5 | In teaching English language, how often do you use authentic materials to enhance learners understanding of English using TBLTM? | 3.10 | .568 | 4.40 | .516 |
| 6 | How often do you give tasks for learners to develop their knowledge of English using TBLTM? | 3.40 | .699 | 4.20 | .632 |
| 7 | In your teaching vocabulary, how often do you check or evaluate learners' knowledge using TBLTM? | 3.22 | .441 | 4.20 | .632 |
| 8 | How often do you make the learners to learn vocabulary independently outside classroom using TBLTM? | 3.10 | .568 | 4.10 | .316 |
| | Grand Mean | 3.3873 | | 4.2375 | |

Depending on the above data, comparison of the data was made and it was identified that there were differences between the results of questionnaires before and after the intervention. That is before the treatment, the grand mean was 3.3873. And after the treatment it was 4.2375. This supported and approved the data that were gathered through classroom

observations. This also indicates that the intervention has improved the practices of English language teachers in teaching vocabulary using TBLTM (Fraser. et al, 2009). This shows that training is an important tool and the treatment has positively affected the practices of English language teachers in teaching vocabulary using TBLTM.

Discussion

The results of the base line study indicated that before the intervention, teachers did not follow the procedures of teaching vocabulary using TBLTM and practiced it ineffectively. They also do not have detail knowledge about methods of teaching vocabulary using TBLTM. In addition, they did not understand the importance of English syllabuses for grade seven and eight. Furthermore, they do not have detail knowledge about the relationship between this material and English teacher's guide and student's text book. But, it is very essential for teachers to know the principles and procedures of teaching foreign language, especially, the vocabulary (Nunan, 2004 & Brown, 2000); because, vocabulary is the central, life and back bone of any language (Moeller et. al, 2009, Richard & Renandya, 2002). In addition, they should have also detail knowledge about the materials that were designed to teach this level (MoE, 2017). As a result, their practices were not effective. That is the classroom situations were not set well to teach English language effectively. Vocabularies or most frequent words were not introduced at the beginning of the lesson. Students were not organized in pair or by group and tasks were not provided for them appropriately. In addition, lack of supervising learners' activities was seen. Furthermore, learners' vocabulary retentions were not assessed at the end of the lesson and conclusions of the days' lessons were not seen effectively. Rather, they used lecture method, reading method and grammar translation method.

After the intervention, the teachers understood the principles and procedures of teaching vocabulary using TBLTM to practice this skill. They also understood about the importance of this method and how to implement it to teach the target skill. In addition, they recognized the relationship between English syllabus, teacher's guide and student's text book for grade seven and eight. As a result, their teaching practices were improved (Fraser. et al, 2009). That is they set the classroom situations properly; motivated the students to learn vocabulary; introduced new vocabulary to

teach them; used available teaching aids like printed material, mobile phone and real objects; taught different vocabulary depending on their parts of speech (noun, adjectives, verbs, pronouns...); acted as facilitator and the selector of tasks in teaching this skill; used appropriate tasks to practice the teaching of vocabulary; organized the tasks properly in teaching vocabulary; supported the learners in performing the tasks effectively; made them group participants and supervised them in teaching the target language; assessed learners' understanding of vocabulary by asking questions and making them to reflect these words in the classroom; and tried to develop learners' knowledge of vocabulary. The researcher also found that they overcome shortage of student's text book by writing important points and vocabulary tasks on the black board. Furthermore, they followed procedures of teaching this skill using the target method and tried to implement important activities during the pre-tasks, while-tasks and post-tasks effectively. All these indicate that the intervention has brought changes. That is as a result of regular training, follow up and in staff training, English language teachers' practices of teaching vocabulary using TBLTM were improved (*Workneh & Tassew, 2013*). It was also found that it enabled them to overcome some challenges that they faced before training. From this point of view the researcher recognized that the intervention has brought positive effects and developed the practices of the teachers in teaching this skill using the target method.

It is clear that task based approach give priority for teaching vocabulary and employs tasks in teaching language, especially in teaching foreign language. It also focuses on meaning than grammar, and it is student-centered approach of language teaching (Nunan, 2004 & Rozati, 2014). Therefore, in order to teach vocabulary appropriately, teachers should have detail understanding about teaching vocabulary using TBLTM and use it properly.

Conclusion

Teaching vocabulary is the base and important element of teaching language. It is very important for learners' purposeful communication inside and outside the classroom. For this purpose, the researcher was motivated to investigate the effects of task-based language teaching method training in improving English language teachers' practices of teaching vocabulary: Gudar town middle level schools in focus. In order to collect data before and after the intervention, the researcher used similar classroom observations and questionnaire. The collected data were analyzed according to the sequences of data gathering tool presented in this research. The findings of the research indicate that, before the intervention the way teachers practiced teaching vocabulary using TBLTM was ineffective. That is they did not follow the principles and procedures of teaching this skill. They mainly focus on practicing the structures and contents of the lessons. After the intervention, as a result of regular training, follow up and in staff training, they practiced teaching this skill effectively. That is they improved setting the classroom situations, motivated the students to learn vocabulary, and introduced new vocabulary to teach them. To some extent they used available teaching aids. They taught the word depending on their parts of speech (noun, adjectives, verbs, pronouns...), acted as facilitator and the selector of tasks in teaching this skill, and used appropriate tasks to practice the teaching of vocabulary. In addition, they organized the tasks properly in teaching vocabulary, supported the learners in performing the tasks effectively, made the learners a group participant and supervised them in teaching the

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target language. Furthermore, they assessed learners' understanding of vocabulary and made them to reflect in teaching this skill and tried to develop learners' knowledge of vocabulary. The researcher also found that the teachers overcome shortage of student's text book by writing important points, key vocabularies and exercises on the black board. In general, the above research findings indicate that the intervention improved Gudar town middle level schools of English language teachers' practices of teaching vocabulary using TBLTM that can develop learners' knowledge of this skill.

Recommendations

Depending on the findings of the study, the researcher tried to give the following suggestions as follows.

- Providing teachers with continuing training on teaching vocabulary using TBLTM; Encouraging in staff training;
- In teaching foreign language, teachers should give priority to teach vocabulary.
- The school should fulfill authentic materials to teach language, because, these materials enhance teaching vocabulary using TBLTM.
- Establishing foreign classroom teaching which is supported by Radio and Television that can motivate the teaching of vocabulary at middle level schools.
- Providing teachers with plenty of teaching aids to develop learners' knowledge of words.
- Making continues supervision by providing guidance and giving feedback for teachers and supplying them with essential supports

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Effect of Aligned Vocabulary Teaching to Learners' Strategy Preferences on Grade II Students' Perceptions of Strategy Use

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Abstract

The study investigated the effects of aligning vocabulary teaching practices with learners' learning strategy preferences on their perceptions of strategy use. The study consisted of two phases. In the first descriptive phase, data was collected from 74 students through a questionnaire and interviews with eight top-performing students. The questionnaire used a zero-to-five scale, and a one-sample t-test compared the observed mean with the expected mean ($X=3$). The interview data was thematically interpreted alongside the questionnaire data. The majority of students preferred 18 different vocabulary learning strategies assessed through questionnaire and interview. In the second phase, a quasi-experimental design was adopted using these 18 strategies. The experimental group received intervention aligned with their learning strategy preferences, while the control group used the conventional method. Pre- and post-questionnaires and interviews were used to assess the groups' perceptions of the learning strategies. An independent sample t-test analyzed the questionnaire data, and the interview data were qualitatively analyzed. Before the intervention, the experimental and control groups' average mean scores were not statistically significant ($p > 0.05$), indicating similar perceptions of vocabulary learning strategies ($X = 2.892$ and $X = 2.878$), respectively. After the intervention, the groups' mean scores were statistically significant ($p < 0.05$). The experimental group had a significantly higher average mean score ($X = 4.364$) compared to the control group ($X = 2.878$). This highlights the significant contribution of aligning vocabulary teaching practices with students' learning strategy preferences in improving their perceptions of strategy.

Keywords: learning strategy preferences, vocabulary teaching practices, perceptions of strategies use

Introduction

The development of communication abilities in any second or foreign language depends heavily on vocabulary skills. In this sense, Rouhani and Purgarib (2013) contend that rich vocabulary will help students master English and its four major skills which cover listening, speaking, reading, and writing. Similarly, Teng (2014) indicates that sufficient knowledge of the words enables learners to comprehend what they have read or heard. Moreover, Walters (2004) adds that language learners who have vast and rich vocabulary knowledge can develop their thinking, speaking, reading and writing skills. According to Schmitt (1997)

cited in Douglas (2004), effective communication can occur quite intelligibly when people simply string words together without paying particular attention to grammatical rules at all.

The ability to communicate fluently and acquire the desired language depends on students' vocabulary skills. As a result, learning vocabulary is one of the most crucial components of learning a language. However, as Takač (2008) argues, developing the desired vocabulary skills is difficult in the context of learning English as a foreign language unless supported by effective learning strategies. Vocabulary learning strategies, according to

Nation (2013), are mechanisms (processes and strategies) used to learn vocabulary as well as steps or actions taken by students to find out the meaning of unknown words. Different writers classified vocabulary-learning strategies differently in different contexts. The current study would bring into focus the strategies that were proposed by Schmitt (2000), as it is a more comprehensive taxonomy of vocabulary learning strategies. Schmitt (2000) suggested five categories of L2 vocabulary learning strategies: discovery, social, memory, cognitive, and meta-cognitive strategies, with 40 strategies in all. According to Tseng and Schmitt (2008), the strategies make learning simpler, quicker, more pleasant, self-directed, and more transferable to different settings. More specifically, as Catalán (2003) argues, vocabulary learning strategies help students discover the meaning of new words, give them the ability to store it in long-term memory, help them to remember it instantly, and to apply it in spoken and written forms. Results of various studies (e.g., Gu, 2010; Farokh, 2012 & Sanaz, 2015) also indicated that vocabulary learning strategies are correlated to learners' vocabulary development. Gu's (2010) study, for example, investigated how vocabulary learning strategies are related to the development of vocabulary proficiencies. Results of the study indicated that vocabulary learning strategies are a significant predictor of word development.

The foregoing description highlights that vocabulary learning strategies serve as crucial tools for resolving learners' difficulties in vocabulary acquisition. The pedagogical implication of the highlighted concept is that learners' vocabulary learning strategies should be promoted. One of the mechanisms to do so is through aligning vocabulary teaching practices with learners' learning strategy preferences. In this regard, Cohen and Macaro (2007) note that as students appear to succeed in learning the English language regardless of the teaching methods, much attention should be paid to learners' learning strategies in language classroom instruction. Similarly to this, Oxford (2002) contends that language education is more successful when it is more relevant to learners' preferred learning styles and strategies. The framework and methods

teachers select to aid students in their learning should be based on the student's preferred learning strategies and styles (Ghazal, 2007). This demonstrates that learning occurs most effectively when teaching practices are aligned with students' learning strategy preferences. This is not to say that the best thing one can do for one's students is to use their preferred modes of instruction exclusively but to indicate that learners' independence in learning a foreign language can be more enhanced when instructional practices match with learners' learning strategy preferences.

Teaching practices that give due attention to learners' vocabulary learning strategies promote learners' perceptions of using a wider range of strategies (Brown, 2007). Learners' use of more strategies alone may not guarantee successful vocabulary learning unless they are implemented effectively. Toward this end, Ghazal (2007) contends that using more strategies is not always better; what matters is how well they are implemented in learning new vocabulary items of the targeted language. That is, what seems to make the difference is using strategies that are appropriate to the learning goal. Regarding this, Douglas and Brown (2007) argue that learners' perception of using a wide range of strategies is improved when a teacher helps them use their strategy preferences effectively. Ellis (1997) points out that vocabulary learning is the area where strategic instruction would be particularly beneficial to raise students' perceptions of strategies used. Since most vocabulary learning takes place outside of the language classroom, it is important to raise learners' perceptions of the knowledge involved in knowing lexical items and the strategies used to learn them (Nation, 2001).

Studies, for example, Kaya and Charkova (2011) and Maghsoud and Golshan (2017) have investigated learners' vocabulary learning strategies. Kaya and Charkova's (2014) study explored the most and least frequent vocabulary learning strategies that English language teachers encourage students to use and the strategies that students use to build their vocabulary. The study revealed that contextual guessing and dictionary use were the

most frequently encouraged and used strategies, whereas pronunciation and flashcards were the least frequently encouraged and used, which showed that there was no significant difference between the teacher-encouraged and the student-used strategies. Maghsoud and Golshan (2017) explored the relationship between vocabulary learning strategy and vocabulary size among Iranian EFL learners. The results of the study showed that students with good perceptions of vocabulary learning strategies developed their vocabulary more easily and effectively.

The point discussed above provides evidence of the important role that a language teacher can play in students' learning in general and to enhance their perceptions of learning strategy use in particular. If so, it is worthwhile to investigate the potential effect of aligning vocabulary teaching practices on learners' perceptions of vocabulary learning strategies use in the EFL vocabulary learning context of Ethiopian high schools. Regarding vocabulary learning strategies, it is necessary to see what is stated in the English syllabus for grade eleven, the grade that is the focus of this study. The syllabus states that vocabulary is one of the language elements that students are supposed to master, particularly to cope with the communication demands of the language and to succeed in their academic studies since English is the medium of instruction in high schools and above. The students are supposed to use a variety of learning strategies to develop their vocabulary knowledge. Teachers are also encouraged to support students as much as possible in their learning strategies. Above all, as the syllabus indicates, vocabulary teaching should aim at helping learners to raise their perceptions of more strategies use which in turn enhance their target language vocabulary skills (the revised English syllabus for grades 11–12, 2008).

Based on the researcher's teaching experiences at various high schools, it was noted that the majority of Ethiopian students display limited perceptions regarding the use of learning strategies. One of the reasons could be the mismatch between teachers' vocabulary teaching practices and learners' learning

strategy preferences. Some local studies (e.g., Kibire, 2017; Yonata, 2020) indicate this gap. Kibire's exploratory study, for example, assessed grade 11 EFL teachers' vocabulary teaching strategies at Felege Birhan General Secondary and Preparatory School. The findings revealed that teachers' vocabulary teaching techniques did not consider learners' vocabulary learning strategy preferences. Yonata's descriptive study assessed the alignment of teachers' vocabulary teaching and students' preferences for vocabulary learning strategies with grade 10 learners at Ginchi Secondary School in focus. The findings indicated that there was a mismatch between teachers' vocabulary teaching and learners' preferences for vocabulary learning strategies.

The findings of the local studies discussed above clearly reveal that there is a mismatch between teachers' vocabulary teaching practices and learners' learning strategies. This resulted in difficulty in acquiring the intended perceptions of learning strategies use which help learners discover the meanings of the new words. This research gap, therefore, led the researcher to conduct this study.

To this end, the study addressed the following research questions:

1. What are English vocabularies learning strategies most preferred by grade 11 students?
2. Does aligning vocabulary teaching practice with learners' learning strategy have significant effects on learners' perceptions of strategies use?.

Materials and methods

Research design

This study examined the effects of aligning vocabulary teaching practices with learners' learning strategy preferences on learners' perceptions of vocabulary learning strategies use. To achieve this objective, the study was conducted in two phases. The first phase employed a descriptive survey research design to assess the strategies learners prefer to discover and consolidate the meanings of new

vocabulary items. In this regard, the descriptive research design was chosen among different non-experimental research designs. As Dornyei (2007) states, students' language learning strategies preferences, and use can best be explored through descriptive survey. For this reason, the current study adopted a descriptive research design.

After the vocabulary learning strategies of most students were assessed and identified via descriptive survey, the study aimed at examining if aligning vocabulary teaching practices with learners' learning strategies preferences has a significant effect on learners' perceptions of strategies use. As can be understood from this objective, there are two different variables with a cause-effect relationship among them (i.e., aligned vocabulary teaching practices with learners' learning strategies preferences and perceptions of strategies use). Concerning this, Creswell (2003) argues that an experimental research design is employed when the study investigates the cause-effect relationship between certain variables, or when one independent variable is manipulated and its effect is measured by some dependent variables. Therefore, this encouraged the researcher to use experimental research design (i.e., quasi) to conduct the second phase of the study.

Research Setting

This study was carried out at the Ambo Secondary School (the previous preparatory school) of the Ambo Town Administration. The school is located in the western part of the country, about 120 kilometers from Addis Ababa, the capital city. This School was purposely selected as a study site among the five existing Secondary schools in the town for three main reasons. The first reason was the prevalence of the problem under investigation. From his teaching experiences at this school, the researcher observed that most students fail to perceive the role that vocabulary learning strategies play to enhance their word power. Second, the school had a diverse student body which was helpful for the research. The third reason was the researcher's familiarity with the

school environment and community which helped him conduct the study smoothly.

Participants and Sampling Techniques

The participants were grade 11 students. Grade 11 students were chosen as the study participants for two main reasons. The first reason was the researcher's lived experience. The researcher has been giving tutorial classes for grade 11 students since 2009 E.C. During the tutorial session, the researcher observed that students hold poor perceptions toward vocabulary learning strategies use which possibly resulted in difficulty in learning the meanings of new vocabulary items. This prompted the researcher to examine whether students' perceptions of strategies use can be improved via conscious intervention.

To choose the sample participant for the first phase of the study, the two sections (sections B & F) of grade 11 students were randomly selected among seven sections of the year. Then, the researcher had to obtain and evaluate carefully lists of students from which a sample could be drawn (called a sampling frame) from the vice-director of the school. Using a simple random sampling technique, 36 samples (20 male & 16 female) from 72 students of section B and 38 samples (17 male & 21 female) from 75 students of section F, a total of 74 sample students were randomly chosen to fill the questionnaire. Again with the help of the department head, 8 of the top ten students from the two sections (4 from each section) were purposely selected based on their first-semester English language results and interviewed. The top ten students from each section were selected because it was believed that they could provide more reliable and valid information.

For the second quasi-experimental phase of the study, the two randomly selected sections were again randomly assigned to experimental (11B) and control groups (11F) using a lottery system.

Data Gathering Tools

Questionnaires and interviews were used to collect relevant data in both phases of the study. The first descriptive survey phase of the adopted to identify the strategies that most learners prefer to comprehend the meanings of newly introduced vocabulary items. To collect quantitative data in this regard, Takac's (2008) vocabulary learning strategy questionnaire was adapted and thirty four close-ended questionnaire items under five vocabulary learning strategy categories (i.e., discovery, social, memory, cognitive and meta-cognitive) were developed and relevant data were collected. In all, the items were close-ended requiring respondents to rate on a zero- to -five point scales ranging from never to (always) (1= never, 2= rarely, 3= sometimes, 4= usually, 5= always). The average response was 3 by considering '0' as starting point. Therefore, the expected or average mean of the study was 3. To validate data collected through questionnaire and to probe far beyond and get in-depth information from participants through face-to-face contact, ten items of semi-structured interview guide were designed and pertinent data were gathered.

After vocabulary learning strategies were identified via descriptive survey, quasi-experimental research design was adopted to examine the effects of the intervention on learners' perceptions of strategies use. To collect relevant data in this regard, pre-and post-questionnaires and interviews were used. The questionnaire consists of twelve close-ended items requiring the respondents to rate on a one- to - five scale (1=never, 2= rarely, 3= sometimes, 4=usually, 5=always). Semi-structured interview guides consist of six items which were thematically the same with the questionnaire items were also developed. The purpose of the pre-questionnaire and interview was to collect data and to check if there were any similarities or differences between the groups' (experimental and controlled) previous perceptions of strategies use. After the courses of intervention, data were collected from both experimental and control groups through post-questionnaire and interview and to examine if the intervention had brought any significant

differences between the groups' perceptions of strategies use.

The interviews were used to validate the data collected through questionnaires and to collect in-depth information on learners' perceptions of strategies use.

Data Collection Procedures

This study has two phases. The first descriptive survey phase was conducted to investigate learners' preferences of vocabulary learning strategies while the second experimental phase was employed to examine if the aligned vocabulary teaching to learners' strategy preferences had a significant effect on students' perceptions of strategy use. For the convenience of data collection and analysis the following procedures were used:

The strategies that the majority of the students prefer to learn and consolidate meanings of new vocabulary items were identified through a questionnaire. The data were analyzed and the strategies that major of the students prefer to learn the meanings of new vocabulary items were identified. An interview was conducted with the randomly selected sample participants to triangulate or clarify information obtained through the questionnaire. Based on the learning strategies identified, vocabulary lessons were prepared for the intervention and a quasi-experimental research design was adopted. Data were collected from both experimental and controlled group to see the similarities or differences between the groups' previous perceptions of using vocabulary learning strategies use though pre-questionnaire and interview. Students in the experimental group were taught the vocabulary lesson along with learning strategies identified while the controlled group was taught through conventional method. After the course of the intervention, data were collected from both group through post-questionnaire and interview to check if the intervention had brought a significant change between the groups' perceptions of strategies use.

Method of Analysis

The Statistical Package for the Social Sciences (SPSS) version 25 was used to analyze the quantitative data.

Regarding the questionnaire data in the descriptive survey part of the study, descriptive statistics such as the mean and standardization were applied to discuss the level of students' preferences for vocabulary learning strategies on a scale of zero to five points. The one-sample t-test was applied to compare whether the mean of a sample (observed mean) was significantly different from a population mean (expected mean) which was 3.

Respondents' response to the questionnaires data in the experimental part of the study was measured on a one to five scale. An independent sample t-test was used to compare the pre and post-questionnaires data results of the two groups (experimental and comparison).

The groups' means were used to discuss and interpret the data.

Qualitative data obtained through interviews in both parts of the study were thematically analyzed with questionnaire data through narration.

Results and discussions

Students' Preferences for Vocabulary Learning Strategies

Students' preferences for vocabulary learning strategies were first determined using a descriptive survey. This was done by collecting pertinent data through a questionnaire and interviews. One sample t-test results are presented in Tables 1-6.

Note: (X= sample's mean, SD= standard deviation, Ex= expected mean & sig= level of significance)

Table 1. Students' Discovery Vocabulary Learning Strategies Results

| Strategies | Me an (X) | SD | Ex. mean | T- value | Sig |
|--|-----------------|-------|-------------|-------------|------|
| I prefer to imagine the context in which the new word is used to guess the meaning of a word. | 3.91 | 1.075 | 3 | 7.246 | .000 |
| I prefer to guess the meanings of new words using | 4.05 | .978 | 3 | 9.274 | .000 |
| I prefer to guess the meanings of new words using | 3.58 | 1.047 | 3 | 4.775 | .000 |
| I prefer to guess the meanings of new words using | 3.76 | 1.168 | 3 | 5.573 | .000 |
| I prefer to guess the meanings of new words using | 4.00 | .979 | 3 | 8.785 | .000 |
| I guess meanings of new words using punctuation | 3.97 | .860 | 3 | 9.736 | .000 |
| I prefer to analyze a word's parts to guess the meaning. | 4.05 | .826 | 3 | 10.980 | .000 |
| I prefer to analyze the parts of speech of a new word belongs to guess the meaning | 4.05 | .949 | 3 | 9.552 | .000 |
| I prefer to guess the meanings of new words based on my knowledge of word forms | 3.70 | 1.144 | 3 | 5.286 | .000 |
| I prefer to use my knowledge of the world to discover the meaning of the new word I encountered while reading or listening | 3.53 | 1.173 | 3 | 3.865 | .000 |
| I prefer to learn unfamiliar words using dictionaries | 4.32 | .778 | 3 | 14.638 | .000 |
| Weighted mean | 3.9 | .997 | 3 | 14.25 | .000 |

As shown in Table 1, among the 11 different discoveries of vocabulary learning strategies assessed, the observed means of all the strategies were greater than the expected mean ($X=3$). This implies that the majority of students preferred all of the discovery learning strategies assessed to learn and consolidate the meanings of new vocabulary items. The results of the interview support the findings. For example, student 6 replied on the following:

When I come across an unfamiliar word, I always prefer to look at any clues like synonyms, antonyms, and punctuation that help me to determine the meaning of the word. Since a word belongs to certain parts of speech, I always prefer to analyze its parts to guess its meaning. If I am unable to determine the meaning of a new word and I know that the word has more than one part, I always prefer to break it into possible parts and then guess its meaning. I sometimes consider the form of a new word to find its meaning. If I cannot determine the meanings of new words using other strategies, for example, imagining the context and using contextual clues strategies, I tend to prefer a dictionary (S6).

The results of the sample interview above indicated that students preferred almost all the determination vocabulary learning strategies assessed. The results obtained from the

questionnaire and interviews, thus, indicated that eleven different determination, or discovery learning strategies assessed such as contextual clues, dictionaries, analyzing words' parts and parts of speech, etc, were found to be the learning strategy preferences of the majority of the students. The findings are consistent with the finding of Ilte (2019) which indicated that the experimental group of students who were trained to use context clues to infer the meaning of new words demonstrated higher levels of improvement in the vocabulary knowledge than the control group. The findings also go along Nagy and Scott (2000) and Robb (2003) who state that contextual clues strategies such as definitions, examples, synonyms, antonyms, and punctuations which are pedagogically or naturally put into the texts support students to understand the meaning of novel words and they are considered as essential strategies that help students to figure out the meanings of unknown words. Since a dictionary can be used for various purposes and contains information about a word, according to Nation (2001), students need to use dictionaries, bilingual or monolingual ones, which will help them to understand a lot about the word. Nation (2001) further states that in many languages content words can change their form and meaning by adding prefixes and suffixes. So, knowing prefixes and suffixes can also assist students in the process of determining the meaning of new vocabulary items.

Table 2. Students' Social Vocabulary Learning Strategies Results

| Strategies | Mean (X) | SD | Ex. Mean | T-value | Sig |
|---|----------|-------|----------|---------|------|
| I prefer to ask my teacher to explain the meaning of the new word. | 3.70 | 1.017 | 3 | 5.946 | .000 |
| I ask my classmates and friends to explain the meaning of the word | 3.43 | 1.325 | 3 | 2.807 | .000 |
| I prefer to ask members of my family such as my father, mother, brothers, or sisters to learn the meaning of the new words. | 1.81 | 0.839 | 3 | -12.197 | .000 |
| I prefer to ask some fluent speakers of English to learn the meaning of the new | 1.47 | 0.687 | 3 | -19.123 | .000 |
| Weighted mean | 2.60 | 0.967 | 3 | -22.567 | .000 |

Table 2 above depicts the results of data regarding four different social vocabulary learning strategy preferences of the majority of students. As shown in the table, the mean score of two of the strategies asked by their teachers and classmates ($X=3.70$ and $X=3.43$) was above the expected mean. This suggests that most students prefer strategies to learn new vocabulary items. The results are consistent with the interview data. For example, student 5 responded as follows:

When we are in class, I usually prefer to discuss the meanings of newly learned words with nearby classmates. I also prefer to ask my teacher about new words. But there is one in my family who could tell me the meanings of new words (S5).

This interview data indicates that students usually prefer to ask their teacher and classmate about new words' meanings. Thus, the questionnaire and interview results complement each other:

However, as to data in Table 2, the observed means of two of the strategies (i.e., asking for the meanings of the newly acquired words of their family members and some fluent speakers of English) were found to be below the expected group mean value ($X=1.47$). This indicates that strategies were rarely preferred by students to learn the meaning of newly adopted words. Similar results were also obtained from the interview data in which almost all of the respondents replied that asking their family members and some fluent speakers of English the meanings of newly acquired vocabulary items was not the strategy they preferred to master. Although Ellis (2012) acknowledged the role of families to improve educational outcomes of their children in general and to learn the meanings of new vocabularies items in particular, the findings of the present study showed that learners are not assisted by their families.

Table 3. Students' Memory Vocabulary Learning Strategies Results

| Strategy | Mean (X) | SD | Ex. Mean | T-value | Sig |
|--|----------|-------|----------|---------|------|
| I prefer to write the meaning of new words in my mother tongue to remember them. | 2.28 | 1.00 | 3 | -6.159 | .000 |
| I prefer to link the new words to visual images (pictures) to remember their meaning | 1.89 | 0.769 | 3 | -12.401 | .000 |
| I prefer to link new vocabulary items to real objects and remember the meanings. | 2.32 | 1.124 | 3 | -5.171 | .000 |
| I prefer to make a mental picture of a new word's written form to remember the meanings. | 1.77 | 0.693 | 3 | -15.257 | .000 |
| I prefer to link the new words to other English words with similar sound structures (, e.g. prank, | 1.82 | 0.709 | 3 | -14.261 | .000 |
| I prefer to link the new words to other English words that have similar beginning letters (e.g. prank: pray, pretty) | 2.23 | .129 | 3 | -5.868 | .000 |
| I prefer to relate the new words to other words I already know | 1.88 | 0.682 | 3 | -14.158 | .000 |
| I prefer to say the meaning of new words out loud repeatedly to remember them. | 1.66 | 0.727 | 3 | -15.836 | .000 |
| Weighted mean | 1.98 | 0.854 | 3 | -11.141 | .000 |

As displayed in Table 3 above, the results of the one-sample t-test revealed that the observed mean of six different memory learning strategies explored through the questionnaire was lower than the expected mean (. This indicated that the memory vocabulary learning strategy was not preferred by the majority of 11 students. Interview data collected in this regard was also similar to these findings. For instance, student 4 responded as follows:

When I was in lower grades (i.e., grades 1 and 2, etc.), sometimes I used to prefer to learn the meaning of various words by linking them to visual images (pictures) or real objects. Our teachers also let us say some words loudly to remember their meanings. But I do not normally prefer these strategies since they are

more appropriate for elementary students than high school students (S4).

As the extract of interview data above shows, although students used different memory vocabulary learning strategies to learn meanings of newly acquired vocabulary items when they were in kindergarten and elementary classes, they have not preferred them since then. As far as the participants of this study were high school students, the results of both the questionnaire and the interview are consistent with Taka (2008)'s findings who argue that memory vocabulary learning strategies like visual aids and pictures are more effective with beginners or young learners than veterans.

Table 4. Students' Cognitive Vocabulary Learning Strategies Results

| Strategy | Mean (X) | SD | Ex. Mean | T-value | Sig |
|---|----------|------|----------|---------|------|
| I prefer to write the meanings of new vocabulary items in a separate notebook and study them | 4.11 | .820 | 3 | 11.619 | .000 |
| I prefer to group newly learned words according to similarity of pronunciation to remember them | 1.72 | .652 | 3 | -6.936 | .000 |
| I prefer to group newly learned words according to similarity spelling of to remember them | 1.70 | .679 | 3 | -6.012 | .000 |
| I prefer to group newly learned words according to opposite meanings to remember them | 1.73 | .746 | 3 | -4.653 | .000 |
| I prefer to group newly learned words according to similarity of meanings to remember them | 1.54 | .623 | 3 | -0.136 | .000 |
| I prefer to group newly learned words according to word families to remember its meaning | 3.72 | .914 | 3 | 6.738 | .032 |
| Weighted mean | 2.42 | .739 | 3 | -1.593 | .005 |

Table 4 above shows the results of different cognitive vocabulary learning strategy preferences of students to learn and remember new words. The observed mean of two of the cognitive strategies investigated, writing the meanings of newly acquired vocabulary items in a separate notebook and grouping them

according to word families was found to be greater than the expected mean. This implies that most students always write new vocabulary items in separate notebook. They also prefer to group newly discovered words according to word families to remember meanings.

Results of data obtained from the majority of students during the interview support the results. Most respondents noted that they always preferred writing the meanings of new words in a separate notebook and grouping them according to word families. This was to remember the words' meanings. The results were complemented by the findings of Nation (2001) who reported that taking notes in class invites learners to create their own personal structure for newly learned words, and also affords additional exposure during reviews.

Table 4 shows that each observed mean scores of four of the strategies (i.e., grouping newly learned words according to their similarity in pronunciation, spelling, meanings, and their opposite meanings) was, however, below the expected mean. The findings indicate that most students prefer not to learn and remember the words' meanings. Most respondents' interviews

support these questionnaire results. For example, student 1 said:

When I come across new words, I usually write their meanings at the back of my exercise book and read them later. I also prefer to group newly learned words according to their word families so that I am more likely to remember them. However, I never enjoy grouping newly discovered words according to their similarities in pronunciation, spelling, meanings, and opposite meanings. This is to learn and recall them later.

The results obtained from the questionnaire and the interview show that the majority of students prefer very limited cognitive learning strategies to enhance their vocabulary skills. However, Hedge (2000) suggests that learners need a range of cognitive strategies to learn the meanings of many more unfamiliar words to meet the language's communicative demand.

Table 5. Students' Preferences of Meta-cognitive Vocabulary Learning Strategies

| Strategy | Mean (X) | SD | Ex. mean | T-value | Sig |
|---|----------|-------|----------|---------|------|
| I prefer to do vocabulary related questions after class to learn more vocabulary items | 3.31 | 1.335 | 3 | 5.232 | .000 |
| I prefer to read novels and short stories to remember newly learned words | 1.65 | .816 | 3 | -9.125 | .000 |
| I prefer to read newspapers and magazines to remember newly learned words by | 1.45 | .620 | 3 | 14.79 | .000 |
| To remember the newly learned words, I prefer to use them when I speak in English | 3.55 | 1.388 | 3 | 4.782 | .000 |
| I prefer to construct my own sentences using newly learned words to remember their meaning. | 3.67 | 1.329 | 3 | 6.300 | .000 |
| Weighted mean | .73 | 0.193 | 3 | 4.397 | .000 |

Table 5 above shows data collected regarding students' preferences for five different meta-cognitive vocabulary learning strategies. The observed mean score of three of the strategies such as constructing own sentences using

newly learned words, using the words while speaking English, and doing different vocabulary activities after class were found to be greater than the expected mean of this study. This indicates that the majority of the students

usually preferred strategies to remember the meanings of newly learned words.

Among the strategies investigated the observed means of strategies like reading novels or short stories and newspapers or magazines ($X = 1.64$ and 1.44 respectively) were found to be lower than the expected mean which implies that most of the students rarely preferred these strategies to learn the meanings of new words.

Results from both the questionnaire and interview indicate that doing different vocabulary activities after class and constructing their own sentences using newly learned words were the strategies preferred by the majority of students. The findings are compatible with that of Webb (2005) who argues that students learn new words more when they can use them in their speaking or

writing, or when it becomes their active vocabulary.

Generally, the results of data obtained through administering questionnaires and interviews in the first descriptive survey part of the study revealed that the majority of students tended to prefer eleven different discoveries, two social, two cognitive, and three meta-cognitive, a total of eighteen vocabulary learning strategies to determine and consolidate meanings of new vocabulary items. As the results indicate, students' learning strategies preferences level to each of the five themes of the strategies also varies (i.e., discovery, social, memory, cognitive, and meta-cognitive). Table 6 summarizes the weighted mean of each theme of the strategies.

Table 6. Students' learning strategies preferences level to each five themes of the strategies

| Strategy | Weighted mean | SD | Ex. mean | T. value | Sig. |
|----------------|---------------|------|----------|----------|------|
| Discovery | 3.39 | .997 | 3 | 14.25 | .000 |
| Social | 2.60 | .967 | 3 | -22.567 | .000 |
| Memory | 1.98 | .854 | 3 | -11.141 | .000 |
| Cognitive | 2.42 | .739 | 3 | -1.593 | .000 |
| Meta-cognitive | 2.73 | .193 | 3 | 4.379 | .000 |

Table 6 displays the students learning strategies preference level to each themes of the five strategies. As can be seen from the table, the great majority of the students preferred discovery learning strategy the most (weight mean= 3.39) whereas memory learning strategies the least (weight mean =1.98) to learn meanings of new vocabulary items.

Based on the learning strategies preferences of the majority of the students identified in the descriptive phase of the study above, therefore, vocabulary lessons were prepared for intervention. Then, the second quasi-experimental phase of the study was conducted to check the potential effects of aligning the learning strategies preferred of the students on their perceptions of strategies use.

Students' Perceptions of Strategies use

The findings of the descriptive part of this study showed that students tended to prefer verities of vocabulary learning strategies to increase their word power. Based on the strategies preferred by the majority of the students, material for intervention was prepared and the second quasi-experimental phase of the study was conducted to investigate if the intervention had any significant effects on learners' perceptions of strategies use by collecting data through pre- and post-questionnaires and interviews. The following tables reveal the results of the independent sample t-test.

Table 7. Comparison of Experimental and Controlled Groups Means Results of Pre- and Post-Perceptions of Using Vocabulary Learning Strategies to Learn Vocabulary items

| Perceptions | Groups | items | Mean | Std. Dev. | T-value | Sig |
|--|--------------|-------|-------|-----------|---------|-------|
| Pre- perception of using VLSs to learn new words | Experimental | 7 | 2.892 | 1.411 | .063 | 0.778 |
| | Control | 7 | 2.878 | 1.374 | .066 | 0.779 |
| Post-perception of using VLSs to learn new words | Experimental | 7 | 4.364 | 0.680 | 16.457 | 0.00 |
| | Control | 7 | 2.872 | 0.560 | 16.557 | 0.00 |

As illustrated in Table 6 above, there were no statistically significant differences between the mean scores of the students two groups ($X=2.892$ & $X=2.878$) regarding their perceptions of using different vocabulary learning strategies to learn the meanings of new vocabulary items before the intervention. The two groups held similar perceptions of using the strategies to learn new vocabulary items. The results of the interview data also support this finding. Most of the respondents argued that they rarely perceived using different VLSs while learning the meanings of new words. Student 3 from the experimental group and student 4 from the control group, for example, stated:

S3: Looking at the context is the only strategy that I rarely perceiving when I discover the meanings of new vocabulary items.

S4: I rarely perceive that I have been using more strategies to learn the meanings of new words. For example, imagining the context is the only strategy I sometimes use.

The above data signified that students in both groups both rarely perceived the importance of strategies use to learn the meaning of new vocabulary items.

Table 6 also presents data results of the two groups' concerning their perceptions of using various vocabulary learning strategies to learn the meanings of new vocabulary items at the end of the intervention. The average mean score of the groups was statistically significant since $p < 0.05$, in which the experimental group's mean was greater than ($X=4.364$) the control group ($X=2.878$). This signified that the teaching of vocabulary along with students'

learning strategies and preferences altered students' perceptions of using various vocabulary learning strategies to learn the meanings of new vocabulary items.

The results of the data from interviews bear out this finding. Most respondents from the experimental group verified that their perceptions of using various vocabulary learning strategies and learning the meanings of new vocabulary items were improving, although all interviewees from the control group still had poor perceptions in this regard. Student 3 from the experimental group and student 6 from the control group, for example, confirmed:

S3: Before the second semester, a dictionary was the only strategy that I perceived I always used to learn the meaning of new words, but I have always been using different mechanisms or strategies to learn the meanings of new vocabulary items since then.

S6: I don't think my perception of using various strategies to learn the meanings of new words has improved because I have still been using a dictionary to determine the meanings of new vocabulary items.

As can be understood from the sample interview data above, after the course of the intervention, experimental students' perception to learn meanings of new vocabulary using the strategies was more enhanced than the control group. This inferred that the aligning of vocabulary teaching practices with students' learning strategies preferences can upgrade students' perception of using VLSs to learn meanings of new vocabulary and. The findings are compatible with Brown (2007) who argues that teaching practices that give due attention to

learners' vocabulary learning strategies range of strategies.
 promote learners' perceptions of using a wider

Table 8. Comparison of Experimental and Controlled Groups' Means Results of pre-and post - perceptions of using vocabulary learning strategies to answer vocabulary related questions

| Perception | Group | items | Mean | SD. | T- Value | Sig |
|--|--------------|-------|-------|-------|----------|-------|
| Pre- perception of using vocabulary learning strategies to answer vocabulary related questions | Experimental | 5 | 2.923 | 1.337 | 0.42 | 2.808 |
| | Control | 5 | 2.863 | 1.370 | 0.43 | 2.808 |
| Post-perception of using vocabulary learning strategies to answer vocabulary related questions | Experimental | 5 | 4.531 | 0.551 | 19.532 | 0.00 |
| | Control | 5 | 2.922 | 0.896 | 19.321 | 0.00 |

Table 7 above displays the data results obtained from the second category of questionnaire items, which assessed students' perceptions of using vocabulary learning strategies to answer vocabulary related questions before and after the intervention. The mean scores of the two groups were not statistically insignificant before the intervention since $p > 0.05$. This indicates that perceptions of the two groups regarding using vocabulary learning strategies

S2: *My perception of using different vocabulary learning strategies while performing vocabulary tests is not so good because I don't think that using various strategies help me to answer different vocabulary related questions and improves my vocabulary test results.*

S4: *I always score low marks on my vocabulary test. If I use different vocabulary learning strategies while I am performing vocabulary tests, my test result may be improved.*

Table 7 above also illustrates the results of questionnaire data on learners' perceptions of using VLSs to improve their vocabulary achievement results after the intervention. As the table indicates, the mean scores of the experimental group ($X = 4.531$) is greater than that of the control group ($X = 2.922$). The mean scores of the groups were statistically significant at alpha level 0.05 since the average mean score of the students in the experimental group was considerably greater than that of the students in the control group.

to improve their vocabulary achievement results were almost the same. Further, similar results were obtained from interview data in which the majority of the respondents stated that they rarely perceived that they had used various strategies to answer vocabulary related questions. The following sample experiment with student 2 from the experimental group and student 4 from the control group could be a good example.

This inferred that the intervention has brought a significant change in the groups' perception of using VLSs to improve their vocabulary achievement results. Results from the interview support this finding. Student 3 from the experimental group and student 4 from the control group, for example, stated:

S3: *I have been using various mechanisms or strategies to determine the meanings of new vocabulary items while performing vocabulary tests since the second semester. As a result, my vocabulary test result is relatively better than before.*

S4: *I haven't tried most strategies to improve my vocabulary test results. The only strategy I have always used while performing vocabulary tests is imaging the context. This doesn't bring about any significant change in my vocabulary achievement results.*

Results of the sample interview data above indicated that although the perceptions of students in the experimental groups to use various VLSs to improve their vocabulary achievement results became enhanced, of

those students in the control group remained constant. Hence, it is possible to suggest that the intervention had a significant effect on

Conclusion and recommendation

The results of one sample test revealed that 18 different vocabulary learning strategies were the strategies that the majority of students used to learn and consolidate the meanings of novel vocabulary items. Results of independent sample t-test revealed that the average mean scores of perceptions of strategies use of students in both experimental and control groups were not statistically significant at alpha level 0.05 before the intervention which implied that the two groups held similar perceptions of vocabulary learning strategies use. At the end of the intervention, however, the mean scores of the groups were statistically significant ($P < 0.05$). In other words, the average mean score of students in the experimental group was greater than that of students in the control group. This clearly signifies that the aligning of vocabulary teaching practices with students' learning strategy preferences has a considerable contribution to improve learners' perceptions of strategies use.

Based on the key findings and conclusions, the following recommendations are made.

□ As far as vocabulary learning strategies enable learners to determine and consolidate the meanings of new vocabulary items and help them develop their word power, every student should know the importance of using different learning strategies.

□ Some learners may be uncertain about which strategy works best for them. Therefore, teachers should provide a wide range of instructional support so that students can use their learning strategies in the most effective way.

□ To improve learners' perceptions of strategies use, instead of focusing solely on conventional methods of presenting vocabulary to students, aligning vocabulary teaching

learners' perceptions of using VLSs to improve their vocabulary achievement results.

practices with learners' learning strategies would be worth considering.

□ Teachers should be given different seminars and workshops on the current principles and theories of vocabulary teaching to enhance their students' vocabulary learning and perceptions of learning strategies use.

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