# Deliberate Vocabulary Learning in Year 10 

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#### Abstract

This paper investigates the vocabulary level of year 10 students at a multi-ethnic, decile-3 high school and the effect of deliberate vocabulary learning strategies. This study also highlights motivation, test-taking techniques and attitudes as significant contributors to learner outcomes. After initially testing 8 classes one experimental class was chosen to undertake a 12 -week programme of deliberate vocabulary learning. This target vocabulary was taken from a newly developed word list based on the language used in NCEA documentation. Post-learning test results indicated a modest improvement in the experimental class and it is recommended that deliberate vocabulary learning be introduced into regular mainstream classes where appropriate. Research on deliberate vocabulary strategies based on second-language acquisition principles, and the low level of receptive and productive vocabulary knowledge of students were the motivations for this research.


## INTRODUCTION

Obviously vocabulary knowledge is not the only determining factor in the comprehension of a language. An understanding of grammar is important, along with a background knowledge of the culture, and the skill of guessing meanings from context, among other things. However, in a study of ESL reading comprehension, Laufer and Sim (1985) determined that knowledge of the vocabulary was in fact the most important requirement for comprehension, followed by subject matter knowledge and finally grammar (Wallace, 2003).

While incidental learning of vocabulary is recognised as a valuable learning tool, the deliberate learning of vocabulary is well supported by studies in second language acquisition. Furthermore, it is strongly suggested that it is a far more efficient and effective learning tool than 'learning words in context' methods (Nation, 2002). Carter \& McCarthy (1998) also support the notion that adequate time should be focused on vocabulary learning and that it should be devised independently of other course components for second language acquisition.

Although there is still some active debate on the precise figures, it is generally known that for readers to effectively use the 'learning or guessing words in context' method, they will need to know a large proportion of the words already. It is also generally suggested that learners will need to know at least $95 \%$ of the running words for this to happen, although Nation (2001) would argue that $98 \%$ is the optimal figure required for most readers. In light of this, preliminary research on the vocabulary demands of the language of NCEA students by Wallace (2003), concluded that students will need to have competence in at least the first 3000 words and the AWL
(Academic Word List) families to meet a $95 \%$ threshold. The AWL consists of 570 word families that do not appear in the first 2000 words and does not include proper nouns. The words are derived from a variety of sources but are basically the most frequent 'technical' words from various disciplines such as Arts, Commerce, Law and Science.

A long-term study by Hutton (2003) strongly supported the idea that deliberate learning methods are extremely beneficial to second and first language speakers. Over a three-year period a school-wide programme incorporating vocabulary-learning tasks of the AWL showed significant improvement in student vocabulary levels at a lowdecile secondary school. Therefore it is with second language acquisition principles in mind that the same might possibly be applied to first language learning methodology and to benefit first language speakers at secondary school.

## What is a word list and why is it important?

The word lists referred to are the most frequently used words in the English language. For example the word 'the' is the most frequent word in English and appears in about $7 \%$ of all written and spoken language. Therefore it is time efficient for second language learners to learn the words they will encounter most often. It is also unrealistic for language learners to learn all vocabulary and in second language teaching emphasis is on learning the most frequent words first. However, native speakers do not necessarily learn this way and may learn very low frequency words before the higher frequency words. For example my two-year-old daughter learnt how to use 'diarrhea' correctly long before she used 'the', 'an' or 'a'. Empirical studies into first language acquisition have also suggested that the average English native speaker will acquire $5-10$ words per day from 15 months to 6 years (Gleitman \& Gleitman, 1994), indicating that this early period is the most crucial time for vocabulary acquisition. Nevertheless, as a rule of thumb, if native speakers of English learn around 1000 words per year (Nation, 2001) it could be assumed that the average native speaker will easily have knowledge of the first several thousand words and the AWL.

## The Language of NCEA

Studies have shown that the 2000 word list covers approximately $80 \%$ of all text, with about $12 \%$ consisting of technical and low-frequency and between $8-9 \%$ words from the AWL (cited in Hare, 1992). However after more recent research on the language of NCEA, Wallace (2003) created an essential 212-word list (see Appendix I) based on the reading demands of NCEA text. The word list consists of words outside the first 2000 word list and includes a significant proportion of vocabulary ( $68 \%$ ) from the AWL and 8.3 from outside lists. Interestingly, he found that some subjects required a higher degree of understanding of the NCEA vocabulary (up to $14 \%$ of all text). This research, while by no means conclusive, is consistent with general opinion although some estimates and studies suggest that a greater vocabulary knowledge may be required (Nation, 2001).

## Receptive and Productive Learning

Receptive learning generally refers to listening and reading vocabulary whereas productive learning refers to writing and speaking. Part of this research investigated the students' receptive and productive knowledge of vocabulary within the activities set. As has already been suggested, productive learning strategies are far more efficient than receptive learning methods and students in the 'experimental' class will incorporate some productive learning methods.

## METHOD

Eight year-10 mainstream English classes undertook a vocabulary level test (see Appendix II). This test was used to find the level of vocabulary knowledge for the 2000 and NCEA word list.
An 'experimental' class used some 'deliberate vocabulary methods' such as wordcards, as suggested by Nation (2001) for 12 weeks as part of their regular English lesson. Students also undertook additional tasks (see Appendix III) that exposed them to the target vocabulary. Relevant strategies by Nicholls (1996) incorporating the 'Building Blocks' programme were also in place as a school wide initiative. Students were re-tested on their vocabulary knowledge at the end of the 12 -week period.

Students covered around 20 words per week with additional revision of previously learnt words. Students spent approximately 10 minutes per class being exposed to the target vocabulary in the various exercises Students were made fully aware of the nature of the research, the rationale and how it may contribute positively to their overall progress. Additionally, as extra motivation, the students received some extrinsic incentives such as sweets for activities that were well done.

## PARTICIPANTS

Eight year-10 mainstream English classes undertook a vocabulary level test, and the interventions were trialled on one class (experimental class). After the initial testing had been undertaken, one of the class teachers volunteered her students to be the 'experimental' class.

Several students in the experimental class were from non-English speaking backgrounds. Additional research was undertaken in the form of a case study, monitoring their progress and their experiences in the form of observation, student survey and interview. ESOL Students in other classes were monitored and 5 interviewed. All of these students felt that the words in the NCEA word list were far too difficult and 'long'. However, they were surprised by their improvement in scores in the second sitting. Two students commented that if the passage of reading looked too long they would immediately dismiss it. Another avoidance strategy was that unknown words were ignored and a 'hope for the best' attitude was employed. Generally the ESOL students had extremely poor or non-identifiable strategies for unknown vocabulary in text.

Students who partake in ESOL classes are already working through a programme of direct vocabulary learning, although this may not necessarily be the NCEA or AWL vocabulary. These students use word cards and do other activities such as cloze
exercises. ESOL teachers also pre-teach key vocabulary and introduce appropriate word lists to learn for home study.

## DATA GATHERING

Eight Year-10 mainstream English classes sat the vocabulary level test (see Appendix II).

Apart from the logistics of administering and assessing over 200 vocabulary tests and ensuring equality in the conditions for each student i.e. time of day, time to complete the test and other external reasons, there is the question of test reliability and its strong relationship to student motivation. It seemed for many of the students, if they were not intrinsically or extrinsically motivated to do an activity or did not accept the relevance of an activity, their motivation and performance seemed to be lower than expected. This was evident when a selection of the students were interviewed and asked to re-sit the test with the teacher beside them. Students generally improved on their first attempt by at least a third when they concentrated more thoroughly on the task. The purpose of these interviews was not only to help validate the reliability of the test but also to investigate test-taking technique, attitudes to test taking and motivation. It was also found that as the test progressed the scores dipped considerably. This may have been due to the increasing difficulty of the vocabulary or the fact that the students became 'tired'. Many students complained that the test was either 'too long' or 'too hard'. Some feedback indicated resentment 'why are we doing this?' It should also be noted that while the test format for the vocabulary test is quite simplistic most of the students had not encountered this type of test before thus adding to the concerns of test reliability.

## Experimental Group Vocabulary Activities

Because of the limited time available these activities focused on receptive exposure of the target vocabulary. Activities and tasks (see Appendix III) included matching, stem and cloze exercises, crosswords, questionnaires and quizzes. Emphasis was on exposing students to the vocabulary as much as possible in the time allowed. Anecdotal feedback seemed to indicate that activities such as the cloze exercises and crosswords were enjoyable. A quiz using the target vocabulary was also popular, but many students did not have the life experiences to understand some of the content such as the vocabulary quiz (see Appendix IX).

## Post-testing

Unfortunately, the data spread of the post-test result was much smaller. Two classes were unable to bring about a post result due to student absenteeism (fewer than 10 students sitting). Two more classes had significant numbers of students absent. The experimental class and the remaining three classes each delivered a reliable spread of marks.

## Experimental Class

One of the serious impediments to teaching the target vocabulary was time management. As the students have their own curriculum to follow, another activity
added to an already busy schedule was always going to be difficult and even resented by some students. Past experience showed that any form of home study was impossible and could not be relied upon. So, 10-minutes four times per week was all that could be hoped for. The first few weeks were experimental to find out what activities worked best in the time allowed. Factoring into this was the fact that students finished tasks at varying rates so that there was no way to assess whether all the students did the entire task. Some activities were new to some of the students. For example, many had not done a crossword before so pre-teaching of how to do the activity was needed. However, the biggest and most unfortunate barrier to a successful experiment was student absenteeism for the experimental group and for the other classes (a factor not uncommon in low-decile schools). A possible interpretation is that the non-experimental classes did not improve because of non-attendance rather than absence of a vocabulary programme. As far as the experimental group goes it is impossible to measure accurately whether each student was exposed to the target vocabulary at least 10 -times in the 12 -week period.

One obvious criticism of this experiment might be that of course the students who are exposed to what is to be tested will do better than those who aren't and of course this is the point. Students need to know these words to understand text and deliberate exposure to the target vocabulary must be seriously considered as an option. Critics might also argue that wider reading may be the key but as stated previously, research plainly shows that deliberate learning of specific targeted vocabulary far outstrips the benefits of wider reading-in-context strategies. However, these strategies are also an essential component in vocabulary development. Another answer to the wider-reading strategy is 'do we have time?' Isn't it better to concentrate on a few hundred higher frequency words rather than wade through text to learn words incidentally? As demonstrated by some of the issues of absenteeism we cannot rely on students to read widely at home and there is not enough time at school.

## DATA ANALYSIS

Despite all the absenteeism difficulties, the experimental class showed more than a $12 \%$ improvement on their post-test result. This was achieved despite the administrative problems and all the assorted difficulties encountered.

Although there is not a large increase in the experimental classes' post-test result it does indicate an overall improvement (see Appendix X). It is difficult to calculate how many words an increase of $12 \%$ indicates but it is an increase nonetheless. However, these figures are more general indicators than actual quantitative percentages. Test validity of any assessment tool is always a factor to consider and the vocabulary test used is no exception. As previously noted at the interview stage, students were asked to take the test a second time, sitting next to the teacher. In every case (20 students) there was a marked improvement, some by as much as a $25-30 \%$. This seemed to indicate that when the students concentrated and took the test seriously, they showed a greater knowledge of the vocabulary. This alone must call in to question the validity of the test format. Interestingly, the class that fell $9 \%$ from its pre-test score had a relief teacher for the test day which may indicate that test conditions sometimes have a significant influence on the final result.

## DISCUSSION

## ESOL Students

These students had encountered this test format previously and may have had some advantage over their peers. The 6 ESOL students in the experimental class all made improvements (in excess of 12\%) However, those ESOL students in the other classes showed almost no improvement and in several cases produced a poorer result.

## Possible Reasons for the Vocabulary Gap

Test reliability aside, there are definite 'gaps' in a majority of students' vocabulary knowledge. Most native speakers, by this age, would have acquired at least 1000 words per year so should know around 14-16,000 word families. This gap may be explained by the fact that many students live in environments where this kind of vocabulary is never used. Thompson \& Nicholson, (1999) concluded that a child's family and social experiences contributed to the learning of literacy skills, including receptive and productive vocabulary. Teachers of these classes have also admitted that they avoid 'big words' and substitute simpler words, as it is easier and quicker than to explain a lower-frequency word. In other words some students' exposure to vocabulary in the NCEA Word List may be limited. Popular television programmes, song lyrics, peers \& family members, etc probably use a very limited vocabulary that does not include NCEA or AWL vocabulary. When for example, will students ever hear the word acquire (AWL), except in an academic situation when get is a viable and more common substitute?

## Simplify or Teach the Vocabulary?

Initially, I concluded that the language of NCEA was inherently biased against these year-10 students and possibly against other students in low-decile schools, if in fact there is a direct correlation between the low vocabulary and reading level and the low decile ratings in relation to environment as mentioned earlier. This I can only assume is the case. Obviously, if the students do not have the vocabulary knowledge to understand the text of NCEA they will fail to properly understand what is required of them and be seriously disadvantaged. This leaves a slight dilemma. Do teachers simplify the text of NCEA instructions and text, as is currently being done in some curriculum areas, to assist students to understand the questions or do the students learn the vocabulary? Critics of the first option may claim that this is 'dumbing down' the standard and is only a short-term solution delaying the inevitability that students will at some stage meet these words. However, is assessment emphasis on the students' subject knowledge or their understanding of the questions? It could be argued that a holistic approach to understanding would include the latter. Is it possible for understanding to be more complete if students have knowledge of the vocabulary? The question must be asked what are we actually assessing? Already, anecdotal evidence suggests that many teachers are simplifying the type of spoken vocabulary they use in class. Some students preferred 'younger teachers because they don't use big words' and 'didn't like some older teachers because they used big words'.

## Is it a Reading Problem?

Yes. From the PAT data the average reading age of many of the students was well below the cohort required for Year 10. Only the project class (a class of gifted learners) indicated a level higher than their cohort did. Reading skills and strategies must inevitably play a major role in the understanding of a text. However, as students need to know approximately $95-98 \%$ words already to successfully employ strategies such as 'guessing, this vocabulary gap will greatly affect incidental learning of vocabulary. The class with the highest result also have good reading ages and strategies as shown in their PAT results. A study by Claude (1992) found that a dislike of reading was a barrier to the indirect approach and that for this approach to be successful the student must meet four conditions.

1. A commitment to learning.
2. Development of independent learning strategies.
3. Personal Plan of action.
4. To be able to use a dictionary successfully.

Nevertheless, while vocabulary is an essential component of understanding text, reading strategies, reading programmes and a willingness to read are vital to reading development.

## Building Blocks \& Collaborative Learning

Building Blocks (Nicholls, 1996) is a collection of strategies that teachers can implement into their classroom teaching. One of the main aims of the programme is for students to eventually use these strategies independently to enhance their learning. The programme has been adopted school-wide and acknowledges the central role of language learning in the curriculum. The key principles have been loosely based on Vygotskian socio-cultural theory that has now evolved into today's new educational buzzword 'scaffolding'. Also, central to many 'Building Block' strategies is collaborative group and information transfer type activity tasks which should be encouraged.

## Pre-teaching

This has been traditionally recommended and does have an important part to play in the classroom. However, some recent research has claimed that this method may be of doubtful value and that teachers should take note of the following (Nation \& Coady, 1988). Firstly, knowing the meaning of a word and readily accessing that meaning both require attention. Secondly, pre-teaching may result in the discouragement of coping strategies such as guessing, or ignoring unknown words.

## The Case For Rote-Learning

This 'deep-rote learning' approach is one of the very core components in Confucian influenced education systems particularly in China. However, while this approach is seemingly unpopular in western countries it is also often misunderstood. Rotelearning can be seen in two senses, surface and deep. Surface learning or mechanical rote-learning, refers to a student reproducing material verbatim without understanding. It is where a task which demands investing the minimal time and effort consistent with appearing to meet requirements. Deep 'deep rote-learning' refers to repetitive
learning, which uses repetition as a means of ensuring detail is meaningful and capable of transformation. Both rely on the rehearsal strategy but are distinguished by the learner's intentions with respect to meaning. It is evident that the generally high achievement of Asian students in their home countries and abroad, has been directly influenced, although not exclusively, by the using 'deep-rote strategies (Biggs, 1996). More exploration into 'deep-rote learning' should be undertaken locally but there is good evidence to suggest that it is a viable and proven learning strategy.

## CONCLUSION

According to Ellis (1985:119), researchers are still unclear whether it is motivation that produces successful learning or successful learning that enhances motivation. Nevertheless, it is important that students achieve within what Vygotsky (1962) terms their 'zones of proximal development,' that is where learners are developmentally 'ready'. This can be achieved through careful course design that incorporates the four strands of meaning focused input (listening \& reading), meaning focused output (speaking \& writing), fluency development and language focused learning which includes the direct learning method. Information from frequency count studies also suggests that it is more efficient to learn the higher frequency words first or what Nation (2001) describes as a 'cost-benefit approach to dealing with vocabulary'.

Even though this research is not conclusive and further investigation into vocabulary learning should be undertaken, there is strong evidence supporting the view that the deliberate teaching and learning of vocabulary assists the overall language development of learners. The generations of today and in the future are part of a constant language shift and educationists need to be aware that the language they have used in the past may not necessarily be relevant or understood. New Zealand secondary school students face an uneasy but exciting future with the new qualifications framework and should be equipped as best they can to find success. Simplifying text is only a temporary solution that may well disadvantage students especially in the longer term. Without a knowledge of $95-98 \%$ of the vocabulary in text, reading strategies such as guessing become ineffectual. Nonetheless, it is vital that learners develop strategies that deal with unknown vocabulary and the vast number of low-frequency words that dominate the English language.

## RECOMMENDATIONS

- Vocabulary assessment be introduced school-wide.
- Deliberate learning of targeted vocabulary including 'deep-rote' strategies be introduced.
- Pre-teaching techniques of target vocabulary be part of daily lessons.
- Collaborative learning environments be encouraged.
- Dictionary skills be maintained and encouraged.


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## Appendix I

## The NCEA Word List - Family Headwords

| Group 1 | Group 2 | Group 3 | Group 4 | Group 5 |
| :---: | :---: | :---: | :---: | :---: |
| appropriate <br> area <br> booklet <br> brief <br> community <br> credit <br> data <br> demonstrate <br> design <br> diagram <br> ensure <br> evaluate <br> exemplar <br> factor <br> final <br> graph <br> identify <br> individual <br> issue <br> merit <br> method <br> ongoing <br> option <br> physical <br> process <br> range <br> reference <br> relevant <br> research <br> resource <br> section <br> select <br> source <br> specific <br> task <br> technology <br> text <br> topic <br> visual <br> worksheet | achieve <br> affect <br> available <br> chart <br> classroom <br> column <br> comment <br> create <br> criteria <br> culture <br> drama <br> environment <br> extract <br> focus <br> format <br> goal <br> image <br> impact <br> insert <br> internal <br> internet <br> involve <br> justify <br> magazine <br> media <br> peer <br> period <br> role <br> sequence <br> series <br> site <br> sketch <br> structure <br> style <br> team <br> technique <br> template <br> version <br> video | checklist communicate concept conflict construct context document electronic enable energy feedback <br> file <br> function grade homework hypothesis indicate investigate item journal label layout link major maori minimum obtain occur oral overall participate partner positive primary project strategy teen theme trend viewpoint volume | access <br> accurate <br> alternative <br> analyse <br> aspect <br> attach <br> author <br> award <br> brainstorm <br> challenge <br> contact <br> contemporary <br> contribute <br> dimension <br> display <br> draft <br> enhance <br> establish <br> external <br> feature <br> formula <br> framework <br> income <br> initial <br> interpret <br> landscape <br> paragraph <br> pose <br> potential <br> previous <br> publication <br> require <br> schedule <br> significant <br> sufficient <br> summary <br> survey <br> tape <br> tick <br> valid | adapt <br> allocate approximate ASSESS assist assume authority aware benefit clarify code commission conduct define economy element generate heading illustrate incorporate index job labour layer locate maintain manual medium mental minimal ministry minor normal outcome overseas predict proportion purchase quote resolve scenario sex similar status submit symbol transfer transport undertake |


|  |  |  |
| :--- | :--- | :--- | :--- | :--- |

## Appendix II

## NCEA Level Test

1. appropriate
2. investigate
3. positive
$\qquad$ the most important
4. primary
$\qquad$ to find out something
5. schedule
6. volume
7. whanau
8. sex $\qquad$ to disagree
9. authority $\qquad$ to give out
10. allocate $\qquad$ the people in charge
11. conflict
12. environment
13. justify
14. data $\qquad$ something you need to do
15. research $\qquad$ doing something on your own
16. assumption $\qquad$ to find out about something
17. individual
18. requirement
19. constitution
20. assess $\qquad$ when something is or was started
21. labouring $\qquad$ to test
22. established $\qquad$ a set of laws or rules
23. consists
24. involves
25. majority
26. source
27. indicate $\qquad$ the greatest number
28. policy $\qquad$ to get something
29. obtain
30. identify
31. context
32. analyse $\qquad$ to do with money
33. benefit
34. final $\qquad$ to look at closely
35. finance
36. evidence
37. formula
38. principle $\qquad$ a part of something bigger
39. legal $\qquad$ an idea
40. role $\qquad$ to do with the law
41. theory
42. section
43. occur
44. period $\qquad$ a part of 100
45. vary $\qquad$ to make laws
46. percent $\qquad$ to show
47. legislate
48. demonstrate
49. economy
50. affect $\qquad$ to change
51. categorise $\qquad$ summary of ideas
52. element $\qquad$ to put something in a group
53. conclusion
54. injury
55. variable
56. define $\qquad$ to change from one to another
57. resource $\qquad$ to go forward
58. transfer $\qquad$ not consistent
59. potential
60. proceed

## Appendix III

## Learning Words

Week 1 (see Appendix IV)

- Day One: Group work

Divide class into 5 even groups. One member is the Recorder, he or she writes the answers for the group. One member is the Runner, he or she passes on the cards. One member is the Keyholder, he or she has the answers.

## Method:

Each group is given 5 cards with the target vocabulary. They must tell the Recorder the definition of the words or an example of how the word can be used. The Keyholder has the definitions and tells the group if they are right or wrong with their answer. The Keyholder can only answer yes or no. At the end of the time (maybe 3 or 4 minutes) the Runner passes on the cards to the next group. When all the word definitions are finished the group compares their answers with the answers held with the Keyholder. Any queries are answered by the teacher.

- Day Two: Matching Exercise (see Appendix V) \& Cloze Exercise (see Appendix VI)
Students work individually to match the vocabulary and complete cloze activity. Teacher goes over answers in class.
- Day Three: Vocabulary Exercise (see Appendix VII) Students work individually to match the vocabulary with the meaning. Teacher goes over answers in class.
- Day Four: Stem \& Productive Vocabulary Exercise (see Appendix VII) Students eliminate incorrect stem. They then produce a sentence using the target vocabulary.


## Appendix IV

## Learning Words - Week 1

1. Analyse - to look at something carefully
2. Area - amount of a surface such as land
3. Assume - accepted as true
4. Available - something that is able to be got. Free to work
5. Concept- an idea
6. Constitute - be a part or the whole of
7. Contract - an agreement
8. Data - information
9. Derived - to from or obtain. A word or substance coming from something else
10. Economic - how people produce goods and services and how money is spent.
11. Establish - to set up something
12. Evidence - anything that shows something might be true or false
13. Factor - one of the facts or conditions that helps to produce a result
14. Formula - a rule or fact written in short form e.g. H2O
15. Identify - discover or say who or what (a person or thing) is exactly
16. Indicate - point to or out; make known
17. Interpret - explain or show the meaning
18. Labour - to work
19. Legislate - to make laws
20. Method - regular way to do something; order or organisation
21. Percent - a number's relationship to another number expresses as a number per 100
22. Policy - an action decided by government or another organisation
23. Proceed - to go forward
24. Require - need or depend on
25. Respond - to answer
26. Section - part of a whole that is separated
27. Significant - something important
28. Source - the beginning or start
29. Structure - something built
30. Vary - change or be different

## Appendix V

Matching Exercise

| analyse | To answer |
| :--- | :--- |
| contract | An action decided by authority |
| vary | To work |
| respond | Regular or orderly |
| evident | To get something from something else |
| labour | A part of something |
| policy | Examine something in detail |
| factor | Able to get it |
| derive | Plain to see |
| identify | An agreement |
| method | To say what something is |
| available | Change or to he different |


| Occurred | A part of something bigger |
| :--- | :--- |
| Majority | To describe something clearly |
| Research | Against the law |
| Functional | An idea based on thought and facts |
| Estimate | To give out |
| Created | An example would be the police |
| Issuing | The biggest part |
| Illegal | Something that happened |
| Theory | To study a topic or idea |
| Consist | A guess you have thought about |
| Define | When something works |
| Authorities | Something made |

## Appendix VI

## Cloze Exercise

Choose 10 answers from the 12 words below:
Data, concept, establish, indicate, method, legislate, percentage, requirement, interpret, source, structure, formula.

1. It is a school $\qquad$ that you wear uniform from Year 9 to 12 .
2. They entered the $\qquad$ into the computer.
3. The $\qquad$ of the Amazon River is in Brazil.
4. The $\qquad$ of your essay needs some adjustment.
5. The All Black need to $\qquad$ a solid scrum on Saturday if they are to win.
6. The $\qquad$ of time travel is very difficult to understand.
7. The government is going to $\qquad$ new laws on dangerous dogs.
8. You need to $\qquad$ to me by tomorrow if you want to go on the skiing trip.
9. The true $\qquad$ of Coca-Cola is a secret.
10. There is a high $\qquad$ of students away today.

## Appendix VII

## Vocabulary Exercise

Match the number of the word with the meaning:

1. area
2. proceed $\qquad$ something important
3. section $\qquad$ a part of something
4. significant $\qquad$ to go forward
5. policy
6. labour
7. factor
8. percent $\qquad$ the meaning of something
9. interpret $\qquad$ an idea
10. concept $\qquad$ to describe
11. definition
12. indicates
13. legislate
14. established
15. economic $\qquad$ not important
16. insignificant $\qquad$ to make a law
17. procedure $\qquad$ not consistent
18. variable
19. restructure
20. required
21. unavailable $\qquad$ something seen or named
22. derived $\qquad$ you can't get it
23. evidence $\qquad$ something from something else
24. identified
25. policies
26. indicate
27. labouring $\qquad$ when you quite sure something should happen
28. variables $\qquad$ doing something in order
29. procedure $\qquad$ to give someone a sign
30. assume

## Appendix VIII

## Stem Exercise

## Cross out the word that is not a word:

Example:

1. (a) define
(b) indefine
(c) definition
(d) redefine
2. (a) established
(b) establishment
3. (a) constitute
(b) disconstitute
(c) disestablish
(d) establishinged
4. (a) assume
(b) inassume
(c) unconstitutional
(d) constitution
5. misdefine
(b) definition
(c) assuming
(d) assumes
6. (a) identified
(b) identities
(c) redefine
(d) undefined
(c) identity
(d) disunity
7. (a) proceed
(b) proceeds
(c) conproceed
(d) proceeding
8. (a) variable
(b) variant
(c) varying
(d) varyism
9. (a) restructure
(b) structualing
(c) structures
(d) structured
10. (a) interpretation
(b) disinterpretation
(c) misinterpretation
(d) interprets
11. (a) requirational
(b) require
(c) requirement
(d) requiring
12. (a) method
(b) methodologies
(c) methodly
(d) methodical

Write these words in a sentence:

1. researcher
2. interpretation
3. involved
4. identified
5. analysis
6. definition
7. established
8. factors
9. economist
10. contracted

## Appendix IX

## Vocabulary Quiz

1. Do you assume that Mike Tyson is slightly mad? Why would you assume that?
2. When was Naenae College established? 1950, 1960 0r 1971 ?
3. Define what it means to be rich?
4. Can you estimate the age of Mr Carr?
5. Identify 3 types of native $N Z$ bird?
6. What is the function of a 'memory card'?
7. If there is a 'variation' in the height of players in a netball team, what does that mean?
8. Name 2 reasons why 16 is a significant birthday?
9. Where is the source of the Nile River? Canada, Somalia or Egypt?
10. Does someone usually win or lose if they get a majority vote?
11. Name 3 individual sports?
12. Can you indicate who your favourite actor is?
13. Do you think lowering the drinking age to 18 is a good or bad government policy? Why?
14. Playing a serious sport involves many things such as (name 2)
15. Do you require a passport to enter Australia?
16. Bread consists mainly of $\qquad$ , $\qquad$ \&
17. What could we do to improve the environment?
18. Is the Treaty of Waitangi New Zealands' constitution?
19. How would you assess whether you could do a marathon or not?
20. Would a labouring job be easier or more difficulty than being a teacher?

## Appendix X

Graphs
Graph 1: Results as a Percentage

| NaeNae College Vocabulary Testing |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Class | 2000 June <br> \% | 2000 Sep <br> \% | NCEA <br> June \% | NCEA <br> Sep \% | NCEA \% <br> Diff | Comment |
| 10SR | $92 \%$ | $91 \%$ | $65 \%$ | $77 \%$ | $12.2 \%$ | Control |
| 10SM | $90 \%$ | $94 \%$ | $60 \%$ | $64 \%$ | $3.9 \%$ |  |
| 10DE | $86 \%$ | $83 \%$ | $60 \%$ | $63 \%$ | $2.4 \%$ |  |
| 10MY | $82 \%$ | $92 \%$ | $68 \%$ | $70 \%$ | $2.4 \%$ |  |
| 10EL | $97 \%$ | $98 \%$ | $96 \%$ | $98 \%$ | $1.8 \%$ | Project |
| 10KT | $93 \%$ | $92 \%$ | $80 \%$ | $71 \%$ | $-9.5 \%$ |  |
| 10DT | $93 \%$ |  | $65 \%$ |  |  |  |
| 10AI | $87 \%$ |  | $60 \%$ |  |  |  |

## Graph 2: Comparative Graph

Graph 3: Experimental Class

Graph 4: Post-testing Percentage of NCEA

