To what extent does learning derivations aid vocabulary retention?
Action research involving Year 9 pupils in a mixed comprehensive
learning Latin.

Word count: 7,811

Introduction

In this research, I wanted to ascertain whether learning English derivations from Latin vocabulary would improve pupils' ability to remember the translation of the Latin word. This research was undertaken as I noticed when teaching and observing lessons that the largest barrier to successful Latin translation by pupils learning the language was the difficulty they experienced in remembering vocabulary. Pupils were repeatedly forgetting the meaning of words that they had encountered before, and they either spent a lot of time looking up words in the back of the textbook or became discouraged and stopped trying to translate until motivated by me or another teacher.

My research question was 'to what extent does learning derivations aid vocabulary retention?' This was action research. The participants were thirty year 9 students that I had been teaching consistently for two months.

The school that I carried out this research in is a mixed gender comprehensive in Hertfordshire. Pupils begin at the school in year 9, largely coming from two feeder middle schools in the area, and have the option to remain at the school until they have completed their A Levels. Currently there are 649 students in the secondary school and 234 in the sixth form. The proportion of students eligible for free school meals is well below average (27 in the school, 5 in the sixth form), as are the proportions of students from minority ethnic groups (22 students in total, with 13 pupils' information not yet obtained and 2 who prefer not to say) and those at the early stages of learning English (1 student in the school). The proportion of students

registered as having Special Educational Needs is below average (89 students in the school have SEN status – 50 are registered as needing school action, 31 as school action plus and 8 have statements), while only two looked-after children attend the college. Although the school is not selective, standards on entry to school (measured by Key Stage 2 SATs tests and CATs tests) are slightly above average.

When they enter the school in Year 9 the pupils are divided into 8 classes, based on ability, measured by the students' test results mentioned above. Of these, the 3 highest ability classes are required to take Latin in Year 9. Normally this comprises around 90 students in total, with approximately 30 students in each class. At the end of Year 9 the students can opt to take Latin as a GCSE option. As only the three classes with the highest scoring students are able to study the subject, the students taking Latin are of a high ability, and when they begin they are aged between 13 and 14. The pupils in do not previously have any experience in learning Latin, although they have studied French and German.

The class study Latin using the *Cambridge Latin Course.* In year 9, they have two hour-long Latin lessons per week. Owing to the time constraints of progressing from starting as beginners in the language to GCSE level in three years (for those who choose to continue the subject), they cover the material reasonably fast. In Year 9 they study all of Book 1 and half of Book 2. There are five books in total – for the first WJEC Language certificate, taken at the end of year 10, learning the grammar up to the end of Book 3 is sufficient; however, for the Literature certificate taken in year 11 they study up until the end of Book 4.

In the *Cambridge Latin Course* the passages are designed so that all of the vocabulary in a passage has either been met before or is glossed at the side of the text. There are also prompts in the form of drawings and illustrations. The translations follow a storyline so words can sometimes be guessed at, and logically follow on from what has happened before. There are also online vocabulary testers which can be accessed at home, and which the teacher utilises in class as a competitive and fun way of learning vocabulary.

However; despite this, students have trouble remembering translations of Latin words – even those which have been met repeatedly and had attention drawn to them in class, such as *currit*– he runs. The teacher of the other Latin classes and I frequently spend time in lessons repeating vocabulary which the students have previously translated many times in class. This difficulty in remembering words considerably slows the speed of the pupils' translation and means that they spend lots of time checking vocabulary in the dictionary in the back of the book. I also noticed that on some occasions students would look up the same word more than once in one passage - this was because they had forgotten it as soon as their translation was written down.

I thought it was important to carry out this research as it appeared to be a topic that could have a beneficial effect on the students taking part. Several individual students in the class I was teaching had mentioned, both in class and in parents' evenings, that the most difficult aspect of learning Latin for them was remembering the Latin vocabulary. I also asked the students in the classroom to put their hands up if they felt that learning and remembering vocabulary was difficult for them and all of them did so. It is apparent that if a method of teaching and learning vocabulary was found which improved pupils' vocabulary retention, both students and teachers would benefit. Less time would need to be spent in class going over the same words and translations would be smoother and faster. Pupil confidence in the subject would also be improved, as students would feel less daunted when approaching translations if they already recognised the majority of the words and felt comfortable translating without constant reference to the dictionary for support.

I decided to look at the impact of learning derivations – as opposed to any other method of vocabulary acquisition – as this was something my Latin teacher at university had done in classes, which I personally found useful when learning Latin. This was also a way of learning vocabulary which could easily be added to the traditional 'vocabulary list and test' method of encouraging students to learn vocabulary. The students were familiar with this form of test in their modern language lessons and in lessons with their regular Latin teacher. I wanted to find out whether being told the derivations of words helped the students to remember the Latin and translation, whether it varied

depending on if they already knew the derivation or not, and if learning like this improved their English vocabulary. The potential expansion of the students' English vocabulary was not something I focused on when researching, but I found it interesting – especially as the majority of the students would not be carrying on with Latin after June this year and as such would not be using the Latin vocabulary for much longer, but could benefit from a wider English vocabulary.

Literature Review

In 1914, Archibald wrote an article discussing the use of listing derivations alongside the Latin words they come from. He asserted that the teaching of Latin vocabulary was largely unsatisfactory, and it was because of this that students abandoned the study of Latin. He stated that ensuring students acquire vocabulary is the most important aspect of Latin teaching, that because of this it is imperative that teaching vocabulary be made successful and practical, and that the best way of doing this is by using, from the beginning, a continuous series of word lists based upon English derivatives. He suggests that vocabulary should be listed as so '*liber, libri (libr),* m., "book." LIBRARY (a collection of books.)' By listing the vocabulary in this way Archibald believed the Latin stem and meaning would be easily remembered by the student. His caveats were that the derivative must truly reflect the main root-meanings of the original word, and that it should be defined in clear and simple terms.

Two years prior to writing the article, Archibald taught Latin to a class of college beginners, who met four times a week and devoted five to six hours per week to preparation. The class learnt using a textbook which had three chief features – firstly, the vocabulary was to be almost wholly learned from defined English derivatives; secondly, parsing was to be learnt from learning paradigms of endings, not whole words, and from many drill exercises; and finally, syntax was abbreviated and simplified. When the class had mastered the 'Beginning Book', and with a vocabulary of less than 400 words, they began to read Caesar. In six months they read three and a half books. Archibald asserted that the vocabulary and syntax they had learnt prior to beginning translating Caesar was entirely sufficient. The learning of the important words from the list each day, and the writing out of the meanings of one page per day, allowed the class to cover the material comfortably. Archibald, encouraged by the progress of his students, rewrote the text book along very similar lines, but included constructions such as the ablative absolute and *oratio oblique* much earlier. The second class he taught with this

method, the year before writing the article, succeeded in beginning Caesar in November and achieved even more than the previous class, finishing four books of Caesar before June and mastering one thousand Latin words with two thousand English derivatives.

Archibald asserted that the word-list method of learning proved equally helpful for students beginning Caesar, Cicero and Virgil who had not had the intensive preparation of his classes. He cites as an example a student entering the Caesar class who kept up with the other students purely because of the word lists. He claimed to have used the same method of learning vocabulary for teaching Greek, with largely similar results. He concluded that the successful testing-out of the system with three authors in each language, as well as a beginning book in each, gave evidence of its pedagogical soundness and practical benefits. Archibald's research informed mine by showing that derivations are helpful to older learners – I wanted to see whether it was as beneficial to secondary school students.

Anderson and Jordan at the University of North Carolina, writing in 1928, carried out research on the learning and retention of Latin words and phrases. Their sample was a class of thirty one seventh graders, average age twelve years and eleven months. None of the participants had any experience of learning Latin prior to the research. Among other aims, the researchers wanted to discover what kind of Latin-English word pairs are most readily learned and longer retained, as well as the effectiveness of teaching English-Latin derivatives in improving retention of English equivalents of Latin words.

The research materials consisted of around two hundred and fifty words taken from the list of the five hundred most common words of Caesar compiled by Lodge. The researchers divided the words into three groups, differing according to their similarity of sound to their English equivalents. In the first group of words the English derivatives are almost identical in sound to the Latin words – for example *provincia* – province, or *natura* - nature. These words are referred to as "identical words." There were thirty-five words in this group. The next group of words contains words whose English and Latin sounds are dissimilar but for which there are derivative English words closely

associated with the Latin word. There were seventy-five of these words, called "association words." This list includes words such as *fuga* – flight, with the derivation 'fugitive' and definition as 'one who flees.' The vocabulary lists for these words were laid out with the Latin word on the left, the English translation in the middle and the derivative with an explanation on the right. The third group consisted of words where there was no sound similarity or derivation between the Latin and English words. There were ninety of these words, referred to as 'non-association words,' including *fossa* – ditch and *mora* – delay. They also presented certain Latin phrases with their English equivalents, for example *e pluribus unum* – from many, one.

Because the researchers were studying the advantage in learning derivations they wanted to ensure that the derivative words supplied in the vocabulary lists for association words were understood by the child. For this reason all the derivative words were given to the participants in the form of a test for English meaning. Of the seventy-five derivatives, only forty were known to a majority of the students. The thirty-five words not known to at least fifty percent of the students were classed as "non-association words". This was because the researchers hypothesised that where a derivative was given which was not known to the pupil, the derivation was more likely to be a hindrance than an aid, and they wished to prove or disprove this.

The pupils were tested on each school day for five weeks, with the exception of three days when school was suspended. Vocabulary was given each day and pupils were tested for recall immediately after study, on the following day, one week after study, three weeks after study and eight weeks after study. The same order of words in the list was used in the tests for recall on the following day, but for the other recall tests the Latin words were arranged in a different order from how they were presented on the vocabulary list. Anderson and Jordan found that identical words – such as *provincia* – province, and *victoria* – victory, were best remembered, with ninety percent of these words remembered after eight weeks. The associative words – derivations familiar to the students – were the next best recalled, with sixty-five percent of these recalled after eight weeks. Non-associative words followed, with only thirty-seven percent of these recalled after eight weeks. Thus the researchers found

that if the pupils did not know the English derivative supplied it was not helpful for them.

I have based my word lists on the model that Anderson and Jordan used – Latin word on the left, English translation in the middle and the derivative on the right. Their research has also informed my predictions about the helpfulness of derivations – I predict that students will be most helped by learning derivative words that they already know.

In 1944, Liebesny looked at immigrants from Europe to the USA and how they could best learn English. He claimed that an invaluable help in learning vocabulary is looking at its origin, history and relationship with words. He felt that using a dictionary to find out the derivation of words, including derivation from Latin, would assist learners of the language in recalling and understanding vocabulary. He gives as an example the word 'faith.' Its derivation from the Latin *fides* can instruct us about the links with words such as 'fidelity' and 'confidence.' Liebesny argues that from this study learners would make or refresh acquaintance with words such as faith, fealty, fidelity and confidence and so know that they are all connected in what he refers to as a 'word family.' From this he asserts that it will be easy to learn other related words such as confidant and confident. He does not, however, record any results or opinions of people who learnt vocabulary through this method. This informed my research by illustrating that learning derivations is theoretically helpful in retaining new language vocabulary – I wanted to see if this was true in practice.

Nation (2001) discusses a range of methods for teaching and learning vocabulary in another language. He focuses on modern languages, but we can apply some of his theories to Latin. He refers to the 'learning burden' of a word – that is, the amount of effort it takes to learn it. Different words have a differing learning burden for each learner, dependent upon the learner's previous language background. Each aspect of what it means to know the word can also contribute to the learning burden. The more a word represents patterns and knowledge that the learner is already aware of, the lighter the learning burden. The previous knowledge can be from the learner's first

language, knowledge of another language or previous knowledge of the language being learned. For learners whose first language is similar to the language being learned, the learning burden will be lighter than for those whose first language is different from the second language. Nation thinks that teachers can reduce the learning burden for students by calling attention to logical patterns and analogies, and similarities and connections between the second language and the first. This can include making links between Latin vocabulary and the English derivations. Nation's work confirmed that making links between Latin vocabulary, which is unknown, and English derivatives which are either previously known or explained, could make retaining vocabulary easier for the year 9 students participating in my research.

Oxford and Scarcella (1994) also investigated how students learning a second language acquire vocabulary. In their paper, they are exploring the ways in which adults learn and what factors affect retention of vocabulary, but again we can apply some of their ideas to secondary school pupils learning Latin. Their research covers student motivation and need, what it means to know a word and factors affecting second language vocabulary acquisition.

One of the factors the researchers identified was the learner's previous language background. They theorise that knowledge of the competencies underlying vocabulary in the learner's first language affects understanding of the competencies in the second language. They refer to a study by Meara (1988) – quoted in the article – which suggests that first and second language vocabulary are not remembered independently. Knowledge of the first language affects understanding of the second language vocabulary and usage. This could include knowledge of derivations from words. Knowing how a word in one's first language is related to a word in the second language – especially a language like Latin, which has many derivatives – could assist students' ability to remember vocabulary from the second language. This again informed my research by showing that making links between languages being studied and one's first language made learning the new language easier.

Reading other people's research on word derivations encouraged me and informed my research by showing that learning derivatives can certainly help some students' language acquisition. I based aspects of my research on the methods used – for example Anderson and Jordan's word lists influenced the layouts of the vocabulary lists I gave to students. I decided to try to improve vocabulary retention because I felt that it would benefit the students I taught, and I wanted to focus on derivations because making links between Latin and English words had helped me when I was studying Latin at GCSE level and university.

Methodology and Research Focus

Owing to the time constraints of the research and the small number of participants I could study, I decided to focus upon gaining qualitative rather than quantitative data. I chose as participants a Year 9 class, which I have taught consistently since beginning my second placement, as I was familiar with them and thought that this learning process could be helpful for them. Several of the students had told me that they found learning vocabulary the most difficult part of studying Latin, and when I asked the whole class if they found this all of them agreed. I originally thought that the research was going to be in the form of a case study as I was focusing on a small sample: case studies focus on depth of study, particular rather than general conclusions and take place in natural settings. However; as my reading developed, I realised that I would be making changes to the class routine rather than just observing what was already going on, and there would be action through my classroom practice. Because of this, I reclassified the project as action research.

The documentary evidence which I collected included attendance records showing students who had been present throughout the research. I used assessment and collected the pupils' answer sheets as well as recording their marks.

I decided to collect the students' opinions using a questionnaire as by doing this I could evaluate the effect that this method of teaching vocabulary had for all of the participants who were present, rather than just looking at the test data. Denscombe (2010) asserts that questionnaires are particularly effective in gaining straightforward information from a large number of people, which is what I was aiming to collect in this part of the research. The questionnaires I designed were paper instruments which the students completed in writing; I then collected them in. I asked only nine questions as I did not want the pupils to lose interest or have to rush to complete the questionnaire in the time given. I was conscious that the questions could be leading, and thus affect the validity of the data, so I tried not to assume any outcomes. For example,

rather than asking 'Did you find learning Latin words with English derivatives easier than learning Latin words without English derivatives?' which could assume the answer yes, I asked 'Did you find learning Latin words with English derivations easier, harder or of the same level of difficulty as learning Latin words without derivations?' This meant that the pupils had to choose an answer rather than just writing 'yes' or 'no.'

I used an interview to improve the qualitative data I had collected from the questionnaires. As Denscombe states, interviews are helpful and a suitable method for collecting information on participant's opinions, feelings, emotions and experiences. Denscombe also points out that group interviews are beneficial as they can give more representative data, and they do not limit the number of views or opinions available to the researcher in the way that one-to-one interviews do. I asked three students who had taken part in every vocabulary test and who were available at lunch time and willing to take part in the interview to participate.

There were several drawbacks to my methodology. The main problem was the small size of the group of participants. There were only thirty students involved, and many of them were absent for at least one of the tests, which means it is difficult to measure the effect of the teaching of derivations. Because the class has been selected by ability it is difficult to know whether this method of teaching vocabulary would be easier or harder for lower achieving students. There is also no guarantee that the results would be the same for another group of pupils.

Another problem was the short period of time in which I carried out the research. I had only four weeks to carry out the research, and, because of the control test and recall test, there were only two occasions when the pupils were learning from a vocabulary list with derivations. Because of this it is very difficult to accurately judge whether learning derivations assisted with the students' vocabulary retention.

There were also drawbacks with the timings of the research and other events taking place. The year 9s have an assessment every half term, which is important as it is the basis for their effort reports and progress monitoring. As

there are two other year 9 classes, the other teacher and I had to arrange the assessment to take place on a Wednesday, the only day where all three classes are taught together. Wednesday was normally the day on which the vocabulary tests took place, so this was slightly disruptive. I set the test that week for Thursday, so only one day was different, but it did slightly disrupt the timetable of the research. Also the pupils had to revise for their assessment as homework and so there was less time for them to revise for the vocabulary test.

The effort and time which students put into learning vocabulary would also vary. In theory students in Year 9 should spend thirty minutes on their homework; in practice it is impossible to tell, especially with an exercise like vocabulary rather than written work, whether they have spent all of the time allotted or whether they have rushed through. The effort individuals put in to their learning may also have varied over the three weeks in which vocabulary was set as homework – more or less time spent or effort spent rather than the addition of derivations may have affected the results. When students were absent from lessons they may not have received the vocabulary lists. Although the students are supposed to find out homework from fellow class members, it is possible that some students attempted the tests without having studied the words given. By using words from the *Cambridge Latin Course* end of stage lists I introduced another variable. All of these words had been met while translating in class, but some had been translated more than others and so students may have been more familiar with the meaning before receiving the vocabulary lists.

The use of questionnaires, although in my opinion the best method of collecting data from the pupils about how they felt about learning derivations, was not without drawbacks. As I was concerned about not asking the pupils leading questions I had to include different options for them to express how they felt the derivation method compared to their usual method (for example easier, harder or no difference.) Some of the pupils were confused by the wording of this, and also the similarities between some of the questions. This was relatively easily remedied as I asked the pupils to inform me if they were confused so that I could explain the wording. However, shy students could

have avoided doing this by attempting to answer the questions to the best of their ability without seeking clarification. Some students may also have lost interest in answering the questions if they were not able to immediately understand them. I was also concerned that students may not have been completely honest in reporting their feelings about the usefulness of the derivatives in aiding vocabulary retention. I thought it was possible that the students thought they could get in trouble, upset me or simply give the wrong answer if they thought that the research had not helped them. In order to try to prevent this, before they completed the questionnaire I informed them that I wanted them to be entirely honest about their opinions of the method of vocabulary learning. I told them that the method was not something which I had invented or which I strongly felt was beneficial for everyone and that it was not going to affect my research if they thought that the method was not helpful. I also reminded them that different people learn in different ways, and that if the person they were sitting with thought it had been helpful it did not mean that they had to agree. The questionnaires contained a variety of answers and some students said that the derivatives had not aided their ability to retain vocabulary, so evidently at least some of them did feel comfortable expressing their opinions truly.

The interview was also slightly problematic as it was very difficult not to lead the students to answer questions in a specific way. This was because after they had given short answers to questions I had pre-prepared, and the interviews had moved on based upon what they were saying, it was very challenging to immediately form questions which built on their answers but did not lead them in one direction or another. Interviews are challenging in themselves as interviewers can unconsciously and without intending to influence respondents answers by the way in which they receive them, for example by nodding and smiling, indicating agreement with points. Questions and answers can also be misunderstood by either the interviewee or researcher, giving rise to misleading findings.

I set the class a weekly vocabulary test for four weeks. The vocabulary lists were given to the students as homework. Each consisted of ten words,

selected from the *Cambridge Latin Course*'s end of stage vocabulary selection. Each word had an English derivation.

The first week's vocabulary selection was a 'control' test. I selected ten words which had English derivatives, but I did not list any derivatives or make reference to them. This was because I wanted to see how well the pupils retained the meanings of the vocabulary without being told derivations; however, to make sure I was comparing the tests equally, all the words had to have a connection with English words. I gave each member of the class a copy of the list and then read it aloud with them. Some members of the class realised that there were connections with English words, but I did not elaborate on this. I then gave the class a vocabulary test consisting of these words the following week.

For the tests over the next two weeks I emphasised the English derivatives. I laid out these vocabulary lists in the same way that Anderson and Jordan did when carrying out their research – Latin word on the left, English translation in the middle and English derivative on the right, each under headings; for example 'murus - wall - mural.' Again, I gave the students a copy of the list, but this time when reading aloud I read out the derivative, asked the students if they knew what it meant, and used it in a sentence or explained the meaning. The pupils always had a week to learn the vocabulary lists, which were set as homework.

In the final week of my research I set the class a recall test, consisting of a mixture of ten words selected from the previous tests. They did not revise for this test. The purpose of the final test was to see if there was a difference between the recall and retention of the words where the derivations had been pointed out and the words where they had not been mentioned. Each vocabulary test lasted two and a half minutes. This was longer than the pupils needed, as by this time if the students knew the answer they had written it down and if they didn't they had already guessed at the meaning and stopped trying. When they were sitting the last three tests I reminded them that there were English derivatives which came from these words, and told them that if

they were stuck on a meaning they should try and see if they could remember words that were related to them.

On the same day as the recall test, I asked the class to fill in a questionnaire about the method of learning vocabulary. I had the results of the tests, but I wanted to know whether the pupils felt that learning derivations was helpful, unhelpful or had no effect. I also asked three students who had been present for all of the vocabulary tests to participate in an interview at lunch time so expand upon the answers given in the questionnaire.

<u>Findings and Analysis</u>

My prediction before starting this research was that learning derivations would be helpful for some students, especially if they were already familiar with the derivation in English. I was concerned that if the pupils did not know the English derivation then being told it in addition to the Latin vocabulary would be confusing, as they were learning two new words. This was in accordance with what Anderson and Jordan found in 1926, that in instances where the pupils did not know what the derivations meant the derivations were not helpful in aiding vocabulary retention.

It is very difficult to draw conclusions solely from the data collected from the tests. Of the thirty students in the class, only seventeen were present for every test and because of this it is difficult to generalise about the results. There was also no overall pattern of a majority of students' scores improving or worsening, so one cannot say that the method was a total success or failure (see Appendix 1 for a list of the students' scores.) There are also inconsistencies in the results due to the half term assessment which took place in week two of the research. Eleven of the twenty six students who were present for the tests in both week one and two scored higher in week one than week two, where they were told derivatives for the first time. However it is impossible to say whether this was because of the addition of derivations, or because they had spent the majority of the thirty minutes allocated home work time in revising for their assessment, and thus had spent less time than the previous week learning vocabulary. It is also possible that the pupils were more familiar with the words in the first test as they were from the *Cambridge Latin Course* stage ten end of stage vocabulary list, while the second test words were from stage eleven.

I carried out an interview with three students who had been present at all four tests – student B, who had scored full marks in tests one, two and three, and nine and a half in the recall test, student I, who scored eight in the first test, nine and a half in the second, sixth and a half in the third and six in the recall test, and finally student J, who – although one of the most able in the class –

did not achieve full marks, scoring seven in the first two tests, nine in the third and six in the recall test.

Rather than attempting to work out percentages of words remembered, it is more instructive to look at how individual students achieved in the tests, and then to examine how the students felt about the method of learning vocabulary. Excluding the recall tests, three students achieved full marks in each test. One of these students (whom I shall call student A) achieved full marks in the recall test, one (student B) achieved nine and a half out of ten (meaning that they put down a derivation rather than the English translation) and one (student C) was absent. These students are high achievers in Latin, with student C classed as gifted and talented in the subject. Thus one might expect that these students would score highly in the tests regardless of the way in which the vocabulary was presented, either because they put a lot of effort into learning the words, or because they naturally remember words they have met in translation. Thus to determine whether these high achieving students felt the method was helpful I examined their questionnaires. Student A normally learnt vocabulary by reading the words in their head, then covering the answers and reciting them. She felt that learning derivations made it easier to learn vocabulary, as 'it's easier to remember one and link to the other.' She also stated that it was helpful to be told the derivation as 'if I remembered the derivation I could also remember the real translation.' Student A did warn that if she didn't know the derivation it was confusing, and harder than if she did know it, but that she understood the translation nevertheless. This corroborated the earlier research by Anderson and Jordan. Student A concluded that learning derivations was helpful. Student B usually learnt words in a similar way to student A, by looking at the vocabulary then covering them up and trying to remember them. He also found it easier to learn Latin words when given derivations, because 'I could link the words together.' He found being told derivations helpful regardless of whether he knew the English word or not. Student B found the derivation method helpful, saying 'I think it worked really well and it worked for me. I think it would be good to make up derivations for Latin words that don't have them.' Both of the

students scoring full marks who completed the questionnaire found that linking the derivations to the words was helpful in aiding vocabulary retention.

Student D achieved full marks in every test he sat, although he was not present in week three of the research (the second test with derivations.) He usually finds learning vocabulary easy, regardless of whether the word has an English derivation. He found that learning derivations was helpful as it 'reinforced the memory'. However he thought that creating derivations for words which don't have them would over-complicate learning vocabulary.

High achieving students tended to say that the derivation method was useful in aiding their vocabulary retention. However students who work at an average level in the class were slightly more divided. Student E, who is competent at translating but spends a lot of the allocated translation time in lessons looking up vocabulary, found derivations unhelpful. She scored ten out of ten in the first test, without derivations. In test two, the first with derivations, she scored four, and in test three, five and a half, meaning that she put down a derivative instead of a translation. In the recall test she scored six. Although student E said they found learning words which have English derivations easier than learning words without them, she found that actually being told the derivations made them feel confused, which was something I had been concerned would happen. This did not depend upon whether she already knew the derivation – both situations were confusing. Thus for this student it was unhelpful in aiding her vocabulary retention.

Student F also spends a lot of time looking up vocabulary in class. She achieved very highly in the tests where the students were given the vocabulary lists to learn from – scoring respectively ten, nine and a half and nine and a half – but this fell to a score of three in the recall test. Thus it seems that learning vocabulary with derivations has not assisted in long term word retention for this student. She found that when learning with derivations, although the method helped sometimes, she remembered the derivation instead of the translation. She also felt that the derivation, instead of being a memory prompt, was 'just something else to remember,' which was something I had been concerned about. She said that although the derivation

method could be helpful for others, it was not useful for her. Student G scored well in the tests, but this does not transfer well to how she translates in class, where she retains vocabulary for a short time before forgetting it. Unlike student F, she found that the derivation method assisted her vocabulary retention, and she scored eight in the recall test. She found that being told the derivation helped her remember translations, regardless of whether she previously knew the derivations or not, and that she could then relate the derivation to the words to remember the translation. She felt that she would create her own derivations for words which didn't have them, which would be an interesting activity to further this research.

Of the twenty seven students who were present and completed the questionnaire, nineteen found learning derivations helpful, five found it confusing and three were unsure. All of the pupils who found derivations confusing were girls, as was one of the people who was unsure of whether derivations were advantageous.

In the interviews with the students present at all tests (student B, student I and student J), student B elaborated on finding the derivations helpful for making links with words. Student I, interestingly, found that derivations were helpful in allowing them to link with words and liked being told them but thought that the derivations should not be put on the paper. They found this confusing, and mixed up the words which were derivations and the words which were translations. Student J found that derivations were only helpful when the words were very similar and links could be seen immediately. All the students felt that derivations would be helpful when they were translating a passage as opposed to simply in a test. They also found that the ease of translating depended more on the actual words than any methods they were using – their previous strategies for remembering words included thinking back to times they had translated the word before. They also said that they found me going through the word lists aloud in class was useful for them, as when they encountered a word from the list they could remember me saying it.

The findings of the research were generally in line with what I anticipated at the start of the research, with some students finding derivations helpful and

some finding them unhelpful or confusing. Some of the students' points about how to make derivations less confusing – for example, only including derivations which are very similar to the English or Latin where links can be immediately seen and understood, or relating the derivations aloud to students but not actually putting them on the word lists – were interesting, and possibly something to investigate in the future.

Conclusion

Overall, the key findings of this research were that pupils found derivations which were obviously similar to the Latin words they derived from were helpful, while derivations which were more obscure were less helpful in aiding their vocabulary retention. This corroborated the earlier research by Anderson and Jordan.

It is difficult to come to any firm conclusion about the extent to which learning derivations aids vocabulary retention for students. All one can really say is that this method of learning vocabulary was beneficial for some students and didn't work for others. The majority of students when asked said that the method was helpful for them, but there were several who found derivations confusing at least some of the time. It seemed to depend upon whether the derivation was immediately and obviously relatable to the Latin and English words. There was no overall upward or downward pattern in the scores and the research may have been affected by factors separate from the research.

The research is limited as the data generated refers only to thirty students, and not all students were present at each test. The pupils involved are all of a high ability, so it cannot be assumed that the results are transferable to less able students. There are several ways that the research could be improved, and perhaps be made more conclusive.

The first way to improve and expand the research findings would be to extend the timing of the research. It would make it easier to compare the results of tests with and without derivations if, for example, students did five tests without derivations and five with them. It is difficult to know whether fluctuations in the test results were due to the addition of derivations, or because of outside influences – such as the assessment, or a different amount of time spent learning vocabulary, or because the words were harder that week. With a larger data bank it is possible that firmer conclusions could be drawn. In addition, better planning around events like the half term

assessment might improve the value of the research as there would be fewer variables affecting the pupils' allocated homework time.

It would also perhaps be easier to spot patterns with a larger number of participants. Expanding the number of students, and including students of lower ability or those with less language experience would add more to the results.

One could also investigate whether there was a difference in the gender of participants who found derivations useful. In my research, there were no boys who concluded that it was confusing, although two boys were unsure whether derivations were helpful or not.

It could possibly improve the research to test the students on words which they have not encountered before – for example words from a later stage of the *Cambridge Latin Course*. I did not do this as I wanted participation in the research to benefit the participants and so wanted them to remember words which they would be translating during lessons. However this did add another aspect to the vocabulary tests – some students may have been at an advantage as they learnt the words as they went along (for example by writing 'key words' from passages in their exercise books on their own initiative), and some words had been met more frequently than others. Archibald's (1914) experience teaching the vocabulary of Caesar before the students began translating Caesar was a more fair form of research. However, I believe it would be very difficult to carry out research like this with secondary school students as it would be boring and it is probable that the students would lose interest and stop trying to learn the words.

An interesting way of expanding the research could be by looking at whether learning derivations in other languages aided students' vocabulary retention, in the same way Archibald (1914) claimed that this method was equally successful for Greek and Latin. The students who took part in my research have experience learning French and German, and it would be enlightening to discover whether derivations from any (known) language – not just the learners first language – aid, or negatively effect, vocabulary learning. Another method of exploring this topic could be to investigate whether creating

derivations for Latin words which don't have them assists vocabulary retention. For example, a sixth form class studying Ancient Greek at an all-girls school created their own links, such as the word *oikia* (house) with the company Ikea, a similar sounding word, which sell home wares. It would be interesting to discover whether activities such as this are helpful, or whether to improve retention there needs to be a genuine word link One could also attempt to ascertain whether this method of learning words increased the participants' English vocabulary. I asked the students if they learnt any new English words from our work with derivations in their questionnaire and received answers such as 'mural' and 'custody', indicating that some of the pupils had benefited in this way.

Though somewhat removed from the original topic, a useful topic to research would be whether learning vocabulary for tests using word lists assists actual translation in any meaningful way. On some occasions, words which came up in tests were not recognised in translation passages by students who had spent time learning the lists for homework. It is possible that when learning for a test, once the test is ended the words are forgotten.

Although the results of the tests were inconclusive, since participating in the research, when translating in class, students have recognised some of the words with derivations that they learnt for the tests and previously had trouble with. This includes words such as *contentus* – satisfied. I have continued to verbally make links with English derivatives as the majority of students found this helpful.

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Appendix 1 - Vocabulary Test Results

	Test 1	Test 2	Test 3	Final Test
Student A	10	10	10	10
Student B	10	10	10	9 1/2
Student C	10	10	10	X
Student D	10	10	X	10
Student E	10	4	5 1/2	6
Student F	10	9 1/2	9 1/2	3
Student G	9	9 1/2	X	8
Student H	X	3	9	X
Student I	8	9 1/2	6 1/2	6
Student J	7	7	9	6
Student K	10	10	X	9
Student L	7	6	X	6 1/2
Student M	6	4	X	3
Student N	9	8 1/2	X	8
Student O	10	7	9 1/2	8 1/2
Student P	X	5	7 1/2	8
Student Q	10	10	9	X
Student R	9	9	7 1/2	6
Student S	10	9	10	9
Student T	10	10	8	10
Student U	10	6	10	7
Student V	X	5	9	10
Student W	10	10	9 1/2	7 1/2
Student X	X	2 1/2	7 1/2	6
Student Y	9	6	2 1/2	7
Student Z	10	10	7	8 1/2
Student A2	10	9	2	4 1/2
Student B2	9	9 1/2	X	7 1/2
Student C2	10	10	8	7 1/2
Student D2	8	6	8	8

Appendix 2 – Vocabulary Lists

Vocabulary List 1

Latin word	English translation
1. accipit	accepts
2. contentus	satisfied
3. exclamat	exclaims
4. frater	brother
5. habitat	lives
6. imperium	empire
7. portus	harbour
8. servat	saves, looks after
9. solus	alone
10. vehementer	violently, loudly

Vocabulary List 2

Latin word	English translation	Derivations from the Latin
1. capit	takes	captures
2. civis	citizen	civilian
3. convenit	gathers, meets	convenes (a meeting)
4. credit	trusts, believes	credits
5. favet	supports	favours
6. invitat	invites	invites
7. legit	reads	legible
8. liberalis	generous	liberal (e.g with money)
9. murus	wall	mural
10. sollicitus	worried, anxious	solicitous

Vocabulary List 3

Latin word	English translation	Derivations from the Latin
1. complet	fills	completes
2. custodit	guards	custodian, custody
3. epistula	letter	epistle
4. flamma	flame	flame
5. frustra	in vain	frustrated
6. fugit	flees, runs away	fugitive
7. mirabilis	strange, wonderful	miraculous
8. optime	very well	optimum
9. sentit	feels	senses
10. timet	is afraid, fears	timid