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Vocabulary Learning with the Moodle Glossary Tool: A Case Study

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ABSTRACT

Vocabulary learning is a vital part of mastering a language and experience has shown that students often neglect to routinely work on this aspect leading to problems with listening, speaking, reading, and writing skills. This case study describes and evaluates the use of the Moodle glossary to support vocabulary learning in the modern language classroom. First-year students of German added 30 vocabulary items to the glossary each week. All students were encouraged to learn the new contributions on a weekly basis and classroom activities were used to reinforce the new vocabulary. Contributions were expected to follow a certain format, and students received a small percentage of their mark for their contributions.

A mixed-method approach using surveys, statistics from Moodle, feedback notes, observation notes, email exchanges, and a focus group with students served to analyse the effectiveness of the Moodle glossary. Results showed that all students contributed to building the tool, though technological support from the instructor was sometimes necessary. Students less regularly read the contributions of others. A comparison of the Moodle activity report and the weekly quiz results suggested that engaging with the tool led to improved quiz results. The tool was successful in promoting independent learning, however extrinsic motivators (such as assessment and quizzes) proved necessary for some students. In general, the Moodle glossary was a useful tool for vocabulary learning and recommendations for a successful implementation are given. This case study will be of interest to language instructors, but also to learners and instructors dealing with specialised terminology.

Keywords: Moodle glossary, vocabulary learning, independent learning, technology, modern languages

Introduction

> *It's always good to learn new vocabulary because knowing what you know already isn't enough – it's not going to take you through the later stages and you're going to reach a wall,* (Student C).
>
> *I don't go home and revise vocabulary,* (Student C).

These comments made by a language student during a focus group on vocabulary learning exemplify how beliefs and actions in regard to expanding vocabulary are often contradictory.

In order to research the effectiveness of a new approach to vocabulary learning the following case study on the use of the Moodle glossary tool was conducted in a class of German language learners. The effectiveness of the approach was measured by analysing data related to three research questions, namely to what extent students were using the technology, whether using the glossary actually increased students' vocabulary, and whether the glossary managed to engage students through its opportunities for active and independent learning.

Section 2 of this study presents an overview of the secondary literature linked to the three research questions. Section 3 presents the methodology and the types of data collected for this study. Section 4 gives details on how the glossary was used and how the data was collected. Section 5 presents and discusses the data in relation to the research questions and section 6 gives a short summary of the findings and presents some recommendations for the use of this tool.

This case study was conducted with a small number of participants and the glossary was used in a particular way, including an element of assessment and integrating classroom activities into the approach. While findings cannot be generalised, the study hopes to illuminate some key aspects linked to an effective use of the Moodle glossary for vocabulary learning. This study was carried out in the foreign language classroom. However, findings will also be relevant to teachers and lecturers in other fields who deal with specialised vocabulary.

Conceptual Framework

The uptake of technology for learning

Technology is playing a steadily increasing role in Higher Education with online learning platforms now being used across universities in Britain. The university at which this study was conducted has adopted Moodle as its chosen learning platform, and various papers have presented examples of using Moodle for language teaching and learning (for instance Brandl, 2005; Dougiamas, 2010; Krasnova, 2015).

Despite these positive examples, research has shown that students are, in fact, very diverse in regard to technological ability and use (Jones, Ramanau, Cross, & Healing, 2010; White & Le Cornu, 2011). A study conducted by Margaryan, Littlejohn, and Vojt (2011) amongst undergraduate students in Britain has shown that while the majority of students use a limited number of technologies, such as Wikipedia and the institutional VLE, successfully for learning, they are often not familiar with collaborative forms of technologies, such as wikis. The support of teachers and peers was seen as vital for the introduction of these tools in the classroom. In their study on the use of technology among Hong Kong students Lai, Wang, and Lei (2012) confirm the importance of teacher and peer support. Further predictive factors for the uptake of technology are described as the compatibility of the technology with students' needs and their attitudes towards technology. In contrast, the perceived usefulness of technology for learning as well as students' perceptions of their IT skills are described as less predictive factors, but the researchers admit that the self-selective form of their online survey may have skewed their findings.

This case study will present data on the uptake of the Moodle glossary and seek to determine predictors and barriers to this uptake.

Successful vocabulary learning

Research has shown that taking a structured or an unstructured approach to vocabulary learning seems to make no difference when the learners are immersed in an environment which speaks their target language (Lessard-Clouton, 1996 in Kojic-Sabo & Lightbown, 1999). However, when students only have access to their target language in the classroom more intensive forms of vocabulary work are required (for instance Kojic-Sabo & Lightbown, 1999). There has been much debate on whether deliberate vocabulary learning (DL), such as simply learning lists of words, can enable learners to quickly access words in context, and for some years learning language in meaningful context was seen as the best way of acquiring authentic language (for instance Krashen, 1989). However, Elgort (2011) has demonstrated how the learning of lists of words can be a fast and successful way of acquiring new language and Elgort's experiment showed that "vocabulary knowledge gained through DL is stored and accessed in a manner that is similar to existing L1 and L2 lexical knowledge, which L2 speakers draw on in real language use" (p. 399). At the same time, Elgort concedes that learning words in context should supplement list learning: "the process of acquiring meaning can be enhanced by learning activities that encourage deep processing" (p. 399).

The current case study does not seek to further develop this dichotomy between learning from lists and learning in context, and both approaches to vocabulary learning are taken into account: While vocabulary is presented and learnt in the form of a list, each word is also embedded in an example sentence, in order to present a meaningful context. Vocabulary activities in class are varied, and vocabulary is tested in list form (asking for translations, different tenses, etc), but also in semantic contexts (completing sentences, defining words, etc).

Research question two will seek to determine whether using the Moodle glossary as a structured approach to vocabulary learning (employing both lists of words and semantic contexts) is indeed an effective way of increasing vocabulary.

Engaging students for learning through a constructive pedagogy

Current educational thinking as well as the rapid changes to professional environments have called for a move towards a constructivist, or experiential, approach to pedagogy where "learning is the process of creating knowledge" (Kolb, 1993). Creating knowledge enhances student engagement and demands an active and independent role of students leading to personal development and deep learning (Entwistle, 2005). In the context of the present case study it is interesting to note that learner independence has also been linked specifically to successful vocabulary learning (Kojic-Sabo & Lightbown, 1999).

While it is an aim of Higher Education for students to become independent learners there is also the need to align learning opportunities to the curriculum and to the intended learning outcomes (Biggs & Tang, 2010). The Higher Education Academy (HEA) recently commissioned a study on the design of independent learning opportunities which meet the demands of the curriculum, and where the emphasis lies on *directed* independent learning (Thomas, Jones, & Ottaway, 2015). Directed independent learning is defined as:

> *learning in which students are guided by curriculum content, pedagogy and assessment, and supported by staff and the learning environment, and in which students play an active role in their learning experience – either on their own, or in collaboration with peers* (p7).

As mentioned in this definition, active and independent creation of knowledge can be a collaborative effort. Bovill, Cook-Sather, and Felten (2011) have presented examples of students and lecturers co-creating content (such as modules, but also entire curricula)

collaboratively. Collaborative learning is again linked to deep learning and enhanced engagement, motivation and enthusiasm. However, the co-creation of such projects also present challenges when staff relinquish control over their pedagogical planning, and the time investment can be considerable. A further challenge is meeting the professional requirements of the content and Bovill et al. (2011) conclude that the teacher's expertise is vital for a successful outcome.

The recent advances in technology have introduced many tools which can be used for independent learning whether this is carried out individually or collaboratively. Examples for individual independent learning are quizzes and other learning materials which can be accessed from a learning platform, whereas wikis are a popular example for collaborative learning. Pospíšilová, Bezdíčková, and Ciberová (2011) presented a Chemistry project which benefitted from various tools on Moodle. One part of the project was to collaboratively create a Moodle glossary and a survey conducted at the end of the project confirmed that students had "positive feelings about being involved in the terminology database creation" (p. 175). Students commented that they found quizzes on Moodle to reinforce the terminology useful as these gave immediate feedback and had a strong motivational effect. Similarly, Breeze (2014) used the Moodle function to teach legal English terminology to advanced learners of English. While students were at first anxious about the fact that their work would be exposed to their fellow students, suggestions for improvement given by the lecturers through the comment function raised students' confidence and generally students expressed satisfaction with the study tool they had produced.

A study carried out by Hirschel (2012) investigating students' perspectives on various computer assisted language learning (CALL) activities used glossaries in a similar way to the current research. Students were asked to note down vocabulary and test themselves with online quizzes which used multiple choice questions as well as cloze items. While the CALL activities were generally seen as beneficial by the students, some aspects of the glossary work were described as disappointing by the lecturer. Firstly, students did not feel that their learning from the glossary and the type of quizzing encouraged deeper learning processes and long term retention. Secondly, students were often unsuccessful at noting down "the most advantageous lexical items" (p. 106), confirming the need for more input by the teacher. Finally, while some students regularly used the Moodle website, others preferred to learn vocabulary offline, as computer assisted learning was not compatible with their learning preferences.

In contrast to the study described above, the current case study used classroom activities rather than online quizzes to complement the Moodle glossary, and the input of students was assessed. Research question three examines the opportunities of this implementation for independent and active learning, and whether these proved engaging for students.

Methodology

The overall aim of this research was to evaluate the effectiveness of the Moodle glossary and a case study was chosen as the research method. An evaluative case study provides the opportunity for an enquiry into an educational event to determine its worthwhileness (Bassey, 1999). While reading the secondary literature and implementing the glossary, several areas of interest emerged which in turn led to the phrasing of the research questions as described in the previous section. A mixed-method approach using multiple sources of evidence was adopted in order to collect and triangulate a variety of data relevant to the research questions (Yin, 2013). Methods of data collection included preliminary surveys, contributions to the glossary, Moodle activity reports, participant observations, feedback notes, a focus group and email exchanges. Due to the small scale of this research it is unlikely that findings will be representative. However, the research will illuminate aspects regarding vocabulary learning and teaching which will be of interest to linguists and instructors dealing with specific terminology. Ethical approval to this research was granted by the university prior to the beginning of this study.

Research procedures

The class and the initial survey

This study took place in semester 2 of 2013/14 in a class of German attended mostly by first year students. Students were at an intermediate level of language learning (SCQF level 8 / level B1 of the CEFR for Languages). The class consisted of 13 students who were studying a languages degree or a joint degree with a language. Seven students had completed their schooling in the UK, while the remaining six students came to the UK after completing their schooling abroad.

In semester 1 of 2013/14 (the semester before the implementation of this research) roughly the same class (then German 3) had been asked to compile paper lists of 300 vocabulary items as part of their assessments. A survey was conducted at the end of the semester with questions about students' vocabulary learning habits and their opinion on the paper vocabulary lists. Data from this survey provided information on the attitudes of students to vocabulary learning.

The pilot study

In semester 1 of 2013/14 a pilot study with the glossary tool for vocabulary learning had been conducted. The tool was used in two French classes as well as in a German fourth year class. At the end of this semester surveys were handed out to students asking them

about their vocabulary learning in general and their opinion on the Moodle glossary. The experiences gained in the pilot study as well as the data from these surveys were relevant to optimising the set up and use of the tool in the current study.

Implementation of the glossary

The Moodle glossary was set up by clicking on the activity "glossary" on Moodle. The tool gave students the option to add new entries or to read existing contributions. When making a new entry a page with two boxes appeared which were named "concept" and "definition". Students were asked to submit relevant vocabulary which they had learnt in class or during homework and to write the appropriate English word in the "concept" box, with the German equivalent in the "definition" along with relevant grammatical information and an example sentence. They were also asked to link each entry to a category. The categories for the students had been created by the lecturers and were named week 1, week 2 etc. as this made the task of revising the vocabulary week by week easier (students could simply select the appropriate week). At the beginning of the semester each student was allocated a week during which they had to make 30 contributions (in some weeks two students were allocated and the lecturer selected 30 contributions before publication). Students received detailed written instructions on how to make their contributions at the beginning of the semester, but they were also offered support during their allocated week. All items were approved, and if necessary corrected, before becoming public.

Quizzes and classroom activities

Students were asked to learn the new vocabulary added to the glossary by their peers every week. The vocabulary was tested in class through a variety of written quizzes (for instance inspired by Ur, 2002) and oral activities. While these tests were not formally assessed they did involve a competitive element to encourage students to learn the new vocabulary. Students were regularly asked how they thought they had performed during these activities in order to stimulate discussion on vocabulary learning. The activities included translation of words and sentences, gap-filling exercises, paraphrasing exercises and creative story-telling exercises.

Data from the glossary

The Moodle glossary contributions as well as the Moodle activity report were used as sources of data for this study. The activity report showed how often individual students viewed the glossary. In order to compile the data a chart was created and each student received a tick for the weeks in which they had viewed the glossary.

Data from feedback

All students received written feedback after they had submitted their entries. The feedback consisted of general remarks on students' work as well as corrections and explanations where errors had been made regarding example sentences and grammatical input. Students did not receive marks until the end of the semester when all students' contributions had been submitted.

Data from weekly observation notes

Notes were taken by the lecturer throughout the semester on students' contributions, any particular problems with access to the glossary, students' engagement, and success with the activities.

Data from emails

Students saw the lecturer in class twice a week, but were also able to contact her by email if they had questions about the glossary. The email exchanges often took place when students were having difficulties submitting their entries and provide an insight into some of the problems faced by the students.

Data from a focus group

In week 9 a focus group was conducted to collect students' views on vocabulary learning and the Moodle glossary. All students received a written invitation to the group a week in advance explaining the project and practical issues. In order to avoid bias a colleague of the lecturer, who did not teach these particular students, conducted the focus group. Five students volunteered to take part and this selection was mainly determined by whether students were free during the time slot suggested. The participants were named A to E in the transcript. The data from the focus group was thematically analysed by repeatedly reading the transcript with the research questions in mind to uncover corresponding information.

Discussion

Uptake of the glossary

In the current case study the glossary had two functions. Firstly, students were asked to actively contribute 30 items of vocabulary during an allocated week (this was an assessed task), and secondly, they were asked to learn the vocabulary provided by their peers on a weekly basis. This was a non-assessed task, but was followed up by classroom activities which provided students with feedback on their progress.

The assessed task

Concerning the assessed task, most students in the class were able to submit their entries without any problems. At the beginning of their allocated week all students were asked whether they would like a demonstration of how to use the glossary. However, some students needed additional help. This was partly due to technological insecurities: "I thought I knew how to use the glossary but in actual fact I have no idea" (email from student). When this student received instructions in an email she managed to submit: "Oh, I see, ok, I'll do that now" (email).

There were also some genuine technical hitches. One student did not manage to enter a word which (unknown to him) had been submitted by someone else. The student lost confidence in the tool but solved the problem by submitting his list by email: "Here is my vocab list with 30 words. I couldn't put them online as I tried to do a number of times!" Another student had technical problems due to her computer constantly crashing. In both cases the problems were resolved through dialogue with the lecturer.

There was only one student who did not manage to submit in time, and when she submitted the entries were too late to be of use for a classroom activity. Additionally, the submissions were too few (only 15) and did not meet all requirements. It remains unclear whether this was a problem with technology as the student was also struggling with other aspects of the course.

In summary, most findings of the secondary research are confirmed. The technical competency of students was mixed (Jones et al., 2010), but most problems were resolved through appropriate teacher support (Margaryan et al., 2011). Research described the compatibility of the technology with the needs of the students as a further predictive factor (Lai et al., 2012). As the contributions were assessed it can be argued that students had the need to use the tool and this accounted for the comprehensive uptake of the tool in order to make contributions.

The non-assessed task

Students were also asked to learn the vocabulary uploaded by peers on a weekly basis and this task was not assessed. The Moodle activity report provided detailed data on how often each student viewed the glossary. As outlined above, students received a tick for each week they had viewed the glossary (though the data was not analysed in regard to how long students engaged or how many entries they viewed during a particular week). The data was compiled during a period of 9 weeks. Overall, the uptake according to the viewing figures was mixed: 2 students viewed the glossary every week, 2 students viewed it during 8 weeks, 3 students during 7 weeks, 4 students during 4 weeks, 1 student during 3 weeks and 1 student during 1 week.

When discussing this mixed uptake it is interesting to refer back to Lai et al.'s research (2012) where the perceived usefulness of technology was not necessarily found to be a predictive factor for the uptake of technology. Most students were enthusiastic about the glossary in the focus group: "We don't have this in Spanish and this is so much more helpful in German cause you're expanding your vocabulary and she makes you learn it every week, every week there is a quiz on the vocabulary so you learn it" (Student D). However, the enthusiasm expressed did not lead all students to view the glossary regularly. Whether this is due to technological barriers or other factors is not clear.

Lai et al. (2012) further described a link between the uptake of technology and students' overall preferences for learning. These findings are also confirmed in this study. Three students who viewed the glossary only during three or four weeks were observed to take vocabulary notes regularly in class and progressed very well in their language learning. These students clearly had their own successful methods of vocabulary learning which they preferred.

To summarise, the findings from the research were again largely confirmed in regard to the unassessed task. The voluntary uptake of technology did not seem to be linked to the perceived usefulness of technology, but could be linked to the compatibility with the students' preferences in regard to technology. Uptake was motivated through class activities, particularly when these had a competitive nature, and class conversations around learning may have also increased uptake, as will be shown in the section on engagement.

Successful vocabulary learning

As the weekly quizzes were not formally marked, there is no quantitative data on how effective the glossary was to increase vocabulary. However, data from students' perceptions, the observations during the weekly quizzes, and the contributions to the glossary give some indications on the impact of the glossary on vocabulary acquisition.

In the surveys that took place after the trial runs of the glossary, students were asked about their perceptions on the usefulness of the glossary. When asked, "Did you find the glossary helped expand your vocabulary by contributing to the glossary?" 21 out of 31

students responded "yes". When asked, "Did you find the glossary helped expand your vocabulary by reading other people's contributions?" 23 out of 31 replied "yes".

In the current case study the glossary was discussed in the focus group and students were asked whether they thought their vocabulary had increased during this year. Most students commented favourably: "Yes, I think I've learnt more vocabulary than I have for a long time" (Student B). Observations during the weekly quizzes confirmed that those students who had learnt the vocabulary regularly (as indicated in the Moodle activity report) seemed to do best in the weekly quizzes. During week 6 the Moodle activity report showed that only 6 people had accessed the glossary, and students performed noticeably poorer in the activities during this week: "It is now week 6, […] we had a competitive game to test vocabulary this week […] some did not seem to have engaged with the list at all" (extract from observation notes). After this activity a classroom discussion around the importance of learning vocabulary was initiated, and in the following week 10 students engaged with the glossary leading to an instant improvement in the activities: "On Tuesday we did the vocabulary game […] again and students seemed to be better prepared for this" (observation notes).

The glossary also proved to be an effective method of learning how to note down vocabulary including all relevant grammatical information. Contributions had to be approved by the lecturer before becoming public and students received feedback on their contributions. One student had to resubmit as he had made too many mistakes: "it seems as if you haven't checked for gender and plural of the nouns, and also not added the perfect and imperfect tenses for the nouns […] You'll need a dictionary to check the words" (feedback to student). In the second submission the quality of the student's work had greatly improved.

To summarise, students perceived the tool to be effective (as mentioned in the surveys and the focus group). A comparison of the weekly activity reports and students' performance in the quizzes showed that engagement with the glossary improved students' performance. Different activities were used to ensure that students had grasped the lexical and grammatical difficulties as well as the semantic contexts (Elgort, 2011). The glossary was also effective in improving students' ability to note down vocabulary, as the lecturer was able to view students' contributions immediately, correct them and give students feedback on them.

Engagement though constructive learning

This section will present data on whether the glossary can be linked to independent and active learning, both individual and collaborative, and discuss whether independent learning fosters students' engagement for learning.

In the focus group and in class students were asked about their previous vocabulary learning habits and they were able to come up with many different methods. However, not all students can be described as independent vocabulary learners. The following dialogue from the focus group on vocabulary work during the case study highlights two contrasting opinions on the role of assessment for vocabulary learning:

> *E: I think vocab learning should be a given […]*
>
> *C: No, surely not.*
>
> *E: Come on, you're doing languages at uni, you have to learn vocab […] Why do you need to be given a percentage for something you need to do anyway?*
>
> *C: Cause they wouldn't, that's the thing.*

These two positions show that while some students are independent learners who do not need to be motivated by assessment, others are less intrinsically motivated to work independently.

The quizzes proved to be a further extrinsic motivation for using the glossary to learn vocabulary: "If the vocabulary is just there, I probably wouldn't look at it. If it's there and you're getting tested on it, you're more likely to look at it" (Student C). In particular students found the competitive nature of the quizzes inspiring "who was first who was second, the class is quite childish…" (Student D). While the students' enthusiasm in the focus group didn't lead to full engagement with the tool (as mentioned above) the glossary activity reports did show how quiz results were linked to engagement with the glossary. A pep talk after a weak performance in week 6 drove up participation leading to noticeably better results in the quizzes in the following week.

It has been shown that in this case study external motivators were used such as assessment and quizzes, as well as discussions around learning. It may seem that extrinsic motivators are counter-productive for independent learning. However, Thomas et al. (2015) describe an alternative view of independent learning which is "guided by curriculum content, pedagogy and assessment, and supported by staff and the learning environment, and in which students play an active role in their learning experience – either on their own, or in collaboration with peers" (p. 7). According to this interpretation it is fair to make use of assessment and other motivators in order to support active and independent learning. Furthermore, students did agree in the focus groups that they preferred the collaborative nature of the glossary to more traditional forms of vocabulary work they had done in the previous semester.

In summary, it would be wrong to say that students were enthused by the opportunities for independent learning and more accurate to conclude that the extrinsic motivators were more important for most. Nevertheless, these extrinsic motivators did lead to opportunities for directed independent learning and gave students the skills to note down vocabulary in a helpful manner as well as broaden their vocabulary.

Conclusion and recommendations

This case study described and analysed a particular implementation of the Moodle glossary tool in a German language module through a mixed-method approach.

The main results are summarised below, followed by recommendations for future implementations of the tool.

Uptake of the tool

All students used the tool in order to make contributions. This was due to teacher support but also to the assessed nature of this implementation. In contrast, students' uptake of the technology to read and learn other students' contributions was more mixed. Classroom activities, quizzes and class discussions around the results of the activities seemed to stimulate engagement with the tool.

In future uses of the tool it is recommended to lend guidance and technological support and complement the use of the tool with further activities.

Effectiveness of the glossary

When students had engaged with the tool a better performance in the classroom activities was observed. Furthermore, modelling by peers as well as feedback and editing by the teacher helped students to create grammatically sound entries and example sentences. Students perceived the tool to be effective.

It is recommended to support engagement with the tool to ensure that students make full use of it. The input of the teacher through the editing function is vital to ensure that entries are of good quality. Feedback or a discussion around the entries is helpful for students to understand mistakes. Classroom quizzes and activities are useful as feedback to students on whether they are effectively learning vocabulary.

Opportunities for independent learning

While it emerged that some students were largely extrinsically motivated to engage with the tool, the current implementation of the tool still fostered directed independent learning as students were collaboratively creating a classroom tool which they were also expected to individually engage with on a regular basis. The assessment and quiz activities provided feedback and demonstrated how regular learning leads to improved performance. Students learnt from each other's contributions through modelling.

In future implementations of this tool the use of assessment or classroom activities are recommended for motivational reasons. However, this will depend on the level of the class and the maturity of the students. The collaborative nature of the tool will hopefully encourage students to take pride in the creation of a database, and the editing function will ensure that contributions are of a consistent quality. Lastly, it should not be forgotten that the tool might not be compatible with the learning preferences of all students and that an ongoing conversation with students about vocabulary learning will contribute to developing independent learners who make use of a variety of methods.

Editing the contributions on a weekly basis, as well as creating quizzes for students is time-consuming for the lecturer, and further research could look into the possibility of students creating their own classroom quizzes, thus receiving further opportunities for active learning. Research could also look into creating and evaluating vocabulary databases encompassing a whole programme, rather than just one module. These databases could be individual or collaborative efforts.

Biography

Sibylle Ratz studied in Germany, Russia and the UK and has worked as a teacher, translator, course coordinator and lecturer in Germany and Scotland. She is currently module leader for the German modules and also teaches on 'Intercultural Training for the Year Abroad' where she is the contact person for students of German.

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