

SPIRAL LEARNING: AN INTRODUCTORY COURSE ON READING LOTE ONLINE

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Abstract

In teaching reading, authentic texts with abundant lexical items and complex grammatical structures are typically used (Roche, 1992). Unfortunately, this has been a challenge for students enrolled in reading courses developed for English as a Second Language (ESL) as well as Languages Other Than English (LOTE) students. Students often translate word by word rather than applying learned strategies. To address this, an introductory online course on reading LOTE was developed. Texts and interactive activities in the new course selected words based on frequency lists and applied task-cycling (Levy & Kennedy, 2004) to reading strategies and grammatical structures. The desired outcome was “spiral learning”: while some words, strategies and structures were recycled between chapters, new words and structures were also introduced. The course was taught at the University of Victoria in Canada in 2009. Class observations showed that students responded well and used dictionaries less frequently than in previous courses.

Keywords

Second language learning, task-cycling, reading LOTE

Introduction

This article reports on the development of a new reading course for students who are interested in learning the structures of a Language Other Than English (LOTE), the design of that course, and its testing. The language chosen was German because a course on ‘reading German’ already existed at a North American university that was supposed to serve as a model. That course had no pre-requisites and had been developed for students whose native language was English. The content of that course consisted of authentic texts of a complex nature covering topics such as ‘Philosophy,’ ‘Music,’ and ‘Law.’ The aim of the course was to learn reading strategies in order to understand the main points of those texts. Two questions came to mind: How are students handling the large amount of vocabulary displayed in those texts? How do students navigate through the complex structures of German grammar all at once? Contacting the instructors of that course, the answer was simple: although the course was designed to teach reading strategies, in reality students translated word by word with the help of their dictionaries. Research on reading courses (Huang & Liou, 2007; Murphy, 2007) has confirmed the view of those instructors: students taking those reading courses were often overwhelmed with the complexity of the texts.

This article presents the concept of an introductory reading German course that addressed the issue of complexity by applying general language learning principles such as the modified natural approach (Byrnes, 2006), the concept of spaced retrieval (Balota, Duchek, & Logan, 2007) as well as the concept of task-cycling (Levy & Kennedy, 2004). These principles were used to streamline texts (words), introduce strategies and grammatical structures. In order to allow students to easily navigate between texts, strategies and structures, the course was developed online. In addition, online tasks developed for each text were designed in an interactive format: learners could type in their answers and click on a ‘check’ button to immediately receive feedback.

Theory

Language learning / reading

Many years ago, researchers and instructors believed that a language learner needed to develop four competences: grammatical, discourse, sociolinguistic, and strategic (Hymes, 1974). Later on, the communicative competence (Canale, & Swain 1980) and the intercultural competence (Byram, & Buttjes, 1991) were added. More recently, concepts of language learning seem to focus more and more on intercultural communication (Alred, Byram, & Fleming, 2003). Those concepts emphasise the challenges a learner faces trying to understand processes of communication as well as differences in cultures and their representation in language. Learners need to comprehend, dissect and interpret messages of a speaker with a different cultural background; and, to construct meaningful messages in the target language (Alred, et al., 2003). His or her beliefs about the target language and culture are constantly challenged (Risager, 2006). An intercultural learner is engaged in several processes of interaction, thereby forming several identities as a speaker (Lantolf, & Thorne, 2006).

Interestingly, some of these concepts of intercultural communication also apply to reading. A reader needs to comprehend, dissect and interpret sentences of a text written by someone with a different cultural background. Words have multiple meanings that need to be encoded and decoded by the learner and grammatical structures need to be applied to understand sentences. It therefore seems possible to assist readers with this process by:

- (i) choosing high frequency words from the target language as they are likely appear in different contexts thus allowing for multiple meanings to be conveyed;
- (ii) using basic grammatical structures as entry points into a text before moving on to more complex structures;
- (iii) developing strategies how to decipher a text; and,
- (iv) developing interactive online tasks to give immediate feedback.

However, traditional reading courses have followed a different route so far. Such courses have been regarded as non-communicative as there is no target speaker and consequently the principles that are applied to language learning in general have not been exploited. Instead, these courses have been developed to use different genres with as much authentic material as possible. The idea has been to expose readers to an abundance of lexical items and complex syntactic-morphological structures in order for the reader to develop reading strategies over time (Roche, 1992).

Language learning / Principles

There are many principles of language learning that can be applied to the second language curriculum depending on its context. In the following, three approaches are identified.

One principle is the streamlined natural approach developed by Heidi Byrnes and her colleagues at Georgetown University. This natural approach provides second language learners with as much exposure to a variety of authentic texts as possible (Byrnes, 2006). Different genres are incorporated into the curriculum following a sequence that encourages independent thought. However, in order to guide learners through this process, texts are streamlined, that is, some of the authentic texts are modified to avoid an overabundance of words and to sequence grammatical structures.

Two, there is the approach of targeted vocabulary instruction based on the concept of spaced retrieval. In an interesting study carried out by Laufer (2006), 158 high school ESL students of intermediate ESL proficiency were divided into two groups. The first group completed activities that taught them words directly while the second group had to find the meaning of words with the help of glossaries or a dictionary. The first group demonstrated significantly higher results on their vocabulary quizzes than the second group. Laufer concluded that some vocabulary learning may occur partially due to exposure to input, but with regard to size of the text corpora, this cannot suffice and additional instruction is necessary. This is particularly interesting in view of traditional reading courses that supply learners with an overabundance of words. Laufer's view is shared by

studies that have been carried out in cognitive psychology using the concept of spaced retrieval. More recently, Balota, Duchek, and Logan (2007) compared different types of spaced retrieval, that is, massed, uniform, and graduated learning. These studies agreed that massed repetition does not lead to better results. For example, the repetition of a lexical item and its corresponding L2 (second language) representation twenty times in a row will not lead to a twenty times higher retention rate (Balota, et al, 2007). However, a delay between encounters (uniform: same interval length between encounters; graduated: different interval length between encounters) results in higher retention rates in short-term as well as long-term memory (Carpenter, & DeLosch 2005; Karpicke, & Roediger, 2007a, 2007b).

The concept of spaced retrieval bears resemblance to that of task-cycling or *spiral learning* as it is sometimes called. This is the third learning principle that is of importance in relation to the development of a new reading course. In particular, Levy and Kennedy (2004) from Griffith University brought attention to this subject outlining a task-cycling pedagogy in foreign language learning. The pedagogy draws on Skehan's (1998) notion of a balance between focus on form and focus on meaning. In order to achieve a balance, Skehan (1998) suggested "to implement sequences of tasks so that balanced development occurs as tasks which concentrate on different objectives follow one another in a planned manner" (p. 135). Skehan also spoke of cycles in this context and it is this idea that Levy and Kennedy have followed. Levy and Kennedy described a task-cycling approach using computer-mediated audio-conferencing for the study of Italian and Spanish at Griffith University. Students engaged in conversations emphasising fluency and negotiation followed by sessions of stimulated reflection focusing on linguistic and non-linguistic elements of the interaction. In order to analyse the conversations, they were recorded and the recordings were discussed with the students. Their project showed that students engaged in conversations successfully and were working at the interface of form and meaning.

Reading course online

Over the last few years, integrating new media into the second language curriculum in a meaningful way has been on the rise (Swaffer, & Arens 2005). New media entails learner software (viz., *Hot Potatoes*), learner platforms (viz., *Moodle*), social software (e.g., chat, wikis, blogs) as well as Web 2.0 applications (e.g., *YouTube*, *Facebook*). All of these have been tested in the second language classroom with the approaches using interactive task designs that provide immediate feedback being very successful (Blake, 2008).

This raises the question why reading courses do not also use this type of approach. One answer is that reading courses focus on comprehension whereas other language courses focus on comprehension and production. Therefore the assumption was to use as much authentic material as possible in order to develop reading strategies. There is certainly value in that approach as the reader will learn how to get to the main points of a text without necessarily knowing all the words and all the structures. However, the reports of instructors teaching those courses as well as research reports on reading courses tell a different story, that is, students often struggle taking those courses due to the large amount of words and complex structures they encounter in the course. It might therefore be worth exploring an introductory course on reading that will allow learners to familiarise themselves with the reading process before continuing with a more specialised reading course.

Current research on reading courses points out that these courses use complex grammatical structures and are rich in lexical items. A learner with no previous knowledge of the target language can be quickly at a loss. Huang and Liou (2007), as well as Murphy (2007), not only tried to develop programs to assist learners but also tested these programs. Huang and Liou (2007) presented a computer program that assisted students in reading courses to sort through the vast amount of lexical items in an English as a Second Language (ESL) course. The program chose words based on frequency from a variety of authentic texts. It then created a new reading text with those words. Students were tested on their knowledge of those words before and after reading the text. Results showed that there was some improvement in students' retention of those words. However, the text itself was still very complex in terms of the grammatical structures. Huang and

Liou concluded that targeted vocabulary instruction is essential in reading courses. In Murphy's (2007) study on feedback, Japanese students were provided with elaborative feedback that explained, directed and monitored students' learning via a computer. A post test revealed that students improved their comprehension significantly.

The next step is to use this research for the development of a new reading course. Not only a course that streamlines texts, chooses words based on frequency and introduces strategies and grammatical structures with a cyclical approach but also one that provides interactive tasks and immediate feedback. It was therefore decided to create such a course, in particular to use an online design as it provides opportunities to create such tasks and feedback.

The new course design

Introductory reading course

The design for the introductory German reading course attempted to streamline texts in order to avoid complex grammatical structures and a vast amount of low-frequency lexical items. It progressively introduced strategies and the online design provided interactive tasks with immediate feedback. The desired effect was to allow spiral learning with learners building their understanding of the texts. That is, while some words, strategies and structures were recycled from chapter to chapter, new words, strategies and structures were introduced building on the ones that had already been covered.

Streamlining texts / Structures

The idea behind streamlining texts was to present a balance of form and meaning. Therefore texts on 'Philosophy', 'Music' or 'Law' were not chosen as these often used the most complex structures. For example, texts on 'Law' have an abundance of passive voice structures. Instead, texts from newspapers were selected that used less complex structures as they were written for a wider audience. These texts were then compiled and streamlined. The texts picked one major event relevant to German society from every decade from the last fifty years. Some of these events have been turned into movies and are still talked about in society today. For example, the 1954 soccer World Cup that was won by Germany - known as the 'Miracle of Bern' - was included as it gave new hope to the German people after the end of the World War II. Other inclusions were:

- the 1962 storm tide and flood in Hamburg that was the first test of the new German military - die 'Bundeswehr' - and which propelled a senator of Hamburg, Helmut Schmidt, later chancellor of Germany, into the media;
- the 1977 high jacking of the airliner 'Landshut' by sympathizers of the Red Army Faction who had committed terrorist acts in Germany;
- the 1983 German space mission that characterised the Space Race between West and East and symbolised innovation and the prosperous economy in the West;
- the history of the Reichstag as a symbol of unification including the wrapping of the Reichstag in 1995 by artist Jean-Claude Christo; and,
- the environmental effect of acid rain on German forests and the increasing care for the environment which plays a major role in German society today.

Each chapter used key grammatical structures that were recycled in the following chapter while at the same time new structures were introduced in the following chapter that built on the previous learned structures. The concept was to start with the basics and then increase the complexity. The key structures were 'present tense 1' (verb conjugation and position / nouns and subjects); 'present tense 2' (modal verbs, future tense / conjunctions); 'nouns, pronouns' (subjects and objects / prepositions and conjunctions); 'past tense' (verb conjugation and position); 'passive voice' (present tense and past tense); 'subjunctive 1 and 2' (present tense and past tense).

The concept of spiral learning was introduced by order of topics covered. For example, students learned about verb position in Chapter One (whereby the main verb is the second unit in a statement using present tense in German) which was reviewed in Chapter Two with the

introduction of modal verbs (in which the main verb is pushed to the end of the sentence in a statement using present tense in German while the modal verb is positioned as the second unit) and expanded on in Chapter Three (whereby using subordinating conjunctions rather than coordinating conjunctions forces the word order to change).

Words / Frequency

The texts included function words, content words as well as cognates. Aitchison (2003) referred to content words as the 'bricks' and function words as the 'mortar.' However, as she and others (see, for example, Singleton 1999) cautioned, the distinction may not be as clear-cut as previously assumed. It follows that this distinction can only be a rough categorisation. However, it was important to make that distinction as content to function words in a German text occur in a ratio of approximately three to one (Jones & Tschirner, 2006). The word categories - nouns, verbs, and adjectives - provided the content words. The word categories - adverbs, prepositions, and pronouns - supplied the function words.

Another word type is the cognate. Carroll (1992) defined cognates as the lexical L1 (first language) and L2 (second language) items that bilingual speakers regard as essentially being the same. More specifically, there are cognates that are semantically identical (i.e., 'die Lampe – the lamp') and close-cognates. Close-cognates differ in their presentation either phonologically or in their written form but would still be recognisable as a similar form by L1 speakers. (i.e., 'shoe – Schuh' - sound alike but differ in spelling; 'minute – Minute' – are spelled the same but differ in pronunciation). Whenever possible, cognates and close-cognates were selected from all word categories.

The texts of the introductory German reading course covered a wide range of topics (see below). They were compiled from several authentic texts and then streamlined. After content words, function words and cognates were chosen. They were cross-referenced with the help of the German frequency dictionary by Jones and Tschirner (2006) that assigned a frequency ranking to each word in German. The ranking is based on 4.2 million words of contemporary German that had, in turn, been compiled out of different corpuses (spoken; literature; newspaper; academic texts; instructional language). Jones and Tschirner determined how many times a word occurs in this corpus per million words. They drew the line at sixteen times per million which resulted in 4,034 words that are used most frequently in contemporary German. The approximation of 4,000 words was chosen to comply with Nation's (1990) assessment that 95% of a text consists of 4,000 to 5,000 words. In order to streamline the texts compiled from the authentic texts for the introductory reading course, any word that was not part of the 4,034 most frequent words was only used in a text if the context required it and there was no alternative.

Reading strategies

The concept of task-cycling was applied to words in combination with reading strategies. Each chapter introduced two or three strategies that prompted students to reflect on their work. In addition, at the beginning of each chapter, the strategies of the previous chapter were reviewed. For example, students learned to look for the heading of a text in Chapter Two. In Chapter Three, they reviewed the strategy by expanding on frequencies. Furthermore, they expanded word associations into word fields.

In detail, the strategies were to look for internationalisms and names; to look for cognates; to identify the heading of a text; to look at frequencies; to make one's own vocabulary list; to draw a word field; to make a mind map; to look for what you know; to read for general content first, then for details; and to find the verb. Each strategy was further broken down into sub-strategies. For example, the third strategy 'Identify the heading of a text' consisted of identifying the meaning of the heading or title; checking if the words used in the heading or title occur in the text again; if they did, then identifying the meaning of that sentence; making associations with the words used in the heading or title; looking if you find any of those associations in the text; and, if you did, then identifying the meaning of that sentence.

Web application

The course was developed as a web application. This allowed students to easily navigate between texts, tasks, strategies and structures and thereby practise the concept of spiral learning. Furthermore, the program used interactive tasks to provide students with immediate feedback. This design was created so that learners would have opportunities to read and identify the main points of a text by simply applying the strategies that were outlined, the grammar explanations given, and using the feedback from the interactive tasks. In other words, learners would not be forced to use a dictionary as soon as they read the first sentence of a text because the complexity of that sentence and the lack of feedback would leave them no other choice. The goal of this design was to assist learners to immerse in the text. The aim of this reading course is for learners to 'get' the main points of a text without looking up every word in a dictionary.

Experience

The course was first offered online in the spring of 2009 (January to April) at the University of Victoria in Canada. The course could have been taught via distance education because of its online format. However, the first time it was offered, students met in the CALL (Computer Assisted Language Learning) facility under the supervision of the instructor. The instructor's task was to advise students when/if they had questions regarding the content of the course as well as technical issues. The class met once a week for the duration of three hours. Twenty-four students participated in the course. In order to go through all the material of each chapter, students also had access to the course online outside class hours.

As stated above, instructors and researchers of traditional reading courses have reported that students translate word by word with their dictionaries as soon as they read the first sentence of a text to deal with the abundance of lexical items and the complex grammatical structures. The question therefore was if the new design of a reading course, as described above, would give students the opportunity to actually read the texts.

Findings

The instructor and researcher of this introductory reading course carried out class observations. The observation recorded the amount of time students spent using their dictionaries as well as the point in time in each class students began using their dictionaries. In addition, short informal interviews were carried out with selected students.

Amount of time

The first observation was that the amount of time students spent using their dictionaries stayed about the same throughout the semester. The introduction of internationalisms, names and cognates enabled them to find their way into the texts. However, every chapter introduced new words that had to be checked with a dictionary.

Starting time / Informal interviews

The more interesting fact was when the dictionary was used. This was the second observation. During the first few weeks of the course, students used the dictionary as soon as they opened a text. However, as the semester progressed, most students started using their dictionaries at a later point in time. Informal interviews asking students how they approached a text revealed that students had different preferences. The interviews were informal because they were carried out at the end of the last class. Only eleven of the twenty-four participated as participation was voluntary. The particular questions asked were: 'How did you approach the texts of the last chapter?', 'What did you do first: read the text, the strategies, the grammar explanations, looked at the tasks?' (that was a follow up question if the response to the first question was not very informative), 'Did the approach you used for the texts in the last chapter differ to the approach you used in the first chapter?'

Of the 11 students, three said that they read the texts first without looking at anything else; two answered that they looked at the reading strategies while reading the text; four that they went over

the grammatical structures before reading the text; one said that she looked at the task and the feedback while reading the text; and one said that he simply used his dictionary and translated. Three of the four students who went over the grammatical structures first and the student who translated everything with his dictionary indicated that they used that approach throughout the course. The other seven students answered that they read less of the texts in the first chapter but more in the last chapter.

Starting time / Time table

The following figure (Figure 1) indicates the starting time of the use of the dictionary. The letters (A to S) represent a sample of the twenty-four students; the numbers (1 to 12) the teaching week. In Weeks 5 and 10, the students wrote a midterm test and were therefore not timed.

	1	2	3	4	5	6	7	8	9	10	11	12
A	11	10	13	14	0	27	29	27	33	0	31	30
C	8	6	7	9	0	12	12	13	20	0	24	26
G	9	11	14	16	0	19	21	22	25	0	29	33
M	16	19	23	24	0	28	21	25	31	0	28	25
S	12	12	15	18	0	20	22	21	22	0	24	27

Figure 1: Starting time in use of dictionary

Student A began using the dictionary eleven minutes into class in Week 1 using the program and thirty minutes into the class in the last week. Some students, for example Students C and G, started less than ten minutes into the class using the dictionary in Week 1. Student G gradually started using the dictionary at a later point in time as the course went on whereas Student C did not. Student C jumped from thirteen to twenty minutes from Week 8 to Week 9. Student M went down from twenty-eight to twenty-one minutes from Week 6 to Week 7. Some students seemed to find a comfort zone: for example, Student S hovered around twenty minutes from Week 6 to Week 9. The numbers showed that students had personal preferences when using the dictionary. The topic might also influence that decision. However, towards the end of the course, most students used the dictionary at a later time than at the beginning of the course.

Overall, the observations showed that the new course design worked. By the end of the course, the majority of the students actually read the texts before using their dictionaries. Considering that the goal of the reading course is for students to learn how to get to the main points of a text by reading rather than checking each word, this new reading course succeeded.

Summary and Outlook

The design of the course presented here was a departure of a traditional reading course. Instead of using authentic texts with an overload of structures and lexical items, texts were streamlined to achieve a balance of form to meaning as suggested by Skehan (1998). Several learning principles were used to develop this course by streamlining texts, using high-frequency words, recycling structures and introducing strategies: the modified natural approach, the concept of spaced retrieval, as well as the concept of task-cycling. The course was developed online to be able to use interactive tasks that provided immediate feedback. This contributed to the overall approach of spiral learning. Class observation and informal interviews showed that most learners used the opportunity to ease into the process of reading by actually reading.

This course is in contrast to traditional reading courses that supply learners with an overabundance of words and structures to be as authentic as possible. However, the two types of course do not have to be mutually exclusive. At the introductory level, the new course design works well because it assists students to get to the main points of a text without looking up every word in a dictionary and turning it into a translation exercise. At an intermediate level, texts are more

complex. Future research could look into a combination of this new type of reading course and the traditional reading course at the intermediate level. It should also be noted that the course presented here was developed for native speakers of English who want to understand structures of a language other than English (LOTE). The example used was German but the design of this new course can also be used for other languages.

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