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FROM CLILiG TO DIGITAL TOOLS: DEVELOPING READING STRATEGIES AND COLLABORATIVE SKILLS FOR UNIVERSITY STUDENTS

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ABSTRACT. ***From CLILiG to Digital Tools: Developing Reading Strategies and Collaborative Skills for University Students.*** The article sets out to investigate how language awareness strategies found in the didactics of CLILiG (Content and Language Integrated Learning in German) can support, develop and train reading strategies and collaborative skills for university students. As a didactic concept, CLILiG is, on the one hand, the direct result of language policies. On the other hand, it is a natural response to the multilingual learner of today. The first part of the article focuses on CLILiG, its variants, main features (micro- and macro-scaffolding) and how digital tools for learning can be integrated in class, in order to make use of both language and specific content. The second part discusses two didactic examples designed for students studying in German Institutional Communication in the European Union at the Faculty of European Studies, Babeş-Bolyai University, Cluj-Napoca, Romania. The article offers a look into digital tools like *Coggle* and *Padlet* and how they can be used in class to train reading strategies and collaborative skills with university students. Students' interaction with challenging texts in a foreign language and digital tools supporting a learning outcome can improve reading skills and allow students to find creative ways of understanding specialized content, especially because of the features digital apps like Coggle and Padlet have to offer.

Keywords*: CLILiG, digital learning tools, reading strategies, collaborative skills, macro- and micro-scaffolding, language awareness strategies.*

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REZUMAT. ***De la CLILiG la aplicații digitale: Strategii de citire și învățare colaborativă pentru studenți.*** Articolul explorează cum principiile de *conștiență lingvistică (language awareness)* regăsite în didactica CLILiG (Content and Language Integrated Learning in German) susțin, dezvoltă și exersează strategiile de citire și colaborare ale studenților. Ca termen, CLILiG este pe de-o parte rezultatul politicilor lingvistice din spațiul german, pe de alta este un răspuns firesc la multilingvism. Prima parte a articolul prezintă abordarea CLILiG, principalele caracteristici ale acesteia (micro și macro-secvențiere) și felul în care aplicațiile digitale la clasă pot fi utilizate în a exersa atât limba străină, cât și conținutul specific al materiei. Partea a doua conține două exemple didactice concepute pentru studenții înscriși la cursul de *Comunicare instituțională în Uniunea Europeană* (în limba germană) din oferta Facultății de Studii Europene, Universitatea Babeș-Bolyai, Cluj-Napoca. Articolul prezintă aplicațiile la clasă a două instrumente digitale, *Coggle* și *Padlet* si felul în care acestea exersează strategiile de lectură a textelor specializate, imbunătățind și colaborarea între studenții participanți la curs și seminar. Exemplele arată cum o lectură planificată (determinată de scopul didactic final) a textelor de specialitate permite înțelegerea acestora și cu ajutorul aplicațiilor digitale precum Coggle sau Padlet.

Cuvinte-cheie: *CLILiG, aplicații digitale, strategii de lectură, colaborare, macro- și micro-secvențiere, strategii de conștiență lingvistică.*

Introduction: German and CLIL

When teaching foreign languages, their cultural contexts and the history of an adoptive language and country, teachers are very proud and happy to capture their students with engaging materials and exciting language phenomena. But usually teachers relentlessly underline the fact that English is everywhere. Of course, English is what motivates young people to constantly switch between their first language and English. It is obvious that English will always be a first love for many learners and a first choice of study. But trailing behind are other languages and one of them is German. Needless to say how people react to German, as they always roll their eyes and say: It is just such a difficult language. Such bad public reception and even Germans themselves bragging about their long words and how having a word for anything is really fun, makes landing a probe on the Sun easier than teaching (and learning) German. This introduction discusses second choices in studying foreign languages and how a shift in understanding education in a global context has created a proper ground for teachers and learners of German alike. We have come to the point in which our learners are not monolingual and the educational systems show that:

> Demographic developments, which have transformed European societies into communities that receive immigrants rather than dispatch emigrants, have begun to undermine this understanding, as has the political aim of European integration, embodied in the institutions of the European Union and the Council of Europe. More generally, of course, we are witnessing a trend towards internationalization and globalization, putting pressure on education systems to provide skills which will allow students to stand their ground in international contexts. (Dalton-Puffer 2007, 1)

What Dalton-Puffer discusses further is the emergence of Content and Language Integrated Learning in the European educational system. The author sees in CLIL the teaching of different subjects in non-L1 languages, especially English and, in recent years, German. This is not only a consequence of language policies in a changing world, but also that language, as a medium for content, creates the most appropriate learning context. In other words, the CLIL classrooms enable a more natural acquisition of languages and "in the European context at least, CLIL classrooms are widely seen as a kind of language bath which encourages naturalistic language learning and enhances the development of communicative competence" (Dalton-Puffer 2007, 3-4). In recent years, the Goethe-Institute in Munich, in collaboration with schools and universities in Germany and around the world, has developed extended programs for CLIL classrooms, with a focus on MINT: mathematics, informatics, nature science and technologies. This efforts could aim at bridging the gap of labor force in the German industry in the (not such distant) future. It is also a response to the ever-changing social landscape, reshaped by migration and integration policies.

What are the principles that guide CLILiG didactical approaches? To what extent can these be useful for university teaching of subjects in non-L1 languages? Language in MINT and other subjects has to be precise, as students have to name, describe, argue, explain etc. Main questions that arise are: "How do learners go about specialized texts? What techniques (images or video sequences) can support a systematic acquisition of vocabulary? What reading strategies help learners to understand complex and specialized texts? How can students become independent learners in dealing with such texts?" (MINT und CLIL im DaF-Unterricht. Ein Leitfaden 2018). In the guideline book mentioned before the authors reveal how early education and principles of CLILiG can ensure a proper language tool kit for students to later (during school or even in their professional life) present and communicate specialized content. Ingrid Gogolin and Imke Lange call upon the term "Bildungssprache", a word similar to the terms "academic language", "academic discourse" to group both language for school (*Schulsprache*) and specialized language in a didactical and pedagogical context. (Gogolin, Lange 2011, 112). Authors like

Feilke and Beese et. al take a step forward and suggest that language for school has a didactical purpose and is *constructed* upon, for example the types of texts students have to write. In Germany *Erörterung* is a written debate and very popular in German schools, as it is the case for essay writing in English speaking schools. Training the capacity to debate in writing means that students need *to use* appropriate language to compare, describe, argue, making reference to other texts etc. The competence to use this language (*Bildungssprache*) in such a particular context has to be practiced in early education, so that it can become a prerequisite in later school years. This means that not only students, for example from migrant families and non-native speakers, can face difficulties in using *Bildungssprache*, but also native speakers (Feilke 2012, 8), as such type of language is seldom the object of practice in the classroom. Beese et. al suggest that *Bildungssprache* criss-crosses all school subjects and underline how: "Language that is spoken and written in school consists of different languages". (Beese, Benholz et. al 2014, 28). The authors illustrate such a hypothesis by using the following graphic description:

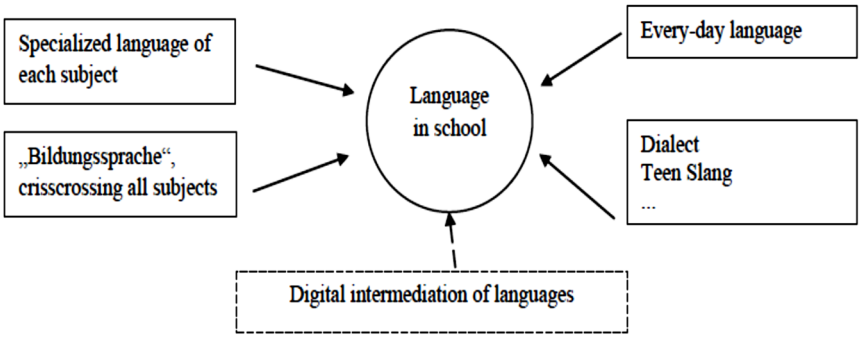

Figure 1

Next to this language assembly suggested by Beese et. al I added digital communication as part of this description mainly because of its omnipresence. The role digital communication can take up in a learning context will be discussed later in the article.

What also comes short in early education, next to practicing Bildungssprache, are learning strategies for developing language and collaborative skills. Moreover, all language types mentioned above revolve around the skill of writing and reading. Teaching (in schools) makes full use of mostly written input in subjects taught and also demands written (or spoken) output that is usually not used in every day communication. This means that students may or may not be able to (effectively and in accordance with the context, for example during a presentation) communicate content, independently of their first language.

Content Language Integrated Learning in German and Language Awareness Strategies

Outside the German speaking world, a sort of CLILiG has been a reality for quite a while. Regions like Transylvania have had German population for centuries and have schools where every subject is taught in German, both for native German speakers and non-native. Moreover, this type of approach has been fostered by the Babeş-Bolyai University in Cluj-Napoca, Romania. Students here can learn in three official languages of instruction (next to programs offered in English): Romanian, Hungarian and German. My approach is a sort of CLILiG for higher education, in which I apply principles found in the didactics of German as a foreign language. The article describes my personal approach to content found in non-L1 language input. It also describes how the usage of new media and digital apps reshape the reality of the classroom, by offering mostly a platform of collaboration and, through exchange of information and its storage, a better understanding of content and personal interpretation of findings. Moreover, such a concept can maybe answer the question, if language or content should be the centrepiece in CLILiG classes (Drumm 2017, 81). Sandra Drumm elaborates on two relevant notions that touch upon CLILiG-classrooms: teaching and learning German as a foreign language through specialized content and learning and teaching subjects (with specialized content) in a foreign language (German). In the latter, the subject's learning goal design the didactical framework. In this particular case students acquire, in parallel, both new linguistic devices and new content (2017, 82), which can turn out to be quite a challenge. Drumm goes even further and argues that the simple acquisition of specialized vocabulary and chunks (in German *Redemittel* – structures for speaking and writing) do not significantly contribute to improving language or knowledge on the subject. Specific language of a subject contains elements of every-day language. The only difference would be the company in which such language structures emerge in written specialized text. For example the passive voice (Passiv) is used in spoken and written German. But once it emerges in texts next to phrases (Funktionsverbgefüge) or nominalizations (Nominalisierunge) (2017, 83), these structures become an impediment in understanding the text or even solving a task. A manner of dealing with such difficulties is to design classes in accordance to the 4C principles that should actually guide the design of CLIL-lessons: content (topic, subject), cognition (typical patterns of thought and cognitive strategies applied to finding insights on the subject), communication (learning and using language) and culture (enabling intercultural awareness) (2017, 82). The 4C principles can, in my opinion, find realization in developing language awareness, while teaching subjects in a non-L1 language.

Inducing language awareness, developing language competences and aiming learner's autonomy, while teaching subjects in non-L1 languages, is called scaffolding. Several factors impact the manner in which scaffolding can be a tool in establishing what language structures are needed to solve different tasks. These are: the learning goals of the subject, student's level of knowledge (Beese, Benholz et. al 2014, 33), curricula, classroom setting, class size and even class infrastructure. Pauline Gibbons sees in the term scaffolding "the temporary assistance by which a teacher helps a learner know how to do something so that the learner will later be able to complete a similar task alone. It is future oriented and aimed at increasing a learner's autonomy." (Gibbons 2015, 16). Beese, Benholz et. al use macro- and micro-scaffolding to put into perspective the actual realization of such an endeavor: the macro-level consists applying a needs analysis, investigating the current proficiency level of students, formulating learning goals and the actual lesson planning. The micro-scaffolding process refers to classroom interaction and how the teacher is required to build in sequences for partner and group work or classroom discussions (2015, 41). For university teaching, scaffolding implicates a special design of the syllabus and a different approach to lecturing and organization of seminars. Furthermore, to what extent can digital learning tools, used in the context of higher education, also provide support in dealing with new content and challenging academic texts? The next part of the article will focus on the role digital tools play in teaching at this level and their utility in the CLILiG approach.

Digital Tools for Teaching and Learning in Higher Education

New media is in current days an integrated part of childhood. Authors like Tillmann and Hugger even speak about the *Medialisierung* of childhood. The term *Medialisierung* refers to how new media infuses communication on a receptive and interpersonal level. Moreover, this type of interactive communication influences the development of personality in children, generational order, but also the configuration and the experience of family (2014, 31). The versatility of new media and digital tools and their interconnectedness become more relevant in a learning context than their simple usage and consumption. The mobility of devices also changes the children's spatial perception, placing them as subjects in the world they construct (2014, 35). Such an introduction aims at defining the current generation of students and their intertwined existence with the digital.

Studies on the impact of new media in higher education have been recently published in *Jahrbuch Medienpädagogik* and address the actual usage

of new media (tablets) in the context of creating a personal learning environment through this devices (Galley, Mühlich et. al 2017, 181). Other studies focus on how online platforms (ILIAS) can create a collective virtual learning environment (2017, 195). Projects like these have revealed that students do see in the freedom in how they can solve a task something positive and that independence in organizing learning habits at this level impacts most aspects of their lives. Moreover, by using learning platforms and their resources (wikis, blogs, folders, forums etc.), students test the enhanced experience of collaboration and time management, next to overcoming technical difficulties. Such endeavors show the importance of infrastructure in higher education facilities. As these teaching conditions are not necessarily always the norm, I will now focus on some principles that can guide, on a micro-scaffolding level, the usage of digital apps and tools in teaching and learning (Tulodziecki 2011, 56-57), mainly because all of my students have a smartphone and internet connection.

1. Meaningful tasks with an appropriate complexity degree: requiring decision making, opinions or the actual creation of (digital) content, ensuring that all prior knowledge on the subject matter is involved in the process of task solving.

2. Transparent learning goals and independent approaches to a task: students actively decide what they want to learn and how they want to work on tasks or on content.

3. Individual and cooperative task solving paths: students get the chance to independently work on a problem, compare, correct and expand their knowledge during cooperative learning sequences.

4. Comparing results and systemizing findings: students are required to decide on the relevance of findings, filtering essential information and how such information (and content) can be made clear for others.

5. Reflecting on the process of learning and transfer upon other subjects: How can strategies, language elements, visualization methods and task solving paths be useful in other settings?

The principles mentioned before find their core in strategies of cooperative learning and teaching. The five pillars of cooperative learning and teaching are: positive interdependence, individual accountability, promotive interaction, appropriate use of social skills and group processing (Johnson, Johnson 2008, 32). Positive interdependence is usually obtained by setting transparent learning goals and by creating the frame for individual accountability. Group members will always have different tasks and will assume different roles during the attempt to solve the designated group work. Promotive interaction requires group members to promote not only their own productivity, but also of other team members in order to succeed. The

constant exchange of information, materials and ideas sets up a proper frame for negotiations and best decision making to achieve the goals of the entire group. Social skills that need to be taught to group members during cooperative learning sequences will be used to build trust, acceptance, and support, but are also used in solving emerging conflicts. Group processing requires the implementation of feedback mechanisms on how the group work evolves and what adjustments need to be made (2008, 23-25).

Digital Tools and CLILiG in Higher Education

What digital tools are useful in teaching university students? To what extent can digital tools improve the understanding of specialized texts? Is there a need for a detailed comprehension of texts or is, for example, the training of reading comprehension more relevant? How can social and cooperative skills be trained through the usage of digital tool? To answer such questions it would be best to refocus on the scaffolding process and the establishing of learning outcomes.

I understand reading in higher education as reading-literacy. It is a concept that has marked the findings in PISA studies of recent years and reveals the active process of (re)construction of meaning during the act of reading. Moreover, reading is an active process mainly because the understanding of the content in the text is linked to prior knowledge on the topic of the text, knowledge and understanding of the world, but also to the language level of the reader (Garbe 2009, 21-22). The types of texts that students are required to read are either continuous or discontinuous texts. The latter refers to texts that are supported by graphical elements. Moreover, authors like Beese, Benholz et. al discuss the term logical image, when referring to diagrams, tables, figures or images (2015, 49). These elements can have little textual support. Hence, their understanding and interpretation depend on how much knowledge students have on the topic and if they can make use of language to interpret these logical images.

In the following I will describe two different ways of training reading strategies, with the support of two digital tools and smartphone/tablet and laptop I have used in class. Reading strategies can be trained before, during and after reading the text. Making students aware of such strategies help them identify the proper reading type (global, selective and in detail) they can use. Before describing the group of learners/students, learning goals and the digital tool used in class, I will shortly mention some reading strategies and the moment to use them. Activating knowledge on the topic, formulating hypothesis in regards to images, graphics, content and titles, formulating

questions to the text and identifying the source and the type of text are strategies that can be used before reading. Identifying paragraphs and a proper title for each paragraph, underlining relevant information, formulating and answering questions and separating relevant from irrelevant information are strategies that can be used during reading. In the aftermath of reading a text students can be encouraged to bring further examples linked to the text and to present information found in the text in a graphical manner, for example a mind-map (see Beese, Benholz 2015, 48-49).

Didactic example number 1: Digital tool - Coggle (mind-map online creator)

Using a mind-map digital creator has two major advantages. Firstly, it offers an instrument to collect key-ideas from all participants in real time. Secondly, it enables the participants to actively negotiate what are the main and secondary issues of the text. It also offers the possibility (through its features) to graphically represent cause-effect relations in the text. The students that have worked with Coggle are in the first semester of study at the Faculty of European Studies (Babeș-Bolyai University, Cluj-Napoca, Romania). Students are taught all subjects in German and the course I offer is called Institutional Communication in the European Union. The students' German language level varies between B1+ and C1, with one native German student. Their other foreign language is English. Working with both German and English texts means that reading strategies become more relevant than an accurate understanding of entire texts. It also meant that the types of reading had to be discussed. In the first week of the seminar, students became familiarized with notions of communication and the public sphere. The text I offered to practice global understanding of a text was *Der Begriff der Öffentlichkeit* (2017, 28-41) by Alexander Godulla. In preparing the class, I decided to offer two preparatory steps, before the actual reading of the text.

Step 1: Was assozieren Sie mit dem Begriff der Öffentlichkeit? (What do you associate with the term public sphere?)

Step 2: Wichtige Wörter im Text: Was passt zusammen? (Words from the text: Assign the right definition). In step 2 I collected relevant and difficult words like heuristisch, normativ, empirisch, Steuerung, Verortung, zwangsläufig, Rückkoplung etc. and mixed in a simpler definition. I aimed at familiarizing my students with words that, out of the context of the text, can have a different meaning.

Step 3: Lesen Sie den Text. Füllen Sie das Mind-Map mit Hauptideen aus dem Text bei coggle mit Ihrem Partner aus. Sie haben 40 Minuten Zeit. (Read the text and fill in with your partner the key ideas on the Coggle app. You have 40 minutes).

The last step of the 90 minutes sequence consisted in sharing a mind-map of one group and reconstructing the text, by adding other key-ideas as shown in the following image:

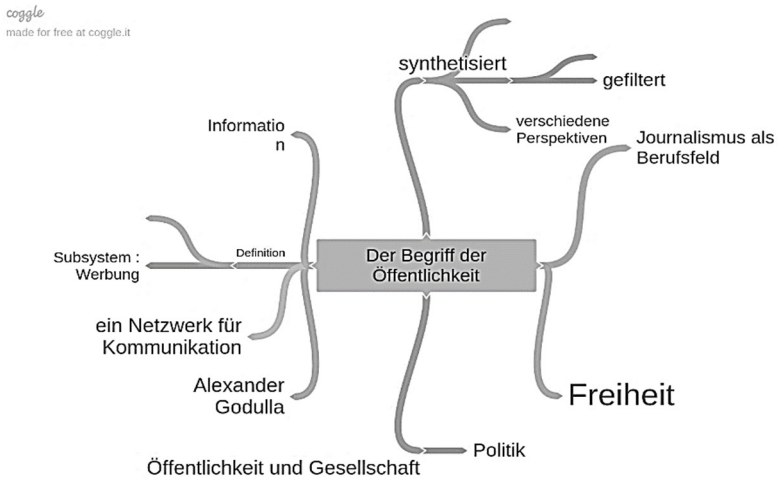

Figure 2

Using the digital app Coggle created a platform of exchange of information (through pair work) and negotiation with the entire group. As the sequence had aimed the global understanding of the text, the transfer onto a written task was postponed for the next meeting. During the reconstruction of the text students I projected language structures (Sprachmittel) to offer support during speaking:

Der Text wurde von … verfasst; Der Text handelt von...; Zunächst beschreibt der Autor/die Autorin ...; Dann geht er/sie auf ... ein; Anschließend untersucht er/sie ...; Der Autor/die Autorin befasst sich mit ...; Er/sie setzt sich auch mit dem Problem des/der ... auseinander.

The last part of the sequence introduces the written task. Following the principles of micro-scaffolding students prepare for the next meeting a summary of the text, based on their mind-maps and on a series of typical language structures offered by the teacher (Buchner 2015, 87).

Didactic example number 2: Digital tool - Padlet (collaborative online platform)

I will now focus on a second didactic unit during which students tackled a text in English. During a needs analysis at the beginning of the semester, it

became clear that students find reading in English easier than in German. But the chosen text *What are institutions?* by G. H. Hodgson is very complex in content. In the first year I introduced this particular reading, I noticed how determined students became to look for certain and definitive answers in the text for concepts like rules, conventions and institutions. But this particular text (or other texts) on this topic does not offer such final answers. The following example is what I call task-related reading. It is a simple answer to a quite general problem: what happens when students do not read their assigned texts at home?

As I mentioned before, the Hodgson text discusses institutions from several points of view. It is also the author's answer to other scientists dealing with the term, making it difficult to understand, if one has not followed the entire polemic. Hence, a working sheet with certain tasks could help in refocusing students on interesting aspects of the text and making them curious to do research on the debate. Usually working sheets can be solved in individual and pair work and, as I already knew that my students will want final answers to their questions, I decided to allow them to work on their task sheet on the online platform Padlet. This digital app is a collaborative platform, in which students can post, edit or delete their findings, but also upload videos and photos. At the same time, students can see what their peers are posting on the same topic. Padlet has a free version (3 padlets/platforms) and students can access the platform by using a QR code or by receiving a link. As in the prior didactic sequence, I decided to introduce the topic by discussing the term institution and what associations can be made with the concept and to introduce Hodgson's main approaches to the issue. During the seminar, students were asked to read (or re-read) the first eight pages of the text and approach the text by following the task sheet and solving at least three or four exercises:

> Lösen Sie mit dem PartnerIn folgende Aufgaben zum Text **What are Institutions** von G. Hodgson? (die ersten 8 Seiten)

1) Welche Informationen haben Sie markiert? Warum waren sie interessant?
2) Welche Perspektive hat der Wissenschaftler: A. sozio-politisch B. wirtschaftlich C.philosophisch. Begründe die Wahl.
3) Wie definiert der Autor am Artikelanfang die Institutionen? Schreiben Sie mit dem Partner/mit der Partnerin die Definition auf Deutsch.
4) Was bewirken Institutionen in der Gesellschaft (3. Absatz / Sektion *On Institutions, Conventions and Rules*? Notieren Sie.
5) Was versteht der Autor unter Regeln und Konventionen? Wo liegt der Unterschied?
6) Welche Sätze passen am besten zu der Sektion: *On How Institutions Work***?**

a. Grundlage einer Institution sind Regeln, die dann vom Individuum als Gewohnheiten übernommen und weitergegeben werden.
b. Institutionen sind sowohl objektive Strukturen, als auch subjektive Quellen menschlicher Tätigkeit.
c. Institutionen interagieren nicht mit dem Individuum. Es gibt keine wechselseitige Beziehung.

7) Notieren Sie, welche Informationen Sie leicht verstanden haben.
8) Notieren Sie Ihre Unklarheiten/ Fragen.

The results of the team and pair work had to be written on the collaborative platform Padlet by using one smartphone in the group. Students were asked to write their names and task number. During the reading and task solving, but also after the reading of the text I noticed two relevant aspects. Firstly, students never asked in what language they have to write their findings. All of them started posting in German and there was no usage of English. Secondly, because the Padlet they were working on was projected, students began noticing similarities in their answers. Writing from their smartphones made it difficult to avoid misspelling, but the Padlet has an edit button and some of them decided to correct their errors. The following image is the end result of a 60 minute working sequence:

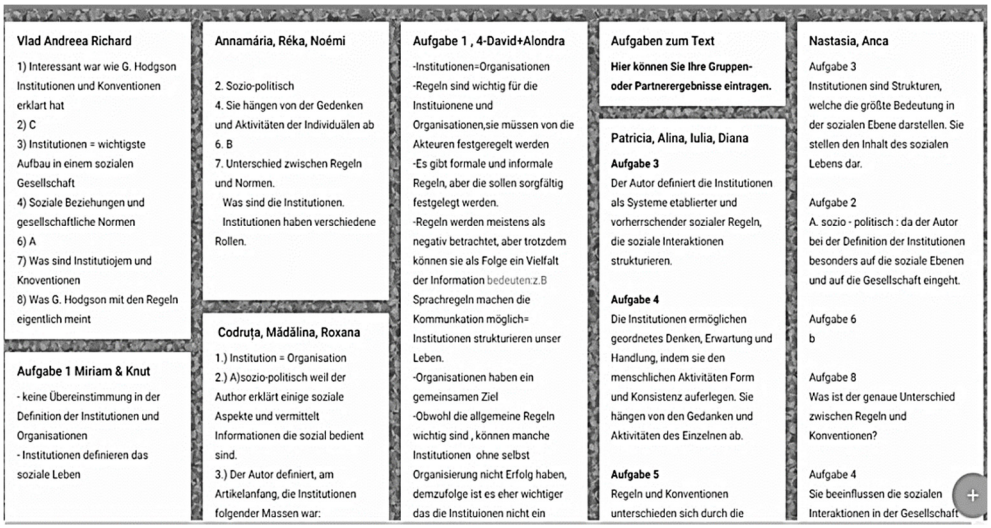

Figure 3

At the end of the sequence we decided to discuss the eight tasks most of the students managed to solve. There was a minimum requirement and all

of the students finished at least three to four tasks. In the final class discussion we talked about similar answers and attempted to answer open questions (as required in task 8).

Next to using task-related reading, Padlet becomes a useful tool in training students' collaborative skills. Most of the groups decided to split the eight pages and take up 1-2 tasks per member and also have a person in charge with writing on the smartphone. Some students tackled the tasks in the designated order and post directly, after they had found the information. The most important aspect students had mentioned during feedback was that they now have information on the text saved for future usage.

Conclusion

Both didactic examples follow the principles of micro-scaffolding and cooperative learning. The usage of digital apps and tools in the reading process ensures a platform for exchange and creation of digital content. Through both Coggle and Padlet students have the chance to independently work on a text and then expand their knowledge on the topic through comparing results and deciding on meaningful information from the texts. Moreover, during group work, members have to upload their findings on the platforms and make them intelligibly for their peers. Working with mind-maps in the app Coggle enables students to have a tool for sharing information and applying reading strategies on all the texts they are required to read. The digital app Padlet is a platform for creating (written) content based on readings and tasks. It offers the possibility to focus on the content of the text, but also revise the written online product according to specific requirements. Furthermore, students' interaction with challenging texts and digital tools supporting a learning outcome can on the one hand improve reading skills, on the other hand it allows students to find creative ways of understanding specialized content in a foreign language, especially because of the features digital apps have to offer. Using smartphones to communicate in a classroom setting creates a personal learning and collaborative environment.

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Material adapted for use in the classroom

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