CLIL in Language Learning Classes: Action- and Product-orientation as an Access to Subject-sensitive Language Acquisition

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Abstract

In addition to basic language competencies, a competent handling of discipline-specific language is needed to participate successfully in school and vocational training. The model for complete action is used in German vocational schools to remedy the deficit of sensual experiences. This model in combination with scaffolding and multisensory accesses can enable content-specific learning, which is not primarily based and transported by language. This leads to the opportunity that teaching of subject content can be combined with specific learning of the target language. Therefore, this teaching concept can offer content and language integrated learning in combination with vocational preparation from the beginning of school attendance.

A pilot survey explores, if the concept applied in technology lessons taught in a language learning class affect the language competencies and the behaviour of students differently compared to more theoretical technology lessons. Even students of the action- and product-oriented module show fewer abnormalities of behaviour, the language competencies of students in both units increase just slightly but not significantly.

Nevertheless, action- and product-orientated teaching facilitates that subject-based teaching can be focused in language learning classes without neglecting relevant input for language acquisition. This opportunity is the reason for an application-oriented generalization of the concept, which can be used for lesson-planning in all school subjects.

Keywords: action- and product-orientation, subject- sensitive language acquisition, multisensory access, scaffolding, language learning classes

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CLIL in Language Learning Classes: Action- and Product-orientation as an Access to Subject-sensitive Language Acquisition

According to the UN Refugee Agency 52% of the refugee population are children below the age of 18 years (UNHCR, 2017, p. 3).[1] Especially children and young people need access to school education and vocational training in the host country so that they have a perspective on the job market and life chances. Regarding this, it is fundamental to acquire language skills. Not only in everyday life, language competencies are relevant to communicate and participate in social contacts but they are also needed in institutional contexts, e.g. in school or university. It is known that performance differences in school contexts are mainly caused by differences in language skills (Diehl, Hunkler & Kristen, 2016; Gogolin & Lange, 2011). For this reason, they are required to gain profession-oriented competencies (Ohm, 2014) and to get access to education and a future job career (Brücker, Kunert, Mangold, Kalusche, Siegert & Schupp, 2016, p. 32). Besides basic language competencies, a competent handling of discipline-specific language is needed in specialized classes. For the German school context, it is established that this specific language can certainly be acquired in combination with the acquisition of the subject-specific content (Becker-Mrotzek, Schramm, Thürmann & Vollmer, 2013; Schmölzer-Eibinger, 2013). Therefore, immigrated young people need to master the language of schooling to participate successfully in subject classes. For this reason, it might be helpful to integrate subject content including the specific language, which is already needed in language learning classes.

In 2014 a guideline for German schools in Lower Saxony was published, which says that for students with insufficient language skills for participation in regular lessons, additive support measures had to be established (Niedersächsisches Kultusministerium, 2014, p. 332). This guideline decides as well that students should get prepared for regular classes in language learning classes, which are offered separately. These language learning classes are supposed to focus on language acquisition, although the language skills in all school subjects are mentioned explicitly in the guideline (ibid.). Referring to the current state of research above, that means that students in language learning classes need to be offered high-quality input of subject content to give them the opportunity to acquire the discipline-specific language required in school. Therefore, a concept can be used, which is already common in German vocational education: action- and product-orientated teaching. Transferred to language learning classes, action-oriented and product-oriented lessons can offer a possibility to focus on subject content with students with low or none basic language competencies because the content can be delivered by tactile materials, nonverbal language and multisensory access as well. Comprehension is ensured by the explicit context in each case. Therefore, the acquired professional knowledge can be combined with the acquisition of specific language content without undermining the learning of subject-specific content. That is why the double learning goal is not overcharging for the students in this context.

The corresponding concept, the theory of complete action, which was first developed for vocational education, is described in more detail in chapter 1. This concept was transferred to technology lessons for language learning classes by Campbell, Dutz, Landherr & Olthoff (2019) by developing teaching materials. Exemplary materials for the specific topic *Papermaking* are presented in chapter 2. These materials were used in a language learning class in Lower Saxony (Germany) in 2017. In this process, it was explored, whether progress in language learning can be observed while the students are working with the materials. Additionally, it was monitored, if action-oriented lessons influence the behaviour of students in comparison with more theoretical lessons.

The results and outcomes of the research project are briefly presented in chapter 3. These documented effects support the cause for a generalization of the concept. Therefore, chapter 4 presents instructions for the transfer of an action- and product-oriented approach to other school-subjects.

1 The model of complete action for school lessons

Subject lessons in regular school contexts are often characterised by secondary experiences and the consumption of results; this damage of sensual experiences can lead to a problem of motivation (Gudjons, 2014, p. 17 et seq.). Vocational schools in Germany try to remedy these deficits by implementing the model of complete action as a teaching concept. Actions can be defined as a pattern of behaviour in which measures and products are applied consciously to obtain a result (Aebli, 2019, p. 185). This definition covers the essential characteristics of actions summarized by Dietrich (1984, p. 58 et seq.): Actions are defined as targeted, active, structured and a confrontation of a complete person with a situation. This already seems to be the basis of a modern definition of actions, which is regulated by the triad *planning*, *performing* and *monitoring* (summarized by Gudjons, 2014, p. 46 et seq.). The model of complete action, which is based on the theory of activity regulation (e.g. Hacker, 2005) furthermore contains the steps *informing*, *deciding* and *evaluating*. Following Gudjons (2014), the six relevant and chronological sequenced steps can be described as follows:

- informing: The students need to procure specific information to solve a complex task.
- planning: The students prepare a concrete workflow independently to solve the complex task.
- deciding: The students decide how the workflow is translated into action.
- performing: The students execute the workflow independently but preferable in teams.
- monitoring: The students control the outcome by a variance analysis.

- evaluating: The students assess the results by reflecting their actions.

Because all steps are based on communication, it is obvious that students need (technical) language competencies to perform a complete action. Furthermore, the students need the competence to choose between different registers, because the condition for qualified actions is to learn to identify language-based variables in a concrete situation (Gudjons, 2014, p. 53, referring to Tymister, 1978, p. 67). Therefore, a complete action always needs to include (technical) language as well. Regarding this, it can be referred to Habermas (1981), who distinguishes between instrumental and communicative actions. Instrumental actions refer to the controlled change, investigation or production of an object, which is coordinated by the processes of communication (Wöll, 1998, p. 129). Communicative actions, on the other hand, describe the coordinated activities to the process of communication (Gudjons, 2014, p. 42), which is why these actions only represent targets, which are reachable in a cooperative way (Wöll, 1998, p. 130). Accordingly, the realization of a complete action in school contexts needs to include both, instrumental and communicative actions.

In summary, it can be said that an action-oriented teaching combines thinking and acting whereby an independent and active confrontation with the learning content is enabled. This includes various senses as well. According to that, the content of school lessons can have a meaningful function and relevance for the everyday life of the students, if they are integrating actions (Gudjons, 2014, p. 8). Relating to that, specific language competencies have to be included to complete the action.

The theory above can be applied to action- and product-oriented technology lessons in language learning classes to give students an oportunity to implement the acquisition of specific content and specific language competencies. This way, a combination of subject learning with basic and professional language learning can be enabled. This leads to the opportunity that specialist knowledge and competencies can be developed and expanded from the beginning of language learning in

language learning classes for learners at a low or non-existent level of language skills.

2 Action- and product-oriented teaching materials for technology lessons in language learning classes

Linguistic aspects which are relevant for communication can only be taught embedded in a context. Corresponding to that, it seems to be obvious that students in language learning classes have to be offered a content which is relevant for their life and combine it with the acquisition of the target language. This can be enabled by including technical and qualification aspects, which are relevant for further jobs and professions.

Technology lessons at the secondary level in Lower Saxony (Germany) are supposed to give students a vocational orientation and convey manual-technical skills (Niedersächsisches Kultusministerium, 2012, p. 6). Therefore, this subject seems to be appropriate to teach specialist competencies in an action-oriented way. In addition, the work with tactile products, objects and tools constitutes a concrete context. Thus, the opportunity is offered to realize language-independent experiences in self-efficacy for students, which is very important for the motivation and self-conceptualization from students with low or none language competencies. The basis for that are internal differentiated materials with an authentic and for the communication relevant language input. Multisensory access to the content allows for stimulation of various systems of sensual perception. This could be for example the auditive, the visual or the haptic system (Gibson, 1973, p. 75). As a result there is equivalence of the relevant information, whereby the comprehension is secured when the students have a lack of some positions. Because of the connection of technical activities with the (special) language acquisition in an action- and product-oriented way, the linguistic usage and the functions included are embedded in an authentic context and from the beginning of the institutionalization of the immigrnt students.

The production of an object should always be the focus of the action- and product-oriented technology lesson so that content-related learning is given priority. In this process, the specific content is actively constructed and discovered by the students and is not only received by secondary experiences and prepared results. The (specific) language which is needed to solve the complex problem or task in a regular context, is presented permanently but is never the only option to understand the content. Therefore, it has to be mentioned that lessons, which are based on this teaching concept are constructed and just close to reality. Nevertheless, it is an option for students with low or none skills in the target language to extend their professional qualifications and get prepared for the vocational training and further school education.

A proven didactic and methodical principle for the organization and the design of teaching materials is *scaffolding*. It was first described first by Wood, Bruner & Ross (1976) in the context of the exploration of the interaction of parents with their children. Gibbons (2002) transferred it to second language acquisition in school context. Following this, Quehl & Trapp (2013, p. 10) regard scaffolding as an opportunity to combine content and language learning in regular school lessons. The idea is that students get a task, which is challenging but not overloading. Because they can´t master the task by themselves, they get specific support. This *scaffold* is supposed to assist students to handle the task successfully. As soon as they are able to meet the challenge unaided, the scaffold can be removed (Quehl & Trapp, 2013, p. 26). According to that, scaffolding is based on Vygotsky´s (1978) Zone of Proximal Development (ZPD), which refers to the actual level of development and the potential level of development. The use of scaffolding for lesson planning and the design of lesson materials enables a type of teaching based on various levels and the constant development of content- and language-based learning. In order to use the scaffolding successfully, the content- and language-based needs has to be analysed for each topic first. Afterwards these needs are internally differentiated, so teachers can be supported for a competent and productive handling of heterogeneous learning groups.

The following teaching materials are generated for the implementation of action- and product-orientated lessons in language learning classes with technical contents and use scaffolds to support students to gain the content and language-based target of learning. All presented materials are developed in cooperation with the institute for technical education at the Carl von Ossietzky Universität Oldenburg (Germany). The underlying concept design is published by Campbell, Dutz, Landherr & Olthoff (2019). The concept and the materials as well were developed explicitly for the application in a language learning class in Lower Saxony (Germany) in 2017. Therefore, the target language is German. Nevertheless, the concept can be used for other languages as well, wherefore the concept is generalized in chapter 4. In the following, the developed teaching materials are exemplified for a teaching unit on the topic *Papermaking*. Accordingly, this target of the unit is the production of paper sheets out of waste paper. The teaching materials are primarily composed of boards of construction stages and worksheets.

On boards of construction stages, as illustrated in figure 1, the work stages are presented permanently. These boards are big panels with the technical artefacts of each work step on it. Some processes cannot be presented by a tactile object. In this case, students can watch a video on a tablet or smartphone, which shows the required work. Each step includes a written work instruction. In addition, the students can use an Anybook Reader (Hegener & Weiner, 2017) to listen to the recorded guidelines of the board. The Anybook Reader is a pen, which can be connected with stickers. These stickers can be coded with an audio recording in advance. For this purpose, every step on the board of construction stage is connected with a sticker. This can be indicated by the grey circles right next to the instructions on figure 1. The board of construction stage is permanently accessible for the students, so that they can read or listen to the instructions again if needed. In addition, the students can compare their manufactured semi-finished products with the corresponding products on the board any time. The presence of the products provides an opportunity, which is not based on language, to secure that the target of the lesson or unit can be reached by the students.
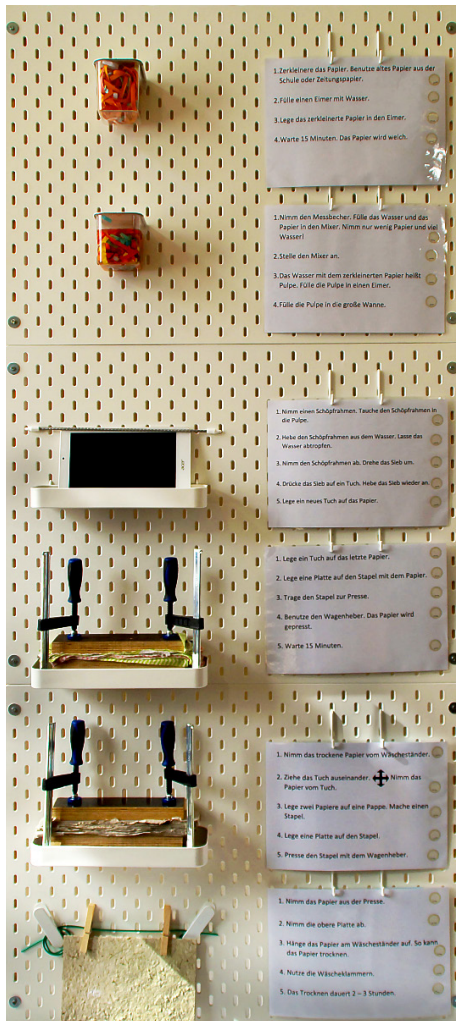
Figure 1: Board of construction stage for the topic *papermaking*.

Figure 2: Worksheet for the topic *papermaking* in profile 3.

In addition to the boards of construction stages, worksheets are used in the lessons to support the conducted activities in the lessons. They also offer an opportunity to reflect, repeat and secure the content of the unit. Therefore, the worksheets are oriented at the content but the language of the boards of construction stages as well. Figure 2 shows a worksheet, which guides the students regarding the use of tools and instruments, in this case the blender, which is used to produce the pulp. This can include for example the use of the ruler, protractor or the conversion of units. Hence the worksheets support further relevant meta competences, which are needed in the lesson or unit but can be useful in context of further apprenticeship as well. The individual choice of the worksheets for every student is a further opportunity for the internal differentiation in accordance with scaffolding. In addition, the worksheets are available in four profiles of requirements (from simple to high demanding). In between these profiles the number of gaps, which has to be filled by the students is changing. Figure 2 is an exemplary worksheet of profile 3, which is already demanding. In this profile, the terminology (e.g. zerkleinern [shred], Zellstoff [cellulose]) has to be mastered but the formation of the linguistic constructions (e.g. the imperative and articles) as well. The students are choosing by themselves, which profile they want to work on during the lesson. This is supposed to provide a positive influence for the self-conceptualization and self-confidence of the students.

The language, which is used for the working materials is controlled to some degree. The formulation can be illustrated by the following example, which is one of the worksteps on the board of construction stage in Figure 1:

(1) Tauche den Schöpfrahmen in die Pulpe. [Sip the mould into the pulp.]

The sentence in (1) shows, that the language is not just simplified, but includes relevant discipline-specific vocabulary (f.e. Schöpfrahmen [mould], Pulpe [pulp], Bütte [vat]) and constructions (f.e. the imperative), so that an appropriate communication in technical terminology about processes and objects can be gained by the students. Furthermore,

the example illustrates the target grammar: The sentence in (1) is formulated as an imperative in a main clause. This construction is used consistently on the boards of construction stages and in the worksheets. The imperative is an essential linguistic component, which is often used in instruction guides. According to that, the competent (receptive and productive) use of the imperative might be described as a part of the discipline-specific language competence and is meaningful and relevant in a discipline-specific context. Subordinated clauses and irrelevant information are avoided in all materials. However, instructions can be formulated with different types of sentences, so there is a scope to adapt the language to the learning group. Different types of sentences are shown for example in figure 3, whereby the degree of difficulty is increasing chronologically.

stage	verb position	example sentence
0	fragments	Ich Schöpfrahmen. [I mould.]
1	finitum: The verb is placed at second position in sentence)	Ich **tauche** den Schöpfrahmen in die Pulpe. [I sip the mould into the pulp.]
2	separation: Two parts of the verb, the finite and the infinite one are separated.	Ich **habe** den Schöpfrahmen in die Pulpe **getaucht**. [I have sipped the mould into the pulp.]
3	inversion: If an additional word is used in front of a main clause, the predicate and the subject need tob e switched. The imperative is included in this stage as well.	Danach **tauche** ich den Schöpfrahmen in die Pulpe**.** [Then I sip the mould into the pulp.] **Tauche** den Schöpfrahmen in die Pulpe. [Sip the mould into the pulp.]
4	final position of the verb: In subordinated sentences the verb takes place at the end oft he sentence.	...weil ich den Schöpfrahmen in die Pulpe **getaucht habe**. [...because I sipped the mould into the pulp.]

Figure 3: German verb positions with example sentences.

There is evidence that the positioning of the verb in different types of sentences is acquired in a specific order (Clahsen, 1985; Pienemann, 1986). Because of the high relevance of the verb in German sentences, the understanding but the appropriate use of verbs as well, can be indicate as an essential part of the fundamental language competence. Figure 3 presents a table with prime examples of the German verb positions.

All stages of the German verb positions are passed chronologically by language learners. Therefore, a table with the verb position can be used to analyse the language level of language learners. Regarding this, Grießhaber (2013) developed a profile analysis, which is used in the research project and is presented in chapter 4. A table with the verb positions as in figure 3 can also be used by teachers to gather evidence about the next stage, which a language learner needs to accomplish. The teacher can support the students to choose the board of construction stages and worksheets, which is in line with the individual needs. This can be illustrated with a concrete example: We try to imagine that we have a language learner in front of us, who can handle sentences with a finite verb in the present tense (stage 1) or present perfect (stage 2), but we have not observed him or her handling sentences from stage 3. According to the order of acquired verb positions, Vygotsky's ZPD and the principle of scaffolding, stage 3 is the next level we want to reach with the learner. Therefore, the use of the imperative in the instruction guides, as shown in the board of construction stage in figure 1 or the worksheet in figure 2 is reasonable. But if we are forced with a language learner who communicates predominantly by using finite verbs in the present tense and therefore can be assigned to stage 1, the adequate handling of the separation should be focused on as the next learning goal. Thus, the use of sentences from stage 3 might be beyond the ZPD in the anxiety zone and can be too demanding for the student.

A sensitive handling of the grammar structures can support the acquisition of the target language. The position of the verb in different types of sentences is just one example. Obviously, an internal differentiation should be used for further aspects.

3 Research project: Testing the teaching materials

As already mentioned, the developed materials, which are illustrated exemplary in chapter 2, were used in a language learning class in Lower Saxony (Germany) in 2017. To test the effect of the action- and product-oriented materials for technology lessons in a context of language learning, the implementation of the materials are accompanied by the documentation of language knowledge of the students as well as their general behaviour. The question is how the language skills and the behaviour of students develop, if they are participating in action-oriented lessons in comparison to students who are participating in theoretical lessons. In 3.1 the methodical approach of the research is described shortly and afterwards in 3.2 the results of the study are presented before chapter 3.3 draws a conclusion. The more detailed content of the study is published in a German anthology (Olthoff 2021).

3.1 Methodology

In the research project action- and product-orientated teaching are compared with a theoretical teaching. Both concepts try to combine the development of discipline-specific content with the development of language skills. The action-oriented lessons are based on manual actions at the topic *Papermaking*, while the theoretical lessons are focused on interactive work with texts, which focus on the history and production of paper.
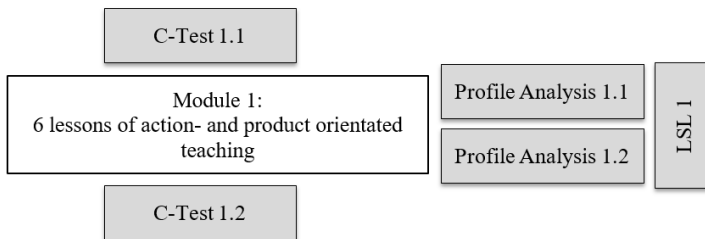
The practical testing of the teaching materials was located in a language learning class of an integrated comprehensive school in Lower Saxony (Germany). In those schools students of all types of school are taught together in one class. The students of the language learning class join the regular teaching but are taught separately in small number of lessons to offer them a special language education in a specific context. The students are between 11 and 15 years old and all of them immigrated to Germany over the last two years with little or no previous knowledge of the German language. The class were separated in two groups: group
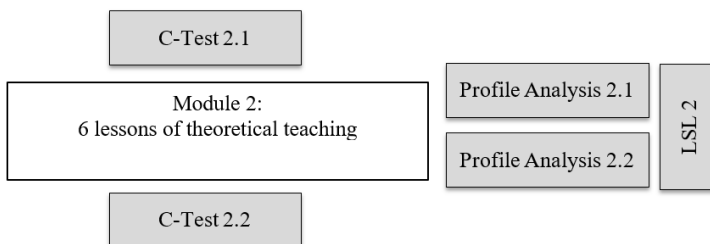
1 received action- and product-oriented lessons while group 2 received theoretical lessons. Both modules were taught for six lessons à 90 minutes by the same teacher; the time-slots were located on Fridays from 9:00 to 10:30 a.m.

The process of the research study can be seen in Figure 4. The grey boxes represent the collection of data and therefore reference to the implemented tests and instruments. The white boxes represent the teaching concepts, which are evaluated in this study.

Group 1:

| C-Test 1.1 |
| Module 1: 6 lessons of action- and product orientated teaching | Profile Analysis 1.1 | LSL 1 |
| | Profile Analysis 1.2 | |
| C-Test 1.2 |

Group 2:

| C-Test 2.1 |
| Module 2: 6 lessons of theoretical teaching | Profile Analysis 2.1 | LSL 2 |
| | Profile Analysis 2.2 | |
| C-Test 2.2 |

Figure 4: Process of the evaluation of the teaching materials.

The language acquisition is operationalized by the growth of language competencies. These are measured by written cloze-tests (Baur & Spettmann, 2007; Baur & Spettmann, 2008) and the profile analysis (Grießhaber, 2013) of oral speech. Both instruments were applied by an external test administration and are described more precisely in the following:

C-tests were implemented in additional lessons before and after the conducted modules. This instrument needs relatively little time and effort for conduction and interpretation. Moreover, they are reliable and show high correlation to other test methods (Arras, Eckes & Grotjahn, 2002, p. 200; Baur, Goggin & Wrede-Jackes, 2013, p. 2). The students get a coherent test with gaps according to a special pattern, which need to be refilled. According to Baur, Goggin & Wrede-Jackes (2013), c-tests for students with German as a second language have a gap in the posterior part of every third word. The title, as well as the first and last sentence of the text, are kept and provide a contextual frame. Proper names are skipped and just the half of the last unit of compounds is deleted. If the number of letters is uneven, the number of erased letters is rounded up. All gaps are marked by a uniform line so that the size of the gaps gives no information about the number of missing letters. The evaluation of the results includes two values, which are related to the total number of gaps: The correct/incorrect-value (R/F-Wert; because in German it is called *Richtig/Falsch-Wert*) refers to the number of gaps, which are semantically, orthographically and grammatically correct. The word-recognition-value (WE-Wert; because in German it is called *Worterkennungswert*) refers to the number of gaps, which are semantically correct, regardless of the orthographic and grammatic correctness. Therefore, the WE-value indicates, if the student understands the content of the text and the R/F-value provides information about potential difficulties with orthographic or grammar. Both values are evaluated for every student in both modules. Because not all students participated in both modules and the data could not be collected belated, the calculated values of the c-test differ between the first and second module. Afterwards, it is considered, whether the differences between the modules are statistically significant at a level of significance of $\alpha < 0{,}05$.

The profile analysis makes a diagnosis about the grammatical complexity of sentences and is used on oral speech in presence study. The output of the students is subdivided into minimal fragments, which are functioning as a sentence. Afterwards, the syntactic structure is classified by means of the German verb positions. The chronologically acquired stages of German verb positions are also used for the internal differen-

tiation of the teaching materials and are presented in chapter 2. Other grammatical or lexical aspects are not focused on but the degree of acquired verb position seems to correlate with the acquisition of other language aspects as vocabulary (Grießhaber, 2013). For every student ten expressed sentences are collected in the first and the last lesson of the unit and are transmitted to a stage of verb positions shown in Figure 3. The mean values for every sample is calculated. Finally, the differences between the mean values of the verb stages before and after the modules are compared and a t-test for independent groups distinguishes statistical difference at a level of significance of $\alpha < 0,05$.

Emotional and social anomalies and learning difficulties are collected by means of the list for the assessment of social and learning behaviour (LSL, because in German it is called *Lehrereinschätzliste für Sozial- und Lernverhalten*) by Petermann & Petermann (2013).[2] It is a standardized surveillance sheet for the behaviour of students in school contexts. Thus, the results are related to the six lessons of the two modules. Emotional and social skills and the learning behaviour of the students are classified by different subfields using ten statements each. These statements are differentiated for every student by the teacher and an external test administration with the support of a 4-degree likert scale. The raw values are converted into percentile rankings by means of a standardization table. For the evaluation, the percentage of subfields with a percentile ranking below 20 are identified. According to Petermann & Petermann (2013, p. 22) percentile ranking between 0 and 10 show a strong abnormality of behaviour and between 10 and 20 behaviour producing considerable risks. Afterwards, a t-test for independent groups determines, if the emotional and social anomalies and learning difficulties of the students differ significantly between the modules at a level of significance of $\alpha < 0,05$.

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2   It was also planned to collect data regarding the motivation of the students. Because of difficulties in understanding, the results of the test were not informative. Additionally, it was tried to analyze the motivation by oral communication with a support from pictures. In that process major impacts of the peer group and the test administration appear. Consequently, the motivation as a variable were excluded.

3.2 Results of the practical testing

In the following, the development of the language competencies is described first and afterwards the results of the assessment of social and learning behaviour.

3.2.1 C-test

The mean value of the R/F value of the students in group 1 was 34.44% before the conducted module. After the module with action- and product-oriented lessons, the students reached a mean value of 42.05%. This means an average rate of growth of 7.61%, what is not a significant difference at level of significance of $\alpha < 0.05$ ($t = -1.08$; $df = 20$; $p = 0.292$). The WE value of the students is on average at 47.66% at the beginning and after the action- and product-oriented module at 61.93%. The rate of increase of 14.27% is not significant at level of significance of $\alpha < 0.05$ ($t = -1.53$; $df = 20$; $p = 0.141$).

Before the theoretical module the students of group 2 reached an average R/F value of 38.73% and afterwards of 42.54%. This means a growth of 3.81%, which is not a significant rate of increase ($t = -0.35$; $df = 16$; $p = 0.702$). The WE value before the theoretical module is on average at 53.33% and afterwards at 56.83%. The growth of 3.49% is not significant as well ($t = -0.38$; $df = 16$; $p = 0.708$).

The comparison of the two modules shows, that the development of the R/F value differs not significant ($t = 1.62$; $df = 18$; $p = 0.123$), but the WE value ($t = 2.25$; $df = 18$; $p = 0.037$). In summary this means that formal and orthographic correctness in both modules increase slightly, but the text comprehension of the students increases in action- and product-oriented lessons than in theoretical lessons although textual work was focussed more in the theoretical lessons. This leads to the conclusion that students benefit from an action- and product-oriented teaching regarding the text comprehension.

3.2.2 Profile analysis

The average of the produced and analysed sentences in oral speech was in the first lesson of the action- and product-oriented module of group 1 at 1.31 and in the last lesson of the unit at 1.48. This signalises that the complexity of sentences increases during the module but without a significant difference (t = -0.86; df = 18; p = 0.399). Analogous to that, the students of group 2 produce in the first lesson of the theoretical module a sentence complexity of 1.29 and in the last lesson of 1.47. The increase of 0.18 is not significant either (t = -0.83; df = 16; p = 0.420). The grammatical complexity of the produced sentences is at an elementary level at all time. Furthermore, it increases more sharply in action- and product-oriented lessons than in theoretical lessons but without a significant difference (t = -0.11; df = 17; p = 0.911). Therefore, it can be concluded that none of the modules provides a benefit for the students regarding the complexity of sentences.

3.2.3 LSL

The students of group 1 show fewer characteristics, which are interpreted as a strong abnormality of behaviour or as a behaviour with considerable risks than the students of group 2. The number of statements, which are classified so has a mean of 15.36% in group 1 during the action- and product-oriented lessons and a mean of 48.72% in group 2 during the theoretical lessons. The difference between the frequency is significant (t = -3.10; df = 24; p = 0.005, n = 13). It should therefore be expected that action- and product-orientation in lessons affects the behaviour of students in school context positively.

3.3 Conclusion

The results of the survey demonstrate that the language competencies of the students in both modules are not increasing demonstrably. It could be conceivable that the scale or the period of the lessons are not

large enough for a significant influence on language ability. But also an improvement cannot be traced certainly to the impact of the different teaching concepts because the time of the lessons compared with the time of language input beyond the lessons is too low. Therefore, the results presentedcan provide just a brief insight into the effects of action- and product-oriented teaching and need to be confirmed, validated and expanded by means of deeper analysis. However, what the research results can confirm is that lessons designed with action- and product-orientation offer the opportunity that technical competence and professional skills can be focused in language learning classes without neglecting the relevant input for language acquisition. Thus, the results show that it is possible to combine (subject-sensitive) language teaching with a vocational preparation from the beginning of the school attendance of language learners. Because of the positive effects for social and learning behaviour, it can be expected as well that the teaching concept facilitates the transition of the students in regular classes and opens an access to further educational opportunities and the job market. This leads to a generalization of the concept so that an action- and product-orientation can be transferred to other school subjects. Regarding this, chapter 4 presents a concept for the application-oriented generalization of action- and product-oriented lesson-planning.

4 Generalization of the concept: Action- and product-orientation for other subjects

Lessons and teaching materials based on an action- and product-orientation offer students a content and language integrated learning in combination with a vocational preparation from the beginning of the school attendance. Thus, an action- and product-orientation in all subjects might be helpful for a supportive participation of language learners. In the following the process of a concrete lesson planning shall be described. Figure 5 presents an overview of the instructions.
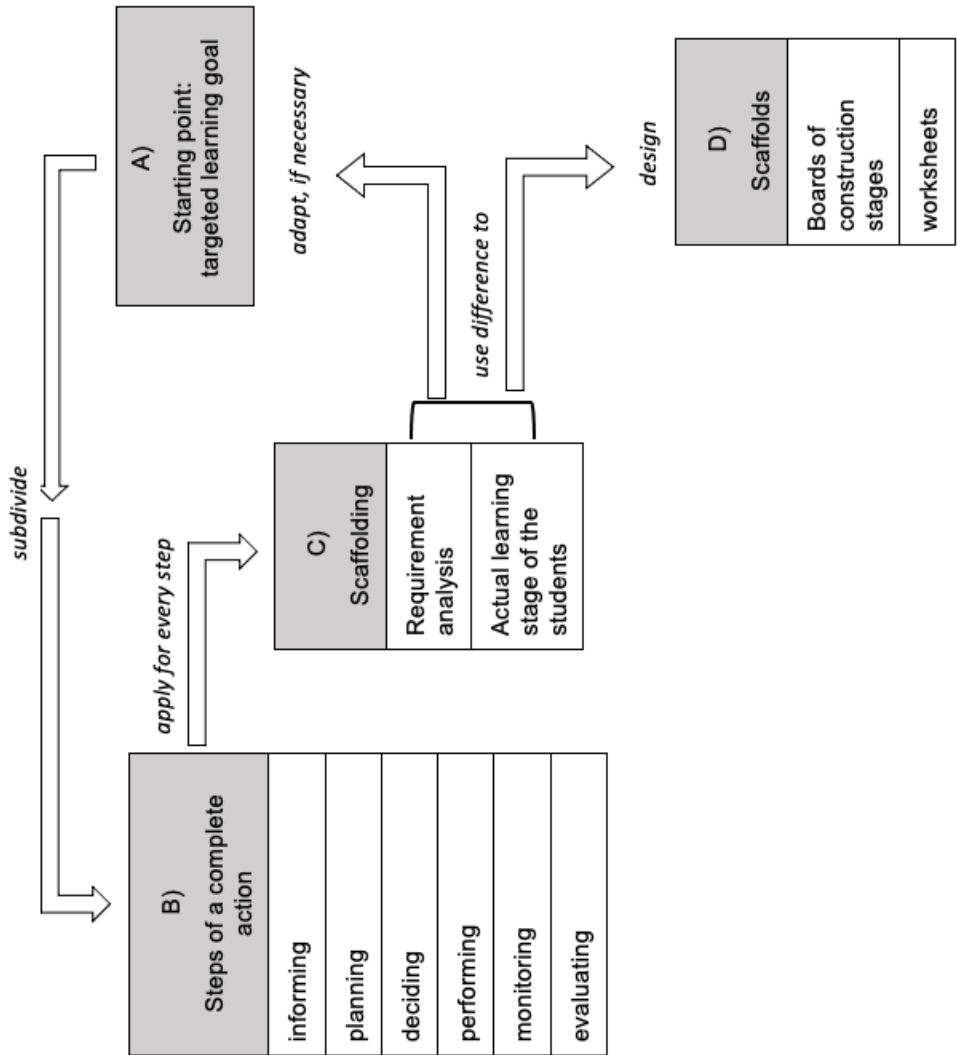
Figure 5: Concept for the application-oriented generalization of action- and product-oriented lesson-planning

According to the model of complete action, which is described in chapter 1, a subject-specific learning goal should be the starting point for lesson planning. This ensures an authentic context and a relevant topic, which is the basis for content learning and the subject-sensitive language acquisition. Afterwards, the learning goal should be subdivided. The six steps of Gudjons (2014), which are reformulated in chapter 1 as well, may be applied to support and visualize this process: informing, planning, deciding, performing, monitoring and evaluating. Every step can be substantiated and concretised by using scaffolding. As mentioned in chapter 2, scaffolding includes two main parts of analysis, which are located before the concrete lesson or unit:

The requirement analysis is a description of the content- and language-based needs, which are relevant for the successful participation of the students in the lesson. The screening of the teaching materials with regards to language and content might be helpful for the awareness of the challenges, which arise in the planned lesson or unit. A glance at the underlying framework guidelines can provide a more detailed consideration. For the description of the language-based needs, a focus on language actions seems a reasonable starting point. For these actions, specific vocabulary but also sentence structures and text types can be characterized. Of course, different types of diagnostic methods and tools can be used to identify the actual learning stage of the students.

In addition to the requirement analysis, an analysis of the actual learning stage of the students might be helpful. This should include not only an analysis of the professional skills and technical competence but also an analysis of language competence. Therefore, a combination of discipline-specific methods and tools, which are specialized for the assessment of the language level is recommended. The profile analysis, which is presented in chapter 3.1, is often used for the diagnosis of the grammatical complexity of produced sentences and can be applied easily and without great costs or effort. The different types of sentences with different positions of the verb, which are acquired chronologically, are the basis of the profile analysis.

The scaffolding uses the zone of proximal development to shape an adequate learning zone for the students. Therefore, a discrepancy between the results of the requirement analysis and the learning stage of the students is needed. This lack needs to be bridged by scaffolds. It has to be mentioned that the size of the difference between actual and target state should not be overwhelming for the students. If the gap is too large, the targeted learning goals should be adapted. Potential scaffolds can be specific teaching materials such as worksheets or boards of construction stages but can also be provided in the interaction. The different types of sentences used by the profile analysis can also be employed for the actual design of language input. Because the sentence types are acquired chronologically, a sentence structure can be used for example on worksheets or boards of construction stages, which can be located in the zone of proximal development of the students. This way, an internal differentiation might be reasonable so that teaching materials with various use of language are provided. A substantial component of the successful use of action- and product-orientation as an access to the subject-sensitive is the warranty of the repeated content by multisensory aspects. Thus, the materials should always offer access to the content, which is not based on the language. This can be realised for example by pictures, videos or haptic objects. The use of different senses can be accompanied by language, but the comprehension needs to be secured without the use of language.

After the conducted lesson or unit, it might be helpful to analyse the next learning stage of the students. On the one hand this enables the assessment of increasing competencies and on the other hand it increases an adjusted design of the further lesson planning and teaching materials.

Overall, it has to be mentioned that the described concept for the action- and product-oriented lesson-planning can provide just a general overview of the steps. It is not target-oriented, if the analysis of requirements and learning stages takes so much time that the achievement of learning goals is impeded. Nevertheless, a universal action- and product-orientation and the use of multisensory accesses in lessons of every subject can

support the subject-related learning because it offers an access, which is not fundamental based on language. This opens the chance to support a systematic and controlled language learning as well. This theoretical concept can be used in teaching practice by serving a general idea. As always for putting theory into practice, it has to be adapted by competent teachers so that it leads to a successful teaching.

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