A MATTER OF TRANSLATION? *UDL* AS FRAMEWORK FOR STUDENT TEACHER'S VIDEO ANALYSIS

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Abstract. *Teacher education needs innovative formats to meet the enormous challenge posed to schools by society's demand for inclusion. Teachers must be both competent and willing to involve all students in their lessons in the best possible way. One format for imparting both relevant knowledge and associated professional attitudes can be the reflection of taped teaching sequences. These are able to reflect the complexity of teaching in such a way that a particularly productive analysis can be carried out. The study aims to explore the potential of using the Universal Design for Learning (UDL; german version by Kremsner, Proyer, and Baesch 2020) as a framework for inclusion orientation in reflecting on videographed instructional sequences. We use qualitative analysis of recordings of a video-based accessible reflection task for 16 master students groups. The students were part of a preparatory seminar for the practical phase in the Master's program. The heterogeneous results indicate that using the UDL reveals multiple difficulties for the students due to its general structure and the German translation utilised. Furthermore, we identify that framing the reflection tasks in the context of inclusive didactics is essential for students' acquisition of competencies.*
Keywords: *Video-Based Reflection; UDL, Teacher Education.*

To cite this article:
Delere, M., Höfer, H., & Marci-Boehncke, G. (2024). A Matter of Translation? UDL As Framework for Student Teacher's Video Analysis. *Education. Innovation. Diversity, 1*(8), 28 - 40. DOI: https://doi.org/10.17770/eid2024.1.8244

Introduction

By signing the UN CRDP, Germany has taken an active step and taken upon itself the responsibility to shape an "inclusive education system at all levels" (UNO, 2021, p. 16). This decision goes beyond a declaration of will, and it is an obligation against the background of the recognition of the human right to education for all people. Thus, in addition to the decision-makers at the macro level of educational policy and the meso-level of individual school institutions, teachers at the micro-level of concrete instructional design have the responsibility and duty to provide all students with the best possible access to the shared subject matter (Kaplan & Lewis, 2019, p. 5; Pit-ten Cate, Markova, Krischler, & Krolak-Schwerdt, 2018, p. 49–50). For this purpose, language teaching, in this case German teaching or more specifically german literature teaching, offers a remarkable potential when students can act on shared objects at their individual access modes and competence levels with the help of digital methods.

In order for teachers to leverage this potential, they must be able to deal with concepts of inclusion orientation in their training. Inclusion must not only be a topic that is dealt with but must also be a space of experience that students can reflect upon (Merz-Atalik, 2017). The goal must be to teach both competencies and attitudes, as Pit-ten Cate et al. (2018) can show in their review article on the relationship of competence, attitude, and training in teacher education. The *Profile for Inclusive Teacher Professional Learning* presented by the *European Agency for Special Needs and Inclusive Education* in 2022 provides a framework for this (De Vroey, Lecheval, & Symeonidou, 2023).

Inclusion orientation in teacher training, equivalent to implementation in schools, is not an unpleasant additional task that can be dealt with when it fits into the educational plan. To

achieve the goal of the UN CRDP, student teacher and their instructors must always think of access for all pupils as a necessity. It is one of the primary conditions of all didactic efforts and thus of all learning processes that student teacher undergo in their education. This task includes permanently reflecting on one's content, pedagogical, and technical knowledge in the context of inclusion, as Marci-Boehncke (2018) states in her analysis and extension of the TPACK model (Mishra & Koehler, 2006). In addition to a professional, positive attitude towards diversity, teachers need above all knowledge about possibilities of dealing with heterogeneous learning groups, such as the concrete frame of reference Universal Design for Learning (UDL) can offer. With its focus on an "*intentional proactive valuing of diversity*" (Zaloudek, 2014, unpaginated, italic in original), UDL has potential here in a dual capacity.

This article investigates a small component of this approach in the context of teacher training in German at the Technical University of Dortmund. The presented module at the beginning of the preparation for practice in the master's program focuses on inclusion orientation and thus lays it as a foundation for the further theoretical preparation of the practice phase. We show how an understanding of possibilities of inclusion orientation can be deepened with students by having them reflect cooperatively and discursively on the design of videotaped teaching sequences, referring to the framework of UDL. Our goal with the project is to make students "reflective [and] critical thinkers" (Kaplan & Lewis, 2019, p. 5–6). The accompanying research presented here explores the following question: How do students apply the principles of *Universal Design for Learning* as a framework model for inclusion orientation in reflecting on instructional sequences from the context of *Trailers as Multimodal Text Summaries*? The aim of the article is to present the results of the qualitative exploratory study of 16 groups of students who were recorded analyzing videos in order to identify the potential and barriers to using UDL as a framework for analysis.

In the following, we first introduce the theoretical frame of UDL and the potential of video-based reflection in teacher education. We then explain the design of the video-based teaching module and the research design, and the results and consequences of the first evaluation cycle.

The Universal Design for Learning

As noted above, inclusion in the education system means achieving a state in which "the diverse needs of all learners are addressed and responded to, regardless of their social, economic, cultural, linguistic, physical, or other contexts" (Kaplan & Lewis, 2019, p. 4). The UDL framework developed by the Center for Applied Special Technology can make a pivotal contribution to this by providing teachers and education leaders with a guideline for planning instruction and curricula (CAST, 2018). In this regard, Universal Design for Learning intends to represent an evolution from a "'teacher-centered' to a 'learner-centered' approach" (Al-Azawei, Serenelli, and Lundqvist, 2016, p. 41). At the heart of this is a changing paradigm for how diversity is perceived by all students, due to which teachers should consider accessibility from the outset (Zaloudek, 2014).

UDL is based on the seven principles of Universal Design (UD) first introduced in the field of accessible architecture (Mace, Hardie, and Place, 1991; Story, Mueller, & Mace, 1998). This "means the design of products, environments, programs and services to be usable by all people, to the greatest extent possible, without the need for adaptation or specialised design" (UNO, 2021, p. 4) and includes, among others, the principles of equitable and intuitive use, tolerance for error, and low physical effort (Story et al., 1998). Probably the most widely used architectural example is a ramp instead of stairs, which allows wheelchair users to access buildings and provides a universal way of access for all other people with possible limitations. Other concepts based on UD, some are precursors to UDL, include

Universal Design in Education (Bowe, 2000), *Universal Design for Instruction* (Scott, Mcguire, and Shaw, 2003), and *Universal Design of Instruction* (Burgstahler, 2009). As a result of a critical examination of teachers' implementation of UDL principles, Kremsner, Proyer, and Baesch (2020) also developed *Local Inclusive Design for Education*, which also references the original principles of UD closely.

The three basic principles of UDL are

Provide multiple means of engagement, so that learners become purposeful & motivated

Provide multiple means of representation, so that learners become resourceful & knowledgeable

Provide multiple means of action and expression, so that learners become strategic & goal-directed (CAST, 2018).

Subsequently, the principles were expanded to include guidelines, which in turn were further differentiated by checklists. However, the UDL Framework is not a "formula with set methods and tools" (Meyer, Rose, & Gordon, 2014, p. 87) to be applied in the same way in every situation. These checklists are intended to help teachers translate the still relatively open principles and guidelines of the UDL for their teaching. However, Kremsner et al. point out that this requires a "translation effort for the inclusive setting", which means both a linguistic transfer into the respective language and a "translation of the content in order to understand the explanations [...] and make them manageable for practice" in context of lesson planning (2020, p. 39; our translation).

Although the effect of implementing the UDL guidelines is "debatable" (Capp, 2017, p. 791) and encounters various barriers (Yuwono, Mirnawati, Kusumastuti, & Ramli, 2023), the bulk of empirical research shows "that exerting further effort to foster the UDL framework in curricula design can provide equal learning opportunities for all people" (Al-Azawei et al., 2016, p. 51). Capp's (2017) meta-analysis also demonstrates the positive effect of implementing UDL on all students. Almeqdad et al. emphasize that the implementation of UDL is particularly successful when not just one or two, but all three principles are addressed (Almeqdad, Alodat, Alquraan, Mohaidat, & Al-Markhzoomy, 2023, p. 20). Nevertheless, the study by Bray et al. shows that studies on the use of technology for UDL implementation pay particular attention to the aspect of representation and tend to neglect the other principles (Bray et al. 2024, p. 129). Most studies focus on the presentation of information (e.g., Hall, Cohen, Vue, & Ganley, 2015; Tzivinikou, 2014), which is why Capp (2017) calls for further research on the evidence of the other principles. Schlüter and Melle (2020) also point out that most studies do not examine the evidence of the actual UDL guidelines but rather the evidence of the teaching-learning environments developed on that basis.

For media-convergent German teaching (Marci-Boehncke & Rath, 2011), UDL seems to be the consequential connecting point for the field of inclusive media and German didactics (Marci-Boehncke, 2018). The use of diverse text modalities, genuinely anchored training of linguistic-communicative and reflexive skills and the reference back to a vast concept of reading and text (ibid.) go directly hand in hand with the claim to enable access to information in different ways. Edyburn (2007), for example, addresses the area of universally designed reading instruction by considering how the goal of sensory reading can be supported with the help of assistive technology. He emphasizes the potential of assistive technology for all students and calls for teachers to develop a positive attitude towards such concepts. The orientation to the pupils' mediatized lifeworld (Krotz, 2017), to their media world and its (digital) forms of use, enables content-related and methodological adaptations to promote engagement, communication, and expression. Digital media thus have particular potential for implementing UDL in action and production-oriented literature instruction (Spinner, 2002) and are therefore a vital aspect of this article.

Video-based tasks for inclusion-oriented reflection

Video-based reflection on teaching is of great importance for teacher education in international discourse, which is rooted in the various diverse potentials of reflection and the medium of video. Reflection is supposed to serve the connection of theory and practice, but as a term, it is hardly graspable as a clear theoretical concept. It is used as a container for various processes (Wyss & Mahler, 2021, p. 19–20; Clarà, 2015). Based on Dewey's broad definition, that all goal-directed thought processes are nameable as reflection (Dewey, 1997), numerous conceptual understandings developed in the transfer to teacher education.

These are distinguished according to the objects to which they are related or their goal direction. Schön has certainly provided the most widely used structuring by identifying the processes of "reflection-in-action" ([1983] 2016, p. ix) and "reflection on action" (p. 276). This categorization was subsequently extended to include "reflection-for-action" as "the desired outcome of both previous types of reflection" (Killion & Todnem, 1991, p. 15). The question of how reflection can be defined and what value it adds to teacher education continues to be a subject of both current and multifaceted research, the breadth of which we cannot rudimentarily reflect here. Various empirical studies address the objects, the social form or how reflection can or must be guided (e.g., Baglieri, 2008; Olteanu, 2017; Bjørnsrud & Nilsen 2019).

Casework with videotaped instructional sequences is considered particularly appropriate for fostering teachers' analysis and reflection skills (Jenset et al., 2024). Written or video-based teaching cases can be viewed as relieved of the pressure to act and make decisions in the direct pedagogical situation. The hypothesis, not uncontroversial (e.g., Hauser, 2021), established for casework and transferable to video analysis, is that reflexively trained students can act more efficiently and reflexively pedagogically after their training even under pressure (Kolbe & Combe, 2008, p. 896–897). Here, an understanding of reflection following Schön becomes apparent when the ability to perform "reflection-in-action" is to be trained from the exercise of "reflection-on-action" (McCoy & Lynam, 2021, p. 941). In this regard, Schneider et al. (2016, p. 487) distinguish the retrospective explanatory view of the conceptualization of Professional Vision (see on this subject, e.g., Sherin & van Es (2008); Blomberg, Stürmer, & Seidel (2011); Wyss, Rosenberger, & Bührer (2021)) from the prospective view of the analysis of teaching with a focus on the exploration of consequences. The assignment presented below draws on both perspectives. First, students are to analyze and justify the observed teaching and the didactic actions of the teachers based on theoretical categories. In the second step, however, just as they think about the consequences of a teacher's action's presence or absence on accessibility for all students, they must look prospectively at the lesson. Developing alternative actions addresses this competency as well. We see the identifying of blind spots required in this process as a profitable format of video-based reflection tasks. Instructional videos, in contrast to written vignettes, are suitable for this type of task precisely because students do not have to first construct complex instructional situations as mental images (Burgula, Gold, Holodynski, & Hellermann, 2016, p. 334; for a comparison of text and video cases, see also Schneider et al. (2016) and Syring et al. (2015)). However, videotaped lessons are also complex materials where meaning has to be constructed by the recipients through processes of reading (Höfer & Delere, 2022).

The videos' repeatability and consistent presentation of information offer further added value and complement the above-described claim of videos as teaching materials in a particular way. Not only do the students' analyses and reflections not have to produce a decision immediately, but they can also discuss in detail, differentiate, and, if necessary, revise altogether. It is not surprising, then, that collaborative occasions for reflection are particularly positively valued: "What is in the foreground of attention for one individual may be very different from what is in the foreground of others" (Williams, 2020, p. 700). At the

same time, group discussions always carry the risk that an equal discussion culture cannot be created or that individual group members call a distorted analysis for social reasons (Zaier, Arslan-Ari, & Maina, 2021, p. 25; Cramer, 2014, p. 349). The social and motivational factors also play a central role in whether it is more likely that one's own videos or those of others are effective (Seidel, Stürmer, Blomberg, Kobarg, & Schwindt, 2011, p. 265; Snoeyink, 2010; Kleinknecht & Poschinski, 2014). Videos can also offer multi-perspectivity because they can be reflected upon differently in different didactic contexts with different questions. This fact plays a central role, especially in the accessible implementation of instructional videos when creating audio descriptions (Wilkens, Bühler, & Bosse, 2020).

There is an intensive discussion in research about the extent to which and how reflection can be guided using instructional videos in order to increase learning effectiveness. The didactic and structured framing of video analysis is considered to be of great importance (van Es, Tunney, Goldsmith, & Seago, 2014; Körkko, 2019; Cocca & Cocca, 2016). In the example presented here, we implemented the category system of the UDL and the structured video analysis based on predefined codes. On the other hand, individual personal monitoring of all actors, as Beisiegel, Mitchell and Hill (2018) demand, cannot be achieved in our research setting.

Training inclusive-oriented teachers requires reflection on different levels to enable students to engage with their existing or newly acquired knowledge and provide them with opportunities to review and develop their attitudes. This teaching thus goes beyond teaching them category systems and definitions of terms or showing them best practice examples of successful inclusive practice. The aspiration is not for students to achieve the genesis of an inclusive self-understanding in individual teaching segments – the process of professionalization is too long-term and requires permanent support and opportunities for reflection and improvement for the teachers (Alves, Christodoulidis, Carpenter, & Hogg, 2024). Nevertheless, students can make small gains within individual tasks, which are then continuously compounded. In a yet unpublished survey of students in the winter semester 2021/22 (n=68, TU Dortmund University, subject German), we can show that the students are very aware of their attitude importance for their future didactics. Most students stated that they agreed (22%) or strongly agreed (66%) with the statement 'My attitude towards inclusion influences my actions as a teacher.' De Boer, Pijl and Minnaert (2011) also emphasize the importance of further developing these attitudes. In the different studies included, teachers were found to have predominantly negative or neutral attitudes towards inclusive education for all pupils (ibid.). These attitudes seem to be the same across all school types, especially among the student teachers' group, which can be explained by their "shared inexperience" (Gigante & Gilmore, 2018, p. 1574).

The UDL offers excellent potential in video-based reflection because, on the one hand, it requires the conscious appreciation of a broad diversity of students (Zaloudek, 2014) and, at the same time, it shows practical categories that lead in a simple form to the inclusion-oriented further development of one's own teaching. University teaching must also deal with heterogeneous groups. In order to teach all students at least basic skills of inclusive teaching in a short period of time, the categories of the UDL can provide a common starting point for individual deepening and reflection of the view on teaching. At the same time, knowledge of such student-centered approaches contributes to the development of students' self-efficacy expectations and thus their attitudes in the context of inclusion (Friesen & Cunning, 2018).

Materials and Methods

The assignment presented here is part of the first thematic complex in the practical semester of the subject Didactics of Literature. In this, essential elements of inclusive German teaching are taught in a lecture and a digital, written learning unit. These are then supposed to

be applied to a teaching sequence in the context of the video analysis to link the theoretical knowledge with practical implementation methods. For this purpose, students are to analyze two short excerpts of a recorded lesson in zoom breakout sessions using the Universal Design for Learning criteria in the German version according to Kremsner et al. (2020) and examine the accessibility for all learners (Delere, Wilkens, Höfer, Bühler, & Marci-Boehncke, 2022). To do this, they work in permanent groups throughout the semester with 3-5 of their peers as "trusted-other[s]" (Hatton & Smith, 1995, p. 41). The video sequences originate from a project on *Trailers as multimodal text summaries*, which was developed and carried out by students of a master seminar from our team on working with videos in heterogeneous learning groups.

The continuous development of the task goes along with the accompanying research within the interdisciplinary project *DEGREE 4.0 – Digital reflective teacher education 4.0: Video-based – accessible – personalized*. In this project, an accessible video-based learning platform for promoting reflection in teacher training is being developed and researched. The entire research process builds on the iterative, cyclical processes of Educational Design Research (Gravemeier & Cobb, 2006), respectively Didactical Design Research (Hußmann, Thiele, Hinz, Prediger, & Ralle, 2013). Central design principles of the concrete task in German are (digital) collaboration, discursivity, and accessible design (see on the accessible design of the instructional videos in the overall project Wilkens et al. (2020)). The aim of the research is the (further) development of local theories on subject didactic inclusion-related reflection skills of student teachers in German.

After initial testing it in one term, the assignment and technical conditions on the platform were significantly revised and conducted again in the following semester. To explore the students' work processes, their video conferences were recorded and subsequently analyzed according to strict data protection guidelines. In addition to the collection and storage under written informed consent of the students, this includes the anonymization of all group data and close cooperation with institutional data protection officers throughout the research. The same standards were valid for recording the original videos in schools. Excluded from the analysis process were audio-only recordings and erroneous files uploaded by some groups. The final sample comprises the 16 remaining working groups. While all school types are represented in the mixed group of the seminar, the elementary school group predominates (see Fig. 1). Therefore, no differentiation of different school types is made in the analysis.

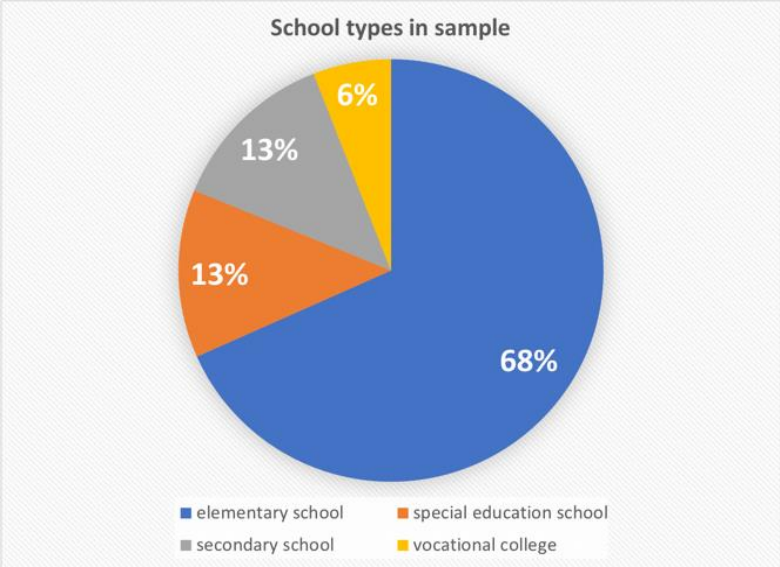

Figure1 ***School types in sample***

The evaluation of the recorded videoconferences uses the methods of a computer-assisted qualitative content analysis with the software MAXQDA® (Kuckartz & Rädiker, 2019). For this, we identified relevant scenes of the recordings and transcribed them. Subsequently, both document types were examined together. In this way, we were able to use the transcribed linguistic negotiation of the analysis in the group to gain detailed insight into reflection processes. The overarching analysis question "How do students apply UDL principles in analyzing the teaching sequence?" will be addressed from a variety of perspectives:

- Perspective of knowledge: are the students able to transfer the UDL principles to the teaching of German literature and thus examine its accessibility? What alternative proposals for action do they make, and how do they justify them?
- Perspective of attitude: do students argue based on an appreciative view of the diversity of all learners or a deficit-oriented perception of learners with disabilities?
- The codes are drawn from preliminary analysis of a design experiment before revising the assignment our theoretical framing and are also supplemented with codes drawn from the material.

We first identified productive scenes in which the students referenced the UDL in their analysis or omitted it, although the reference would be helpful here. So just like the students, we also look at blind spots, for our part, then at the level of their analyses. For scenes in which the assignment to the UDL was omitted, we assigned the corresponding category as missing to get an overview of the frequency of missing categories (for a similar approach, see Molzahn, Marci-Boehncke, & Delere (2020) or Marci-Boehncke & Vogel (2019)). The second phase of analysis assessed the extent to which the students' coding was accurate, including the correct categorization and whether the principle had been correctly applied to the lesson. The two-step procedure allows for a clear code system on the one hand and quick analytical access to the sequences on the other hand, which could provide deeper insight into the students' reflection processes. In the last step, we examined these sequences individually and reconstructed the justification strategies.

Results

The multi-step analysis of the individual recordings revealed a significant heterogeneity of our students' solutions. On the one hand, they looked more closely at different sequences of the instructional videos. Despite their brevity, a complete analysis of both clips would also not be affordable or expected within one seminar unit. The individual analyses then produced various justifications based on their prior knowledge, which in part also differed significantly within the groups. Individual subjective assessments of group members were overruled, sometimes despite the correctness of content, other members hardly got a word in edgewise, although they attempted to participate. This leads to the result that some students' solutions are not comprehensible even though we have their records. Mainly when solutions were supported by everyone but not justified at any point, this circumstance came to the fore. The decision not to quantify solutions, but to perceive the identified scenes individually in their contexts, seems appropriate against the background of these so different solutions. Very few statements can be made on what kind of alternative proposals for action the students make and what picture of inclusion emerges from their analyses. We will discuss that later.

Nevertheless, we found different answers about how the students apply the framework conception UDL in the analysis of teaching. Overall, a variety of errors in categorisation based on the UDL emerged, and difficulties were frequently encountered in certain areas in applying the categories to teaching or abstracting what is happening in the classroom. We pay particular attention to aspects that could potentially arise of the UDL itself.

As a central finding, we were thus able to reconstruct that students showed problems distinguishing between the categories *Provide multiple means of engagement* and *Provide multiple means of action and expression*. The principle – translated in the German version by Kremsner et al. (2020, p. 41) as "Verschiedene Möglichkeiten zur Teilnahme anbieten" which equals translated into English *Provide different ways to participate* – was often equated with Provide different means of action and expression. This equation could be easily understood from the language and content of the justifications:

"There is only one way to participate and that is to raise the hand. In frontal teaching. (...) Or in plenary" (1_#41:57#).

In this case, the students correctly assess the lesson design that the pupils have only one way of participation, and however, it is incorrectly categorized and assigned to the first principle of engagement.

When there is a misinterpretation of the situation and the incorrect category, a more complex case of interrelated misconceptions arises, which can be found in the very question of student participation and underlies the second central finding. Students interpret chronologically sequenced instructional methods in terms of an inclusive diversity of offerings and media used. Many groups interpret the fact that the teachers point out in the video that in the course of the lesson, writing a script as well as a filming trailer media-productively will take place as providing multiple means of action and expression:

"That you summarize that and then sort it into forms of action and expression when they present the lesson plan?" (6_#13:04#).

This interpretation does not address the fact that the individual methods of the lesson plan itself would need to be diverse and accessible to meet the UDL requirement. Some groups merely recognize that the trailer creation phase is conducted with the help of potentially technically universally accessible iPads and note this. However, none of the groups reflects that these potentials of the devices have to be made didactically usable and that the mere use of technology does not yet mean accessibility.

The students have fewer difficulties using the Provide multiple means of representation, which already seems easier to understand linguistically with a clear reference to the teacher's perspective. Here students correctly recognize that different channels of perception are addressed:

"So that it was once just linguistically and once through the (..) laminated cards just, so that they were quasi once visually shown and once linguistically" (3_#05:27#).

Similarly, students correctly recognize the importance of teaching and activating background knowledge in many groups and associate it with the corresponding principle.

"A: Oh exactly, activate background knowledge or make it available.

B: Multiple means of representation" (2_#20:44#).

Nevertheless, even in these correct analyses, only a few students even talk about how this teaching design would be conducive to accessibility for heterogeneous learning groups. This lack of reflection is also apparent in the suggestions for alternative courses of action, and these are mostly suggested to compensate for a point of criticism identified explicitly by the group:

"For example, creating mindmaps in groups to (...) to increase student activity" (9_#32:25).

Several groups consider the low activity of pupils in the introductory phase as problematic and suggest group work or digital tools for this purpose. However, these are hardly discussed against the background of their accessibility, but accepted as a potential alternative and thus improvement when mentioned. At the same time, the alternatives are often only improvements for small teaching areas but do not change the main problems, such as the lack of clarity and transparency of goals.

As announced above, it is hardly possible to make any statements about the students' attitude towards inclusive teaching. Overall, however, many students show a certain skepticism towards the possibility of including all pupils in the classroom. Inclusion is laughingly described by one student as "utopia" (9_#35:40#), by others at least as challenging. It is also clear that some students still assume a dualism of normal and non-normal learners instead of perceiving diversity of all learners:

"[…] shy students may not necessarily have the opportunity to participate as they would, or students with special needs" (11_#39:01#).

Conclusion

The purpose of this article was to present the potentials that a video-based task can offer for teaching inclusion-oriented German didactics using the UDL and the extent to which insights into students' understanding of the UDL and their attitudes towards inclusion can be gained from the analysis of the solutions.

On the reconstructive level, the findings confirm the statement of Kremsner et al. (2020) that the UDL as a translational model holds some difficulties for teachers. We can show that these occur not only during lesson planning but also for students who have to apply the UDL in the context of retrospective analysis and reflection of lessons. Although the principles were available as a spreadsheet, there were identifiable difficulties in differentiating the categories. Here, the translation into German developed by Kremsner et al. (2020) certainly plays a central role, as it opens up linguistic proximity to the pupils' options for action by using the term ‚participation'. Because of the different linguistic connotations, students no longer looked at the *why?* of teaching, the level of motivation, and engagement. They analyzed the *how?* and the opportunities for participation. Motivating, set as the central first principle, was disregarded as a result of this kind of linguistic shift. It is evident from this problem that the German translation needs to be further refined to make it easier for recipients to work with the framework model. However, working with the UDL would remain challenging for teachers and student teachers even without language problems because applying the principles to concrete classroom situations always involves translation. This may indicate the difficulties with applying the principles and the lack of reflection on potential didactic alternatives using the UDL. In addition, we can recognize that the more easily transferable principles in teaching were more applicable for the students and found fewer mistakes here. It is easier to check whether different perceptual channels are addressed than to abstract from the situation of lesson introduction whether the goals shown are both transparent and motivating for all pupils.

It is not enough to combine certain aspects of didactic design with the principles of UDL. Instead, (student) teachers have to reflect the teaching situation in its entire complexity and reconsider monocausal justification logics in the light of heterogeneous learning groups. The individual aspects of the UDL are more suitable as a starting point for discussion. Almost all groups were showing rudiments of this, highlighting the potential of UDL for reflexive tasks of this kind.

Thus, it becomes apparent that the analysis with the UDL needs a detailed framing to enable reflection on the inclusion orientation and go beyond an assignment of principles. The framing of the video-based reflection tasks demanded by Körkko (2019), among others, must therefore go beyond the reference system and the definition of analysis criteria in order to achieve in-depth reflection within the context of higher education didactic objective. Thus, the students have to explicitly deal with the goals of teaching German, which strengthens the subject didactic potential of the task. The link between video analysis and reflection on the students' attitudes also needs to be strengthened. While the UDL could be the reflection

occasion on the level of knowledge, the video analysis itself might be a reflection occasion on the level of attitudes. According to our findings, however, this does not necessarily result from engagement with the subject matter. Teachers at the university must rather initiate this consistently.

These problems are to be countered in further cycles by extended content input in the run-up to the analysis, a revised German translation of the UDL principles, and subsequent prompts for reflection. A perpetual review of the results will remain essential to increase our learning environment's effectiveness continuously.

The findings of the present study refer to a concrete learning group that is characterized by different predispositions. Nevertheless, due to the similarity to the analysis by Kremsner et al. (2020) and the fact that the problems are structurally anchored in the UDL itself, we assume that further studies could reproduce them. For this, further studies with other learning groups, a revised learning environment, and a different framework model for inclusive teaching are needed. These can be used to examine which factors are crucial for using video-based subject didactic tasks in the training of successful teachers for an inclusive school system. Thus, working with instructional videos remains both promising and preconditional in this area as well.

Acknowledgements

This work was supported by the German Federal Ministry of Education and Research under Grant 16DHB2130X.

Disclosure Statement

The authors report there are no competing interests to declare.

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