Using technology to support speaking in the heterogeneous young learners' EFL classroom

Andreas Kullick [1]

[1] University of Education Schwäbisch Gmünd, 73525 Schwäbisch Gmünd, Germany
andreas.kullick@ph-gmuend.de

Abstract. In this study, I investigate the potential of technology-enhanced tasks to support oral communication in the heterogeneous young learners' English as a foreign language (EFL) classroom. It has been established that technology holds potential for the development of learners' oral communication skills in foreign language learning. However, most studies have mainly focused on adolescent or adult learners so far. Here I present a classroom-based research project carried out with 3rd graders in a German primary school. Together with two other projects, it is part of a qualitative study for a PhD dissertation that examines possibilities to employ technology-enhanced tasks to support primary school pupils in speaking English. Interviews with in-service and pre-service teachers were conducted to shed light on how they see the potential of technology-enhanced tasks to promote oral communication in a heterogeneous EFL primary classroom. First preliminary findings are presented in this paper.

Keywords: young learners, EFL, speaking, heterogeneity, tasks, technology, primary school, classroom-based, apps

1 Introduction

Research has shown many benefits of using technology in the foreign language classroom. For example, technology can facilitate learner-centered and communication-oriented approaches (e.g. Blume & Würffel 2018) or offer opportunities for differentiation, individualisation, and personalisation (e.g. Cutrim Schmid 2017). Moreover, it can promote learners' interaction, encourage them to give feedback, help improve their pronunciation, and enable extended production, intercultural awareness, and strategy-development (Edelenbos, Johnstone & Kubanek 2006). Additionally, technology helps teachers to control the scope and the difficulty of the tasks.

However, the possibilities that the fusion of technology and task in the classroom holds for foreign language learning have scarcely been investigated. Furthermore, studies conducted on this topic mostly took place at secondary level or with adult learners (e.g. Van den Branden 2006; Stockwell 2010). Although some researchers have pointed to the benefits that technology-mediated learning environments can offer even to a heterogeneous group of young learners (e.g. Pinter 2015, Müller-Hartmann & Schocker-v. Ditfurth 2011; Whyte & Cutrim Schmid 2014, González-Lloret 2016) the number of

studies that consider technology-enhanced language learning tasks is still very limited (Pellerin 2014; Gonzáles-Lloret 2017). Hence, the need for multilevel research on technology-enhanced tasks, to which Chapelle (2001) already drew attention more than 20 years ago, has been neglected so far (Gonzáles-Lloret 2017).

This paper contributes to the little research in this field. It presents a small-scale project conducted in an English as a foreign language (EFL) primary school classroom in the German federal state of Baden-Württemberg. The objective of the project was to promote young learners' oral communication using technology-enhanced tasks. The project is part of the research for a PhD dissertation exploring teachers' perspectives on the use of new technologies to promote oral communication in task-supported language learning in the heterogeneous EFL primary classroom. As the dissertation is still work in progress, the initial findings presented here should be regarded as preliminary. By presenting the project step by step, we begin with the research background.

2 Background

The dissertation seeks to answer the following overarching research question: What are in-service and pre-service EFL primary school teachers' perspectives on promoting oral communication through the use of technology-enhanced tasks in heterogeneous English as a foreign language (EFL) primary classrooms. More specifically:

a) Do the teachers think that technology-enhanced tasks have the potential to support oral communicative EFL learning in the heterogeneous primary classroom?
b) If so, what aspects of the use of technology in the EFL classroom do they consider have a relevant impact on the development of learners' oral communicative competence?

Therefore, my classroom-based research is concerned with four different areas: heterogeneity, communicative competence, task-supported language learning, and technology. For a clearer understanding of my research, I would like to briefly give an account of the four areas in the following sections.

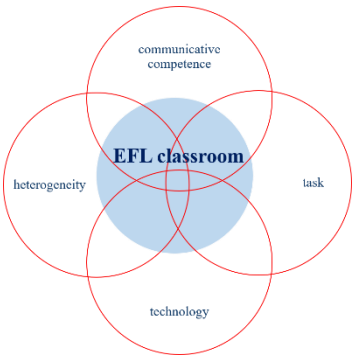


Fig. 1. Interconnected areas in the EFL classroom affected by the research approach.

2.1 Heterogeneity in the young learners' EFL classroom

German primary school classes are considered very heterogeneous. The term *heterogeneity* refers to social categories as well as to the different performance levels of students (Budde 2013; Trautmann & Wischer 2020; Walgenbach 2017). In addition to differences such as gender, age, socio-economic background, learning speed, and motivation (Giesler, Schuett & Wolter 2016), learners in the English as a foreign language (EFL) classroom differ above all in their levels of performance. Their proficiency relating to a range of abilities and speaking skills (Goh & Burns 2012) varies considerably. Müller-Hartmann and Schocker-von Ditfurth point out that heterogeneity is even "*the* constituent feature of primary classrooms" (2011: 12, emphasis in original).

This poses two main challenges for all teachers. They need to design lessons that meet the diverse needs of their learners and they need to create learning opportunities so that learners can appreciate and benefit from heterogeneity (Chilla & Vogt 2017; Eisenmann 2019). In a nutshell, the question is how best to support both weaker and stronger pupils (Budde 2012). However, as Chilla and Vogt (2017) point out, foreign language didactics still seem to be reluctant to discover the subject area of heterogeneity. Since my research is on oral performance heterogeneity, we will next take a look at communicative competence in the primary classroom.

2.2 Communicative competence in the young learners' EFL classroom

According to the syllabus for English as a foreign language in primary schools in Baden-Württemberg, *communicative competence* is the main goal of EFL learning and refers to the ability of pupils to successfully communicate in the target language (Ministerium für Kultus, Jugend und Sport 2020). The focus is on developing listening and speaking skills, rather than on reading and writing. Young learners should be able to acquire intelligible pronunciation, use clear intonation for communicative purposes, make themselves understood with the help of phrases and short sentences (monologic speaking), and participate increasingly actively in conversations (dialogic speaking). To achieve this, different chunks and structures are used in English lessons. For example, a set of vocabulary on topics such as *me and my family, school, animals,* or *free time* is provided for learners to use in structures such as 'My name is…', 'My favourite subject is…', 'On the farm, there are…', or 'Do you like…?' (ibid.: 17ff.). In addition to that, EFL learning at primary level follows a thematic and not a grammatical progression (Kuty 2018a). Since young learners "will not have even developed sufficient grammatical resources to produce utterances that are morphologically or syntactically accurate" (Goh & Burns 2012:16), the focus of communication in primary school English lessons is on meaning. The principle of fluency before accuracy is thus at the centre of the lessons.

Research has shown that one approach for the development of communicative competence is *task-supported language learning* (Ellis 2009). For this reason, our attention will next turn to TSLL.

2.3 Task-supported language learning in the young learners' EFL classroom

The concept of t*ask-supported language learning* (TSLL) has first been introduced by Ellis (2009). He uses the term to describe English learning that works with tasks, is based on "a structural syllabus and typically involves 'PPP' (presentation-practice-production)" (ibid.: 224). The difference to *task-based language teaching* (TBLT), which was developed in the 1980s, is that TBLT consists of a syllabus of "unfocused tasks" (ibid.) that have to be completed, thus specifying the content. In Baden-Württemberg, EFL teachers usually use coursebooks, worksheets, or other teaching aids for their classes. To them, tasks serve not as the basis of their lessons but as an add-on. Therefore, TSLL rather than TBLT is implemented in primary schools in Baden-Württemberg (Müller-Hartmann & Schocker-von Ditfurth 2011).

Different researchers have offered various definitions of *task* and *task design* (e.g. Long 1985; Willis 1996; Ellis 2003; Samuda & Bygate 2008). One definition that stands out from all others comes from Van den Branden (2006: 4): "A task is an activity in which a person engages in order to attain an objective, and which necessitates the use of language." What is distinct about his definition is that he puts the learners at the centre and takes their perspective into account. This is important because we know that pupils engage in tasks that give them the opportunity to communicate their own meanings, content, or feelings (Müller-Hartmann & Schocker 2016). In other words, it is important that learners can take agency of their actions. Following Dewey's (1938; 1997) idea of *learning by doing*, González-Lloret (2017: 2) also points to this aspect when she explains that "we learn a language by doing something with it rather than knowing about it."

For the implementation of TSLL in EFL primary classrooms in Baden-Württemberg, Müller-Hartmann and Schocker-von Ditfurth (2011) propose a four-step *framework for sequencing tasks* that we can use as a guide. In their framework, the authors consider the coursebook as "the basic tool in TSLL contexts" (ibid.: 91) and suggest that as a first step teachers use the coursebook as a resource, analyse it and pre-select tasks. However, the teachers who participated in my research did not consider the coursebook as the basic tool of their English lessons. Two of the teachers did not even use a specific coursebook at all. Rather, various textbooks were part of a pool of resources that also included worksheets, copy templates, online printable materials, and activity books. From this pool, the teachers compiled materials that they adapted for their English lessons. Therefore, the *framework for sequencing tasks* needed to be adapted to this situation, resulting in the following four steps:

1. Planning lessons: analysing resources and pre-selecting tasks.
2. Pre-task: negotiating task choice, activating, and pre-teaching language.
3. Task cycle: doing the task, preparing, and presenting results.
4. Post-task: giving feedback, reflecting, and evaluating.

However, since the teachers in my research did not just use tasks, but technology-enhanced tasks, we will next take a look at the topic of technology in the classroom.

2.4 Technology in the young learners' EFL classroom

When talking about *technology*, we do not necessarily have to refer to a specific device. Etymologically, the term *technology* derives from Greek *tekhnē* (art, skill) and *logos* (reason). Hence, technology is "the practical and purposeful application of knowledge" (Huang, Spector & Yang 2019: 7). In common usage, however, *technology* refers to "physical things as in smartphones, tablet computers, interactive whiteboards, and so on" (ibid.). Educational technology in the classroom then is the sound and effective use of digital tools "to support or facilitate learning, performance, and instruction" (ibid.: 8). Technology-enhanced lessons offer new learning opportunities and benefits even to a heterogeneous group of young learners (e.g. Pinter 2015; Kuty 2018b). Various studies show that technology in EFL learning can create not only options for differentiation, individualisation, and personalisation (e.g. Bates 2019) but also promote oracy and interaction (Edelenbos, Johnstone & Kubanek 2006: 149f.). In particular, the possibility to support young learners in developing their oral language competencies and communication skills is one benefit of using technology in the classroom that several other authors also point out (e.g. Pellerin 2014; Legutke, Müller-Hartmann & Schocker-von Ditfurth 2015). Moreover, technology can easily be adapted to the learning environment and provide immediate feedback to learners. It can help increase pupils' control over task management and thereby even remove social barriers that might otherwise put communicative pressure on learners (Kaliampos 2019). So next, let us bring tasks and technology into the primary school classroom.

2.5 Task and technology in the young learners' EFL classroom

The combination of tasks and technology in foreign language education holds enormous possibilities. According to González-Lloret (2017), tasks are ideal for fully exploiting the potential of technologies for foreign language learning. However, the requirement set out by Graumann (2002) for teaching in heterogeneous classes also applies to the use of technology-enhanced tasks: The lesson design has to cater for the individual needs of the pupils. With a focus on performance heterogeneity this includes, for example, individualised instruction, a variety of media, open forms of teaching and learning, and adequate scaffolding (Eisenmann 2019).

To implement technology-enhanced tasks that take into account primary school children's various needs, we can draw on Chapelle's "criteria for CALL task appropriateness" (2001: 55). These criteria include technology-enhanced task language learning potential, learner fit, focus on meaning, authenticity, positive impact on learners, and practicality, i.e. the suitability of the chosen technology to support the language learning activity. For task evaluation, Chapelle suggests analysing three "objects of evaluation" (ibid.: 53): software, teacher-planned activities, and learners' performance. In the context of the research presented here, one more object needs to be added to Chapelle's objects of evaluation, namely the *implications for technology-enhanced task design.* In the following, I am presenting my methodology.

3 Methodology

Whereas we can evaluate the objects software and teacher-planned activities by the use of judgmental methods, i.e. investigate "software and task in terms of criteria drawn from research on SLA" (Chapelle 2001: 54), we need empirical methods to examine learners' performance and the implications for the design of technology-enhanced tasks. The reason for this is that with empirical methods we can consider the same criteria, but we use the "data gathered to reveal the details of CALL use and learning outcomes" (ibid.).

To collect empirical data, I conducted my classroom-based research at three cooperating primary schools. From each school, one EFL teacher participated in the research. Each of the three in-service teachers was assisted by a pre-service teacher (students of EFL teaching at the University of Education Schwäbisch Gmünd). The tandems were responsible for developing, creating, and implementing one small-scale project using technology-enhanced tasks to support pupils in speaking English at each school. Thus, the research design promoted collaboration between pre- and in-service teachers (Cutrim Schmid & Hegelheimer 2014). However, before creating the tasks for the projects, I first visited the teachers and observed their EFL lessons. This gave me a first impression of their classes. Also, the children had the chance to get used to me. After all, I would be coming more often. Then, I held a workshop for all participants, which was tailored to their needs regarding the project and in which they could bring in their own questions and concerns. The topics covered in the workshop included task design, how to use an iPad or a laptop, how to use a Smartboard, and how to work with different apps and software. After the workshop, the first interview was conducted with the in-service teachers. For the interviews, a semi-structured interview guide was developed. Subsequently, the three projects, which were integrated into the EFL curriculum of the respective school, were carried out in the scope of three to six lessons each. The lessons were video-recorded and made available to the participants so that they could watch the lessons again, if they wanted to. Finally, the second semi-structured interview was taken, this time also with the pre-service teachers.

<table>
<tr><td colspan="3">Classroom observation</td></tr>
<tr><td colspan="3">Participant workshop
(in-service- & pre-service teachers)</td></tr>
<tr><td>Interview 1
(in-service teachers)</td><td>3x1 classroom project</td><td>Interview 2
(in-service- & pre-service teachers)</td></tr>
</table>

Fig. 2. Data collection instruments.

Next, I will briefly introduce the instruments that I used to analyse the collected data.

4 Data analysis instruments

In the research design two tools are used for data analysis. The first tool is reflexive Thematic Analysis (TA) as suggested by Braun & Clarke (2006). TA is a qualitative method for identifying patterns of shared meaning, so-called *themes*, organised around a core concept across datasets. TA "emphasizes meaning as contextual or situated, reality or reali*ties* as multiple, and researcher subjectivity as not just valid but a *resource*" (Braun et al. 2019: 848, italics in original). Braun and Clarke (2022: 34ff.) introduce a six-phase process of applying TA: familiarising with the dataset, coding, generating initial themes, developing and reviewing themes, refining and defining themes, and writing up. The initial coding of the data was inductive to generate themes informed by the content of the data. Later, focused coding with a deductive orientation followed. The coding took into account both semantic and latent meanings. Then, according to Corbin and Strauss's (2015) principle of *axial coding* (i.e. coding for context), the codes were divided into conditions, actions-interactions, and consequences. To support this process, the researcher used a second data analysis tool.

This second tool is an adaptation of the coding *paradigm* as suggested by Corbin and Strauss (ibid.). The paradigm is a tool that assists researchers in axial coding or coding around categories. These categories are also called "themes" (ibid.: 35). In my research, the themes arise from the preceding TA. The paradigm has got three main features: conditions, actions-interactions, and consequences. Since "the paradigm is only a tool and not a set of directives" (ibid.: 229), it allows us to ask questions and find linkages in the data in order to work out concepts whilst keeping action-interaction in the centre. It also enables us to show processes and not just to give static descriptions of situations. However, if we want to understand and explain processes, we have to put them into context. Context is a broad term and includes, amongst others, the circumstances or conditions that make up a situation, the meanings people give to these, the actions and interactions people undertake to achieve a goal, and the consequences that result from these actions (ibid.: 226). Like links in a chain, one action often leads to another that in turn is followed by another, and so on, which is why the consequences of an action-interaction cannot always be predicted. Therefore, "the relationships between conditions, subsequent interaction, and consequences rarely follow a linear path" (ibid.: 233). Rather, they follow non-linear processes. As conditions can change, action-interaction may also need to change in order to achieve the desired outcome. And since consequences are the result of actions, they often become part of the conditions that lead to the next actions and interactions.[1]

In axial coding, i.e. in coding for context, we locate and link "action–interaction within a framework of subconcepts that give it meaning and enable it to explain what interactions are occurring, and why and what consequences real or anticipated are happening because of action–interaction" (ibid.: 227). Thus, with the help of the coding paradigm we can not only explain the actions-interactions in EFL lessons, but also place

[1] The connections between conditions, action-interaction, and consequences in non-linear processes are illustrated in fig. 3.

them in their respective context in order to understand why they were carried out (conditions), and what results they had (consequences).

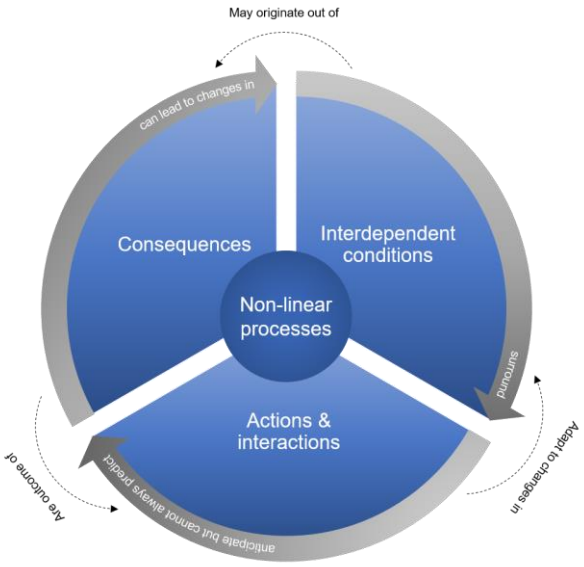


Fig. 3. Coding paradigm (based on Corbin & Strauss 2015).

5 Example of a small-scale classroom project

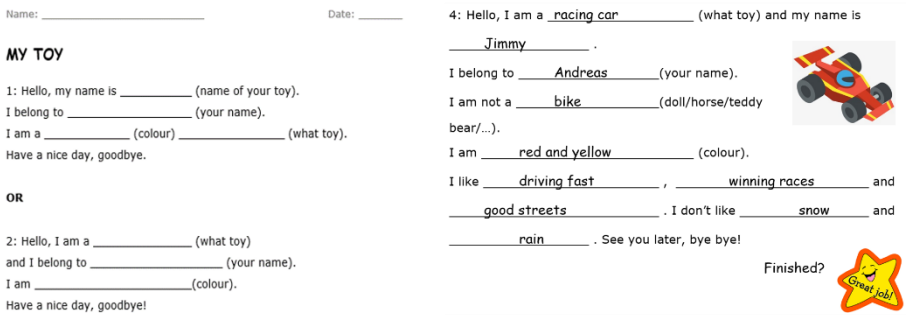
To give the reader a better impression of how the small-scale classroom projects were implemented, I would like to briefly present one of them as an example. The project was carried out with 3rd graders at a primary school in a rural area. It was integrated into the first English lessons after a long phase of school lockdowns and home schooling, during which no English lessons had been held. 13 girls and 10 boys attended this class and it was their first year in learning English as a foreign language. The English teacher, who was also the class teacher, decided to create a task on the topic *Present your favourite toy*. For the task, she wanted to work with iPads and use the App *ChatterPix Kids*, both of which she had been introduced to in the workshop. The teacher scheduled six lessons in total for the project. Four lessons for the introduction, the pre-task and the core task and two lessons for the presentation of results and reflection (post-task). The core task had two educational objectives:

1. The pupils are able to understand, pronounce and apply the vocabulary increasingly confidently.
2. The pupils are able to use the vocabulary and sentences in their own video production.

For the project, the pupils had been asked to bring their favourite toys with them to school. With the help of *Sally, the Kangaroo*, a hand puppet that the children know from a textbook, the teacher introduced the topic and reactivated the vocabulary. For this, she had brought real toys that she now presented to the children. Then she asked the pupils if they had any suggestions on how to make the toys talk so that they could introduce themselves and Sally would not have to do it anymore. The children quickly had the idea of making a video about it. To give the pupils an idea of where the project could be going and what a possible task outcome could look like, the teacher then showed two example videos in which *Sally, the Kangaroo* introduced herself. The first video showed a basic introduction and the second an extended one for pupils who worked better, faster, or needed a greater challenge. Both videos had been recorded using the "ChatterPix Kids" app by the researcher before the start of the project.

Fig. 4. *Sally, the Kangaroo* in an example video of the "ChatterPix Kids" app.

However, before the pupils were allowed to make their first recording, they had to fill in a worksheet or create an individual text to introduce the toy of their choice. This gave them a template to which they could later refer when recording. The children were also provided with a word bank which, together with the example videos and the worksheet, served as scaffolding and language support. More language support was provided by dictionaries, pictionaries, and the teacher and classmates who were available for assistance. For pupils who had finished their recording, the teacher had prepared another task where they had to work in pairs to create a dialogue between two toys. Again, the pupils were provided with an example video that the researcher had recorded. At the end of the core task, the teacher asked all pupils to save their individual results so that they could present them to their classmates and reflect on them in the next two English lessons (post-task phase).


Name: _____ Date: _____

MY TOY

1: Hello, my name is _____ (name of your toy).
I belong to _____ (your name).
I am a _____ (colour) _____ (what toy).
Have a nice day, goodbye.

OR

2: Hello, I am a _____ (what toy)
and I belong to _____ (your name).
I am _____(colour).
Have a nice day, goodbye!

4: Hello, I am a racing car (what toy) and my name is Jimmy .
I belong to Andreas (your name).
I am not a bike (doll/horse/teddy bear/...).
I am red and yellow (colour).
I like driving fast , winning races and good streets . I don't like snow and rain . See you later, bye bye!
Finished?
Great job!

Fig. 5. Examples of worksheets for language support.

After their presentations in class, the researcher asked the pupils for one or two sentences as feedback on the project. Their comments were positive throughout. For instance, the children said that they thought the app was really cool and that working with it was great fun, that it was very exciting, that it was funny that the animals could open their mouths, and that it was great that everyone presented something.[2] After the six lesson-project, a second interview with the teacher, in which she reflected on the implementation of the technology-enhanced task in her EFL lessons, was conducted. In the following section I will present a summary of first preliminary findings from this interview.

6 First preliminary findings

As pointed out earlier, in my research I investigate primary school EFL teachers' perspectives on promoting speaking through the use of technology-enhanced tasks in their heterogeneous classrooms. For this reason, all preliminary findings presented in the following represent only the view of the English teacher who implemented the project introduced above. Does she think that the technology-enhanced task she created has the potential to support oral communicative EFL learning in her class? And if so, what aspects of the use of technology in her EFL lessons does she consider to have a relevant impact on the development of her learners' speaking competence?

At the present stage of my research, I am focusing on analysing interview data using the coding paradigm. Thus, I would like to outline some preliminary findings that have emerged from this. At this point, I concentrate on the theme *oral performance*. One condition is to develop learners' communicative competence and support them in speaking English. Therefore, the action-interaction taken implements technology-enhanced tasks. In the interview after the project, the English teacher gave information about the consequences she had observed and which she found had resulted from the use of technology and task concerning the oral performance of the young learners. For

[2] In the following lessons without the researcher, the children of course reflected on the project with their teacher and received detailed feedback.

example, the teacher (T5) thought that the task "completely worked. I mean, using the iPad and this app they all were motivated [..] at all costs they all wanted to speak into it and introduce their soft toy and make it talk. I think they all felt addressed" (interview 2_T5).[3] Regarding the objective of the task (children create a video and speak English) the teacher stated that "[e]veryone reached the goal of the task. Yes, they all have, according to their proficiency level. Some with three sentences and […] all the others have done it very elaborately with the longer version or with an individual version. […] They all reached the goal, on different levels though" (interview 2_T5). As a final example, here is the teacher's perception of the performance of the weaker learners in her class: "The two weakest children of the group, who always refrain from speaking, […] bent over it (the iPad, t.a.) and tried to speak as quietly as possible so that the others do not hear it, but they all spoke" (interview 2_T5).

Regarding the theme *oral performance*, a preliminary summary of the results from this teacher's perspective shows that the technology-enhanced task helped to promote speaking in her heterogeneous EFL primary classroom. According to the teacher, all pupils felt addressed by the task. This suggests that technology-enhanced tasks have the potential to already meet the needs of young learners. Moreover, the teacher stated that the technology-enhanced task encouraged the use of the target language by all pupils. Furthermore, she noted that the children not only spoke English but they also spoke a lot. She observed the use of the target language even in weak learners, who usually always refrain from speaking English. A reason for this might be found in the safe space that technology gives to learners allowing them to speak without fear of being judged by someone else. What may also contribute to this is that the children receive immediate feedback and have the opportunity to revise and re-record their result, again in a protected setting. They can perform the task as many times as they like until they are happy with their outcome. Eisenmann (2019) suggests making conscious efforts to engage quieter or weaker learners in EFL lessons so that they feel more valued and involved. The more protected learning environment that the teacher created through the technology-enhanced task might have been a contribution to this. Another observation made by the teacher was that all pupils reached the goal of the task, i.e. they all produced a video. Finally, the teacher noted that the technology-enhanced task also entailed a higher degree of differentiation and individualisation. Therefore, from this teacher's point of view, technology-enhanced tasks are suitable for dealing with the high level of performance heterogeneity in her EFL lessons. Although the learners were not involved in real-world-interaction with people outside the classroom, the language they were using can be transferred to such authentic interactions. This is also indicated by the dialogues that some children in the project produced with a partner.

[3] The interviews were conducted in German. The teacher's answers and comments have been translated into English by the author.

Condition	Developing communicative competence						
Action-interaction	Using technology-enhanced tasks						
Consequences	All pupils are addressed	All pupils use target language	Pupils speak a lot	Weak and shy pupils also speak English	Pupils can perform task more often & repeat recordings	All pupils reach goal and produce task outcome	Task entails higher degree of differentiation & individualisation

Fig. 6. Overview: First preliminary findings representing T5's perspectives on using technology-enhanced tasks to support speaking in EFL learning with a heterogeneous group of young learners (theme: oral performance).

7 Final words and future work

In this paper, I have presented the first preliminary findings of my research on teacher's perspectives on the potential of technology-enhanced tasks in promoting speaking in heterogeneous EFL primary classrooms. In the next phase of my research, I will further analyse the interviews, reduce the data to a few themes, and try to find connections between them. Then, with the help of the coding paradigm, I will code for context around these themes in order to find out what linkages between conditions, actions-interactions, and consequences the pre-service and in-service teachers consider as beneficial or detrimental when it comes to promoting oral communication with technology-enhanced tasks. This will also show what potential the teachers see in technology-enhanced tasks in this respect, if any. First preliminary findings at this stage suggest that it is not merely the technology but mainly specific features of technology-enhanced tasks that will make a difference regarding pupils' learning. Furthermore, we wish to understand two more things: What criteria for the design of technology-enhanced tasks that cater for the needs of a heterogeneous group of young learners are relevant for the teachers? What support do they consider helpful to be able to design such tasks? The support could, for example, be in terms of equipment, teacher training, handling of the technology, or sustainability.

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