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Translanguaging in mainstream education: a sociocultural approach

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ABSTRACT

Due to the monolingual self-understanding of European nation-states, migration-induced multilingualism and the language mixing practices it triggers are not usually acknowledged as resources for learning within mainstream classrooms. The term translanguaging has recently been put forward as both a way of describing the flexible ways in which bilinguals draw upon their multiple languages to enhance their communicative potential and a pedagogical approach in which teachers and pupils use these practices for learning. However, little research has been conducted in how the translanguaging approach can be used in mainstream education to enhance knowledge. This study draws on videographic data recorded in 59 10th grade (15-year-olds) subject-matter classes in 4 secondary schools. Applying sociocultural discourse analysis to peer-peer interaction and therefore considering how learners scaffold one another as they participate in collaborative talk and in the co-construction of knowledge, results describe several functions of translanguaging for ‘exploratory talk’ leading to content-matter learning. Multilingual adolescents in naturalistic settings thus use their multilingualism to cognitively engage with content-based tasks and produce high-order speech acts embedded in complex talk.

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1. Introduction

The achievement gap between monolingual and multilingual speakers of minority languages, solidly unveiled by large-scale monitoring studies (OECD 2014), triggered the implementation of programmes to support language learning of minority multilingual pupils. While the majority of these initiatives targets the language(s) of schooling (Gogolin et al. 2011), little focus has been put on fostering the plurilingual repertoires of multilingual speakers of minority languages. Yet, a growing bulk of research suggests that a way to raise outcomes of minority multilingual pupils is through the exploitation of their multilingual repertoires as resources for learning (Beacco 2005). However, little is known about the functions family languages can assume for the acquisition of knowledge. This paper aims to analyse the quality of talk in peer-peer interactions when adolescent pupils use their full linguistic repertoires to solve tasks in content-matter mainstream classrooms.

Recent developments in sociolinguistics have adopted the term translanguaging (Creese and Blackledge 2010; García 2009; García and Leiva 2014; Hornberger and Link 2012) to refer to the ‘act performed by bilinguals of accessing different linguistic features or various modes of what are

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described as autonomous languages, in order to maximize communicative potential' (García 2009, 140). García and Leiva (2014) describe translanguaging as both an act of bilingual performance and a pedagogical approach for systematically teaching multilinguals, by encouraging them to use the totality of their language knowledge to engage in educational learning.

The proposal for a systematic use of translanguaging practices in mainstream education is, however, met with resistance. Generally, teachers believe that allowing linguistic diversity in the classroom will have negative consequences for learning (Dooly 2007). They present an array of arguments for not including other languages in their classrooms. Apart from their lack of proficiency in the minority languages, typical arguments include the fear of social homophily disrupting inter-language friendships, of an increase in off-task talk, or the claim that pupils' reduced proficiency in the family languages does not allow their use for learning (Van Der Wildt, Van Avermaet, and Van Houtte 2015). While insights on translanguaging as a pedagogical tool in complementary schools are available (Creese and Blackledge 2010), research on its functions to acquire new knowledge in mainstream education is still widely under-explored. To examine the use of translanguaging as a tool for learning requires adding a sociocultural lens to highlight its potential for the joint construction of knowledge.

This study thus takes on a sociocultural approach on the role of peer interaction for classroom learning (Mercer 1995; Mercer, Wegerif, and Dawes 1999; Mercer 2004) in order to analyse adolescent pupils' use of translanguaging for acquiring new knowledge in content-matter mainstream classrooms. It specifically seeks to analyse the role of translanguaging for acquiring new knowledge in pupils' task-related talk in mainstream education. This paper thus adds a strong educational focus to the previous sociolinguistic research on translanguaging, by offering a sociocultural perspective.

The study draws on videographic data recorded in 59 10th grade content-matter classes, in 4 secondary schools in Germany (Bührig and Duarte 2013; Duarte, Gogolin, and Siemon 2013). A sociocultural discourse analysis (Mercer 2004) was conducted on a corpus of 15 sequences in which multilingual pupils translanguage in peer-peer interaction. The article first introduces a review of research on translanguaging as a means for learning, and then presents the methodological approach, followed by the results and a discussion.

2. Translanguaging as a means for learning

The key motive for the study is rooted in the observation that the linguistic repertoires of multilingual minority pupils are rarely valorized in education. The issue of improving academic achievement among language minority pupils has loomed large for decades, and traditional approaches, wherein pupils are discouraged from multilingual language use, have been shown to be ineffective (Conteh, Kumar, and Beddow 2008). We will first focus on findings around minority languages and translanguaging in mainstream teaching, and then provide an overview on research about interaction and the acquisition of new knowledge.

2.1. Minority languages in mainstream teaching

While empirical studies into the use of family languages in the classroom suggest better educational success for all pupils (Moodley 2007), multilingual language practices are traditionally perceived as illegitimate within mainstream education (Kamwangamalu 2010). Current developments have adopted the translanguaging approach (Creese and Blackledge 2010; García 2009; García and Leiva 2014; Hornberger and Link 2012) to refer to the dynamic and flexible ways in which multilingual speakers access their language repertoires to expand their communicative potential. This line of research has analysed the dynamics and potential of multiple languages for educational purposes, going beyond seeing languages as isolated constructs. The languages are utilized flexibly so that pupils can benefit from the permeability of learning across languages. This allows them to be free from undergoing language separation or coping with sociolinguistic matters, such as language power and identity, which frequently affect the performance in monolingual classrooms (Hornberger and Link 2012).

While this approach has enjoyed positive scientific echoing, its transfer to the pedagogical practice is met with scepticism. Agirdag, Jordens, and Van Houtte (2014) investigated teachers' beliefs towards the Turkish language in Belgian primary schools and found that a vast majority claims that its use is detrimental to academic achievement. Similarly, Dooly (2007) found that most teachers consider minority languages to be an obstacle for learning. Conteh, Kumar, and Beddow (2008) showed how teachers assume that home languages are only used to address private issues but not as learning tool.

In sum, embedded in monolingual ideologies and contradicting research results, pedagogical practices often do not recognize the value of minority languages for pupils' learning. More research is thus needed in order to provide insights into students' use of translanguaging in mainstream education. Further, as existing research has mainly focused on young learners, a particular focus on older speakers is needed.

2.2. Interaction and the acquisition of knowledge

In interactional terms, the study's theoretical assumption derives from the work of sociocultural theory (Mercer 1995; Vygotsky 1978) on the role of participation in social interactions in shaping cognitive development. Communication, cognitive development and learning are hereby treated as related processes that are embedded in particular interactional contexts. The term *interthinking* (Mercer 1995) describes the link between cognitive and social functions of group talk and implies using talk to think collectively, to engage with others' ideas.

While new interpretations of Vygotsky's work have become increasingly diverse, this paper draws upon the work of the neo-Vygotskians (Mercer, Wegerif, and Dawes 1999) and their examination of how the joint construction of knowledge can lead to the development of quality talk in classroom (Mercer 1995). In their analysis of the use of different speech acts in peer-peer interaction they identified three types of talk: (a) *disputational talk*, mostly marked by a high degree of disagreement amongst participants and individualized decision-making; (b) *cumulative talk*, in which there is positive engagement but participants uncritically build on one another's statements and (c) *exploratory talk*, during which critical and constructive engagement with each other's ideas takes place and often leads to the acquisition of new knowledge. These findings provide a framework to identify high quality discourse.

Mercer (2002) suggests that in order for learning to take place in interaction, a shared framework of understanding and rules needs to be created. Several interaction mechanisms play a central role in crafting this framework, such as questioning, recapping, reformulating, elaborating. Mercer calls this shared understanding in which dialogical activities of joint thinking take place the 'intermental development zone (IDZ)'. This paper argues that translanguaging can play a central role in facilitating learning by enhancing the quality of interaction in the IDZ.

Although many studies have looked into classroom discourse, very few have focused on students' participation in it when the teacher is not involved (Ackermann 2011). However, many researchers conclude that the educational potential of pupils' interaction in the classroom is being squandered (Mercer, Wegerif, and Dawes 1999). As the study combines the active use of translanguaging with an interactional perspective on the acquisition of knowledge, its setting is not language classes, but rather content-matter mainstream classrooms, in which the main aim is the acquisition of subject knowledge.

All in all, there is consensus on the role of meaningful interaction for the acquisition of new knowledge (Edwards 2009; Wuttke 2005). However, most research so far has focused on younger learners and on teacher-pupil interaction and has not specifically looked at the role of multilingualism for knowledge construction. This study will thus focus on adolescent pupils' peer-peer interactions in content classrooms and specifically analyse the role of translanguaging practices in the joint construction of knowledge. It aims at answering the following research questions:

(1) What is the role of translanguaging in pupils' task-related talk in mainstream education?

This question addresses the issue of the type of talk that is conducted when translanguaging is used as an interactional strategy while pupils are jointly solving a task. Sub-questions are:

(1.1) To what extent do pupils sharing the same linguistic repertoires use translanguaging in their interaction?

(1.2) In what kind of talk is translanguaging used by pupils?

(2) How can peer–peer interaction in which translanguaging occurs be characterized?

This question draws on sociocultural research on the quality of peer–peer talk in jointly solving tasks. It describes the functions translanguaging assumes in the process of acquiring content knowledge. One sub-question will be examined:

(2.1) Which functions can the use of translanguaging in peer–peer interaction assume specifically for learning/acquiring new knowledge?

3. Methodology

The study uses sociocultural discourse analysis (Mercer 2004) to examine instances of classroom interaction in content-matter classes in which translanguaging occurs. Sociocultural discourse analysis focuses on the use of language as a joint social mode of thinking for constructing knowledge. It involves the analysis of naturalistic interaction between pupils jointly solving a task. In the first step, a quantitative analysis based on the allocation of speech occurrences to predefined theory-driven codes is done. This leads to an overview of the frequencies of occurrence of particular codings of language use. A second step includes a qualitative micro-analysis of illustrative segments in the data.

3.1. Data collection and processing

Data for this study stems from a video study conducted in Hamburg, Germany. The aim of the study was to analyse the role of multilingualism in mainstream education (Duarte, Gogolin, and Siemon 2013). A whole teaching unit in Mathematics and Social Sciences classes was videotaped in different school types. All participants provided their consent and participation was voluntary. Prior to videography, questionnaires were carried out to gather relevant sociolinguistic information.

The study was carried out in four schools, one of higher academic track (*Gymnasium*), one of comprehensive nature and two vocational schools (see Table 1). The selection criterion was initially the willingness of schools to cooperate. The second criterion referred to the student composition. Schools in the final sample were classified as 'socially disadvantaged' in accordance to the Hamburg KESS Index (Bos and Gröhlich 2010) and were targeted due to their high number of minority pupils. The third criterion was the presence of pupils that, according to the sociolinguistic questionnaire, shared family languages. To a small extent this was the case in all classes (see overview of shared languages in Table 1). However, translanguaging was only identified in 5% of the speech acts in the whole sample (Duarte, Gogolin, and Siemon 2013). In the sample, 84.5% of the pupils were born in Germany, 74.5% had an immigrant background and 63.8% spoke at least one language other than German at home. All pupils had a very high proficiency in the German language and used it both at school and with varying degrees also in the interaction at home. Average age of pupils was 15.6 years.

To analyse every linguistic interaction in the classroom, it was necessary to choose an unconventional method for the videography. Recording was done with a three-camera design. In addition, each

Table 1. Sample of video study.

Type of schools	Number of pupils	Immigrant background	Shared languages (by n. of pupils)	Subjects	Videographed hours
Gymnasium	22	21	Russian (2) Bosnian (2) Turkish (2)	Mathematics	6
Comprehensive school	10	5	Turkish (3)	History	6
				Mathematics	9
Vocational school 1	11	7	Turkish (3)	Society	6
Vocational school 2	8	5	Dari (2)	Professional learning	14
			Turkish (5)	Professional learning	18
Total	51	38 (74.5%)		4	59

teacher and pupil was given an audio recorder to wear around the neck. Three video-tracks and up to 30 audio-tracks were then synchronized and coded using the software Adobe Premiere.

3.2. Data coding and reduction

Based on previous video studies (Janík and Seidel 2009), a first phase was the coding of low-inference ratings. Four researchers listened in on all audio-tracks and tagged the material using a simple coding system for the following categories:

- *Languages*: German, other language, several other languages, unintelligible
- *Theme*: class-related, non-class-related, mixed, non-recognizable
- *Social forms*: lecture, group, partner or individual work, several forms (mixed)
- *Addressees*: open to all participants, private, self-instruction, not recognizable.

To extract the codings from Adobe Premiere, a software generating a data format that can be read by statistical software was created. For the current study, all taggings indicating that interaction took place multilingually were considered. This was the case in just 5% of all the codings reporting to the language category, confirming the dominance of German for general classroom communication. These instances of translanguaging were then analysed more closely and thematic sequences were outlined. This data was then transcribed, translated and coded using the MaxQDATA (version 11) software.

3.3. Coding system

- (1) *Unit of analysis*: Drawing on the research of the quality of talk (Mercer 1995; Mercer, Wegerif, and Dawes 1999; Mercer and Littleton 2007) and on recent developments on coding classroom dialogue (Hennessy et al. 2016), the unit of analysis was the individual speech act. The typology of speech acts used by Mercer, Wegerif, and Dawes (1999) served as a basis for analysis. The first step thus consisted of the separation of all utterances into speech acts. Two trained coders performed individual coding of all transcribed sequences. A third coder was involved in case of disagreement. A total of 87% of inter-coder agreement in the division and classification of speech acts was reached. It should be, however, noted that coding speech acts using a pre-determined coding system is a sensitive issue and one that may reduce the richness and fluidity of interaction. Using a simplified coding system to analyse a phenomenon that is traditionally studied from an in-depth linguistic perspective has its advantages but also causes some methodological constraints, as not all aspects of interaction can be equally addressed (for a linguistic analysis see Bührg and Duarte 2013).

- (2) *Languages*: The languages occurring in each speech act were coded using the typology proposed by Jordens (2016). This included the following codes: only German, only another language, only two other languages, or a mix of German and other language(s). A total of eight different languages were identified.
- (3) *Type of talk*: To classify speech acts in off- or on-task is a complicated matter. For this purpose, the scheme mentioned by Barnes (1999) was used. Speech acts were first divided into off-task, on-task or mixed. Task-related talk was then sub-divided into social-managerial, when dealing with the task at hand in organizational terms not directly related to the content (e.g. asking for materials), and cognitively oriented, when dealing with explanations and understanding of ideas.

3.4. Sample for sociocultural discourse analysis

A total of 15 sequences and 1561 speech acts make up the sample for the sociocultural discourse analysis. They were delineated from the moment translanguaging was tagged as low-inference rating in the video data until the moment it stopped. Table 2 presents an overview.

3.5. Presentation of results

In a first step, the numeric results in relation to the use of translanguaging and the kind of talk in which it is embedded will be presented. Later, a qualitative analysis of the talk in which translanguaging occurs will be provided on the basis of two illustrative segments of the data, analysed following conversation analysis principles (Heritage 1995).

4. Results

4.1. Role of translanguaging in peer-peer interaction

The first research question of the present study addressed the role of translanguaging in pupils' task-related interactions with each other. In particular, we wanted to examine to what extent pupils sharing linguistic repertoires use translanguaging in their interaction. For this, we looked at the languages of the speech acts in the translanguaging sequences and counted the frequencies of speech acts occurring per language as well as those in which two or more languages (mixed) occurred. Table 3 displays the results.

In the sequences in which translanguaging occurs, the dominant language in which most of the others are incorporated is German with a percentage of 62.6% of the speech acts occurring only in

Table 2. Data used for the sociocultural discourse analysis.

Sequences (<i>n</i> = 15)	Languages	Total of codings	Speech acts	School form
Pen	Twil/German	42	13	Gymnasium
History in Russian (Part 1)	Russian/German	1091	485	Gymnasium
History in Russian (Part 2)	Russian/German	910	273	Gymnasium
History in Russian (Part 3)	Russian/German	1765	507	Gymnasium
Turkish for foreigners	Turkish/German	154	40	Vocational 1
Internship talk	Dari/English/German	211	55	Vocational 1
What have you done with my work	Turkish/German	49	16	Vocational 2
Intercept theorem	Bosnian/English/German	84	22	Gymnasium
Let's talk about the ongoing lesson	Bosnian/German	129	42	Gymnasium
Helping with math	Bosnian/German	120	30	Gymnasium
Chat, slander and math	Bosnian/German	32	8	Gymnasium
Feelings and math	Bosnian/German	58	15	Gymnasium
Talking about a snack	Turkish/German	129	30	Vocational 2
Cell phone	Turkish/German	21	7	Comprehensive
Asking for help	Turkish/German	73	18	Gymnasium
TOTAL	8 languages	4868	1561	4 schools

German. These results confirm the dominance of German in the bilingual peer–peer interaction. German is followed by Russian (19.4%) with speech acts being produced throughout three long sequences by two pupils. Mixed speech acts in which two or more languages are used (12.3%) are the third most used translanguaging constellation. The other languages found in the sequences occur in very small numbers although the pupils sharing the same repertoires often perform other tasks together in German.

The second sub-question on the role of translanguaging in peer–peer interaction assessed the extent to which pupils engage with the task at hand when they are using several languages. The results in [Table 4](#) clearly show how overall on-task talk (social-managerial and cognitively demanding) dominates across languages, occurring in 75% of the speech acts. In addition, no pattern was found in the sense that some languages were predominantly used for off-task talk while others were more used for engaging with the task.

4.2. Functions of translanguaging for acquiring knowledge

The second research question specifically aimed at analysing the quality of talk in which translanguaging occurs. In the first step, we quantified the type of speech acts used in the sequences (see [Table 5](#)) in order to have an overview of the diversity of purposes translanguaging can assume. In the second step, we performed a conversation analysis (Heritage 1995) on two segments of the data.

The table shows a predominance of the speech acts stating or claiming (16.9%) as well as asking (14.9%), clearly reflecting the dialogical situation of jointly solving tasks. Also the speech acts providing information about the task, confirming (11.8%) given information and quoting (8.6%) from the worksheets are frequently used by the pupils in their translanguaging practices. No differences were found between the mixed speech acts, those occurring solely in German and those in the other languages. According to the sociocultural studies on the quality of peer–peer talk (Barnes 1999; Mercer, Wegerif, and Dawes 1999), these speech acts are typical of exploratory talk in which partners engage critically but constructively with each other’s ideas. In this kind of interactions, claims and suggestions are offered for joint consideration and answers are provided. These may be challenged, but challenges are justified and alternative hypotheses are offered. A typical feature of exploratory talk is thus that knowledge is made publicly accountable and reasoning is detectible in the talk.

But what do these results tell us about the actual quality of talk in the joint construction of knowledge? In order to answer this question, two segments from the data will be analysed below. They were chosen as they exemplify the type of speech acts used when translanguaging also plays a central role. These were both taken from the *Gymnasium* (academic track) but from different subjects. In this school, there were both more pupils sharing family languages (see [Table 1](#)), as well as a more overt approach towards letting pupils using their languages in peer talk. As a result, more and longer sequences than in the rest of the sample were found.

Table 3. Frequency of languages occurring in the translanguaging sequences.

Language	Frequency	%
German	977	62.6
Russian	303	19.4
Mixed	192	12.3
Bosnian	39	2.5
Turkish	21	1.3
English	17	1.1
Dari	9	0.6
Twi	3	0.2
Total	1561	100

Table 4. Type of talk per language.

Languages	Off-task	On-task		Total
		<i>Social-managerial</i>	<i>Cognitively oriented</i>	
German	265	295	417	977
Russian	62	107	134	303
Mixed	36	33	123	192
Bosnian	13	11	15	39
Turkish	8	2	11	21
English	2	9	6	17
Dari	4	2	3	9
Twi	1	1	1	3
Total	391	460	710	1561
%	25.0	29.5	45.5	100

4.2.1. Solving the intercept theorem trilingually

a. Classroom context and participants. The first segment (see Table 6) stems from a Mathematics class in which around 35% of pupils has an immigrant background. Prior to the filmed unit, the teacher mentioned having two Bosnian-speaking girls born in Germany (P1 aged 15.3; P2 aged 15.6) in his class that often sat together. They were not, however, directly encouraged to use their family language in class.

b. Task. Pupils had been asked to solve a worksheet concerning the intercept theorem by working in pairs. In the sequence, the girls jointly attempt to answer one of the questions in the worksheet and use German, Bosnian and English.

c. Paraphrases. The interaction starts with the first pupil directly referring to the image on the worksheet and describing in Bosnian what she sees in relation to the size of the sides of the geometric lines represented. She voices her observation in a fully task-related speech act. The reaction of the second pupil is formulated fully in English and is not directly related to what her interlocutor just said.

In Section 3, the first pupil continues her engagement with the task. She starts by using German to explicitly announce her summary of what is their available knowledge from the worksheet ('we know') and continues in Bosnian to provide the exact known information ('how much is from S to A1'). Still in Bosnian, she then poses a question on the missing information about the distance they must calculate. Immediately after, she uses German to put forward a hypothesis for her own

Table 5. Frequency of speech acts in the translanguaging scenes.

Speech act	Frequency	%
Stating/claiming	264	16.9
Asking	233	14.9
Informing	197	12.6
Confirming	184	11.8
Quoting	134	8.6
Ordering	97	6.2
Answering	74	4.7
Classifying	71	4.5
Identifying	52	3.3
Ironizing	45	2.9
Disagreeing	39	2.5
Alleging	36	2.3
Justifying	31	2.0
Disclosing	29	1.9
Admonishing	28	1.8
Correcting	27	1.7
Conjecturing	11	0.7
Excusing	5	0.3
Thanking	4	0.2
Total	1561	100

Table 6. Segment 1: Intercept theorem.

1	P1	Ljeva strana je duza nego ova i (<i>the left side is longer than this one and</i>)
2	P2	and I don't wanna talk about it (eng. original)
3	P1	Ja • äh wir wissen (<i>we know</i>) • koliko je od S do A1 (<i>how much it is from S to A1</i>) • jedan koliki je razmak (<i>how big is the distance?</i>) und dann ist das ein Meter fünfzig (doch) (<i>and then it's one meter fifty (right)</i>) . Mi znamo (<i>we know</i>)
4	P2	Aber das Ding ist, wir haben keine Wasserwaage • und dann wissen wir nicht so/ • wie/ (<i>but the thing is that we don't have a water level • and then we don't really know /</i>) • ähm • Ja neznam, gdje da postavimo taj (<i>I don't know where we arrange this</i>)
5	P1	A eins • Genau. (<i>A one • exactly</i>)
6	P2	(Und) dann • ähm ((1,5s)) Und jetzt brauchen wir aber die andere Seite aber das muss so äh (<i>and then • uhm And now we really need the other side but that must be like this</i>) • • ravno da bude (• • <i>it must be straight</i>) da bude (<i>should</i>) B ein Punkt (<i>B one point</i>)
7	P1	Ja znam, da trebamo B (<i>I know we must</i>) B ein Punkt (da) (<i>B one point there</i>) postavimo • • • (<i>arrange</i>)
8	P2	Wir müssen ja • • berechnen wie viel. (<i>we must calculate how much</i>) • ähm • • koliko je (<i>how much it is</i>) Meter .izmedjo (<i>Meters between</i>) S und B eins (<i>S and B one</i>) Und dann ist das die Länge (<i>And then that is the length</i>) ((1,5s)) od ove druge (<i>of the other</i>) Seite (<i>side</i>)
9	P1	Nesto mit x. (<i>Some things with an x</i>)

question ('and then it's one meter fifty, right?'). When she is about to continue her summary of what they know, the second pupil interrupts her. Her talk so far is solely cognitively demanding and task-related. However, interaction has up to now not been in the sense of the joint construction of knowledge, as the two pupils do not engage with each other's talk.

In Section 6, the second pupil reacts to the previous statements by introducing a typical managerial aspect, related to solving the task but not addressing the content. She states in German that they need a water level to perform their calculations. In Bosnian, she then claims not knowing where they can get it. The first pupil continues to examine the numbers on the worksheet and quotes in German,

while directly confirming what the second pupil had just said. From this point on, the two girls are actively building on each other's statements.

The second pupil now also directly engages with the geometric lines on the worksheet. She first uses German to state what they need ('the other side') and continues in Bosnian to propose a solution ('it must be straight'). She then corrects herself in Bosnian ('it should') and continues to propose another complementary solution in German.

Next, the first pupil first uses Bosnian to introduce her knowledge. The technical expressions are quoted from German ('B eins Punkt'). The second pupil builds on this and proposes a solution for what they should calculate. She moves back and forth between German and Bosnian. At the end, she proposes the solution to what they need to measure ('and then that is the length'). The first pupil then completes the information, confirming that she agrees with the solution.

d. Analysis. In this segment, we thus see a predominance of on-task talk of cognitive-demanding nature, with a few instances of social-managerial talk on materials needed to solve the task at hand. In the first three sections, the interaction is more of a cumulative nature. The two pupils accept one another's statements, while sharing knowledge in an uncritical way and without engaging with each other's arguments (Mercer, Wegerif, and Dawes 1999). This changes in Section 4, in which the second pupil, up to then less cognitively involved in the task, becomes more involved. In the last part of the interaction, knowledge is thus jointly constructed through the means of exploratory talk. The two pupils listen to each other, share relevant information and their contributions build on what was said before. The pupils use similar mechanisms to make their thinking loud as those identified by Edwards (2009). They use direct questioning, repetition of each other's ideas and questioning within a previously established set of interaction rules. These are typical features of exploratory talk (Barnes 1999; Edwards 2009; Mercer 1995; Mercer, Wegerif, and Dawes 1999).

4.2.2. Analysing a speech between German and Russian

a. Classroom context and participants. In the following segment (Table 7 a, b and c), the History teacher of the same school has been working on the topic of National Socialism and asks pupils to analyse in pairs a speech of Hitler, based on four questions on a worksheet. Two Russian-speaking girls (P1 aged 15.5 and P2 aged 15.4) feature in the segment. While P1 was born in Germany and mentions using more German than Russian both at school and at home, P2 was born in Russia, moved to Germany at the age of 10 and indicated using predominantly Russian at home. This explains why she extensively uses the Russian language in the three sequences in which she is involved.

b. Task. After explaining her worksheet, the teacher divides the paragraphs of the speech the pupils need to analyse between the pairs. She then asks the two Russian-speaking pupils to work together, also not explicitly telling them to use their multilingualism. The girls are assigned to work on paragraph four, one of the longest of the speech. Due to its length, their interaction will be presented in three sections.

c. Paraphrases of sequence (a). At the beginning of their interaction, the two pupils comment on their possibility for working together and even on their clothes. Their talk is off-task up to the point in which pupil 1 refers to the length of the paragraph they are supposed to analyse ('the fourth one'). The last comment of the second pupil is in relation to the teacher ('is she crazy') and again refers to the length of the paragraph ('look at this'). Up to here there is also a clear division of languages. While pupil 1 speaks solely in German, pupil 2 only uses Russian.

After this initial interaction, the pupils carefully read the first task, in which they must find the central topic of their assigned paragraph.

d. Paraphrases of sequence (b). In this part of the interaction, most of the talk is on-task, cognitively demanding. In Sections 1 and 2, both girls attempt to paraphrase the content of their paragraph. The

Table 7. Segment 2: The speech (sequences a, b and c).

(a)	
1	P1 Cool. Hat's wieder mal gut eingeteilt. Freu dich mal nicht so wild. Hahaha. (Cool. Once again she divided the groups well. Don't be that happy. Hahaha.)
2	P2 Всё ужасно просвечивается. Вот мне надо было чёрный лифчик одеть. (Looking at her top: Everything is so terribly transparent. I should have worn a black bra.)
3	P1 Ah, kritisch, kritisch. ... Den vierten? (Oh yes, critical, critical ... Pointing to the worksheet: The fourth one?)
4	P2 Ja. Она чё с ума сошла. Посмотри! (Is she crazy? Look at this.)
(b)	
1	P1 Warte mal. Lass mal jetzt ... Was ist das zentrale Thema dieses Abschnitts? Das zentrale Thema ist einfach, der Zusammenhalt und ... alle anderen sind scheiße und wenn wir arbeiten ... sind wir die Besten. Mit deiner, mit deinem scheiß Egoismus von wegen: ja, ich überzeug die Leute, dann geht das schon richtig. (Wait a minute. Let us see ... What is the central topic of this paragraph? The central topic is easy, the union and ... all the others are shit and if we work ... we are the best. With your, your shitty selfishness, like: yes, I convince this people, and then it will work out.)
2	P2 Ah. Das zentrale Thema ... Понимаешь. Он тут много всего говорит. (Ah. The central topic ... Do you get it? Here he speaks about a lot of things.) Он сначала говорит, что да, что мы должны быть все вместе (First he says that we all must stick together) и он так говорит как будто это их сейчас мнение. (and then he talks, as if it were their own opinion here.) И потом он говорит, что Deutsche Volk hat sich verändert, они как бы уже теперь- (And then he says that (Ger) the German People has changed (Rus) as if now they already -
3	P1 Oh ist das durchsichtig ey. (Touching the top of pupil 2: Oh yes this is really transparent.)
4	P2 ... ist nicht mehr das Volk der Ehrlosigkeit, der Schande, der Selbstzerfleischung (is not anymore the People without honor, the People of shame of self-suffering.)
5	P1 Ja. Mein ich ja. (Yes. Exactly what I mean.)
6	P2 der Kleinmütigkeit (of the cowardliness)
7	P1 Aber das Ding ist ... (But the thing is ...)
8	P2 он как бы говорит, что сейчас всё намного лучше, что сейчас так круто. (he says, like, that now everything is much better, that now is cooler.)
9	P1 Ja wenn es so ist. Es ist ja noch nicht so. Muss ja so werden. Keine Ahnung. (Yes but when that is the case. It is not yet like that. It must become like that. I don't know.)
10	P2 Так ещё раз. Читай зачем ты поднимаешь руку? Сейчас некогда о тех штуках. (ok, once again, read ... Why are calling the teacher? We have not time to solve that.)
11	P1 Formuliert eine Überschrift zu dem Abschnitt. (Formulate a title for the paragraph.)
12	P2 Давай. (Let's do it.)
(c)	
1	P1 Ist ja, soll ja ne Überschrift sein. Ähm. Der ... Nee nicht der Werdegang ... (It is, should be a title, Uhm. The ... No not the rise ...)
2	P2 Das Deutsche Volk ... wird zu einer Einheit. (The German people ... becomes a unity.)
3	P1 Soll zu einer Einheit werden (Should become a unity.)
4	P2 Warum sagt man nicht einfach ähm, der Umschwung? (Why can't we just say, uhm, the turning point.)
5	P1 Да! (Yes!) Die- Ich will, ich will ... Ты хорошо сказала. Die Vereinigung der Arbeiter. (They - I want, I want ... (Rus) You said it really well. (Ger) The union of the workers.)
6	P2 Ja aber das ist ... (Yes but that is ...)
7	P1 Die Vereinigung der Arbeiter zu einem ... (The union of the worker into a ...)
8	P2 Aber das umfasst das ganze Thema, und dieser ... Der Aufruf ... Der Aufruf zur- (But this includes a whole theme, and this ... The call ... The call to-)
9	P1 -zur Vereinigung. Прочитай ещё раз. ((Ger) - to unification. (Rus) Read it again.)

- 10 P2 Ja. Der Aufruf zur Arbeitereinheit. Och. Keine Ahnung. Mann.
(Yes. The call to worker unification. Oh. I don't know, oh man.)
- 11 P1 Да! Zur Arbeitereinheit. Он постоянно говорит! Да, да
((Rus)Yes! To worker unification. (Rus) He says that all the time! Yes, yes, yes.)
Вот вы лучше всех. Die Vereinigung der Arbeiter zu einer Einheit.
((Rus)You are the best. (Ger) The association of the workers into one unity.)
- 12 P2 Der Aufruf.
(The call to.)
- 13 P1 Der Aufruf.
(The call to.)
-

first pupil uses again solely German and reproduces central messages of the text by using a kind of youth jargon (e.g. 'all the others are shit'). The second pupil uses Russian to do the same and enumerates the aspects Hitler mentions in his speech ('first', 'then', 'and then'). She uses German solely to quote directly from the worksheet or from the speech itself. Up to this point, the two pupils engage in exploratory talk, as they build on each other's ideas to perform similar tasks, such as, summarizing information, enumerating arguments in the text and even sharing relevant information.

In Section 3, the first pupil interrupts this on-task talk to refer to the clothes of the second pupil and to the fact that they are, indeed, transparent. This is related to this pupil's initial comment on her choice of bra for that day. As in the previous statements, she does this in German.

From this point on, the second pupil continues to filter central information from the text in Russian, quoting directly key terms in German. The first pupil, however, disagrees with her and interrupts her twice ('But the thing is' and later 'Yes but when that is the case.') she finishes by stating 'I don't know' and raises her hand to ask for the teacher's support.

The second pupil now directly responds to this, by asking why she is calling the teacher and reminding her of their lack of time to solve the task. The first pupil looks back at the worksheet and reminds both of them of what precisely the task is ('formulate a title for the paragraph'). The second pupil agrees by stating 'let's do it' and they go back to work.

So, in this part of the interaction, talk is initially exploratory but moves to a more social-managerial exchange, as uncertainty and disagreement are expressed by one of the pupils. However, they manage to solve their disagreement by re-focusing on the task on the worksheet.

e. Paraphrases of sequence (c). In the last part of their interaction, we see again high quality exploratory talk with translanguaging, as the girls try to focus on finding a suitable title for their paragraph. The first pupil now uses almost exclusively German in her attempt to produce suitable suggestions for the title. She uses Russian to make a compliment ('you said it really well'), to give an order ('read it again') and to summarize information from the text ('you are the best').

f. Analysis. Overall, the pupils complement each other's formulations, show agreement and reinforce each other's suggestions, when they reach a final agreement. The interaction goes on in this same way throughout three whole classes and until the worksheet is completed and their presentation of the results is prepared. The fact that one of the pupils rarely uses Russian, while the other translanguages between German and Russian does not seem to affect the course of the conversation or cause comprehension barriers between the two. They successfully complete their task and present their results in German.

Their interaction moves quickly between off-task and on-task talk, with a predominance of cognitively demanding features. Further, they flexibly change between exploratory talk and disputational talk in which disagreement is shown and suggestions are met with some degree of resistance. However, this can be seen as a sign of their high engagement with each other's ideas.

5. Discussion

This paper aimed at analysing the quality of peer–peer interactions of multilingual adolescent pupils while they make use of their full linguistic repertoires to solve tasks in content-matter mainstream classrooms. It combined recent research on translanguaging as a pedagogical approach with a socio-cultural framework to analyse the joint construction of knowledge in pupils' task-based interactions (Mercer 1995; Mercer, Wegerif, and Dawes 1999; Mercer 2004). It was based on the assumptions that (a) developmental processes take place through participation in peer interaction in institutional contexts like schooling and that (b) for multilingual pupils' translanguaging is a natural process which can play a central role for learning through collaborative talk.

In relation to the first research question on the role of translanguaging in mainstream classes, we predominantly found on-task talk in the translanguaging sequences, with a clear dominance of cognitively demanding speech acts. There were also some mixed speech acts containing also off- and on-task talk, indicating that pupils often not only switch between languages but also move flexibly between private and class-related talk. No differences in on and off-task behaviour were found between the pupils' translanguaging and the pairs performing the same task solely in German. Further, even in the translanguaging sequences, there was a dominance of speech acts exclusively in German.

Concerning the second research question, addressing the quality of peer–peer talk in collaborative talk, our results point towards an overwhelming amount of speech acts typical of exploratory talk (Mercer and Littleton 2007) in which knowledge is shared and interlocutors critically build on another's ideas. The qualitative analysis of key segments shows how translanguaging is used to scaffold meaning through interaction and contribute to jointly solving school tasks. Talk in which translanguaging is used can be seen to advance understanding, as partners present ideas as clearly as necessary for them to become shared and jointly evaluated. Translanguaging practices thus seem to reinforce the creative process of knowledge building, by mediating the emergence of high-order thinking. The possibility of flexible use of pupils' linguistic repertoires allows learners to select and control the content of the talk which constitutes the sources for a high quality 'IDZ' in which interthinking effectively takes place.

Translanguaging plays central functions in the two phases of the collaborative talk analysed for this study. While trying to *make sense* of the task at hand, translanguaging plays a role in:

- paraphrasing the task in the worksheet
- identifying and describing available knowledge to solve the task
- solving managerial aspects.

When jointly *constructing answers*, translanguaging is used to:

- set forward a particular formulation in terms of content
- hypothesize
- recast and correct previous information
- negotiate meaning
- quote from sources and worksheets
- show disagreement/agreement and appraisal
- provide counter-arguments
- discuss appropriate wording.

6. Conclusion

These results have several implications to the field of multilingualism and education, particularly contradicting the deep-rooted believe that allowing linguistic diversity in the classroom has negative

consequences for pupils' learning (Dooly 2007). They provide valuable evidence to challenge teachers' arguments for not allowing their pupils to translanguange (overview in: Van Der Wildt, Van Avermaet, and Van Houtte 2015). In particular, they confirmed a dominance of on-task talk when other languages were used. Pupils use translanguaging for high quality exploratory talk, and their collaboration does not differ from groups working monolingually. In addition, and as seen in the Russian sequence, competence in family languages does not have to be at a high level to engage in cognitively demanding talk, as even receptive skills or youth jargon were shown to be useful resources for interthinking.

In the study, translanguaging allows pupils to be free from undergoing language separation or from coping with other sociolinguistic matters, frequently affecting performance of speakers of minority languages in typical monolingual classrooms (Hornberger and Link 2012). It is one aspect of pupils' shared experiences and contributes to establish trust. The flexible shift between languages due to common repertoires allows pupils to primarily focus on breaking down and organizing the content, without the effort of having to activate their monolingual *modus* to engage in interaction.

In sociocultural terms, this research added the aspect of multilingualism to the theory of the guided construction of knowledge in schools (Mercer 1995). In relation to talk as a social action, the paper explains how translanguaging is used to create joint knowledge and understanding and highlights the ways in which pupils help each other to learn through several languages. Regarding the relationship between context and continuity (Edwards 2009), the results of the paper point towards that fact that encouraging the continuity of shared translanguaging spaces would improve their quality, thus implying that the context for their use must be a systematic and overt one. The paper thus shows how a sociocultural theorization of translanguaging can add valuable insights to the current sociolinguistic efforts by focussing on the functions of multilingual repertoires for negotiating and acquiring knowledge in mainstream education.

As Conteh, Kumar, and Beddow (2008, 225) put it, 'to construct a pedagogy which provides scope for developing the full potential of talk as a tool and medium for learning entails radical shifts (...) particularly if they are multilingual'. The results of this study suggest that allowing translanguaging in phases of collaborative talk may be one feature of such a pedagogical shift.

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