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A Task-Based Needs Analysis of Primary School-Aged Children with Migrant or Refugee Backgrounds in Austria

### **Abstract**

In this study we report on a task-based needs analysis (TBNA) for primary school-aged newcomers to Austria. 31% of Austria's primary school students learn German as an L2 and thus a systematic analysis of their learning needs is crucial. Semi-structured interviews were conducted, and a survey was distributed. Results show 38 crucial target tasks for social and academic integration and their respective rankings regarding perceived frequency and the need for training. Triangulation of multiple sources and methods facilitated the identification of target tasks in various life domains, and the development of detailed task descriptions along multiple task dimensions. Collectively, the results provide a basis for task selection, task sequencing, and the development of a meaningful syllabus for refugee/migrant populations at the primary school level in Austria, as well as countries with similar refugee populations.

#### 1. Introduction

While mass migrations are not new phenomena in human history, they pose complex and novel challenges for refugees and their receiving countries. Circumstances such as war, political or religious persecution, epidemics, natural catastrophes, famine, genocide, economic crises, or climate change frequently force people to flee, cross cultural and linguistic borders, and respectively learn the language of the receiving country (Long, 2015). Recent wars in the Middle East, Sub-Saharan Africa and Ukraine have sharply increased the number of individuals who seek refuge in Europe. During the migration wave in 2015/16, more than 700.000 refugees in Europe were minors (*Children in Migration - Asylum Applicants*, 2022) and respectively, school systems in each receiving country needed to find adequate ways for the fast integration of new students who did not yet have knowledge of the target language.

Austria had the highest average of underaged refugees per 100.000 citizens between the years 2014 and 2019 in Europe (N=810) (*Children in Migration - Asylum Applicants*, 2022). The very recent and tragic developments in the Russian-Ukraine conflict have again led to a migration wave to Austria. In the first quarter of 2022, 40.000 Ukrainian citizens, of whom 37% (19.520 individuals) were children and youth, sought refuge in the Austrian republic (*Pressemitteilung: 12.794-092/22*, 2022). As a consequence, the country has a large population of children with migration backgrounds who learn German as an L2, specifically 31% of all pupils in primary school ("Schülerinnen Und Schüler Im Schuljahr 2020/21, Für Die Deutsch Nicht Die Erstgenannte Alltag Gebrauchte Sprache Ist," 2021). Therefore, the teaching of German as L2 has become prominent in many of Austria's schools, and the system of "*German language support classes* (GLSC)" (Erling et al., 2022, p. 574) was put in place in 2018 (Erling et al., 2022).

While there are standardized ways of investigating L2 learner needs (Brown, 2009), to our knowledge no analysis of the communicative needs of young refugees and children with migration backgrounds has been conducted in Austria. Long (2005b) advocated that the analysis of learner needs is the first step in developing any effective L2 program. A task-based need analysis (TBNA) focuses on communicative needs and detects and describes the tasks that learners are required to do in their L2 in order to function in the target domain (Long, 2005a). A TBNA provides a basis for a task-based syllabus which is learner-centred, meaningful and fosters effective language learning, as it aligns with research findings in second language acquisition and with socially progressive movements in education research (Serafini, 2021). Although a task-based teaching approach has not yet been adopted as standard in Austria's GLSCs for newcomers, TBLT would align with the program's goals which were defined in terms of competencies (Spiel et al., 2021).

In what follows we report on a task-based needs analysis for primary school-aged newcomers (including refugees and children with migration backgrounds) that was conducted in an Austrian context. Its aim was to detect target tasks and describe them alongside multiple task dimensions such as task goals and procedures, participation and interaction, spatial and environmental conditions, linguistic demands, cognitive and psycholinguistic demands, and technological requirements (Gilabert & Malicka, 2021). The information coming out of this needs analysis can be potentially used as the basis for task selection, task sequencing, and the development of a meaningful syllabus for refugee/migrant populations at the primary school level in Austria.

# **Literature Review**

Long (1985, 2005b, 2005a, 2015) contributed extensively to the field of needs analysis in SLA and called for an increase in NAs from a task-based perspective and a closer investigation of the employed methodologies. This has resulted in exponential growth of NA studies which focus on needs in terms of target tasks and review the utilized methodologies systematically (see While English is still dominant in TBNA, other languages have started to be investigated in recent years.

**Table 1** TBNAs from 1999 - 2022). While English is still dominant in TBNA, other languages have started to be investigated in recent years.

*Table 1:* Task-Based Needs Analyses 1999 – 2022

Author and	Target Learner	Target	Methodology	Sources
Year	<b>Group/ Course</b>	Language		
Jasso-Aguilar (1999)	hotel maids in Hawaii	English	Participant observation, unstructured interviews, and questionnaires	hotel maids, supervisors, the executive housekeeper, and a human resources staff member
Kim et al. (2003)	NNS university students in an EAP programme in Hawaii	English	review of learning material, survey, semi- structured interviews	domain experts, previous students, future students
Gilabert (2005)	Catalan Journalists	English	unstructured and semi- structured interviews, survey	domain experts (scholars)
Bartlett (2005)	investigation of the task of ordering beverages or snacks in cafés	English	Target-discourse analysis	Domain expert – salespeople and clients
Chaudron et al. (2005)	tertiary program for Korean as a foreign language	Korean	Unstructured interviews, survey	Teachers and students

Huh (2006)	business English course in a Korean context	English	literature survey, semi- structured interviews, survey	Literature on business English, domain experts (Korean business professionals), previous students and future students
Lambert (2010)	university graduates of a Japanese university	English	Analysis of job- placement records, interviews, open-item survey, follow-up survey	Job-placement records, previous students,
Spence and Liu 2013)	engineers of a manufacturing company in Taiwan	English	Survey, semi- structured interviews	Domain experts – process integration engineers
Oliver et al. (2013)	Aboriginal adolescents	English	interviews, observation material analysis	educators, students, potential employers and Aboriginal community members
Nezakatgoo and Alibakhshi (2014)	medical students in Iran	English	Learning material analysis, non-participant observation, semi-structured interviews, in-depth stakeholder interviews	Textbooks, students, domain experts – physicians,
Park and Slater (2014)	mobile-assisted language learning in college ESL university students	English	Semi-structured interviews, online questionnaire,	Teachers, students
Serafini and Torres (2015)	Spanish for specific purposes courses at university level	Spanish	Open-ended online survey, closed-ended survey,	Domain experts – business graduates and professionals, students
Serafini et al. (2015)	NNS working at scientific research institution U.S.	English	Semi-structured interviews, survey, non-participant observation, target-discourse analysis	Insider sources – students, domain experts
Martin and Adrada-Rafael, (2017)	business Spanish at University	Spanish	Semi-structured interviews, open-ended survey,	Domain experts – graduates and professionals, insider sources – business instructors
Youn (2018))	NNS University Students	English	Interviews, survey	Domain experts - administrators, instructors, students,

Iizuka (2019)	U.S study-abroad students in Japan	Japanese	Semi-structured interviews, survey	Domain experts – students abroad, host families
Ngoc and Chau (2020)	Vietnamese labourers working abroad	English	Interview, survey	Domain experts - labourers
Alhadiah (2021)	Saudi university students	English	Semi-structured interviews, surveys	Insider sources – students and instructors
Camus and Advani (2021)	study abroad students	Spanish	Interviews, survey	Domain experts – directors and previous study abroad students,
Alibakhshi and Labbafi (2021)	marine life engineers	English	Semi-structured interviews, survey	Domain experts – subject specialists, insider sources – ME students
Toker and Sağdıç (2021)	Syrian refugee parents	Turkish	Non- participant observation, semi- structured interviews, survey	Domain experts – teachers, parents, administrators
Smith et al. (2022)	university students of an EAP programme in Hawaii	English	Document analysis, semi-structured interviews, observations, survey	published/unpublished NA reports, university course syllabi, insider sources/domain experts - current and former ELI students, ELI instructors, and university course instructors,

In the 21st century, globalisation and the increasing number of not only "voluntary" but also "involuntary language learners" (Long, 2005b, p. 3, emphasis in original) have certainly increased the urgency for effective and learner-targeted L2 teaching. As illustrated in the introduction, millions of people are forced to move to other countries and learn a new language every year. These learner groups are referred to as "involuntary language learners" by Long, as their need to learn the L2 is too often simply a prerequisite for life in the new country.

Long writes that general language programs which do not consider the specificity of the learner group and their language needs may be "inadequate" and "inefficient" (Long, 2005b, p. 1). A NA allows us to identify the different linguistic needs of learner groups and subsequently to design adequate and effective language learning programs (Gilabert & Malicka, 2021; Long,

2015; Serafini, 2021). Long (2005a) has argued that every learner community differs in their language needs and, hence, every language course should be considered as teaching language for specific purposes (Long, 2005b). This statement motivated this NA for a learner group of children with migration/refugee backgrounds who have specific language learning needs, which have not yet been identified and for which generic language classes do not suffice.

### Review of Needs Analyses in the Context of Migration and Younger Learners

Task-based NAs have been used mainly in contexts with adult learners and most often in the context of English for specific or academic purposes (see Table 1). In order to discuss NAs with similar learner groups to this study, only NAs that target a task-based syllabus and which are concerned with migrant populations or young learners belonging to minority groups were selected for an in-depth review. Four of the following studies were concerned with the needs of adult refugee learners, one study analysed the needs of refugees in secondary school, and one study analysed the needs of adolescent aboriginal learners whose L1 was a minority language.

In 1993, the Flemish Ministry of Education supported research regarding the Dutch language needs of adult immigrants living in Flanders. Researchers adopted a target situation analysis (TSA)approach and described target situations which were important for the integration and functioning of immigrants in society (van Avermaet & Gysen, 2006). Therefore, insider and outsider interviews were conducted, and a questionnaire asking about communicative situations in which immigrants needed or wanted to use Dutch was distributed. The results showed that the communicative needs of immigrants could be grouped into the following five domains "work/business, education/training, informal social contact, formal social contact [and] children's education" (van Avermaet & Gysen, 2006, p. 25). The study also focused on non-linguistic language needs and pointed out that migrant populations have specific language needs which are crucial for their integration and functioning in the society of the target country.

A recent TBNA was conducted by Toker & Sağdıç (2021) in Turkey and investigated the language needs of Syrian refugee parents when interacting with the school community. They initiated data collection with a non-participant observation in one elementary school on the last day of the academic semester and continued with nine semi-structured stakeholder interviews with teachers, school administrators and parents of L1 Turkish children. The identified target tasks were then incorporated into a closed-item questionnaire (30 tasks), which inquired about the frequency and difficulty of each task and received responses from 53 parents of L1 Turkish children. Subsequently, Toker and Sağdıç (2021) gathered 18 target tasks into four groups of task types and sequenced tasks within groups from most frequent and less complex to less frequent and more complex. One of the limitations mentioned in the paper is that the researchers were not able to talk to the Syrian parents as they did not speak Arabic and so they might have missed cultural features that may make certain tasks more challenging for the target community than for Turkish parents. Nevertheless, the study displayed that a TBNA can identify refugees' specific needs when interacting with their children's school community.

Middleton (2019) investigated the needs of well-educated adult refugees learning English in the Netherlands. 16 stakeholders were asked to fill in a 33-item survey inquiring about language needs regarding reading, writing, listening, speaking, and academic- and informal language skills. How the researcher selected the 33 items is not disclosed in the thesis. Furthermore, Middleton conducted qualitative interviews with four domain experts (teachers and students) and observed eight EFL classes. Middleton's NA provided useful information about learners' wants and learners' subjective needs (Hutchinson and Waters, 1987, op. cit. Brown, 2009). They concluded that listening, speaking, writing and academic performance needs have the highest importance for the target learners in this study.

Huang's (2021) NA identified the language-learning needs of adult Syrian refugees in Canada. They (2021) triangulated data collected through surveys, interviews, and oral-language production recordings. Huang initiated the data collection with a survey (31 responses from 17 instructors and 14 learners). After quantitative and qualitative analysis, she used the participants' responses to create 20 guiding questions for 8 instructor and 9 learner interviews, which were conducted online or in person, in either Arabic or English. Results established that the language needs of refugees are connected to receiving citizenship, entering academic studies or finding/improving employment. In Huang's study the needs of beginner learners were expressed in target tasks: "visiting doctors, filling out forms, reading official documents, interacting socially" (Huang, 2021, p. 155). In higher proficiency levels the learner needs were more diverse and often related to professional and academic needs, as well as to the goal of receiving a language certificate. Huang's results conveyed that a broad number of learners were unsatisfied or frustrated with the classes they were receiving at the time, as they did not fit their needs. This finding displays that refugees constitute a learner group with specific language needs that ought to be identified for the development of learner-targeted curricula.

One of the few published TBNAs for younger learners was conducted by Oliver et al. (2013). The target learners in their study were Australian Aboriginal adolescents with English as L2 and the researchers investigated their language learning needs for entering employment after schooling. 70 aboriginal students aged 14-20 were enrolled in a school in rural western Australia, which offered vocational training through the Australian Qualification Packages (AQF). The researchers approached students, teachers and school employees, an officer from the Aboriginal workforce deployment centre, potential future employers, Aboriginal community members, and consulted a variety of learning materials. Data was gathered through qualitative interviews and focus group discussions, 18 school and business observations and official

government documents. Data was then triangulated and the results shed light on the student's language needs for social and intercultural purposes, such as greeting appropriately, using adequate humour, and sharing personal information. They should also be able to express if they had understood instructions from their employers and ask for clarification if not. Students needed to have knowledge regarding the associated lexis in a work domain, be able to describe the process of completing a task and deal politely with clients. Community members also suggested training in code-switching, pragmatics, and workshops for supporting the development of self-confidence. Oliver et al. demonstrated that in the case of a NA for younger learners, besides learning materials and official documents, individuals with expertise in different life domains of the target group are valid sources who can provide insight into a broad range of target tasks and general needs.

Duran and Ramaut (2006) report a NA that investigated the needs of refugees in secondary schools in Belgium. The analysis was conducted by researchers of the Centre for Language and Education at the University Leuven with the aim to define learning goals for the reception classroom. Methods employed were non-participant classroom observations, in ordinary classes and reception classes, expert interviews with teachers, and an analysis of existing syllabi and curricula. The following aspects of goals were determined: 1. domains of social school life in which newcomers need to integrate, 2. typical linguistic use in these domains, 3. Target tasks of learners in the identified situations. A discussion of these target tasks by various stakeholders and experts resulted in a comprehensive list of learning objectives for newcomers in secondary school. It was determined that newcomers need to function socially and academically and understand greetings and classroom management instructions as well as explanations of academic activities. Receptive skills were thus given high priority in the subsequently developed task-based curriculum for the reception classroom.

All the above-mentioned studies used multiple methods and a variety of sources for data collection. Interviews were mentioned as the most fruitful methodology and surveys were used in five of the six studies. This review also revealed that NAs have ranged from those not using tasks as a unit of analysis (Flemish researchers in the 90s; Huang, 2021), partially task-based (Middleton, 2019; Oliver et al., 2013) to those who made tasks the central unit in NA (Duran & Ramaut, 2006; Toker & Sağdıç, 2021). As this brief review shows, TBNAs of learners with refugee or migration backgrounds are scarce and, to our knowledge, there are no published NAs for primary school-aged children. Hence, NAs for school-aged learners are needed in order to identify which TBNA methodologies are most suitable for identifying the specific needs of younger populations.

This study sets out to fill this key gap by obtaining valid and reliable information about the pressing needs of underresearched young refugee/migrant communities in Austria learning German as an L2 for reasons of social survival and academic integration. It extends TBNA research through the triangulating of multiple sources and methods to gain a broad perspective on target tasks in all life domains of young children with migration or refugee backgrounds.

# **Research Questions**

This study aimed to answer the following research questions:

- 1. What target tasks do primary school-aged newcomers to Austria need to perform in German in and outside of school?
- 2. What dimensions, in terms of goals and procedures, participation and interaction, spatial and environmental conditions, linguistic demands, cognitive and psycholinguistic demands, and technological requirements are associated with each task?

Additionally, the study provides methodological insights, how semi-structured interviews may be used to detect target tasks, how the content of task descriptions and can be associated with multiple task dimensions, and how follow-up online surveys may allow the quantification in terms of frequency and need for training for each target task. Thereby this study reflects on and evaluates the suitability of the use of multiple sources and methods for younger learners with migration backgrounds, who have a wide range of communicative needs.

# Methodology

### **Methodological Considerations**

Long's (2005a) methodological suggestions for triangulation of multiple sources and methods are taken up in this study as he claimed that it increases the quality of a NA (see Table 1 in Serafini et al, 2015 for a summary). Additionally, Serafini et al's (2015, p. 25) "adaptable methodological checklist" was adopted in this study.

### **Participants**

In total, 123 individuals from a purposive sample participated in the study. Targeting a holistic perspective, interviewees with insights into different life domains of primary schoolaged children (school, home, after-school club, public) were sought out. Additionally, two teenage girls (12y; 17y) who migrated to Austria when they were in primary school (AoA 8; AoA 6) participated and provided their first-person experiences (see Table 2).

**Table 2:** Interviewees: Domain – Expertise – Number of Interviews

Life domain	Profession/Expertise	Number of Participants	Number of Interviews
School	Primary school teacher	3	3
After school club/ public	After school club teacher	2	3
Home//school/ public	Social worker	2	2

All dimensions Newcomer	2	2
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As for the quantitative instrument, a survey was answered by 113 experts of whom 6 had to be excluded due to their occupation or residency not fitting the sampling criteria. The results of 107 participants were analysed in the study (Table 3).

**Table 3:** Demographic Data of Survey Participants

Sex (%)	Age	Province of Residence (%)	Profession/experience (%)
86 female	Range:	41.1 Tyrol	43.0 Primary school teacher
14 male	17y - 68y	21.5 Styria	30.8 After school club teacher
	98.1% > 18	16.8 Vienna	10.3 Social worker
	01.9% < 18	9.3 Upper Austria	3.7 Immigrant children/parents
		1.9 Salzburg	11.9 Other professions related to
		5.6 Lower Austria	working with immigrant children
		.9 Carinthia	
		.9 Burgenland	
		1.9 Unknown	

#### **Instruments**

#### *Interviews*

Long's (2005a) review, as well as reflections on the aforementioned studies, suggest that interviews are a traditional and suitable methodology for conducting NAs. Hence, semi-structured interviews were conducted to explore the target field (N=10). A specially adapted questionnaire, developed by Gilabert (2005) and used previously by Keller (2021), was employed during the interviews to identify target tasks and describe them in terms of task dimensions such as goals and procedures, participation and interaction, spatial and environmental conditions, linguistic demands, cognitive and psycholinguistic demands, and technological requirements (Gilabert & Malicka, 2021).

Prior to the interviews, participants were sent a consent form via email. Interviews were conducted in German and recorded via the video communication platform Zoom. Subsequently,

they were automatically transcribed by employing the services of SonixAI. The researcher then repeatedly listened to the recordings to edit and correct the transcriptions. Data was analysed in AtlasTI using a coding scheme specifically developed for identifying target tasks and their associated task dimensions, (as per Gilabert & Malicka, 2021). A second researcher inter-coded 10% of the interviews and independent coding resulted in an agreement rate of 87,96%. The coders subsequently met and discussed 17 conflicts until they agreed on all selected codes. The author continued to code the remaining interviews, identifying emerging target tasks and associating task dimensions. 55 different target tasks and sub-tasks could be identified at first and through a close inspection, similar and closely related tasks could be merged into task types. 38 target tasks which were mentioned in at least two different interviews and were said to have a great need for training or to be highly frequent were selected and incorporated into an online survey. Additionally, data from semi-structured interviews was used to develop comprehensive task descriptions alongside the associated task dimensions.

#### Surveys

Following Gilabert (2005), surveys were used to provide information on task frequency and the perceived need for language training, which can be extremely valuable for syllabus developers in the selection and sequencing of tasks. A questionnaire was developed in which 38 target tasks identified in the interviews were rated on a 6-point Likert scale from 0 to 5 on their *frequency* (0 = never, 5 = very often) and their *need for training* (0 = no need for training, 5 = very high need for training). Participants were furthermore given the chance to leave comments on each task or at the end of the questionnaire. Additionally, demographic data was gathered to

ensure that the sample fit the selected criteria (living in Austria, expertise on realities of immigrant children between the ages 6-10 through experience or occupation).

The survey was created in German; consent was given by all participants, or by a parent in the case of minors. Social media platforms and messenger services were used to distribute the survey to a wide range of individuals who had insights into the lives of primary school-aged newcomers (for demographics see Table 3). Additionally, in provinces where the Ministry of Education allowed it, the link for the survey was sent to primary schools, and three Austrian cities agreed to distribute the link among employees in their after-school clubs. Due to this snowball method, the researcher does not have information on the number of individuals who received the questionnaire, but 113 responses were obtained. 6 participants had to be excluded, therefore 107 responses could be used for analysis. Answers regarding perceived frequency and need for training were analysed by calculating mean ratings of each task to create two lists with rankings. Additionally, the frequency of correspondence for each point on the Likert scale was converted into percentages and displayed in a table contrasting rating scores of perceived frequency and difficulty for each task. Content analysis (Hsieh & Shannon, 2005) was adopted for the analysis of the qualitative comments and information was triangulated with information gathered through interviews.

## **Results**

Semi-structured interviews enabled the researcher to identify crucial target tasks for primary-school children with migration or refugee backgrounds. In order to create a systematic and manageable list of the 38 selected target tasks, they were then grouped into the following five thematic categories: Academic (N = 9), Autonomy (N = 1), General (N = 13), Social (N = 13) and Translation (N = 7) (see Table 4).

The interviews provided valuable information in terms of the following task dimensions: goals and procedures, participation and interaction, spatial and environmental conditions, linguistic demands, cognitive and psycholinguistic demands, and technological requirements (see an example of task description; 'solving math word or picture problems' in Appendix B).

Table 4: Identified Target Tasks and Thematic Grouping

TASK TYPE	TARGET TASK
ACADEMIC	1. Do homework
	2. Solve math word- or picture problems (Problems presented through
	micro-stories)
	3. Solve math problems (2 + 4 =)
	4. Do tasks on worksheets or in workbooks independently
	(Sub-task - ST Reading and understanding task descriptions)  5. Write a 'dictation'
	6. Read stories and books
	7. Play educational computer games
	8. Work with maps
	9. Doing Arts and Crafts
AUTONOMY	10. Speak up against bullying and racism
SOCIAL	11. Greeting others and introducing oneself appropriately
SOCIAL	
	12. Solve conflicts
	13. Find playmates (at playgrounds, during break time)
	14. Play team sport games
	15. Engage in circle time discussions
	16. Engage in social learning classes
	17. Play commonly known table games
CENEDAL	18. Explain a (new) game to peers
GENERAL	19. Borrow a book from the library
	20. Express basic needs
	21. Express if they did not understand
	22. Ask for support
	23. Ask for permission
	24. Search lost items (ST ask peers/teachers if they have seen the item)
	25. Deliver and pick up items in school
	26. Change rooms (classroom, gym, kitchen etc.) in school or after school
	clubs (ST understand the instructions where to go, what to take and when
	to come back)
	27. Take part in excursions
	28. Describe small accidents, pain or illness to a teacher/supervisor
	29. Explain late arrival (for school, after-school club etc.)
	30. Take part in extracurricular activities
mp A Nov A my On-	31. Cooking in a community in school /at the after-school club
TRANSLATION	32. Translate between parents and teachers
	33. Translate for parents at official appointments
	34. Translate for parents at the doctor/pharmacy
	35. Translate content for classmates
	36. Translate/Fill out forms for parents
	37. Translate letters/emails/messages for parents
	38. Do phone calls for parents (e.g., making appointments)

Qualitative interviews furthermore showed that task dimensions sometimes vary and how this influences task difficulty and complexity. In the following, three short examples are provided:

The difficulty of the task 'do homework' is not only influenced by the language skills and academic competencies of the child, but also by the dimdension of *task environment*. Cultural differences, such as larger families and households with frequent visitors, might create atmospheres in which it is challenging to calmly do one's homework. One social worker explained that for newcomers who live in refugee homes, finding space and time to do their homework is sometimes simply impossible:

"I am active in refugee homes, [...] and the living conditions there are very cramped. [...] There is no extra room or desk or anything like that. And there are a lot of children, families with many children. Yes, so it is very difficult to accuse a child of not wanting [to do homework] or something. It is simply not possible." (Translation by the author)

Children who are provided with adequate spaces to do homework might perceive the task as being less difficult than children who don't have access to these environments. Therefore, the task conditions generated by the *spatial and environmental conditions* vary and influence the difficulty of the task 'do homework' strongly.

Most interviewees agreed that newcomers need further training in 'finding playmates during break times or at the playground'. In one interview, a former newcomer expressed the pain and loneliness she felt during her time in primary school when she was not able to find friends. Another teenager, however, explained that she had no difficulties in connecting with Austrian children and that these connections were invaluable to her. These personal stories from former newcomers provide evidence that finding friends and building social connections is a task with great importance for the children's well-being and integration and that some children

might need more support than others. The dimensions of *participation and interaction* and *cognitive and psycholinguistic demands* are influential when performing the task.

The *cognitive* and *psycholinguistic demands* of tasks that require children to translate for parents were mentioned as extremely influential regarding difficulty and complexity. Some experts argued that translating content which is not meant for children will be overwhelming for them and such tasks should therefore not be included in a syllabus. Children might feel anxious and stressed about the content as well as the consequences of incorrect translations. Nevertheless, one social worker argued that if newcomers are frequently translating for their parents, support and training should indeed be provided. She suggested that support could alternatively be given by equipping children with information on public resources for translation assistance and how to access them. We learn from these comments that the psychological aspects that influence translation tasks are of high importance for syllabus designers and need to be taken into close consideration.

Apart from describing tasks, interviewees advocated the importance of recognizing the general needs of children with migration or refugee backgrounds. Emotional support and social inclusion were mentioned repeatedly. Working on empowerment and building self-confidence was said to be an important part of supporting young migrants' healthy development. Additionally, one social worker pointed to the schools' responsibility for developing a learning environment where children feel safe and can experience the joy of learning. This information is especially important for teachers as the creation of a safe, open, and joyful learning environment is a prerequisite to learning in any dimension.

As for qualitative data, Table 5 displays the rankings (highest to lowest) according to the means of 6-point Likert ratings of perceived *frequency* and *need for training* (0 = infrequent/no need for training, 5 = very frequent/high need for training) of the 38 target tasks. The ICC for

inter-rater reliability produced a Cronbach's  $\alpha$  of .965 and suggests that raters rated the items in a consistent manner and results may be averaged. Besides inspecting mean rankings, the investigation of the frequency of responses on Likert scale ratings proved to be helpful. For improving relevance and ease of comparison, ratings on points 0 and 1, 2 and 3, and 4 and 5 were summed (see Appendix A). The percentage distributions of ratings demonstrate that the majority of participants perceived most tasks as highly frequent and in need for training. These results validate that the experts who participated in the survey agreed to a great extent (on some tasks up to 90%) and that the target tasks identified in the NA are indeed crucial tasks for the target learner group.

Table 5: Ranking of Perceived Frequency and Need for Training of Target Tasks

	PERCEIVED FREQUEN	ICY*				PERCEIVED NEED FOR TRA	AINI	IG**	
		N	М	SD			N	М	SD
1.	Do Homework	106	4.25	1.21	1.	Solve math word or picture problems	105	4.63	0.70
2.	Solve math problems	106	4.15	1.09	2.	Do tasks on worksheets or in workbooks independently	107	4.59	0.69
3.	Solve math word or picture problems	104	4.14	1.14	3.	Do Homework	107	4.52	0.94
4.	Do tasks on worksheets or in workbooks independently	106	4.05	1.25	4.	Read stories and books	105	4.28	1.06
5.	Solve conflicts	104	3.73	1.24	5.	Solve Conflicts	104	4.17	1.16
6.	Express basic needs	103	3.71	1.30	6.	Engage in circle time discussions	102	4.09	1.19
7.	Find playmates	106	3.67	1.36	7.	Write a 'dictation'	103	4.05	1.37
8.	Express if they did not understand	104	3.63	1.31	8.	Speak up against bullying and racism	105	3.95	1.42
9.	Ask for support	106	3.61	1.11	9.	Explain a (new) game to peers	102	3.90	1.08
10	.Play team sport games	105	3.54	1.24	10	.Engage in social learning classes	91	3.73	1.35
11	.Write a 'dictation'	104	3.54	1.36	11	.Solve math problems	106	3.69	1.20
12	Greeting others and introducing oneself appropriately	106	3.50	1.16	12	Express if they did not understand	104	3.64	1.24
13	.Translate between parents and teachers	100	3.37	1.40	13	.Take part in extracurricular activities	101	3.61	1.30

14.Ask for permission	106	3 25	1 1 있	14. Ask for support	106	3.59	1 22
·							
15. Translate for parents at the doctor/pharmacy				15.Work with maps	100	3.53	
16. Translate for parents at official appointments	92	3.29	1.55	16. Translate for parents at official appointments	88	3.45	1.60
17.Engage in circle time discussions	103	3.28	1.44	17.Translate for parents at the doctor/pharmacy	83	3.45	1.65
18.Search lost items	105	3.17	1.17	18. Translate between parents and teachers	99	3.34	1.59
19.Translate content for classmates	104	3.13	1.46	19.Do phone calls for parents	87	3.33	1.70
20.Engage in social learning classes	94	3.13	1.46	20.Borrow a book from the library	100	3.32	1.56
21.Translate/Fill out forms for parents	90	3.11	1.57	21.Translate/Fill out forms for parents	87	3.24	1.75
22.Play commonly known table games	104	3.05	1.30	22. Describe small accidents, pain or illness to a teacher/supervisor	101	3.22	1.38
23.Translate letters/emails/messages for parents	86	3.05	1.61	23. Ask for permission	105	3.21	1.24
24.Deliver and pick up items in school	100	3.02	1.15	24.Translate letters/emails/messages for parents	82	3.16	1.69
25.Explain a (new) game to peers	104	3.02	1.15	25.Explain late arrival	105	3.09	1.41
26.Speak up against bullying and racism	105	3.00	1.55	26.Greeting others and introducing oneself appropriately	105	3.06	1.41
27.Doing Arts and Crafts	100	2.99	1.21	27.Find playmates	106	2.98	1.44
28.Read stories and books	105	2.97	1.52	28.Play commonly known table games	102	2.83	1.44
29.Do phone calls for parents	92	2.96	1.60	29. Translate content for classmates	101	2.83	1.63
30.Change rooms in social institutions	99	2.89	1.20	30.Take part in excursions	104	2.76	1.60
31.Take part in excursions	104	2.88	1.22	31.Search lost items	103	2.67	1.38
32.Describe small accidents, pain, or illness to a teacher/supervisor	102	2.82	1.27	32.Deliver and pick up items in school	99	2.65	1.36
33.Play educational computer games	98	2.81	1.28	33.Express basic needs	102	2.55	1.60
34.Work with maps	101	2.78	1.28	34. Play educational computer games	97	2.52	1.32

35.Explain late arrival	106 <b>2.70</b> 1.27	35. Do Arts and Crafts	99 <b>2.41</b> 1.32
36.Borrow a book from the library	101 <b>2.57</b> 1.26	36. Play team sport games	104 <b>2.34</b> 1.39
37. Take part in extracurricular activities	102 <b>2.42</b> 1.30	37.Cooking in a community in school /at after school club	89 <b>2.31</b> 1.49
38.Cooking in a community in school /at after school club	90 <b>2.07</b> 1.33	38.Change rooms in social institutions	97 <b>2.20</b> 1.33

#### Notes:

\*\*\* Rank ordered based on the averaged rating score / high to low

	ACADEMIC	GENERAL	SOCIAL	TRANSLATION	AUTONOMY	l
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In terms of perceived frequency, four academic tasks (A) and one social task (S) were rated as the most frequent:

- 1. Do homework (A) (M = 4.25, SD = 1.21)
- 2. Solve math word- or picture problems (A) (M = 4.15, SD = 1.09)
- 3. Solve math problems (A) (M = 4.14, SD = 1.14)
- 4. Do tasks on worksheets or in workbooks independently (A) (M = 4.05, SD = 1.25)
- 5. Solve Conflicts (S) (M = 3.73, SD = 1.24)

Regarding the need for training, four academic tasks and one social task were perceived as the most crucial.

- 1. Solve math word- or picture problems (A) (M = 4.63, SD = 0.70)
- 2. Do tasks on worksheets or in workbooks independently (A) (M = 4.59, SD = 0.69)
- 3. Do homework (M= 4.52, SD = 0.94) (A)
- 4. Read stories and books (M = 4.28, SD = 1.06) (A)
- 5. Solve conflicts (M = 4.17, SD = 1.16) (S)

The tasks 'do homework,' 'solve math word- or picture problems,' 'do tasks on worksheets or in workbooks independently' and 'solve conflicts' rank highest on both scales. Interestingly,

<sup>\*</sup> Frequency scale (never - 0, 1, 2, 3, 4, 5 - very often)

<sup>\*\*</sup> Scale Need for Training (no need for training - 0, 1, 2, 3, 4, 5 – very high need for training)

'read stories and books' seems to have a high need for training (rank 4) but was not rated as frequent (rank 28). This can also be seen in the tasks 'write a dictation' and 'speak up against racism and bullying.' Both tasks ranked higher in the need for training than in frequency. On the reverse 'solve math problems' and 'express basic needs' are very frequent tasks (rank 3 and 6) but are not perceived to have a high need for training (rank 11 and 33). Hence, these results demonstrate that the frequency and the need for training of tasks do not always have a linear relationship and that it is important to assess these constructs separately.

### **Discussion**

The present study aimed to identify a set of target tasks which primary school-aged newcomers to Austria need to perform for successful academic and social integration. In the first phase of this study, experts in different life domains of primary school-aged newcomers, as well as two former newcomers, were interviewed. Therefore, a specifically adapted questionnaire to identify and describe target tasks along task dimensions, described by Gilabert and Malicka (2021), was employed. A list of 38 target tasks could be created and grouped thematically into five groups. The tasks were mentioned at least in two interviews and were said to be either highly frequent or identified as needing considerable training.

From this data, 38 detailed task descriptions, organised by task domain and dimension, were created that may prove helpful for task design. As mentioned by Gilabert and Malicka (2022), knowledge about the social setting of the target task may suggest how to plan the social context and ways of collaboration in a pedagogical task. Information on the cognitive demands, the channel of communication and the employment of technology provides designers with detailed insights and can contribute to authentic and realistic pedagogical task design. Furthermore, information on the language demands of each task was gathered and provide a

basis for designers to choose which language skills and linguistic features to incorporate and focus on. These descriptions vary in length and specificity. Academic tasks do not show much variation in their execution and, therefore, descriptions are detailed and specific. However, general tasks, for example 'asking for support', are employed in a range of situations and thus task dimensions, as participants, topic or task environment vary, which leads to broader and less specific task descriptions.

By way of example, in the task 'solve math word- or picture problems' the goal is to solve a mathematical problem stated in a micro-story (e.g. Lilly has 5 apples, she gives 3 to Lara. How many apples does Lilly have now?) and provide a verbal answer. The social setting may vary between individual work and whole classroom involvement. Designers may choose to have a pre-task with a focus on content and language, including general language (e.g. politely asking for help: 'Can you help me, please?', question formation: 'How do I add/subtract this?', 'Is this OK?', instructions: 'You need to...'/ 'Why don't you try this?', identifying problems: 'I'm not sure how this works' 'I don't know how to do this'), language related to the content of the stories (e.g. give, have, apples etc.) and specific mathematical language associated with the task (e.g. adding, subtracting, '5 minus 3 makes 2', etc.). A variety of techniques may be used for drawing attention to language (e.g. input enhancement, input flooding, input elaboration etc.). The same language could be recycled during the task (i.e., for example through recasting, or elicitation) and post-task phases (i.e., through vocabulary and grammar awarenessraising activities). To include the necessary language skills, designers might design a worksheet presenting the math word problem through text and provide a line for a written response ('Now, Lilly has 2 apples'). Thus, the training of reading and writing competencies is incorporated as per the task description.

In phase 2, a survey including these 38 target tasks was distributed broadly and answered by experts from various professions. Participants rated tasks according to their perceived frequency and the need for training on two separate 6-point Likert scales. Similar to Toker and Sağdıç (2021), ranking lists of all tasks from more to less frequent and high to low need for training were created. The distinction between these two constructs proved to be relevant, as for most tasks there was no linear relationship between the rank of frequency and the need for training. Consequently, syllabus designers may consult these ranking lists when making decisions about task selection and sequencing (Gilabert & Malicka, 2021; Toker & Sağdıç, 2021). Additionally, information in task descriptions on complexity, difficulty and factors which influence these variables may be consulted for task sequencing and the manipulation of complexity in pedagogical tasks.

Furthermore, interviews depicted that newcomers are a heterogeneous group and certain tasks, and task dimensions vary between children. This heterogeneous findings align with Huang's (2021) and Oliver et al' (2013) results, as well as the analysis reported by van Avermaet and Gysen (2006). Teachers and syllabus designers need to be aware of that tasks and task dimensions may vary between children, and while this NA can provide a basis for task design and sequencing, flexibility and personalisation are needed regarding local pedagogical implementation.

Besides target tasks, several general needs of young children with refugee and migration backgrounds were identified (feeling of belonging, feeling safe, feeling the joy of learning etc.) and can be informative for teachers and task designers regarding the learning- and social environment which should be created in and around the syllabus. Correspondingly, content which addresses empowerment, and the development of autonomy might be incorporated into the syllabus for furthering the children's general well-being and integration. These results align

with findings from Oliver et al. (2013), who found that also Aboriginal students needed support in raising their self-confidence.

### **Methodological Reflections**

In addition to identifying and describing tasks that may inform pedagogical task and syllabus design, this study provides practical contributions to NA research itself, by illustrating how a TBNA utilizing multiple sources and methods is beneficial when targeting young learner groups with urgent needs to acquire an L2 in various life domains. An effort was made to follow key recommendations on the methodology of TBNAs (Long, 2005a, 2015; Serafini et al., 2015). Interviews were particularly helpful for task identification and descriptions along task dimensions. The selection of interviewees was challenging in this NA. While Long (2005a) argues domain experts are the most useful source for interviews, the young age of the target learners (6-10 years) limited the reliability of them as sources. However, professionals who work with these children in different domains provided a wide array of expertise and were extremely helpful in exploring the field. First-person accounts of former newcomers proved valuable to understand the target context, although the two interviewed teenagers sometimes had difficulty determining target tasks and remembering them in much detail. They were, however, important informants regarding the home domain, as outsiders usually do not have access. The triangulation of various sources allowed the researcher to ask former newcomers to verify tasks that had been identified by professionals in previous interviews. By triangulating sources, a complete and richer view of every task was obtained which would not have been achieved without it.

Concerning the survey, the involvement of experts from various professions, who know the realities and challenges of target learners, yielded a balanced number of ratings on tasks in and outside of school. Likert scales regarding frequency and the need for training revealed that the highest-ranking tasks in frequency are also the ones with the highest need for training, while on lower ranks there was no clear linear relationship. While previous TBNAs have frequently assessed the perceived difficulty in surveys (Lambert, 2010; Serafini & Torres, 2015; Toker & Sağdıç, 2021), the researcher believes that the *need for training* connects directly with the urgency newcomers have for performing certain tasks in the L2 for reasons of social and academic survival, and that this is a valuable piece of information for syllabus designers. Information on task difficulty and complexity was collected during interviews and is available in task descriptions and may facilitate decision-making during pedagogic task design and sequencing.

## Limitations

As with any research, NAs are restricted by limits of time, space, and participation. Undoubtedly, non-participant observation is an extremely useful methodology that would have directly addressed the point of view of target learners and yielded richer data on target tasks. However, due to time restrictions and the differences in the researcher's place of living and the context of the study, as well as restrictions regarding the entering of schools during the Covid19 pandemic, it was not feasible. A peripheral consequence of not performing observations is that no samples of discourse were collected, which could have provided additional in-depth data on the linguistic demands of target tasks. This NA could be extended by collecting samples of texts, forms, classroom activities or recordings of interactions etc.

Regarding the participants, people who have migration or refugee backgrounds are underrepresented in the sample and thus there is a risk that specific cultural aspects of tasks might not have been fully captured. Primary school teachers make up more than 40% of survey participants, which might have contributed to the many academic tasks being ranked as highly

frequent and having the highest need for training. Future TBNAs might try to gather a more balanced sample of professionals from different life domains.

## **Conclusion**

This present study extends the field of task-based needs analysis in SLA by, firstly, using multiple methods and sources to identify target tasks of younger learners; secondly, by providing information on communicative needs in terms of tasks of migrant populations; and thirdly, by conducting a TBNA with German as a target language. This TBNA has targeted the context of young learners with migration/refugee backgrounds in Austria who have urgent needs to acquire German as an L2 and to develop feelings of belonging and being safe. While the focus of the investigation is Austria, it reflects the situation of several countries in Europe in which refugees and migrants are seeking peace and security and need to learn the respective languages. Countries are under pressure to find ways of teaching the language of instruction and are often restricted in time and resources to do so. The current NA identified and described the target tasks of the target learner group to provide syllabus designers with accurate information on the complex and varied communicative needs of young newcomers to Austria. It is our hope that results may yield the development of effective learner-targeted and meaningful curricula, in which language is taught through tasks and learning outcomes are defined in terms of crucial target tasks for successful social and academic integration into Austrian society. Furthermore, we believe that with minor adjustments, the usefulness of the results may cross country borders and provide information for syllabus design targeting similar learner groups in similar contexts across Europe and especially the German-speaking world. We hope that this study will inspire further research regarding expanding on this TBNA through non-participant observation, discourse analysis and/or continuing the process through the development of a syllabus that includes the design of appropriate pedagogical tasks.

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# Appendix A

**Table** A: Frequency of responses (in percentages) on perceived frequency and need for training on 38 target tasks

on 38 target tasks				
	Frequency* Need for Training**	LOW	MEDIUM	HIGH
		0 & 1	2 & 3	4 & 5
ACADEMIC TASKS				
Do homework	freq	4,7%	17,9%	77,4%
	NFT	0,9%	12,2%	86,9%
Do tasks on worksheets or in workbooks		5,7%	21,7%	72,6%
ndependently	NFT	0,0%	9,3%	90,7%
Doing arts and crafts	NFT	26,3%	54,6%	19,2%
	freq	10,0%	58,0%	32,0%
Play educational computer games	freq	13,2%	61,3%	25,5%
inj cuicuitonai computer games	NFT	19,5%	63,9%	16,5%
Read stories and books	freq	21,0%	40,0%	39,0%
	NFT	2,9%	15,3%	81,9%
Solve math problems	freq	2,8%	22,6%	74,5%
P- 02-2	NFT	3,7%	38,7%	57,5%
Solve math word problems or picture pr	oblems freq	2,9%	19,2%	77,9%
porte main word problems of picture pr	NFI	0,0%	10,5%	89,5%
Work with maps	freq	16,9%	57,5%	25,8%
	NFT	9,0%	37,0%	54,0%
Write a 'dictation'	freq	10,6%	35,5%	53,9%
The in the thirty of the transfer of the trans	NFT	7,8%	14,5%	77,7%
GENERAL TASKS				
Ask for permission	freq	6,6%	49,0%	44,4%
Ask for permission	NFT	11,5%	47,6%	40,9%
A alz for aumnort	freq	3,7%	40,6%	55,6%
Ask for support	NFT	6,6%	31,2%	62,2%
Dannary a haak from the library	freq	23,8%	51,5%	24,7%
Borrow a book from the library	NFT	14,0%	33,0%	53,0%
Cook in a community in school /at after	school freq	35,5%	48,9%	15,5%
elub	NFT	28,1%	48,3%	23,6%
0-1: 1:	freq	14,0%	52,0%	34,0%
Deliver and pick up items in school	NFT	22,2%	48,5%	29,3%
Describe small accidents, pain or illness	to a freq	17,6%	51,0%	31,3%
eacher/supervisor	NFT	12,9%	40,6%	46,5%
•	freq	20,8%	51,0%	28,3%
Explain late arrival (for school, after sch	nool club) NFT	16,2%	39,0%	44,8%
	freq	6,8%	30,1%	63,2%
Express basic needs	NFT	32,3%	36,3%	31,4%
	freq	8,7%	29,8%	61,5%
Express if they did not understand	NFT	7,7%	28,9%	63,5%
	freq	12,4%	46,6%	40,9%
Search lost items	NFT	25,2%	45,6%	29,2%
	freq	12,5%	58,7%	28,8%
Take part at excursions	NFT	26,0%	39,5%	34,6%
	freq	28,4%	50,0%	21,5%
Take part in extracurricular activities	NFT	9,9%	30,7%	59,4%

D) 1.1 (1)	Nft	20,6%	45,1%	34,3%
Play commonly known table games	freq	13,5%	50,0%	36,5%
TASKS REGARDING AUTONOMY				
Speak up against bullying and racism	freq NFT	18,1% 8,6%	43,8% 20,0%	38,1% <b>71,4%</b>
	NFI	8,0%	20,0%	/1,4%
SOCIAL TASKS				
Engage in circle time discussions	freq	13,6%	37,9%	48,5%
Engage in circle time discussions	NFT	4,9%	20,6%	74,5%
Engage in social learning classes	freq	13,8%	44,7%	41,4%
Engage in social leaf ining classes	NFT	7,7%	33,0%	59,4%
Explain a (new) game to peers	freq	6,7%	62,5%	30,7%
Explain a (new) game to peers	NFT	2,0%	33,3%	64,7%
Find playmates (at playgrounds, at breaktime)	freq	7,6%	34,0%	58,5%
ring playmates (at playgroungs, at breaktime)	NFT	17,9%	45,3%	36,8%
Greeting others and introducing oneself	freq	5,7%	39,6%	54,7%
appropriately	NFT	15,2%	41,0%	43,8%
Dlay toom sport somes	freq	7,7%	37,1%	55,3%
Play team sport games	NFT	32,7%	46,2%	21,1%
Solve conflicts	freq	4,8%	31,7%	63,5%
Solve connicts	NFT	4,8%	15,4%	79,8%
Do phone calls for parents	freq	21,8%	39,1%	39,2%
Do phone cans for parents	NFT	18,3%	26,4%	55,1%
TRANSLATION TASKS				
		10,0%	38,0%	52 AO/
Translate between parents and teachers	freq			52,0%
Translate between parents and teachers	NFT NFT	18,2%	27,3%	54,5%
•	NFT freq	18,2% 14,4%	27,3% 42,4%	54,5% 43,2%
•	NFT	18,2% 14,4% 26,7%	27,3% 42,4% 37,6%	54,5% 43,2% 35,7%
Translate content for classmates	NFT freq NFT freq	18,2% 14,4% 26,7% 17,4%	27,3% 42,4% <b>37,6%</b> 31,5%	54,5% 43,2% 35,7% 51,1%
Translate content for classmates	NFT freq NFT freq NFT	18,2% 14,4% 26,7% 17,4% 13,6%	27,3% 42,4% <b>37,6%</b> 31,5% 32,9%	54,5% 43,2% 35,7% 51,1% 53,4%
Translate content for classmates  Translate for parents at official appointments	NFT freq NFT freq NFT freq	18,2% 14,4% 26,7% 17,4% 13,6% 19,5%	27,3% 42,4% 37,6% 31,5% 32,9% 24,1%	54,5% 43,2% 35,7% 51,1% 53,4% 56,3%
Translate content for classmates  Translate for parents at official appointments	NFT freq NFT freq NFT	18,2% 14,4% 26,7% 17,4% 13,6% 19,5% 15,6%	27,3% 42,4% 37,6% 31,5% 32,9% 24,1% 27,8%	54,5% 43,2% 35,7% 51,1% 53,4% 56,3% 56,7%
Translate content for classmates  Translate for parents at official appointments  Translate for parents at the doctor/pharmacy	NFT freq NFT freq NFT freq NFT freq	18,2% 14,4% 26,7% 17,4% 13,6% 19,5% 15,6% 22,1%	27,3% 42,4% 37,6% 31,5% 32,9% 24,1% 27,8% 32,6%	54,5% 43,2% 35,7% 51,1% 53,4% 56,3% 56,7% 45,4%
Translate between parents and teachers  Translate content for classmates  Translate for parents at official appointments  Translate for parents at the doctor/pharmacy  Translate letters/e-mails/messages for parents	NFT freq NFT freq NFT freq NFT	18,2% 14,4% 26,7% 17,4% 13,6% 19,5% 15,6% 22,1% 22,0%	27,3% 42,4% 37,6% 31,5% 32,9% 24,1% 27,8% 32,6% 28,1%	54,5% 43,2% 35,7% 51,1% 53,4% 56,3% 56,7% 45,4% 50,0%
Translate content for classmates  Translate for parents at official appointments  Translate for parents at the doctor/pharmacy	NFT freq NFT freq NFT freq NFT freq	18,2% 14,4% 26,7% 17,4% 13,6% 19,5% 15,6% 22,1%	27,3% 42,4% 37,6% 31,5% 32,9% 24,1% 27,8% 32,6%	54,5% 43,2% 35,7% 51,1% 53,4% 56,3% 45,4%

<sup>\*</sup> Frequency scale (never - 0, 1, 2, 3, 4, 5 - very often)

<sup>\*\*</sup> Scale Need for Training (no need for training - 0, 1, 2, 3, 4, 5 – very high need for training)
Sum of frequency of correspondence for points 0 and 1, 2 and 3, and 4 and 5 on 6-point Likert-scale

## **Solving Math Word- or Picture Problems**

Children are given math problems which are presented as micro-stories through texts or pictures (e.g., Lilly has 5 apples, she gives 3 to Lara. How many apples does Lilly have now?). They need to read and understand the story, elicit the math problem, and do a calculation to solve it. In the process, they might consult with peers or the teacher. Finally, they are asked to provide an answer in numbers and verbally (orally to the teacher or in written form underneath the word problem).

	underneath the word problem).		
Task Dimension	Description		
Life domain and task	School: These tasks are usually conducted during math lessons or as part of		
setting	the student's homework		
Task type	academic		
Participants and	- peers and teachers		
social setting	- individual or whole classroom setting		
Goal of the task/	The goal of the task is to solve the problem and provide a verbal answer.		
outcome			
Possible topics	shopping, sharing, gardening, fruit picking etc.		
Task frequency/	several times a week, $10 - 20$ minutes		
timespan			
Task environment	- in a classroom, seated on desks		
	- familiar, calm environment		
	*If the task is done as homework, spatial setting might vary (see task "Do		
	Homework")		
Channels of	- reading and writing in textbooks or on worksheets		
communication	- speaking and listening, face-to-face		
Psychological aspects	The task does not naturally cause stress, a great amount of incomprehensible		
	text might however do so. The teacher is a very important resource to		
	prevent children from feeling stressed and overwhelmed by assisting them		
	and guiding them through the steps of the task.		
Language demands	- Receptive and productive language competencies		
	- Comprehensive reading		
	- Oral language competencies such as fluency and accuracy		
	- Descriptive language		
	- Mathematical lexis: larger than, smaller than, plus, minus, equals,		
	numbers, take away, add, subtract		
	- Lexis related to topics: currency, money, buy, pay, shopping, plant/pick		
	flowers, take out, put inside, eat, give, take		
	- General language e.g.:		
	politely asking for help: 'Can you help me, please?'		
	question formation: 'How do I add/subtract this?', 'Is this OK?',		
	instructions: 'You need to'/ 'Why don't you try this?'		
	identifying problems: 'I'm not sure how this works'/ 'I don't know how		
	to do this'		
Necessary attitudes	- attentiveness, concentration		
and soft skills	- adaption to interactional rules of the classroom: raising a hand before		
	talking, not interrupting someone who is speaking		
<b>Options for support</b>	teacher, L1, visual representations, educational support material		
Difficulty/need for	- highly complex for all children		
training	- especially challenging for children with low German language skills.		
Options to decrease	Short text, short sentences, visual support, performing the task orally in a		
difficulty	whole classroom setting, step-by-step guidance through the teacher		