



ELIAS

Early Language and Intercultural Acquisition Studies

Editors

Kristin Kersten, Eva Frey, Alexandra Hähnert

Contributors

Suzanne Akerman, Petra Burmeister, Aafke Buyl, Jutta Daszenies, Michael Ewig,
Anna Flyman Mattsson, Eva Frey, Lydia Gerlich, Lena Gotthardt, Svenja Grzyb,
Alexandra Hähnert, Gisela Håkansson, Alex Housen, Jaklin Isensee, Sonja Janssens,
Holger Kersten, Kristin Kersten, Julia Kögler, Sylvia Luft, Ute Massler, Katharina Neils,
Kai Perret, Thorsten Piske, Andreas Rohde, Marion Salentin, Christina Schelletter,
Annelie Schober, Anja Steinlen, Ramona Thierer, Shannon Thomas, Christine Tiefenthal,
Martina Weitz, Insa Wippermann, Henning Wode

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Beneficiary organisation: University of Magdeburg, Germany

Project coordinator: Dr. Kristin Kersten
Project coordinator organisation: University of Magdeburg, Germany
Project coordinator telephone number: +49.391.6716.655
Project coordinator email address: projekte@kristin-kersten.de



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Executive Summary

More than ever before, educational institutions are called upon to prepare young children for the demands of an increasingly globalised world and the challenges of preserving our biosphere upon which all human life depends. In order to provide them with the personal and professional foundations they need to participate in a multilingual and multicultural society and to grow to be responsible European citizens, European education systems must impart sound knowledge of foreign languages, intercultural skills and tolerance, and individual as well as collective environmental awareness. It is critically important to introduce children to such knowledge and skills at the earliest stage possible, i.e. ideally at the start of a lifelong learning process. As numerous studies on early education have demonstrated, children's natural learning strategies and enthusiasm maximise their learning success at a young age.

The most effective method of imparting such knowledge and skills at an early age is a language immersion programme in bilingual preschools, carried out through native speakers of a second language (L2). ELIAS aims to advance Europe-wide establishment of bilingual preschools and collaboration with non-academic educational institutions. A research consortium from nine universities and a zoo monitors young children's learning progress in second language acquisition, intercultural communication, bilingual science skills and environmental awareness in ten bilingual preschools in Belgium, England, Germany and Sweden. Located on the premises of the Magdeburg Zoo, the unique bilingual Zoo-Preschool thrives on its proximity to animals and provides an ideal environment for bilingual education for sustainable development ("Green Immersion"). Such collaboration is unprecedented in the world.

ELIAS aims to inform specialists in the European education sector, preschools, schools, research institutions and non-academic cultural institutions (e.g. zoological and botanical gardens, aquariums, museums) and the general public.

The research team employs ethnographic participant observation of preschool activities, and a number of standardised and non-standardised tests for language development. Assessment during the first half of the project revealed that: a) strategies of intercultural competence are successfully learned in preschool; b) L2 acquisition takes place, and its success is mainly dependent on the children's contact time with the L2; with teaching principles employed by the L2 native-speaker educators as another probable impact factor; c) the first language (L1) of the children does not suffer from the intensive exposure to an L2; on the contrary, the L1 seems to benefit from early language awareness; and d) children progress through steps of increasing environmental awareness, but progress seems to be strongly related to the age of the child and other individual factors. In the second half of the project, these findings will be corroborated by continuous longitudinal observations and assessments.

ELIAS has produced a series of practical materials such as teacher training modules, Green Immersion modules, an information brochure and guidelines, and a range of presentations on bilingual learning, all of which can be accessed and downloaded from the ELIAS website at www.elias.bilikita.org. These materials will be completed in the course of the next year. The website, intensive PR activities and, notably, the final symposium in June 2010 and a two-volume book-publication will make all results accessible to the public even after the project's lifetime.

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1. Project Objectives

Alexandra Hähnert

In the increasingly multicultural societies of today, foreign language proficiency and intercultural competence are becoming more and more important. The ELIAS project aims to make a contribution to the implementation of efficient bilingual preschool programmes throughout the EU. The ideal, however, is to go beyond mere language training and to provide children of an early age with crucial knowledge of different foreign languages, intercultural competence, tolerant attitudes and a heightened awareness of the environment within an integrated program.

The preschools affiliated with the project – seven intercultural bilingual preschools in Belgium, Germany and Sweden, and a monolingual preschool in Great Britain – are academically monitored and guided by a research team from nine universities in the four countries. The research team aims to single out the factors which render a programme most efficient in terms of language, culture, and content learning. It is intended that the results obtained will be transferable to bilingual programmes with any chosen foreign language.

ELIAS places a special emphasis on early environmental education. In an unprecedented pilot programme, research on bilingual science learning and the acquisition of environmental awareness will be carried out in the unique zoo preschool in Magdeburg, Germany.

Moreover, preschool staff are provided with teacher training in theoretical and practical issues of bilingual education. Teaching materials for bilingual science education are being developed. Another project goal is the creation of an implementation manual for bilingual preschools. The research team, on the other hand, profits from the practical knowledge and experiences of the preschool staff and from their expertise about the children's development in their observations and assessment procedures. Thus, continual feedback between all partners warrants an increase in quality both in the preschool programmes and in the research studies.

A primary concern of ELIAS is to encourage bilingual learning and the implementation of bilingual programmes as widely as possible across European preschools, and to help establish the continuation of the programme into elementary school.

Initial target groups include project preschool staff, children, and their parents, the zoological garden affiliated with the project and other institutions with a direct interest in bilingual education. In the long run, the project will benefit European preschools and preschool initiatives, as well as elementary and secondary schools. ELIAS will produce a pool of knowledge from which all European institutions involved practically or theoretically in bilingual education may draw, and thus enhance European educational action plans at large. In this way, ELIAS makes a contribution to the vision of an integrated Europe.

2. Project Approach

Eva Frey, Kristin Kersten, Anja Steinlen

ELIAS uses a qualitative, ethnographic approach supplemented with several quantitative measures to capture the complex learning situation in bilingual preschools. Within this framework, the main methodological tool is participant observation (see below, 2.1, 3.1). Participant observation focuses on intercultural communication (3.2), on bilingual environmental learning (3.3.), and on language learning (3.4-6). This chapter summarises the most important methodological approaches and the dissemination strategies. Assessment procedures and project results of all studies are explained in detail in the next chapter (3).

In accordance with the ELIAS objective to examine the effectiveness of the immersive preschool programmes, several language assessments (L2 English, L1 English, L1 German) are carried out with a variety of age-appropriate tests. The test used for second language assessments is the ELIAS L2 Grammar Test, which was exclusively developed for ELIAS (3.4), the standardised Lexicon Test (BPVS, 3.5), and, since the bulk of the preschools are located in Germany, a standardised L1 Test (SETK) for L1 German (3.6). Training and guidance on data analysis were provided by different partners according to their expertise in the field. In addition to these quantitative measures, several surveys, such as interviews with preschool teachers and parent questionnaires, were conducted to elicit data constituting the learning environment of the children as well as their social background. All of these assessment materials can be accessed on the project website, www.elias.bilikita.org.

Another objective of the project is to provide children with an educational framework that fosters scientifically sound Education for Sustainable Development (ESD) in a bilingual learning context. Based on this innovative educational approach, the ELIAS team created a new technical term: *Green Immersion* (Kersten & Perret 2008, see 3.3). Apart from ongoing participant observation, the ELIAS team also conducted a pilot assessment that led to the development of a set of teaching techniques and materials, and a tailored developmental model on Green Immersion education. The online version of those modules can be downloaded from the ELIAS homepage.

2.1 Methodology and Methodological Tools

A major research tool within the ELIAS Project is the so-called "ethnographic observation", i.e. the non-obtrusive observation of human behaviour in a field environment. The person is usually not aware that he/she is being observed (see e.g. Pitman 1989). But why should field research be carried out? Why not focus on tests? As Ellis (1990a: 67) pointed out, there is a scepticism over the ability of this approach to 'produce the definitive answers that some researchers expect.' ELIAS therefore supplements data from quantitative research (i.e. the L1 and L2 language tests) with quali-

tative data, because we feel that qualitative and quantitative methods are complementary rather than opposites.¹

Ethnography focuses on the collection and interpretation of data and questions and hypothesis often emerge during the course of the investigation, rather than beforehand (see e.g. Pitman 1989). That is, ethnographic research is a bottom-up approach, i.e. theory is derived from data ('data first').²

Within the ethnographic framework, a research strategy called "participant observation" is often used. Participant observation aims to gain a close and intimate familiarity with a given group of individuals (such as a religious, occupational, or sub-cultural group, or a particular community) and their practices through an intensive involvement with people in their natural environment, usually over an extended period of time.³

In the context of ELIAS, participant observation was chosen as the most important tool to determine how children acquire a foreign language in a bilingual preschool context. This was done, because studies of very young children agree that written questionnaires (which are an important tool in ethnographic studies) are of no use for data collection, as very young children are unable to read (see, e.g., Boehm & Weinberg, 1997; Garbarino & Stott, 1989; Touliatos & Compton, 1983, all in McKechnie 2000). While it is possible to interview and survey adults who may act as important informants about children's foreign language acquisition, these methods only indirectly capture a picture of that development. In contrast, the techniques of ethnographic observation, which allow exploration of research questions from the context itself in a manner that may be adjusted to be age appropriate, provide a promising approach to research with young children in foreign language settings.

Participant observation is carried out by a researcher who comes to the respective preschool at least once a week. Observers are present during the daily preschool routines and take field notes. Observers are familiar to the children and often considered part of the staff. For the children and the staff, the researcher, however, is slightly separate from everyday life of the classroom but still functions as a member of the group (see also Tabors 1997). By being a participant, the researcher is able to get to know all the children and the teachers; by being an observer the researcher is able to record interactions that may have otherwise gone unnoticed (see 3.1).

According to Pitman (1989), there are six characteristics of ethnographic research:

¹ In the German literature, this approach is called "triangulation" (see e.g. Flick 2008).

² The ethnographic approach has been criticized because ethnographies are based on the detailed description and analysis of a particular context or situation. It is therefore difficult for outsiders to access and replicate the results. However, as Pitman (1989: 59) points out, five key aspects of ethnographic research have been developed which enhance external reliability, i.e. the replication of the research by others: For example, it is important to be explicit about the social position of the researchers within the group under investigation. Most importantly, however, the choice of the informants, the analytical constructs and premises, the social situations, the conditions and the analytical constructs and premises, and the methods of data collection and analysis have to be clearly stated.

³ Participant observations have a long tradition and were extensively used in the 19th and 20th century, esp. with respect to the studies of non-Western societies or sub-culture groups (see e.g. Spradley 1980, De Walt et al. 1998). With the introduction of "grounded theory" (e.g. Glaser & Strauss 1967), a more formalized qualitative research program, many ethnographers have refined their methods, by making them more amenable to formal hypothesis-testing and replicability.

1. The research is carried out in the context in which the subjects normally live and work, i.e. it is contextual.
2. The research is unobtrusive, i.e. the researcher avoids manipulating the phenomena under investigation.
3. The research is relatively long-term, i.e. longitudinal.
4. The research involves the participation of stakeholders other than the researcher, i.e. it is collaborative.
5. The researcher carries out interpretive analyses of the data.
6. There is interaction between questions/hypotheses and data collection/ interpretation, i.e. the research, is organic.

These six characteristics may also be applied to ethnographic research within ELIAS: For example, the participant observations are carried out during the two-year period of the project (longitudinal), the research takes place in the preschools (contextual) and researchers ensure that the children's activities and the daily routines of the preschools are not disturbed (relatively unobtrusive research). As the interpretation of participant observation is also supplemented by parent questionnaires and regular conversations and interviews with the preschool teachers, the research carried out within ELIAS is collaborative. The research team carries out interpretive analyses of the data and constantly checks whether the materials and the interpretations are useful to the purpose of the research.

During the course of the first year an observation checklist has been developed to assess teacher-child interaction (see 3.1). The current version of the ELIAS checklist includes questions on the teacher's language use, contextualisation of language and negotiation of meaning, supplemented by questions on the children's reaction and their use of their L1 or L2 English. It has to be stressed, though, that a strictly bottom-up process was followed, i.e. the data were gathered first and on the basis of collected material, the observation checklists were developed.

The results of the observations will be complemented with the results of the quantitative assessments in order to capture the complex picture of learning and education in bilingual preschools.

2.2 Dissemination and Exploitation

Apart from the research studies, ELIAS aims at developing training materials and practical manuals which can be employed in bilingual preschools in a supra-regional context. As we have often experienced, new institutions tend to "re-invent the wheel" over again, in spite of the fact that a lot of the initial difficulties can be avoided by referring to tried and tested methods. The ELIAS materials are intended to remedy this situation. They will help disseminate best practices in bilingual preschools. Materials that can be viewed at the website currently include several teacher training modules on background information for different relevant topics, such as teaching principles in immersive institutions and an introduction to second language learning; a parent information brochure on immersive learning in preschools; a conceptual design for a zoo-preschool; a range of presentations on ELIAS topics and results; a bibliography,

and, as stated above, online teaching materials for Green Immersion. Several drafts of more publications, including a final book publication, are currently being refined and will be available in the second half of the project.

To warrant continual learning opportunities for the most important target group, the children, ELIAS places a strong emphasis on the continuation of bilingual programmes in primary schools. We thus created an implementation guideline for immersion in primary schools (Kersten et al. 2009), in collaboration with Germany's most notable association for bilingual learning, FMKS (www.fmks.eu). In the following year, these guidelines will be provided in English, and they will be complemented by a manual for bilingual preschools. Several partners contributed to initiatives for new immersive primary schools in meetings with parents, administrators and political boards. Another initiative with a very strong long-term impact is the foundation of a new association of bilingual institutions, which took place in Saxony-Anhalt in June this year. Three partners were involved in the implementation and are currently taking part in this network.

Apart from these practical materials, the ELIAS team used different strategies to make the project known in the European context, such as repeated press articles and information, diverse small-scale and large-scale team meetings with practitioners and representatives from administrative and political boards, a symposium, information events, lectures, presentations and a panel discussion for preschools, parents, students and a wider audience, university classes, as well as diverse academic presentations on conferences.

Ultimately, the findings of ELIAS shall contribute to the extending and improving of early bilingual education throughout the Community.

3. Project Outcomes & Results

ELIAS has a threefold research focus. Research studies are carried out with the help of triangulation, i.e. the combination of different qualitative and quantitative research methods. This section describes in detail the outcomes of these studies, namely participant observation with respect to teaching principles (3.1), intercultural communication (3.2) and Green Immersion (bilingual environmental learning, 3.3) in preschools, as well as the language assessments on first and second language learning carried out in the ELIAS preschools (3.4-3.6). Even though the preschools represent different programme setups, it is obvious from the results that children acquire new competences rapidly, successfully, and with a lot of fun.

3.1 Participant Observation

Marion Salentin, Martina Weitz, Svenja Grzyb, Kristin Kersten

3.1.1 Introduction

In order to present the monitoring carried out in the preschools and the development of the observation checklist, it is necessary to provide some general background information about the preschools included in the project.

The bilingual preschools where observation took place are located in Cologne, Leverkusen, Hamburg, Kiel, Magdeburg, Schwäbisch-Gmünd (Germany), in Clabecq (Belgium), and in Lund (Sweden). Additional data was collected in an English preschool in Hatfield, but cross-sectionally and without continuous participant observation. The preschools are quite different in size and range from less than 15 to more than 90 children. On average, every child spends between 5 and 8 hours per day in preschool. Most of the parents characterise themselves as belonging to the upper-middle class, as most of them have a high academic degree and self-assess their income as high. Some of the preschools are funded by parents, but most of them are subsidised by the state or the community. All preschools have between one and three groups with a partly open or partly closed structure. The number of teachers ranges from one to six teachers per group. Most of the parents chose a bilingual preschool exclusively due to the bilingual program, but for some parents other reasons were more significant and the bilingual concept was just a positive side-effect.⁴

As this summary indicates, preschools differ greatly with respect to length and intensity of exposure to the English language (L2), the age of the children, their language backgrounds, as well as the internal structure of the preschools (e.g. high variance in daily routines, etc.). We assume that many of these factors affect language learning in immersion settings.

Due to these tremendous differences between the different preschool settings, it is a very complex task to develop a tool for participant observation that takes all these dif-

⁴ Questionnaires used to elicit preschool backgrounds can be downloaded from www.elias.bilikita.org.

ferent factors, especially the daily activities and the diverse teaching strategies used by the different preschool teachers, into account. One of the project's goals is the creation of an observation checklist that is able to capture, describe and evaluate all the different practices and demands of each preschool. According to the ethnographic approach of the project, the checklist draft has been constantly improved and adapted to the ongoing observations made in the preschools during the first half of the project. Similar observation lists developed for assessing the grade of communicative language teaching and evaluating the use of various teaching strategies in immersion settings (e.g. COLT, Spada & Fröhlich 1995; TALOS, Ullmann & Geva 1982, etc.) were used as a starting point. But as most of them are concerned with the school context, they were only partly useful for the preschool context. ELIAS is developing an observation tool which responds to different preschool settings, activities, and teaching principles used in the diverse bilingual preschools we are monitoring.

3.1.2 Method

Observations are carried out approximately once a week in each preschool. One basic principle of ELIAS is that the researchers who observe the communicative situation in the L2-groups are familiar with the children and regarded by them as a part of the system. This is a key prerequisite to avoid situations in which children do not feel comfortable and might feel shy or fearful and not willing to communicate (in the worst case, neither with the observer nor with their teacher). Hence, by visiting each group regularly and accompanying their activities, we try to lessen the possibility of disturbance.

The task is to observe the children's activities and to collect and register these data in the observation checklist. Furthermore, data on each preschool setup and on factors influencing the children's L2 input and interaction (other than those mentioned in the checklist) are collected with the help of field notes and questionnaires. The collection of these data serves several purposes:

1. Conceptual designs of the participating bilingual preschools can be documented and evaluated.
2. To improve and enhance second language learning, there needs to be a description of the actual state at the very beginning.
3. The research teams get ideas about what topics to focus on for the ELIAS teacher training.
4. Some preschool teaching and preschool concepts can be correlated to the test results in the respective groups.

3.1.3 Results and Discussion

The observation instrument is designed to not only describe what is observed, but also to evaluate. The categories in the checklists were chosen on the basis of what is referred to as *best practices* in the literature. To yield comparable and objective observations, categories are graded as either "high" or "low" on a likert scale from 0 (absent) to 4 (high) ("high-inference" categories, Mackey & Gass 2005). According to

what is rated as best practice in literature, a high use of a certain teaching principle will have a positive effect on the children's language learning.

One effect of the "high-low" scaling of categories with regard to best practices is that some categories in the checklist sound somewhat long-winded, such as "absence of translation" (into the L1) or "absence of raised voice/threats." However, this is necessary for reasons of comparison: a high usage of a *good practice* needs to be marked high on the likert scale, in order to compare with other good examples. Literal translation from the L2 into the L1, for instance, is known as an unhelpful principle for language learning. We observed in such cases that children do not focus on the L2 but simply wait for the translation. Literal translation could thus be called a case of "*bad practice*." To filter out the usage of good practices by the teachers, this means that categories had to be reformulated in such a way that a high mark represents the best practice principle, or the absence of bad practice.

This gradation makes it possible to average each category for each teacher and preschool and to compare the preschool results with each other. First observation results from all ELIAS preschools signal that the average values of the categories differ highly among all preschools. To increase the reliability of the checklist, the results of all observers will next be compared with the help of video tapes. That way, every observer will be able to rate the same situations. A pilot rating was carried out on preschool videos during the first team meeting (cf. chapter 5).

Other practical problems were encountered during the first phase of checklist creation and usage. Observers quickly discovered a typical feature of qualitative data-elicitation: every situation takes place in a unique constellation of circumstances. No situation will ever occur twice; there are too many variable factors in the preschool settings. However, the objective of an appropriate elicitation tool for observations is to find characteristic features that describe every element of an activity. Thus, the distinction between "situation" and "activity" was introduced, with "situation" describing a regular sequence or a daily routine such as breakfast, free play, morning circle, outside play etc., while "activity" refers to shorter episodes within these situations, like singing, guided play or games. This made the observations more comparable, more differentiated, and thus more exact.

Despite of initial definitions of each category, observers first had different interpretations of the category meanings. Thus, in a next step, a catalogue will be created in which the categories are explained in more detail. These explanations will be based on experiences of all observers, and they will be tested with the help of external researchers and practitioners.

The current draft of the ELIAS observation checklist as well as explanatory materials can be downloaded from the project's website at www.elias.bilikita.org.

3.2 Intercultural Communication

Holger Kersten, Ute Massler

Jutta Daszenies, Eva Frey, Lydia Gerlich, Alexandra Hähnert, Kristin Kersten, Anja Steinlen, Insa Wippermann

3.2.1 Introduction

This chapter provides information about the theoretical and practical steps that have been taken to observe, record and evaluate moments of intercultural activity in the partner institutions. Due to the fact that a standard procedure for measuring intercultural skills is not available, the team decided to use multiple approaches for the observation and evaluation of intercultural interaction during the project's initial phase. This path was chosen to maximize the testing of various observation and evaluation techniques. Generally speaking, however, all observers used ethnographic observation in their attempts to gain insight into the intercultural activities occurring at the preschools. Additionally, individual research teams supplemented this information with insights gained from interviews conducted with children (Schwäbisch-Gmünd/Tübingen) and with preschool teachers (Magdeburg).

During the half-time team meeting in July, representatives from the various teams came together in series of workshops in which observations were shared and discussed. This information was then entered in a form designed for the systematic transcription and transmission of the observational data.

The observations originate from all ELIAS preschools. It is important to note that these child care institutions differ from one another in many significant aspects. For the present chapter this is relevant with regard to the overall number of children enrolled in the preschools, the percentage of non-German children in each institution, the number of non-German educators involved in the daily activities, and the educators' respective cultural backgrounds. With this fundamental diversity it is clear that the observations and the conclusions drawn from them cover a wide spectrum of responses, and that they may not be directly transferable from one preschool to another.

Despite the fact that the first-year focus on intercultural matters has brought to light a number of challenges in the observation and evaluation processes, the first tentative results may be formulated as follows:

- The introduction of a second language unavoidably generates intercultural situations.
- Encounters with different languages and unfamiliar cultural practices:
 - stimulate curiosity and interest in new ways of seeing, experiencing and expressing what seems to be a fixed and unalterable world,
 - encourage changing perspectives and attempts for alternatives to "normal" solutions for everyday problems
 - generate novel ways of interacting with other people.

Importance of ICC (general and within project context)

The term "intercultural competence" is a relatively recent addition to the research repertoire of the various academic disciplines that feel called upon to study its theoretical background and its practical implications. Although one may safely assume that intercultural issues have been a part of human history ever since cultural contact happened on a sizable level, the phenomenon generally labelled "globalisation" has led to a substantial increase in research efforts to shed light on the processes that affect the interaction between people with different cultural backgrounds. Based on the assumption that lack of intercultural knowledge and appropriate strategies for intercultural interaction will create problems and hamper communication processes both in a personal realm and in an institutional framework, intercultural competence has become a central concern in the modern world.

In accordance with the realisation that early childhood is not only a formative period for language acquisition, but also for the development of fundamental cultural concepts, researchers from different fields have begun to study the ways in which various combinations of symbolic and behavioural practices, are embodied in everyday routines. In this context it has become evident that values and beliefs as well as behaviours and practices are learned and rehearsed at an early age. In view of the fact that the growing globalisation process and increasing international migration will multiply opportunities for intercultural encounters, the ability to find and apply successful and mutually beneficial strategies for harmonious and successful communication and interaction will become an important educational goal.

This position has also been expressed in the Common European Framework of Reference for Languages. It posits that "[t]he linguistic and cultural competences in respect of each language [. . .] enable the individual to develop an enriched, more complex personality and an enhanced capacity for further language learning and greater openness to new cultural experiences." (CEFR 43)

Since it has been found that cultural practices are formed at an early age and that some of them can be harmful or destructive to individuals or society, it is desirable that early-childhood education programmes pay attention to the effects that particular childrearing practices may have.

Educational Goals of ICC in Preschools

It is important to note that "intercultural competence" as a concept and a term raises a number of definitional problems. For one thing, the relevant literature uses a variety of expressions to designate the skills covered by it. Some of the terms are "cross-cultural adjustment," "cross-cultural adaptation," "intercultural understanding," and "intercultural sensitivity." In a 2001 survey paper, Wiseman reports of a growing consensus regarding the concept and identifies "knowledge, motivation, and skills to interact effectively and appropriately with members of different cultures" as the three main features which have come to be accepted as main components of "intercultural communication competence."

Goals of Research

Inspired by the objectives for a European agenda for culture to promote cultural diversity and intercultural dialogue, it is the goal of ELIAS to help create an environ-

ment in which young children are put into a position that enables them to discover, accept and appreciate a range of cultural practices that may differ from the dominant cultural context in which they are raised.

Within this larger context, partial goals consist of:

- observing, recording and monitoring the development of the children's intercultural awareness through intensive participant observation
- comparing the characteristics of intercultural dialogue in the various settings reflected in the partner institutions
- evaluating the data in the light of the current theories of intercultural communication.

The activities mentioned above are supposed to result in the development and refinement of assessment methods and tools which will ultimately be used to document changes in the children's behaviour from the project's beginning to a later phase.

3.2.2 Background

Previous Findings on ICC and Children

Most of the research literature devoted to intercultural competence has focused on adults. Therefore, it is neither surprising nor inappropriate that the different approaches formulate sophisticated parameters in the development of the desired intellectual and behavioural skills. If "competent" communication is seen as a repertoire of effective and appropriate behavioural strategies, people should be in a position to manipulate their social environment to obtain their intended goals. This presumes a cognitive ability and a set of skills that young children may not have to a comparable degree.

At the same time, however, previous research indicates that the issue of interculturality is indeed relevant for small children. Even preverbal infants are capable of making sense of their world (Shonkoff and Phillips 2000: 147). Research has further shown that toddlers, although frequently portrayed as egocentric, are quite capable to take on the perspective of another person (148), thus allowing them to develop the kind of empathy necessary for successful intercultural interaction.

In view of the complex nature of identifying, observing, and evaluating intercultural behaviour, ELIAS attempts to integrate and adapt existing developmental models for intercultural sensitivity or competence. In the context, the work of the following authors has been considered to be particularly helpful: Michael Byram's (1997) model of intercultural competence, Bennett's (1993) work on intercultural sensitivity, and Deardorff's (2004) Pyramid and Process Models.

Byram (1997) offers a comprehensive and well-structured framework for an understanding of the different levels involved in the concept. Moreover, he is noted for his work regarding the implementation of intercultural competence in EFL classrooms. His research is of special importance to European teachers because it constitutes the basis for the concepts formulated in the Common European Framework.

In his 1997 publication, *Teaching and Assessing Intercultural Communicative Competence*, Byram specifies a set of features in which the concept is embedded and

which are relevant for an appropriate understanding and assessment:

- **Attitudes**

To achieve intercultural competence, an individual needs curiosity, openness, a readiness to question the assumptions and values of a culture – those of an unfamiliar one and those which are the givens of one's own environment. In terms of developmental objectives, it requires a willingness to seek out or take up opportunities to engage with otherness in a relationship of equality. It also presupposes an interest in discovering alternatives to the familiar interpretations of phenomena both in one's own and in other cultures.

- **Knowledge**

Becoming culturally competent requires a factual knowledge about social groups, their world view, and their products and practices – in one's own country and in that of one's interlocutor. The objectives here are to understand the historical and contemporary relationships between the two countries involved as well as the causes and processes of misunderstanding between them. Of equal importance is the knowledge of the processes of social interaction and the processes and institutions of socialisation in one's own and one's interlocutor's country.

- **Interpretive skills**

Since factual knowledge and information derived from observation are rarely unambiguous, an individual needs the ability to interpret an event (or a document) from another culture, to explain it and relate it to similar events (or documents) in his or her own culture. In this context, it becomes important to identify ethnocentric perspectives and, perhaps, to explain their origins. Similarly, individuals finding themselves in an intercultural encounter should develop a sensitivity for misunderstandings and instances of unsuccessful interaction. To remedy such problems, individuals need to be able to mediate between conflicting interpretations of actions, events and phenomena.

- **Skills of discovery and interaction**

Successful intercultural competence also depends on the ability to acquire new knowledge concerning another culture and its practices, and on the ability to apply this knowledge, the attendant attitudes and skills in actual communication and interaction. Developmental objectives here would be to become competent in identifying similar and dissimilar processes of interaction. Furthermore, the individual should gain expertise in locating and using institutions which facilitate contact with other countries and cultures.

- **Critical cultural awareness**

Byram's model also includes the ability "to evaluate critically and on the basis of explicit criteria perspectives, practices and products in one's own and other cultures and countries" (101). In this context, individuals are expected to identify explicit or implicit values (in actions, events, or documents). Critical cultural awareness also enables members of a given culture to become, whenever necessary, mediators in intercultural exchanges and defuse moments of crisis by negotiating solutions that are mutually acceptable to the representatives of the cultures involved.

Keeping in mind that these criteria were developed for adults rather than young chil-

dren, it is obvious that the qualities listed here cannot be found in their most advanced stage in a preschool setting. Nevertheless, the initial research results testify to the fact that some of the skills and abilities mentioned above can be observed in a germinal stage.

In addition to Byram's model, Milton J. Bennett's (1993) work on the developmental aspects of intercultural sensitivity offers a phase model to describe a gradual change in people's reaction to cultural difference. In his sequence, intercultural competence advances from ethnocentric to ethnorelative stages, that is, from early moments of denial of difference to cognitive and behavioural adaptations to difference. Ultimately, the individual develops an understanding of the fact that his or her culture is not the only or "correct" way of life but one variety of cultural expression among a larger spectrum.

Finally, the work of Byram and Bennett is supplemented by the "Pyramid Model of Intercultural Competence" and the "Process Model of Intercultural Competence" proposed by Deardorff (2004). Deardorff's models allow a more flexible assessment of intercultural competence because they introduce degrees of competence and do not prescribe a fixed list of components. These models are adaptable to specific situations and contexts and can accommodate the development of new specific assessment indicators while providing a basis for general assessment of intercultural competence.

3.2.3 Methods

A survey of the academic literature reveals that even after years of research "intercultural competence" remains a complex topic surrounded by many unsolved questions and controversial issues (Deardorff 2008: 17). Since research setups and procedures depend to a large degree on the actual conditions given in the individual child-care institutions, no attempt has initially been made to create a research tool that would cover all the individual characteristics of the various partners. Nevertheless, the partners generally agreed that they would collect data regarding intercultural contact by using ethnographic approaches and varying forms of participant observation. The ultimate goal was (and is) to derive a detailed and comprehensive description of the children's behavioural repertoire. Such a series of careful exploratory studies is expected to help generate working hypotheses.

Most of the current data on intercultural behaviour was collected with the help of ethnographic techniques. Researchers attempted to provide a rich description of the context of behaviour and development. It was assumed that taking this approach would come upon previously unanticipated features of intercultural behaviour that deserve more focused observation and investigation. In the course of this process, a few members of the research team added other forms of data elicitation: Since parents and preschool teachers interact closely with the children, both their behaviour and their beliefs are relevant to the intercultural processes taking place at the child-care institutions. They are natural informants whose knowledge about their own children exceeds the insights that can be gained in the context of limited observation sessions. Consequently, parents and educators were used as informants; their opinions and judgments were elicited in personal interviews and with the help of questionnaires.

The team started out with the following several research questions, which may undergo changes during the observation process:

- What are the situations in which intercultural competence becomes visible?
- What forms of intercultural behaviour do the children exhibit?
- What are the indicators for an "intercultural awareness" in young children?
- Do the children undergo a change in their continued exposure to situations involving contact with other cultures and their representatives?
- How can such a change be explained?
- How can intercultural competence be fostered in the child-care environment?

Hypotheses and expectations:

- The children's natural curiosity will encourage them to explore new forms of cultural expression.
- Their daily exposure to a foreign language will stimulate interest in the cultural practices that are associated with it.
- Their interest in, attachment to and affection for the preschool educators will generate imitative behaviour and voluntary adoption of particular cultural practices.
- As the children gain a better understanding of the bicultural situation, they find themselves in, and they will negotiate moments of cultural contact more competently and with a growing self-confidence.
- Ultimately the children will learn to accept cultural variation as the rule rather than the exception and use the repertoire of intercultural skills to master potentially confusing or challenging situations emerging from the confrontation with members of other cultures.

3.2.4 Results and Discussion

As the project got under way, participant observers were asked to submit their findings with the help of a form that had been designed to help consolidate the information. The incoming data was first descriptively summarised, and then entered into a spreadsheet and organised into overarching categories. These categories were derived from the features detailed in the definition of "intercultural competence" and in the relevant descriptions in the Common European Framework of Reference for Languages (CEFRL, Table 3.2.1).

CATEGORIES Definition (CEFR)		
Motivation	Knowledge	Skills
"motivation [. . .] to interact effectively and appropriately with members of different cultures" (Wiseman 2001)	"knowledge, awareness and understanding of the relation [. . .] between the 'world of origin' and the 'world of the target community'" (103)	"ability to bring the culture of origin and the foreign culture into relation with each other" (104) "capacity to fulfil the role of cultural intermediary" (104)
Observed Behaviour		
<ul style="list-style-type: none"> • Children show an interest in other languages. • Children ask for the meaning of unknown words. • Children ask about language abilities of others / encourage them to speak. 	<ul style="list-style-type: none"> • Children use foreign language to communicate. • Children reproduce facts or assumptions about other culture(s). • Children talk about their own ability to speak several languages. • Children offer words/phrases in a language not taught in preschool. • Children's utterances show a lack of knowledge regarding issues of time and place. 	<ul style="list-style-type: none"> • Children choose language according to their interlocutor. • Children offer help to other children and adults (translation, linguistic mediation).

Table 3.2.1: Children's observed behaviours according to categories of intercultural competence.

In analysing the content of child utterances and behaviour the observers found that the children reacted to and/or communicated on the following general topics:

1. (different) language(s)
2. sounds of other languages
3. foreign countries and their identificational items (locations, maps, flags)
4. non-domestic animals
5. food
6. skin colour
7. clothes
8. religion

Of all these topics, metalinguistic comments were by far the most frequent incidents observed in the daily preschool activities.

The behaviours listed above clearly show that in close contact with speakers of other languages and their cultures, children are motivated to intensively (and, as can be assumed, perhaps more rewarding) interact with them. Similarly, regular and intensive encounters with interlocutors from a different cultural background produce fac-

tual knowledge about the regions and cultures involved. Finally, in sustained exposure with other languages and cultures and the people who represent them, children develop and refine skills which facilitate intercultural interaction.

While the majority of the observations recorded in the project's initial phase fall into the categories that might, in accordance with the educational goals specified by the European Union, be termed desirable and conducive to the promotion of "mutual understanding and tolerance, respect for identities and cultural diversity through more effective international communication" (CEFRL 3), the spectrum of observed behaviour also included evidence that young children show a range of reactions that include timidity, apprehension, or even hostility. These observations can be conceptualized with the reference to the ethnocentric stages in Bennett et al's (2003) Developmental Model of Intercultural Sensitivity:

CATEGORIES Definition: Bennett et al. (2003)	
Denial	Defense
<p>"In the first stage of Ethnocentrism, Denial, people have not yet constructed the category of <i>cultural difference</i>. To them, the world is completely their current experience of it, and alternatives to that experience are literally unimaginable. [. . .] This world view state is the default condition of normal socialization. People can stay in Denial their whole lives, as long as they don't have much contact with cultural difference." (248)</p>	<p>"[P]eople have become more adept at perceiving cultural difference. Exposure to [. . .] the kind of casual contact that occurs in a multicultural classroom may set the stage for this level of experience. [. . .] Because one's own culture is still experienced as the only true reality, the existence of the other cultures is threatening to that reality. To counter the threat, the world is organised into <i>us</i> and <i>them</i>, associated with the <i>denigration of them</i> and the <i>superiority of us</i>." (249)</p>
Observed Behaviour	
<ul style="list-style-type: none"> • Children initially prefer the teacher who represents their own language and culture. • Children react to L2 and L2 speakers very reservedly, with fear or with anger. • Children express frustration at their lack of understanding. • Children refuse to communicate in the foreign language. • Children laugh about "strange" language / sounds. 	

Table 3.2.2: Children's observed behaviour according to two categories from Bennett et al's (2003) Developmental Model of Intercultural Sensitivity.

Conclusion

As previous researchers have pointed out, studying situations of intercultural contact is a complicated matter involving not only the children and their immediate caregivers, but a very complex network of social relationships, which also includes interactions between L1- and L2-speaking staff, those between parents and the L2-speaking staff, as well as the children's life outside of the child-care institution. Compared to the situation regarding the children's acquisition of the second language, these situational factors are much harder to control. Even ethnographic observation as a method presents a challenge in a preschool setting which has few formal arrange-

ments, few guided activities and gives children ample room to choose their peer groups and interlocutors freely.

However, at the current stage, the observation of intercultural encounters has already yielded a substantial amount of data which corroborates the three models used for the description of intercultural learning. The significant differences that exist among the various partner preschools with regard to the overall number of children, the number of children and educators with a non-L1 background, and the institutional frameworks in which they are embedded, generate a great amount of variation in the results collected at each preschool. Yet, the range of behavioural responses recorded in the observation so far can be accommodated in the categories suggested by these research models. When the project moves into its second research period, these categories will be further refined to establish a more fine-grained description of intercultural learning in bilingual preschools.

3.3 Green Immersion

(Bilingual Education for Sustainable Development)

Shannon Thomas

Suzanne Akerman, Petra Burmeister, Michael Ewig, Kristin Kersten, Julia Kögler, Kai Perret

3.3.1 Introduction

Educating young children about sustainable living provides them the opportunity to experience nature and the environment, and to establish a lifelong awareness of environmental needs, before personal prejudices can develop. Children are the world's hope for an environmentally sustainable future; therefore, providing scientifically sound Education for Sustainable Development (ESD, e.g. WAZA 2005) can offer children the correct tools to work towards fulfilling that role. One concern in the field of ESD is that once learners realise the vastness of environmental concerns, they may develop fear or complacency towards environmental issues. Conceivably, it may be the combination of early education and sound ESD which minimizes, or even nullifies, these undesirable reactions.

As with ESD, second language learning can also be more beneficial when introduced in the early stages of childhood. The most successful approach to second language learning in early childhood is immersion (Genesee 1987, Wesche 2002). In immersion, the second language is not taught in a systematic way but acquired like the first language. The second language is the medium in regular kindergarten activities and school subjects. The teacher uses the second language in a highly contextualised way so that the children can infer the meaning from the situation.

The Zoo-Kindergarten in Magdeburg, Germany, combines early childhood ESD and second language acquisition in their kindergarten programme. The children at the Zoo-Kindergarten are presented with environmentally themed learning activities conducted entirely in their second language. This method of education is what the ELIAS project has dubbed *Green Immersion* (Kersten & Perret 2008).

3.3.2 Method

The Zoo-Kindergarten is situated on the grounds of the Zoological Garden in Magdeburg, Germany. With a capacity for 31 children, the Zoo-Kindergarten offers activities for two groups of children, an introductory level for the younger children and a more challenging level for the older children. The Zoo-Kindergarten organises environmentally-sound activities as well as various other life-learning and preschool-learning activities for the children. To ensure that the children are provided with excellent learning opportunities, the Zoo-Kindergarten has three native English-speaking educators and two German-speaking educators. Two of the native English-speaking educators have backgrounds in biology and environmental education, as well as experience in ESD. The other three educators are experienced in second language and intercultural education.

The educators at the Zoo-Kindergarten organise and deliver environmentally based in-class activity as well as a corresponding practical application activity in the zoo or adjacent park each week. The activities are based on current environmental issues, shaped into a medium that engages young children. The activities examine a variety of the environmental aspects, but due to proximity to the zoological facility, many focus on animals. The children are exposed to as many 'real' representations of the environmental topics as possible. Each activity engages as many senses as comfortable for the child in the setting. The various activities supply the opportunity to be creative through crafts and games, and to learn how to vocalize their own thoughts on environmental issues, hopefully through the second language. The children are also provided with unique opportunities to interact with animals in a personal way. It is through these interactions, especially, that an emotional connection to the animal world, and thereby the environmental world, can be instigated. The Green Immersion programme intends to build the structure for young children to become environmentally conscious via these connections.

3.3.3 Results and Discussion

The Green Immersion programme at the zoo kindergarten began in October 2008. Like any new embarkment, Green Immersion at the zoo kindergarten has changed over the last year to better fit the needs of the children. The educators are continuously looking for better techniques to teach Green Immersion and to simply improve techniques. One turning point in the understanding of effective Green Immersion methods followed a pilot assessment conducted at the kindergarten. The pilot assessment was a simple experiment to test what the children learned during a single environmental activity.

Assessment of Environmental Learning

In the first week of testing, educators administered a pre-test to the children. The children were asked to construct a 'food chain' using the pictures provided for them; some children had knowledge of a basic food chain, acquired outside the kindergarten, others did not. The following week the environmental activity was conducted as normal, using the same material as in the pre-test. In the third week the post-test was

administered to the children, using the same method and material as in the pre-test. However, to fully explore whether the children had reached the level of full understanding, another test was administered immediately following the post-test. The only variable in the extended post-test was a change in the variety of pictures. The children were asked to make a new food chain from the new pictures.

The pilot assessment resulted in valuable information about the learning needs of the children. During the pre-test the youngest children exhibited no realisation of a food chain concept. They also were distracted by the picture format (i.e., some pictures were formatted horizontally and others vertically) and chose their food chain based on picture format and not picture content. The older children looked at the content of the pictures and discussed the various diet possibilities of each animal. However, they did not look for possible food chain links in the group of pictures. The older children understood that only three pictures were needed for a complete food chain, while the younger ones did not. The results from the post-test indicated that a majority of the children remembered that there was some linking relationship in the correct food chain pictures. Thus, the teaching techniques and materials were judged efficient enough for basic understanding of Green Immersion content.

However, the results determined from the extended post-test indicated that, although the younger children followed what happened during the in-class Green Immersion activity, they were unable to broaden that knowledge to understand similar patterns with different cues. The older children were able to make that broader connection. Therefore, the team came to the conclusion that perhaps children who were between ages three and five needed at least two different levels of Green Immersion teaching for different age groups, one for a basic understanding of Green Immersion for the younger children, and one encompassing more refined aspects of Green Immersion for the older children.

In the months following the pilot assessment, the idea of two teaching levels was gradually implemented: a basic level for those children still in the "discovering" stages of Green Immersion, and a more advanced level for those children ready to begin making connections of environmental processes.

Green Immersion Developmental Model

To further refine the education levels and the general concept of Green Immersion, the ELIAS team developed a tailored structure based on Janßen's (1988) model of how a person encounters nature.

Following this model, the Green Immersion activities in the Zoo-Kindergarten are now based on a six-stage process of environmental learning. The initial stage of Green Immersion introduces an environmental concept to the children and invites the children to connect with that concept on an emotional level. The second and third stages of Green Immersion are highly factual stages, encouraging the children to describe what they have observed and to reiterate the new information. The following stage, knowledge transfer, is when there is a cognitive recognition of the links between similar environmental concepts. The activities at the zoo kindergarten are mainly focused on these first four stages of environmental learning. The final two stages of environmental learning, becoming environmentally aware and "Action Competence", are supported at the Zoo-Kindergarten, but not yet heavily emphasised for such young children.

Once children begin to *connect* to the environment on an emotional level, they are then asked to *describe* the encounters in their own words. Sometimes these descriptions of their encounter are incorrect in the sense of being scientifically sound; however, the way the child feels at that moment is what matters in this stage. The educators at the preschool then take that experience and describe it using environmentally-sound information. Green Immersion focuses on the second language during this stage. As the environmental activity continues, the children are encouraged to describe their encounters using their new knowledge; usually, these descriptions include some utterances in their second language, the language in which the children encountered the topic. However, if the child does not use English, this is not regarded as a negative factor.

Using the second language as the teaching language causes some children to simply "*regurgitate*" the sounds they hear. This form of repetition is desirable and can be useful for the educator to reinforce the second-language. The children are then encouraged to participate in the environmental activity again, this time equipped with their new knowledge, and to repeat the process of *experiencing*, *describing* and *regurgitating*. These three levels of learning can be simultaneous or drawn out, depending on the complexity of the activity or the developmental level of the child.

As the children begin to understand the environmental topic, both in language and environmental understanding, the target is to have them *transfer* that understanding to similar environmental topics. Once the children have begun to transfer that knowledge, they can begin to appreciate their *role* in the environment around them. The realisation of individual environmental impact leads to a manner that promotes a positive participant in a sustainable environment, which is "*Action Competence*".

Green Immersion Online Materials

Another objective of ELIAS is to provide learning institutions that have no direct access to a zoo or have limited environmental ties with learning and teaching materials used in the Zoo-Kindergarten. All modules introduced in Green Immersion activities are available online at www.elias.bilikita.org. Thereby, environmental awareness can be promoted through Green Immersion materials in every preschool, primary school, or any similar educational institution that wishes to promote education for sustainable development, especially in an integrated way with bilingual language learning.

3.4 ELIAS L2–Grammar Test

Anja Steinlen

3.4.1 Introduction

In 2003, the European Commission issued that all European children should have command of two foreign languages at a functionally adequate level (Commission of the European Communities 2003). However, this highly ambitious aim can only be reached when foreign language learning takes place as early as possible, preferably

before school entry. Several European preschools have therefore decided to offer bilingual programmes, among these are preschools from Sweden, Belgium and Germany which are part of the ELIAS Project. These preschools all work according to immersion principles because immersion programmes most effectively enable the children to learn a foreign language (L2) successfully (see review in Wesche 2002).

It is well known that in such a context, children produce few English words and sentences early in their preschool period (see e.g. Wode 2001). Therefore, this study focuses on preschoolers' comprehension abilities with respect to certain English grammatical phenomena,⁵ using a picture pointing task, which was exclusively developed for ELIAS by the project's research team. Of special interest are the effects of L1 background, sex and contact duration to English on the children's performance in this grammar comprehension task. In addition, the relationship between lexical and grammatical development will be explored.

This is the first time that a study on L2 acquisition in a preschool context is able to demonstrate how children comprehend grammatical phenomena when their L1 is Swedish or German (typologically similar to English) or French (typologically more distant from English): It may, for example, be possible that children whose L1 is typologically further apart from the L2 will obtain lower scores than children whose L1 is typologically closer related to the L2 because the grammatical structures may then be more similar and, therefore easier to comprehend. The newly-designed ELIAS Grammar Test, therefore, proves to be a valid diagnostic tool which can be used to evaluate language proficiency in different L2 settings.

3.4.2 Method

Between February and April 2009, altogether 266 children (50% girls and 50% boys) from eleven preschools (HSbili, HS mono, BE, HH, K-B, K-R, KI-F, KI-M, LD, MD, SG) took part in this experiment. Of these eleven preschools, nine preschools function bilingually, i.e. they offer English as an additional language according to immersion principles (B, KI-F, KI-M, LD, MD, SG, K-B, K-R, HH). In addition, two different groups of children were tested in a preschool in England (HS); children with a monolingual and children with a bilingual German-English background. The monolingual English children serve as a comparison group in order to establish norms for this grammar test, which is a non-standardised test (see below). The children's age range was between 3 and 7 years, and the children had been exposed to English between 7-43 months at the time of testing.

The children in eleven preschools were tested individually in a quiet, familiar room. First, the child looked at three pictures which were presented to them. The child then listened to a sentence that corresponded to one of the pictures. Responses were made by touching the picture which the child thought to be appropriate to the sentence. Before testing, the children were given four training items consisting of three pictures of different objects and an appropriate single word utterance to ensure they knew how to make the responses. The three pictures in each set differed in the following way: Two of these pictures contrasted only in the target grammatical dimen-

⁵ The term "grammatical phenomenon" is taken from Pienemann (1998: 18).

sion (e.g. absence / presence of the plural inflectional marker -s: cat-cats). The third picture was a distractor (see Rohde 2005). The children were tested on nine grammatical phenomena (see Table 3.4.1 below). In total, there were 54 test items (9 grammatical phenomena x 3 picture pairs x 2 test presentations per picture set). The session did not take longer than ten minutes.

Abbreviation	Phenomenon	Example sentence
AGRc	Subject-verb agreement: Copula verbs; Singular / plural	<i>the deer is white</i> <i>the deer are white</i>
AGRv	Subject-verb agreement: Full verbs; Singular / plural	<i>the sheep eats</i> <i>the sheep eat</i>
GEN	Possessive case: Absent / present	<i>the girl is kissing the boy</i> <i>the girl is kissing the boy's dog</i>
NEG	Sentences: Affirmative / negative	<i>the boy is running</i> <i>the boy is not running</i>
PLU	Inflectional morpheme: +/- plural -s	<i>cat</i> <i>cats</i>
POSS	Possessive pronoun singular: Masculine / feminine	<i>his cat</i> <i>her cat</i>
PROog	Personal pronoun singular (object): Masculine / feminine	<i>the girl is kissing him</i> <i>the girl is kissing her</i>
PROsg	Personal pronoun singular (subject): Masculine / feminine	<i>he is singing</i> <i>she is singing</i>
SVO	Word order	<i>the boy is touching the girl</i> <i>the girl is touching the boy</i>

Table 3.4.1: Nine grammatical phenomena were tested in the grammar comprehension task. The phenomena are listed alphabetically. Column 1 shows the abbreviations; column 2 explains each phenomenon and column 3 provides example sentences ("prompts").

3.4.3 Results and Discussion

Different results for the grammar test were obtained for the different preschools. These differences may be attributed to a varying degree of L2 contact to the L2 English in these preschools. In general, the more the children were exposed to English, the better their scores were.

The results of this study also showed that the children's sex did not influence the results because boys and girls performed equally well in the grammar test. This result confirms findings from other studies, which also did not find evidence for sex-related effects in L2 comprehension in a preschool context (e.g. Burmeister & Steinlen 2008, Steinlen & Rogotzki 2009).

No differences were found for children with a monolingual and children with a bilingual (i.e. migration) background. Their scores did not differ. However, the number of children with a migration background was rather small and it was not possible to determine the results with respect to different language families (i.e. Indo-European vs.

Altaic) or to carry out a matched subgroup analysis (e.g. Flege et al. 1999) where the results of two groups of children, who were matched for their L1 background, age and L2 exposure, could be compared.

The children did not identify the grammatical phenomena equally well: the best scores across all preschools were obtained for NEG and PLU, and the lowest scores were for subject-verb agreement. These results may be due to the frequency in the input or to similarities/differences to structures in the children's L1. Similar results were obtained in a study with EAL children in London (Howell et al. 2003) and in parallel tests administered to monolingual English children (Au-Yeung et al. 2000, Howell et al. 2003). Apparently, some grammatical phenomena are more difficult to master in comprehension than others, independent of the language acquisition setting, i.e. L1 acquisition or the acquisition of a foreign language which may or may not be the children's ambient language outside the preschool context (see also Steinlen 2008).

The present study also demonstrated a close interaction between lexical and grammatical development in L2 acquisition in a preschool context: there was a positive correlation between the scores of the BPVS (the lexicon test used in the ELIAS study, see below) and the grammar test for the majority of the preschools. That is, the more words the children know, the easier it is for them to correctly identify grammatical phenomena. Lexical and grammatical comprehension abilities are apparently related. Similar results were reported in L2-studies examining the relationship between lexical and grammatical abilities, although these studies rather focussed on production than on comprehension (e.g. Burns 1957, Marchman et al. 2004, Simon-Cereijido & Gutiérrez-Clellen 2009). Because no correlation between the scores of the grammar and lexical test was found for the monolingual and bilingual groups in England, we speculate that lexical and grammatical learning may develop independently after a certain level of knowledge is reached.

This study found a large individual variation regarding the way children learn to comprehend grammatical phenomena. This result has been reported in many studies (e.g. Paradis 2005, Tabors & Snow 1994; Wong Fillmore 1979). Among the many factors to be considered, personality traits may serve as one explanation, e.g. whether a child is shy or more extroverted, or whether a child seeks out the company of the English preschool teacher or not (e.g. Burmeister & Steinlen 2008, Wong Fillmore 1979).

In conclusion, the purpose of this study was to examine the development of grammatical comprehension abilities in children with different L1s who were exposed to the L2 English in a preschool context. The results clearly demonstrate that it is feasible to learn a second language as early as preschool, using immersion methods: the children who had longer contact to English performed significantly better than children who were less exposed to English. Thus, the children's ability to identify grammatical phenomena in a picture pointing task improved as a function of L2 contact duration. Although similar findings have been reported for the comprehension of grammatical phenomena by monolingual L1 English and EAL children (e.g. Au-Yeung et al. 2000, Howell et al. 2003) as well as for the production abilities in L2 tutored and non-tutored acquisition (see Wode 1993 for an overview), this study for the first time showed such a development for monolingual German, French and Swedish children in bilingual preschools which offer English as an L2.

3.5 L2 – Lexicon Test (BPVS)

Martina Weitz, Svenja Grzyb, Andreas Rohde, Kristin Kersten

3.5.1 Introduction

Preliminary studies in bilingual preschools (e.g. Rohde & Tiefenthal 2000; Tiefenthal 1999; Westphal 1998) suggest that children first develop receptive skills in the L2 while L2 production lags behind. Testing L2 production can be difficult, because many children are unwilling to produce L2 utterances in an experimental situation. This minimal amount of L2 production is not surprising, considering that children do not, necessarily, need to use the L2. Wode (2001: 429) states that "children [in such immersion settings] all share the same first language so that from their point of view, there is no vital reason at all to take the trouble of resorting to an unknown language." As a result, we decided to use a test instrument for which no L2 production on the children's side was necessary.

Although studies in this field are rare and research on L2 acquisition in immersion preschools needs to be expanded and further developed, there have been some studies on vocabulary acquisition that help to understand the high effectiveness of immersion programmes. For example, the Formula Test designed by Weber & Tardif (1991), which has been modified and carried out in various bilingual preschools in Germany, exemplified to what extent the children were able to understand and appropriately react to typical formulas used in their preschool (Tiefenthal 1999, Mairbaum 1999). Various studies suggest that using an immersion method as early as preschool helps children to achieve impressively high levels of L2 proficiency after primary school (Wode 2005: 2).

With the current supporting evidence of effective bilingual programmes in Germany, ELIAS has taken one more step forward regarding research in early language acquisition; i.e. to document and examine in detail which level of L2 English proficiency can be expected from children with differing L1 backgrounds in various bilingual preschool programmes. This section focuses on the level of receptive lexical competence that can be reached in immersive preschool settings, and on the extent to which these abilities can be compared to those of L1 speakers of English or to children learning English as an additional language (EAL, English is the ambient language). Further issues tackled within this study are the possible reasons for different L2 outcomes in diverse preschool settings (see also section 3.1 on participant observation).

The test instrument used for L2 lexical learning has a crucial advantage; its results can be transferred to various preschool settings (unlike a formula test, which needs to be adapted to different contexts and language uses), and that it is possible to compare the data to several standardised comparative values (see below).

3.5.2 Method

A Background Information

The *British Picture Vocabulary Scale* (BPVS II, Dunn, Dunn, Whetton & Burley 1997) is used to measure the receptive vocabulary acquisition of children in 11 different ELIAS preschools. It is a standardised vocabulary picture-pointing test which determines the receptive vocabulary of 3 to 15-year old L1-speakers of English as well as 3 to 8-year old children learning English as an additional language (EAL); thus, testing is conducted in countries where English is the ambient language.

The BPVS is based on the US-American Peabody Picture Vocabulary Test (PPVT, Dunn, Dunn & Williams 1997) and its modifications try to account for both linguistic and cultural differences between American and British contexts.⁶ The BPVS has been standardised with 2571 L1- and 410 EAL subjects. A second version of the BPVS used in ELIAS was developed from a combination of new and old materials from the existing BPVS and the PPVT III. The testing items were checked in order to cover a wide range of language levels as well as word classes and are allocated to different semantic and/or grammatical groupings: actions, adjectives, animals and parts, books, body parts of humans, buildings and all other structures, emotions and social expression, food, geographic scenery including space, household items etc. (cf. Dunn, Dunn, Whetton & Burley 1997: 25) In total, there are 168 test items, distributed evenly over 14 test sets with each set containing 12 vocabulary items (12 setcards).

Each setcard displays four pictures that show various situations or objects; the higher the sets, the more complex the pictures. While more difficult words, normally not used in everyday speech, can be found in the higher sets (i.e. sets for higher age levels), in the lower levels (i.e. for young children), depict 'operational' or high frequency words; "that is, functional in the context of everyday life" (Dunn et al. 1997: 25). Consequently, the level of difficulty increases with each test set. As mentioned above, this test, therefore, has not been designed to test children's knowledge in a specific preschool scenario, but to assess a representative vocabulary that is typical of a child's environment and his/her needs at a particular age and stage of development.

B Procedure

Each child is tested individually by two experimenters in a quiet, familiar preschool room. Testing does not take longer than 5-10 minutes. One examiner asks the child to point to the appropriate picture when giving the respective prompt (e.g. "Show me *baby*"). In this prompt, it is important to not change any word endings or embed the items of a sentence, since this may provide extra information that the child is not supposed to obtain. To ensure the child understands the task, two training sets are shown to the child before starting with the first test item. While the first experimenter

⁶ As ELIAS is set in a European context, the BPVS was preferred over its US-American counterpart, the PPVT.

interacts with the child, the second observes the situation from a distance and notes the child's answer on the performance record sheet. The withdrawal of the second observer ensures the child neither sees the stimulus words nor the scoring of the test. If a child is either unwilling to answer a question or does not know the answer (although guessing is explicitly allowed), the item is counted as wrong and testing is continued with the next setcard. Testing starts with the initial set, the *basal set*,⁷ for every child, and is discontinued after the set in which 8 or more incorrect answers have been given, the *ceiling set*.

The BPVS offers comparative values that allow for a comparison to L1 speakers and EAL speakers. The following data explains how the scores were obtained. Succeeding these explanations, the results of the different preschools are presented and compared.

C Subjects

Between February and April 2009, 282 children (132 girls, 150 boys) from eleven different preschools were tested with the BPVS.

Preschool	N° of children (girls / boys)	Age in months	L2 contact in months	L2 exposure per day in hours	N° of bilingual English children (girls/boys)	Age in months (bilingual English)
HSbili09	15 (7 / 8)	57	-	-	-	-
HSmono09	14 (10 / 4)	60	-	-	-	-
B09	38 (13 / 25)	68	6	2,5	0	0
KI-F09	57 (22 / 35)	49	9	6	0	0
KI-M09	42 (18/24)	54	16	7	1 (1/0)	52
LD09	25 (14/11)	55	35	9	8 (3/5)	55
MD09	13 (9/ 4)	49	6	6,5	2 (2/0)	58
SG09	29 (18 / 11)	59	21	4	0	0
K-B09	15 (9 / 6)	51	21	9	4(1/3)	45
K-R09	10 (4 / 6)	50	19	5	0	0
HH09	12 (3 / 9)	46	15	6	0	0

Table 3.5.1: Information on the number of children within the eleven preschools participating in the ELIAS project, their average age, the time of L2 contact and their average L2 exposure per day. The sixth column shows the number of children who were exposed to English in their homes and thus raised either bilingually or monolingually English, and their average age.

⁷ For more proficient learners, the basal set may not coincide with the initial set.

Nine of these preschools adhere to the immersion principles, with one (or more) of the teachers speaking the children's L2 English. The L1s in the preschools are German (7 preschools: KI-F, KI-M, MD, SG, K-R, K-B, HH), Swedish (LD) and French (B). The remaining two (HS bili and HS mono) are preschools in England which were used as comparison groups. One comparison group includes children whose L1 is German and who learn English as an additional language (HS bili), the other comparison group comprises L1 English children (HS mono). Table 3.5.1 shows the number of children in each preschool, their average age and average duration of L2 contact, as well as the average age of L1 English children visiting a bilingual preschool.

The children's average age ranges from 46 to 68 months, with HH having the youngest children and B the oldest children. When comparing the participating preschools, the mean exposure to English is even more heterogeneous, ranging from an average of 6 to 35 months. LD exceeds all the other preschools in English exposure, with 35 months. LD also displays an average L2 exposure which is more than 1/3 higher than the highest average L2 contact in the other preschools (e.g. K-B and SG with 21 months of L2 exposure).

Four of the preschools include children with an L1 English background (LD, MD, KI-M and K-B). This can, of course, result in more L2 input for the other children and also peer interactions in English, which is regarded as very positive in the SLA literature (e.g. Snow & Ferguson 1977, Wode 2001). This factor needs to be taken into consideration when interpreting the results.

3.5.3 Results and Discussion

As was expected, the preschool children in England scored the highest results. Surprisingly, however, the bilingual children (HS bili, L1 German), who naturally had a shorter period of L2 exposure, show a higher score than the monolinguals' score. This result could be explained as the children's cognitive advantages when being raised bilingually (Baker & Jones 1998: 63ff) however, this is only speculation at this point, as the data corpus is much too small for representative claims.

The results of the preschools in Germany, Belgium and Sweden displayed a wide range of results. Two factors that may account for these differences have been investigated i.e. the factors of age and L2 contact. Studies suggest that the rate of language learning is slower for younger children due to the lack of word learning strategies and a lesser ability to concentrate, although young children have been found to catch up with older learners after a longer time of L2 exposure (Ellis 1994: 491). This trend may lead to the assumption that older children might score higher in initial tests. As for our data, no tendency could be found for higher scores as a function of increasing age.

The factor of L2 contact, however, revealed a clear tendency of increasing lexical knowledge as a function of L2 exposure. Figure 3.5.1 shows the raw scores obtained by each child in reference to the total L2 exposure in hours.

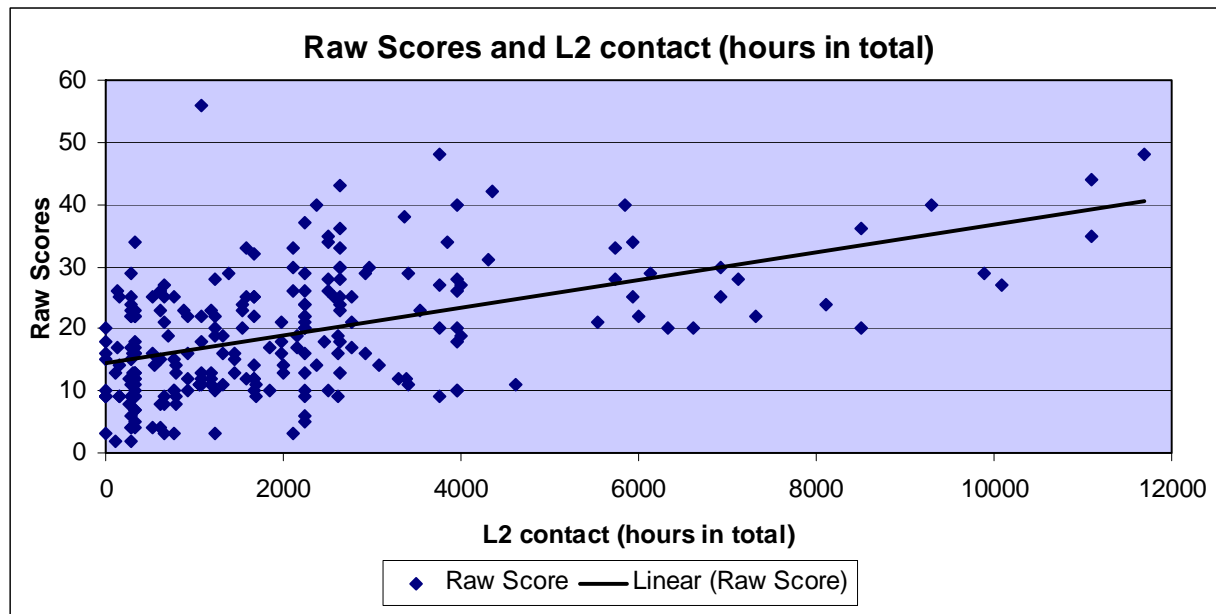


Figure 3.5.1: All raw scores obtained by the bilingual preschoolers, arranged according to their time of L2 exposure.

In order to interpret the scores on a broader level, they were also compared to the average results obtained by L1 speakers and EAL speakers, for whom the test was standardised. The language development of each child can be compared to the L1 speaker of English who is at a similar stage and to that of an L2 speaker of English who learns the language in an English-speaking country (EAL), who has a much higher exposure time to the L2 than bilingual preschoolers in non-English-speaking countries.

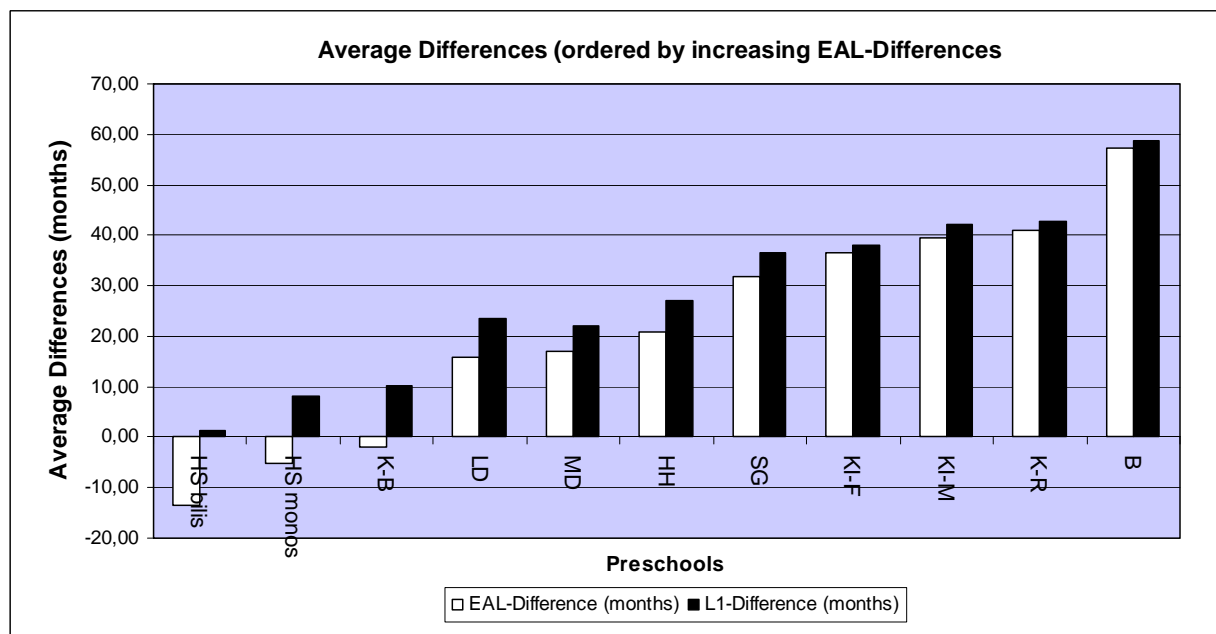


Figure 3.5.2: Average differences to EAL and L1 speakers for whom the test was standardised. Preschools are arranged by increasing differences to EAL speakers.

The results show that the HS bilingual children, i.e. the EAL children in our own study, are 13 months "ahead" of an average EAL child in their L2 receptive skills (HS bili, white column). A comparison with average L1 speakers (black column) shows a difference of one month; hence the average L1 learner displays the same receptive lexicon one month earlier than the EAL children tested here.

As the lower raw scores for the HS monolingual group (our own L1 comparison group) suggested, their differences to both EAL and L1 speakers are even higher than those of the bilingual group. This shows that even preschoolers from England may deviate from the normative scores offered by the BPVS. Preliminary conclusions drawn from a preschool questionnaire ascribe the monolinguals' results to their lower socio-economic background. Further analyses, however, are needed in order to support this assumption.

The example of preschool K-B shows that EAL equivalents of the same age group can indeed be reached in bilingual preschools of other countries. Again, the results of the other preschools present a very diverse picture.

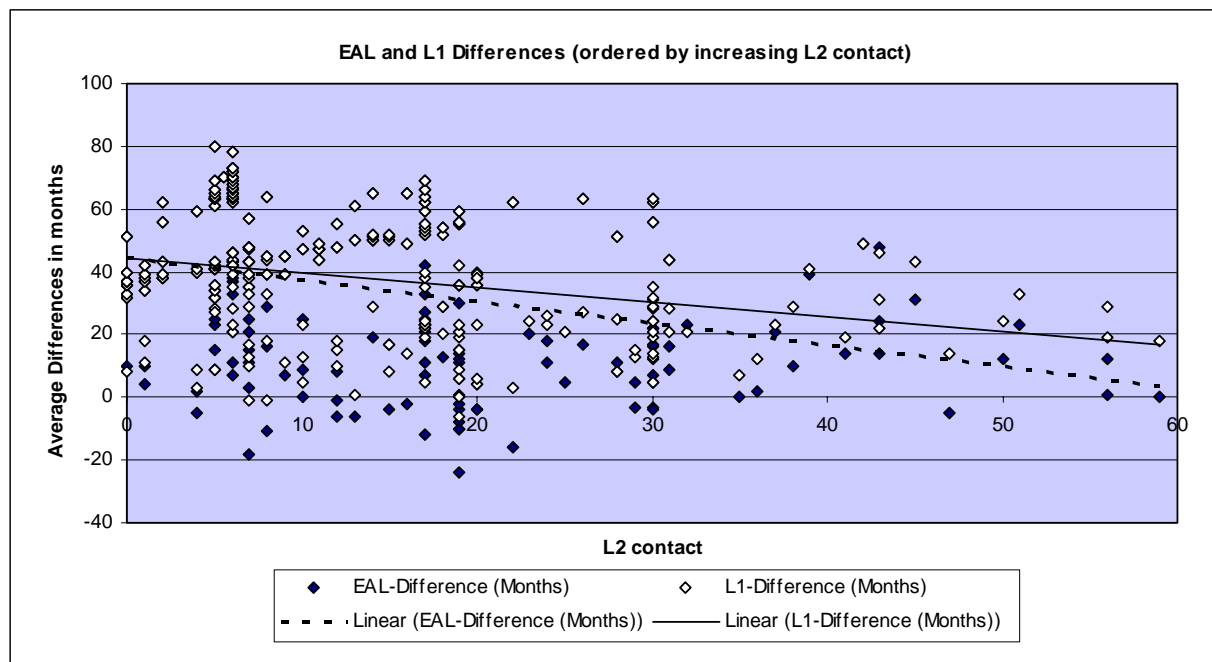


Figure 3.5.3: EAL and L1 differences for all children tested, arranged by increasing L2 contact.

While different factors, which can account for this phenomenon, will be analysed in more detail in the following research period, the factor of L2 contact reveals, again, an interesting tendency (Figure 3.5.3). The scores show that the longer the children are exposed to the L2, the closer their L2 receptive skills become to EAL and L1 speakers (i.e. the difference between them decreases, as shown in the falling graphs). In a next step, these scores will be analysed statistically and related to the results yielded by the observation checklist on teaching principles in each preschool. That way, factors for effective language learning can be identified. But even after the first period of language assessment, these results vividly exemplify how successful a second language can be learned in a bilingual preschool.

3.6 L1 – Language Test (SETK)

Katharina Neils, Anja Steinlen

3.6.1 Introduction

In Canada, immersion programmes started in the 1960s, i.e. English children are sent to schools where all or a majority of lessons are taught in French (e.g. Lambert & Tucker 1972). Although these programmes have proven to be very successful (see e.g. Wesche 2002 for an overview), parents frequently asked the question: "What about English language skills? Will they suffer if my child is in French immersion?"⁸ A similar question is often asked by German parents of those children who attend a bilingual preschool: "Will the German language skills of my child suffer because the native English speakers in our preschool exclusively use English?"

For an immersion school setting, this question can already be answered: many studies showed that the children's L1 did not suffer (see e.g. Genesee 1987; Turnbull et al. 2001, Zaunbauer et al. 2005, Zaunbauer & Möller 2006, 2007). However, such an assessment has not yet been conducted in bilingual preschools. One aim of the ELIAS Project is, therefore, to examine whether the children's L1 German is affected by the use of English in bilingual preschools.

In Germany, there are different language tests at our disposal, but only a few of them are standardised. These tests are listed in Table 3.6.1 below.

Name of the test	Age (Months)	Features
Kindersprachtest für das Vorschulalter (KISTE): <i>Language Test for Preschoolers</i>	3.3 to 6.11	Development of grammar/lexicon, syntax/morphology, semantics/communication
Heidelberger Sprachentwicklungstest (HSET): <i>The Heidelberg Language Development Test</i>	4.0 to 9.11	Developmental stage of language comprehension, production, syntax, morphology, lexicon
Sprachentwicklungstest für dreibis fünfjährige Kinder (SETK 3-5): <i>Language Development Test for Children between 3-5 Years</i>	3.0 to 5.11	Receptive/expressive language development of morphology/syntax, semantics/lexicon, phonological working memory / memory span

Table 3.6.1: Examples for standardised language development tests for German

The SETK 3-5 (Grimm, 2001), which is used in the ELIAS Project, is one of them: it has a standardised measure of language abilities that is appropriate for German children from 3 to 5 years of age.

⁸ www.cpf.nfld.net/FAQs.html#faq8

The SETK has already been used in many studies. The Federal State of Baden-Württemberg, for example, is currently using the SETK 3-5 for children age 4.5 whose German language abilities seem to be delayed (Jacobs 2009). Moreover, the SETK 3-5 has been used to explore the relationship between music and language (Sallat 2009, Jentschke et al. 2008), to compare sensory motor inhibition in clinical and normal preschoolers (Chasiotis et al. 2006), in comparisons with other language tests which also assess the development of German (e.g. Vogt 2003, Fried 2006) and, of course, in speech and language therapy (e.g. Möller et al. 2008, Rosenfeld et al. 2008).

Because the goal of the current study is to determine whether the use of the L2 English in preschool is detrimental for the children's L1 German, the following questions will be addressed in this study:

- What is the children's level of German in a bilingual preschool? Does their German suffer because English is used so frequently? Will the scores of the SETK 3-5 reveal a difference to German children in a German monolingual preschool?
- Will the results show specific effects due to the children's L1 (in case their L1 is not German), their sex or their age?
- Will there be a difference between the preschools and if so, what are the reasons?

3.6.2 Method

A Procedure

The SETK 3-5 (Grimm 2001) is a standardised and norm-referenced instrument to examine the language status of German-speaking preschool children. This battery has been standardised by testing a group of 495 German-speaking children between 3;0 and 5;11 years of age and has good validity and reliability, with internal consistency of the subtests ranging between .62 and .89. It contains two different test versions depending on the age of the children (a version for 3-year-olds and a version for 4- and 5-year-olds). In particular, it assesses the domains of linguistic understanding, production, and memory. In the domain of linguistic understanding, this is the scale *understanding of sentences*, in the domain of linguistic production, it is the scale *formation of morphological rules*, and in the domain of linguistic memory, it is the scale *phonological working memory for non-words*.

The subtest *Understanding of sentences scale* measures the ability to comprehend sentences of varying complexity.

Instruction (exemplary item 1): "Here, I have brought some things for you." (Experimenter arranges a teddy bear, a smaller and a bigger pencil, a white ball and a smaller yellow ball in a fixed order). "Can you tell me what this is?" After the child has named the objects correctly, the experimenter says: "Show me. The yellow ball rolls away because you have hit it with the white ball."

The subtest *Formation of morphological rules scale* measures the ability to build the plural form.

Instruction: "I have some pictures here. I would like to show them to you. They are pictures of animals and of other things. I will always tell you what *one* of these things is called and you tell me what *several* of these things are called, that is, what *more than one* of them is called. Look, here is *one* car. . . . Here, there are even *more*. So, here are three . . . [cars]."

The subtest *Phonological working memory for non-words scale* measures the ability to pronounce non-words.

Sample instruction: "Now I would like to play a game of words with you. I will tell you some funny words you have never heard before. Listen closely to me and then repeat these words. Let's try this first. Listen, I will say the first word now: "Maluk" . . . Now it's your turn!"

Testing took place in a quiet room at the child's preschool and lasted between 15 and 30 minutes per session.

B Subjects

For this intermediate report, we are presenting the data of two German preschools (n= 41), MD (n = 13) and SG (n= 28). The subjects were tested in May 2009. In the preschool MD, there were 7 girls and 6 boys. The MD children were 48 months at the time of the test (SD = 9.3 months). There were 17 girls and 11 boys tested in the preschool SG. At the time of the test, the SG children were 56 months (SD = 6.0 months).

3.6.3 Results and Discussion

The results showed that the children's scores in both preschools are above average in all subtests. As Figures 3.6.1 and 3.6.2 below show: 73% and 65% of the monolingual children (i.e. the average group who provided the norms for the SETK 3-5) received lower scores than the bilingual children from the preschools in MD and SG. This finding, therefore, strongly indicates that the L1 of children who attend a bilingual preschool does not suffer while they are exposed to the L2 English. So far, L1 competencies in an immersion setting have only been assessed in a school context (see e.g. Genesee 1987; Turnbull et al. 2001, Zaunbauer et al. 2005, Zaunbauer & Möller 2006, 2007). This study for the first time shows that the children's L1 is not negatively affected by the introduction of the L2 English in the bilingual preschool. In fact, the results even excel the expectations because these children seem to fare better than their monolingual peers. Based on these data it seems safe to conclude that early L2 acquisition does not hinder, but that it may actually improve the acquisition of the native language.

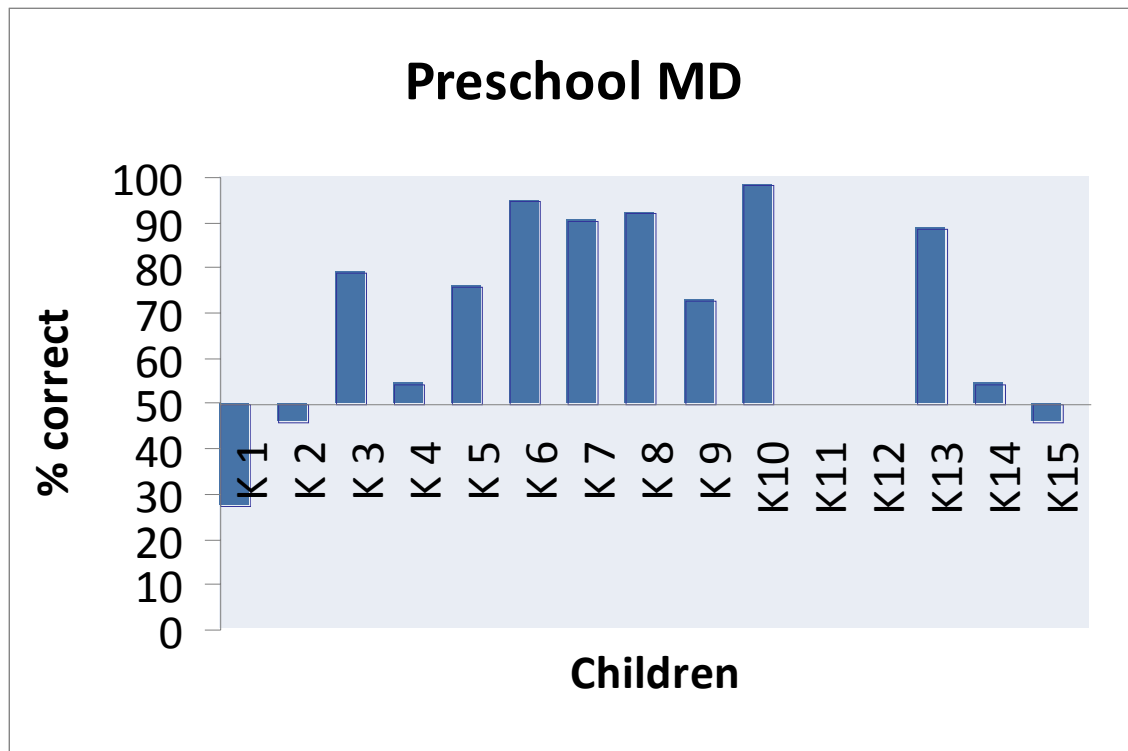


Figure 3.6.1: Percentage of correct identification for the SETK obtained in the preschool MD. The individual children (K) are listed separately. The 50% demarcation line means that 50% of the control group who provided the norms scored higher and 50% of the control group scored lower than the individual child (K) tested.

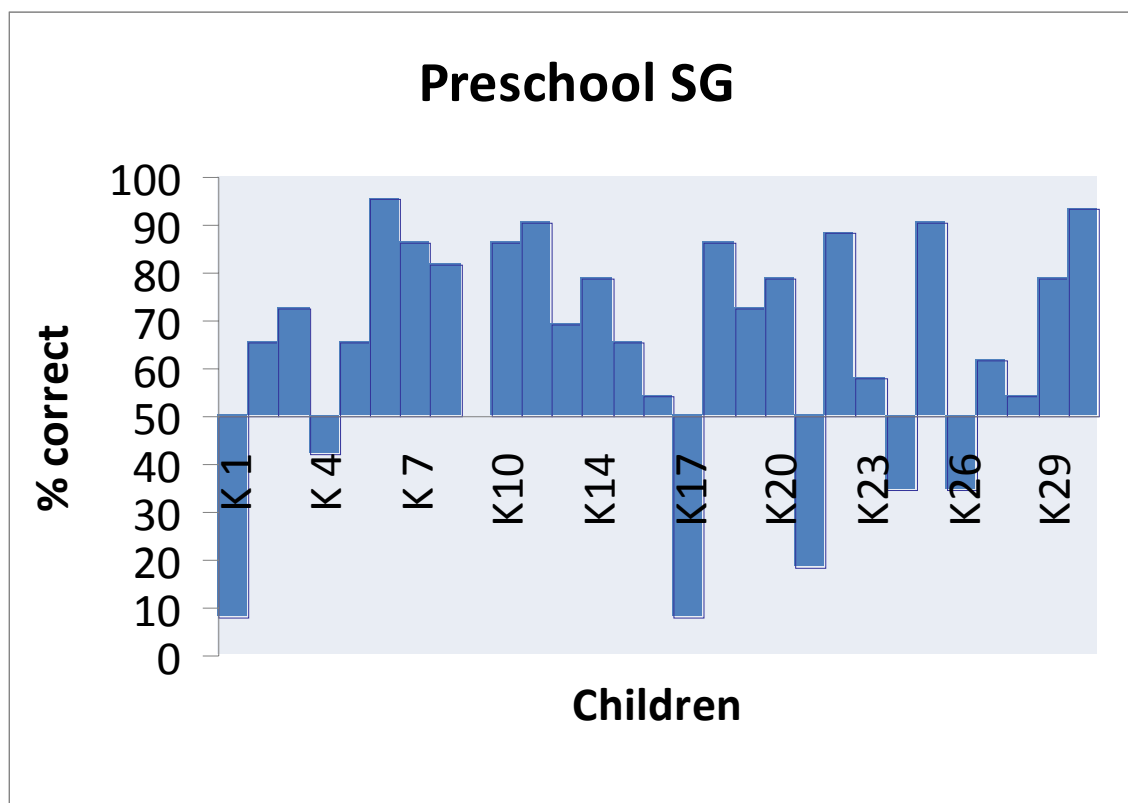


Figure 3.6.2: Percentage of correct identification for the SETK obtained in the preschool SG. The individual children (K) are listed separately.

The results of this study also showed that the children's sex did not influence the results, as boys and girls in both preschools performed equally well in the SETK 3-5. This result is interesting insofar as general consensus in the literature states that boys exhibit a delay in language acquisition more often than girls (see e.g. Bornstein et al. 2004). In the two preschools tested, such results were not observed, although the children who participated in the tests were not screened for language delays and therefore not excluded from the tests.

For both preschools, the analyses did not show a correlation between the scores of the BPVS and the scores of the SETK. Our hypothesis that a better command of German would yield better results in foreign language lexical comprehension could not be confirmed. L2 vocabulary learning and L1 German language abilities seem apparently not to be related, at least not in the initial stages of foreign language learning. More data, however, is necessary to corroborate these findings.

The results are more diverse with respect to the question of whether better L1 German language abilities are reflected in better scores on the English ELIAS grammar comprehension task. This was indeed the case for the preschool MD, but not for the preschool SG. More data is therefore needed to determine whether L1 abilities influence L2 grammar comprehension abilities.

In conclusion, the purpose of this study was to assess the children's knowledge of German, using a standardised and normalised test battery, i.e. the SETK 3-5 (Grimm 2001). This language test was administered to 43 children in two German preschools, which both offer a foreign language, i.e. English, which is used according to immersion principles. As parents of children in such bilingual preschools often worry about the development of their children's L1, the results of the SETK in both preschools clearly show that the children's L1 German is not negatively affected by the use of English. On the contrary, these children fare even better than their peers in a monolingual German preschool. Thus, foreign language acquisition in a preschool context seems to be an asset with respect to the development of the preschoolers' L1 German. It is, therefore, feasible to introduce an L2 in a preschool context. We expect that the following SETK assessments in the second period of the project will further support these findings.

4. Partnerships

Kristin Kersten

4.1 European Added Value and Geographical Coverage

The European added value is an important aspect of the project's setup. ELIAS contributes to European debates and actions in three major project areas, 1. the evaluation of the success of the programmes investigated, 2. the establishment of *best practices* in bilingual preschools independent of regional or national confinements, and 3. the recommendations derived from the evaluation and *best practices* for bilingual preschools in Europe.

Bilingual preschool programmes have received a considerable increase in popularity in European Countries over the past decade. We have, however, experienced that many newly established institutions face the same problems over again. These problems begin with the question of what is considered to be "bilingual" or "immersion", what kind of staff to use, where to find suitable staff, and how to put the idea into practice. It is our distinct impression that many new programmes try to "reinvent the wheel" without recurring to *best practices* from already well-established institutions. ELIAS seeks to provide improvement of this situation. The following sections summarise these steps with regard to the European added value.

4.1.1 Multinational Evaluation of Preschool Programmes

It is the aim of ELIAS to evaluate the success of different programmes on a scientific basis. Programmes all over Europe differ in various aspects, such as:

- the institutional framework set up in national education legislation
- the amount of L2 input (daily or weekly)
- the intensity of L2 input
- the combination of the L1 and the L2
- the language backgrounds of the staff
- the teaching principles used to convey the L2
- the group structure
- the age of the children
- the language background of the children
- the attitudes towards the programme, etc.

All of these aspects have an impact on the children's development in such crucial areas as language learning (both L1, L2 and others), intercultural learning and content learning. The ELIAS project evaluates intercultural competence and the level of language learning in each project preschool, as well as environmental learning in the

Zoo-Preschool. These results are crucial to filter out *best practices* in bilingual preschools with regard to the different aspects that have to be considered in a bilingual preschool setup.

4.1.2 Best Practice

ELIAS describes *best practices* in the partner preschools as highly impacting the children's progress, with regard to the above aspects. These practices are identified through the results of the evaluation and the analysis of the preschools' organisational structure. First results show that

- the amount of L2 contact
- the teaching approach and
- the group and staff structure

seem to be crucial factors while considering in the setup of a programme.

To give a few practical examples, *best practices* with regard to these factors include a high amount of L2 contact with at least a few hours of daily contact to the L2, a so-called One-Person-One-Language approach (Döpke 1992) which avoids the translation of languages, a group structure in which the L2 teacher has the same responsibilities as the L1 teacher and, in shared groups, provides at least 50% of the linguistic input. *Best practices* inferred from all project preschools as well as additional experiences and the literature will be described in detail in the guidelines that are being developed as an end result of the project.

4.1.3 Recommendations

In the project's guidelines on bilingual preschools, we will give recommendations for the wide-spread successful implementation of such programmes at a European level. They will be beneficial for all institutions interested in the topic. As another goal, the recommendations will have an impact on EU political debates and actions in the area of multilingualism and multiculturalism, as well as bilingual education for sustainable development, a new and auspicious concept which we termed *Green Immersion*.

In addition to the implementation guidelines based on *best practices*, such recommendations to the EU will address, among others, questions of:

- the permeability in the job market for teachers from different countries
- the centralisation of job offers and their dissemination
- the recognition of foreign job certificates within the EU for immersion educational staff
- the number and setup of administrative institutions involved in the implementation of such programmes
- the multi-language capacities of the above institutions (or the lack thereof)

All of those issues have been experienced as rather great obstacles for new institutions, leading to delays in the schedule and to subsequent financial problems, which might be avoided in the future through the help of more centralised administrative officers.

4.2 Experiences and Benefits

The experiences from the first year of the project have been beneficial in various ways. There are direct benefits for all team members resulting from the collaboration within the network, as well as many exchanges with additional groups and institutions.

4.2.1 Internal Benefits

First of all, it is of great interest to all project members to learn about different systems for early childhood education, which result in different preschool setups. Not only are the differences interesting, it is also enlightening and reassuring to see that many approaches, philosophies and practical problems are actually experienced across national borders.

In several cases, the partners could provide help with such practical problems. As an example, university members were able to help with the search for L2 native speaking staff, with the translation of legal information, and with administrative processes such as those mentioned above. We have experienced that university titles help open doors for preschool requests in administrative institutions, when preschool initiatives on their own would not be heard. While this situation is deplorable on a large scale, the final success was naturally very beneficial to the project.

An immediate result for team members especially in the preschools is the increase in their own language skills through the continual input of their colleagues – and this works in both ways. This way, not only the children profit from the immersion setup, both L1 and L2 teachers are immersed in the other language/s as well and, as in a naturalistic setup, will simply acquire the languages together with the children. This is especially true for newly implemented preschools with new staff, such as the Zoo-Preschool in Magdeburg, where second language skills of the whole staff were limited in the beginning, and have greatly increased during the last year. Most members of the research team are fluent in their L2 English; nevertheless, the regular exchange with native speakers is beneficial for them as well. In some cases, such as in Belgium or Sweden, the team is even exposed to a third language due to the multilingual situation of the country and/or their preschool.

The multilingual background of the partners also adds an interesting variable to the research setup, in that language acquisition across different L1s but with the same L2, can be compared. This includes actual English L1 data from the preschool in Hatfield, which establishes the baseline for comparison.

Another very important field of experience resulting from the multinational setup, not only for the children but notably for all adults as well, are intercultural contacts between all team members. While one might argue the cultural differences within the

research team, i.e. between European academics, are not vast, the preschool staffs include teachers from five different continents, providing not only very different varieties of English and their L1s, but also of cultural backgrounds. These backgrounds affect communication patterns within the teams, such as questions of politeness, of personal distance, role behaviour, teaching approaches, body contact with the children and among adults, to name but a few. For newly formed teams, such issues may present a challenge and a learning field for intercultural awareness. We experienced throughout the first year how differences were first identified, then addressed, and finally resolved by discussion and compromises. Some team members feel that this is an ongoing process. The important experience for all of us is to remain open, alert, interested in the other persons' point of view and willing to take their perspective. Through the close contact, the university teams were often involved in those processes as well, either as external advisors, or as part of the communication process themselves. In that way, the whole ELIAS teams profits from a heightened sensitivity for intercultural communication.

Another important aspect of exchange lies in the different fields of expertise that our international team contribute to the project. International aspects are tied with the interdisciplinary project approach. Every team member makes a unique contribution to the success of the whole endeavour. Expertise covers practical experience, teacher training, different methodological foci in qualitative and quantitative research and the different thematic strands, language learning, intercultural competence, and ESD. We were able to develop our new and unique expertise in the interdisciplinary field of bilingual ESD, or as we coined it, Green Immersion, from these starting points. The exchange over these fields was such that whenever a question arises in one of the work groups, we are able to recur to a member of another one to discuss the question, or to launch a discussion forum, to resolve the problem.

4.2.2 External Benefits

From the very beginning of the project, we experienced a great need for experiences and *best practices* for immersion preschools from different target groups. Partners were repeatedly approached by practitioners, associations, researchers and city administrations alike, and, from our part, we searched and reinforced those contacts intensively. Even laymen who found the project on the internet contacted us to ask about advice concerning their own children. Team members were asked to give comments or advice on bilingual education, were invited to contribute to guidelines and curriculum developments, and gave presentations and training events. We were very happy to oblige as it is our conviction that every institution can learn from already established experiences in the field, and that we will gain, ourselves, inestimable new experiences with every new contact we establish, or project we advise.

To make ELIAS goals and outcomes, as well as the new environmental concept of Green Immersion, known to a wide variety of target groups, we have presented the project at national and international conferences, notably including two European conferences on zoo-associations (EAZA 2008) and zoo education (EZE 2009).

As an official EU-project, ELIAS team members also came to the attention of the respective political bodies in their regions. As a result, not only did we receive help, encouragement and further dissemination opportunities, but team members were also

recommended as experts on issues of early education to other political boards. That way, the network of contacts and the impact of the project could be considerably enlarged.

Through the project's dissemination activities, other universities and preschools adopted our project setup, so that we were able to enlarge the data pool beyond the original seven project preschools. We collaborated more and more closely with several other preschools and universities. Three of these institutions have now filed the request to become official project partners in the second period of the project, thus increasing the project's impact considerably and adding invaluable data and information to the project's framework. In addition, contacts were established with a renowned university in the Netherlands, with whom we exchanged ideas for collaboration. A result of this cooperation two of our project partners will write a handbook article on the teaching of English to young children.

Another important issue in the preschools is the continuation of the bilingual programme into elementary education. Together with parent associations and the respective administrations, several partners launched initiatives for their respective regions and will continue to supervise this process during the following year. The continuation of successful educational programmes is indispensable if we wish to meet the long-term educational goals. Multilateral projects such as ELIAS can only function as a starting point and an incentive for broader application, if widespread effects are wanted. Only the continuous access to good educational programmes over the years of schooling can warrant their success. If ended after three or so years of preschool education, bilingual programmes cannot yield the multilingual and intercultural competences the EU requires of their citizens. They can lay a sound foundation and enhance cognitive competences in general, but if not taken up in elementary school, much of the children's immediate active knowledge gained during preschool education is in danger to simply blow out. To advance this situation, several project partners took part in the composition of guidelines for immersion elementary schooling in the most well-established immersion association in Germany, the FMKS (www.fmks.eu). These guidelines will be provided in English by ELIAS in the second half of the project.

On the same note, the collaboration of Magdeburg University, the Zoo and the Zoo-Preschool in the field of Green Immersion has received so much recognition, regional and international, that this collaboration will be intensified over the years to come. We intend to create a competence centre for Green Immersion to enlarge the cooperation between curricular and extra-curricular educational institutions.

Last but not least, thanks to the initiative of the Magdeburg ELIAS team and a bilingual high school, we were able to found a new association of all bilingual institutions in the region. The goals of this association comprise joint efforts to work for easier administrative processes in the recognition of new institutions and of foreign teaching certificates as noted above, as well as the exchange of information and *best practices* in immersion teaching.

5. Plans for the Future

Eva Frey, Kristin Kersten, Holger Kersten, Ute Massler, Katharina Neils, Marion Salentin, Anja Steinlen, Shannon Thomas, Martina Weitz

ELIAS' main focus is on longitudinal research in bilingual preschools to describe the children's development in various areas of learning. Therefore, in the remaining project time, the observations and assessments carried out during the last year will be completed.

The observation checklist for participant observation will continuously be refined to characterise the teachers' input and the children's reactions in preschool interaction. Results of these observations will be related to the children's development and test results in the different preschools. To increase inter-rater reliability, video sequences will be used for comparative analyses among the observer team. In addition, a more detailed questionnaire on background information in preschools is currently being developed to reveal a more complete picture of the different factors that play a part in preschool education.

With the first sets of observations on interculturality in place, the subsequent research effort will concentrate on the various factors that are likely to have an important impact on the further development of the children's intercultural competence. In continuation of the research methods applied so far, attempts will be made to observe and record in greater detail the intensity and the types of intercultural contact occurring in the individual preschool settings. At this point it is not clear whether such data can be studied by using quantitative methods and whether there is any way in which intercultural competence can actually be measured. Since these issues are controversial in the relevant research literature, the consortium will continue to search for and, if need be, formulate their own methods and tools to further advance the discussion surrounding these problem areas. Such tools will include refined questionnaires and interviews with the preschool teachers.

Over the past year, the Green Immersion team has created eleven online lesson modules, and over the next year every newly created Green Immersion module will be converted into the same publishable state. All modules will eventually be published on the ELIAS website. They will be adapted so as to apply to a broader audience, including elementary schools and kindergartens without zoo facilities. All modules will be available on CD ROM at the end of the project. The team will continue to work with the stage model on bilingual education for sustainable development. Their observations on the children's progress through the developmental steps will be the focus of the final study on Green Immersion at the Zoo-Preschool.

All language assessments, the L2 lexicon and grammar test and the L1 SETK-test, will be repeated over the next year to complete the longitudinal study. A comparison with the first assessment phase will reveal the progress of the children in each preschool and respective field of competence. The longitudinal L1 SETK tests will be able to determine whether the L1 of the German children is affected by the progress that they will make in their L2 English. In addition, all results will be related to the parent questionnaire in order to show whether their socio-economic background,

their attitude to English and L1 background or other factors may affect their children's development.⁹ It is also imperative to relate a variable such as intensity of L2 contact to the results of the L2 tests because children in two different preschool groups may attain different results although they did not differ in terms of their L2 exposure, L1 background and age.

When all test results are available, the results of the different tests will be related to each other, analysed according to their statistical significance and, most importantly, correlated with the different preschool contexts.

The research team is currently working on drafted chapters for a final two-volume book publication, which will give a comprehensive overview of the ELIAS research results in all fields of study. These volumes will suit both practical and theoretical research purposes, thus enabling a wide range of different audiences to profit from the studies and from best practices identified in the ELIAS preschools and beyond.

Teacher Training Materials will be supplemented with modules on further topics relevant to bilingual preschools. Teacher trainings will be carried out in the ELIAS preschools by each responsible research team. The modules will be made available to the general public on the ELIAS homepage. In accordance, guidelines for the implementation of bilingual preschools and zoo-preschools will be completed and published on the website.

Finally, the ELIAS Final Symposium held in June 2010 will present all project outcomes and materials to the general public.

⁹ In the literature, the parents' background and their involvement in their children's education have proven to be an important variable in predicting their children's performance in a school context (e.g. Edelenbos et al. 2006, Lopez 2005, Mushi 2000, and (e.g. Keith & Keith 1993, Cotton & Wikelund 2000 for L1), although such effects were not studied yet for language acquisition in a preschool context.

6. Contribution to EU Policies

Eva Frey

As globalisation continues to confront the European Union with new challenges, each citizen will need a wide range of key competences to adapt flexibly to a rapidly changing and highly interconnected world (OJ L 394, 30.12.2006: 13). Through innovative education and teaching methods, children can develop these key competences, defined as a combination of knowledge, skills and attitudes.

The authors of the 'Joint Interim Report 2004 of the Council and the Commission on "Education and Training 2010"' have identified early on that so-called "human resources" are the European Union's main asset for the creation and transmission of knowledge. This knowledge is a determining factor in each society's potential for innovation. Investment in education and training is a key factor of the Union's competitiveness, sustainable growth and employment and therefore a prerequisite for achieving the economic, social and environmental goals set in Lisbon for the European Union (*Joint Interim Report 2004*: 4). All Member States of the EU must contribute to the development of the Community as an advanced knowledge-based society with greater social cohesion while ensuring good protection of the environment for future generations.

ELIAS enhances such educational goals for children from their very first entrance in the educational system. The project has its main focus on early intercultural and language learning using a Content and Language Integrated Learning (CLIL) approach, as emphasised in the objectives of the Comenius Programme (OJ L 327, 24.11.2006: 50). With this focus, the project contributes to Priority 4 of 'Language learning and linguistic diversity' (*General Call for Proposals 2008 - 2010* 2008: 9) of the Lifelong Learning Programme (OJ L 327 2006).

Following the recommendations of the *Common European Framework of Reference for Languages* (2001), ELIAS develops innovative education and training materials, which ultimately aim at fostering exchange and cooperation between education and training systems within the Community (OJ L 327 2006: 48). In addition, ELIAS provides tools and practices to advance a Europe-wide establishment of bilingual pre-schools and collaboration with non-academic educational institutions to offer greater public access to better preschool education.

The most important contribution of ELIAS, however, refers to the enhancement of several key competences which all individuals need for personal fulfilment and development, active citizenship, social inclusion and employment. The competences that ELIAS addresses in particular are language competence, science competence paired with awareness and action competence for the environment, as well as intercultural competence (*Common European Framework of Reference for Languages* 2001: 48):

A Communication in foreign languages

Mutual understanding in a Community characterised by linguistic and cultural diversity can only be achieved if people and bodies are able to communicate with each

other successfully — be it by using a language other than their first language, or by using language mediation (*High Level Group on Multilingualism* 2007: 6). The communication in foreign languages is based on the ability to understand, express and interpret concepts, thoughts, feelings and opinions (*OJ C 394* 2006: 14). Bilingual or immersion education from native speakers of a second language (L2) is the most effective CLIL teaching method for L2 acquisition in preschools, since it also imparts other key skills such as content learning and intercultural awareness. Thus, this pedagogical concept promoted by ELIAS is ideal for Europe's knowledge-based society. It gives young children the earliest head start in their lifelong learning process and prepares them to better exploit their foreign language skills in later school life. It is crucial to prepare children as early as possible for a life in a multicultural, multilingual society. Providing them with these necessary resources will help them develop into responsible European citizens. The project's investigations into the effectiveness of first and second language learning provide a realistic picture of the level of competence children can reach in bilingual preschool programmes.

B Basic competences in science

The ability and willingness to use the body of knowledge and methodology employed to explain the natural world, in order to identify questions and to draw evidence-based conclusions, is regarded as another key competence (*OJ C 394* 2006: 15). ELIAS fosters the development of these competences in young children by introducing them to topics such as animals and nature, simultaneously raising their awareness of environmental issues in an age-appropriate way. With the unique Zoo-Preschool located on the premises of the Magdeburg Zoo, ELIAS has helped develop an ideal learning environment for science education. In that respect, a particularly important objective of the project is to enhance the cooperation between preschools and non-academic educational institutions which are exceptionally well suited to raise environmental awareness (EAZA 2008).

Since non-academic institutions such as zoos enable people to develop appreciation, wonder, respect, understanding, care and concern about nature (WAZA 2005; EAZA 2008), it is vital to build on this potential so as to establish a lifelong awareness of environmental needs (BMU 2007). All children should be provided with an educational framework that fosters scientifically sound Education for Sustainable Development (ESD). That is why the ELIAS project has developed a set of teaching techniques and materials that will help foster ESD. This method of education is what the ELIAS project has dubbed *Green Immersion*.

Additionally, the current project design in Magdeburg involves two bilingual educators with additional special expertise in biology and zoo-education — a fact that further strengthens the final outcome of the type of science education provided within the framework of ELIAS.

C Cultural awareness and expression

Last but not least, it is essential for a solid understanding of one's own culture to understand the cultural and linguistic diversity in Europe and other regions of the world. A sense of identity can be the basis for an open attitude towards and respect for the

diversity of cultural expression. Basic intercultural competences include the ability to relate one's own points of view to the opinions of others (OJ C 394 2006: 15).

ELIAS wishes to provide insight into the development of intercultural awareness in very young children as well as to address issues of culture transmission. Crucial for this experience are preschool teachers who are native speakers of the preschool's second language. That is why bilingual preschools generally employ native speakers of the second language the children are supposed to learn. Native speakers provide children with authentic language input, in a way a non-native speaker could not provide. They also naturally model their own cultural background. Moreover, as children recognize the diversity of cultural backgrounds in the preschools, of children and of teachers, this can shape positive culture reception in the children. This ensures an education towards tolerance of different cultures and a heightened intercultural awareness. The effectiveness of increasing intercultural awareness is documented through intensive participant observation in the preschools.

At the end of the project, ELIAS will have documented and evaluated a variety of innovative education techniques. The consortium will have produced teacher training materials and guidelines that are open to the public. It is expected that all results produced in the context of the project will benefit educational institutions all over Europe and beyond.

7. List of Abbreviations and References

7.1 List of Abbreviations

AGRc	Grammatical phenomenon: Subject-verb agreement: Copula verbs; Singular / plural
AGRv	Grammatical phenomenon: Subject-verb agreement: Full verbs; Singular / plural
Be	Ecole Communale de Clabecq (Belgian preschool; L1 = French)
BPVS	British Picture Vocabulary Scale
EAL	English as an Additional Language
ELIAS	Early Language and Intercultural Acquisition Studies
GEN	Grammatical phenomenon: Possessive case: Absent / present
HH	Kindertagesstätte an der Bucerius Law School e.V. (German preschool; L1 = German)
HSbili	Group of children whose L1 is German and who learn English as an additional language (from preschools in England used as control groups; L1 = German)
HSET	Heidelberger Sprachentwicklungstest / The Heidelberg Language Development Test
HSmono	Group of children whose L1 is English (from preschools in England used as control groups; L1 = English)
K-B	Cologne Bumblebees e.V. Internationaler Bilingualer Kindergarten (German preschool; L1 = German)
KI-F	AWO-Kinderhaus Ander-Schanze (German preschool; L1 = German)
KI-M	Kommunaler Kindergarten Melsdorf (German preschool; L1 = German)
KISTE	Kindersprachtest für das Vorschulalter / Language Test for Preschoolers
K-R	Die Rheinpiraten e.V. (German preschool; L1 = German)
L1	First language or mother tongue
L2	Second language
LD	Bilingual Montessori School of Lund (Swedish preschool; L1 = Swedish)
MD	Deutsch-englischsprachiger Zoo-Kindergarten Magdeburg, Children's House e. V. (German preschool; L1 = German)
NEG	Grammatical phenomenon: Sentences: Affirmative / negative
PLU	Grammatical phenomenon: Inflectional morpheme: +/- plural –s
POSS	Grammatical phenomenon: Possessive pronoun singular: Masculine / feminine
PROog	Grammatical phenomenon: Personal pronoun singular (object): Masculine / feminine
PROsg	Grammatical phenomenon: Personal pronoun singular (subject): Masculine / feminine
SETK 3-5	Sprachentwicklungstest für drei- bis fünfjährige Kinder / Language Development Test for Children between 3-5 Years
SG	Kinderhaus Französische Allee (German preschool; L1 = German)
SVO	Grammatical phenomenon: Word order

7.2 References

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