



**Improving migrant, refugee and  
from deprived neighborhood  
children reading skills through an  
Animal Assisted Reading program**

Enders-Slegers, Marie-Jose & Pires,  
Iva Miranda (eds.)



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## READ4SUCCEED



### **Improving migrant, refugee and from deprived neighborhood children reading skills through an Animal Assisted Reading program**

**HORIZONTAL:** Supporting individuals in acquiring and developing basic skills and key competences

**HORIZONTAL:** Social inclusion

**SCHOOL EDUCATION:** Tackling early school leaving and disadvantage

Project start date 01-09-2019

Project end date 31-12-2022

Project duration 42 months

Project 2019-1-PT01-KA201-061410

## PREFACE

The eBook you are about to read is the result of hard work and a lot of talking, but most of all it is the result of so much fun. It follows 3 years of hard work of our partners in Portugal, Spain, Italy and the Netherlands. Together with scientists and AAI-practitioners, we have conducted a great program that showcases all the benefits of an Animal Assisted Reading program. You will find information about Dog Assisted Reading and Education in which the focus lies on the R.E.A.D. program designed by Intermountain Therapy Animals (ITA). You will also learn about our Read4Succeed program, a program designed to improve the reading skills of children from a migrant, refugee and from deprived neighborhood, through an Animal Assisted Reading program.

As the founder of Stichting AAI-maatje in the Netherlands, I am really proud to be part of this great project. This eBook is a good step in the right direction to show the public the wonderful benefits of collaborating with a dog in schools. Therefore, I consider it a must read for everyone working in the field of Animal Assisted Education (AAE).

We would never have succeeded without the help of our R.E.A.D. teams in the Netherlands, Portugal, Spain and Italy. Because of them, many children have experienced the magic of reading to a dog for 10 weeks. Teamwork truly makes the dream work! This eBook is therefore also dedicated to them. Thank you all!

Nicky Barendrecht-Jenken  
Stichting AAI-maatje  
The Netherlands

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# CHAPTER 1. THE PROJECT AND THE PARTICIPATING ORGANIZATIONS

*Iva Miranda Pires*

## 1.1 INTRODUCTION

Read4Succeed (2019-1-PT01-KA201-061410) is a transnational cooperation project developed by a consortium of 7 partners, including universities, schools, non-profit associations and Reading Education Assistance Dogs (R.E.A.D) teams from four European countries (Portugal, Spain, Italy and The Netherlands). It is a European Union funded project through the Erasmus Plus that started in September of 2019 with a duration of 36 months.

In accordance with the objectives set by the European Union and the partner countries, the project aims to contribute towards making schools more inclusive, i.e. to promote the development of strategies that will allow schools to properly host all the children from their communities and to develop appropriate responses to deal with multicultural and multilingual differences.

The Read4Succeed project on Dog Assisted Reading will help to raise awareness of Animal Assisted Interventions in the European context by adding a program that aims to implement the intervention at an earlier point, during the first years of schooling. The target groups are migrant and refugee children, as well as children from disadvantaged neighborhoods, aged 7 to 10 years, who are enrolled in primary schools. Despite the different socio-economic contexts and the specificity of each target group, these children face similar challenges and problems in their host contexts.

## 1.2 PROJECT SUMMARY

### **Background**

Over the last decades, European societies have become increasingly diverse, mainly due to immigration flows from intra-European Union mobility and asylum seekers from third countries, particularly from African countries. In 2015 around 10% of the EU population were migrants, 5% of whom were under 15 years of age (Janta & Harte, 2016). In 2019, 207,000 people seeking asylum in the European Union were under 18 years old – 7% of them (14,000) were unaccompanied children. Most of unaccompanied children came from Afghanistan, Syria and Pakistan (Eurostat).

Considerable and sudden migration flows can have a negative affect on education systems, jeopardizing the integration process of migrant and refugee children and creating tensions within the host communities. Teachers are now facing new challenges and seeking new strategies, in order to provide a good, planned and prompt response to this new reality (Nicolai et al., 2017). Nevertheless, most teachers do not have the required skills to teach students from a wide range of cultural, socio-economic and linguistic backgrounds, as they have not received proper training to deal with these new circumstances (OECD, 2015). According to the Teaching and Learning International Survey (TALIS) (SIRIUS, 2013), teachers from several countries reported that they need to receive more professional development on teaching in a multicultural or multilingual setting (OECD, 2015).

As for the children, they face negative prejudices related to their migratory status, lack of knowledge of the language of the host country, psychological barriers, or insufficient family and community support, which result in higher rates of academic underachievement and school dropout. Children from deprived socio-economic backgrounds may have even lower school outcomes than those coming from a migratory context.

Despite the different performance from country to country, migrant children (either first, second, or higher generation) have some propensity to lower educational achievements, being more susceptible to leave school earlier than children from the host country. Nonetheless, children arising from a poor socio-economic environment may have even poorer educational results than those coming from a migrant setting. The Program for International Student Assessment (PISA) (OECD, 2010) data suggests that a group of children from a poor socio-economic environment will have a greater influence on peer outcomes than a group of migrant children, and a far greater impact on the overall school achievement of students than the presence of a large number of migrant children in a classroom or school (Janta & Harte, 2016).

Janta & Harte (2016) state that, according to Heath et al. (2008), there are some aspects that can determine the educational challenges migrant children have to deal with, namely: fewer socio-economic resources, sometimes associated with lower academic achievement of their parents; negative prejudice related to their migratory status; lack of knowledge of the host language; psychological barriers or insufficient family and community support. The integration of these children in the educational system therefore plays an important role not only for their social inclusion within the host community but also of their families (Berger Sacramento, 2015; Nicolai et al., 2017). In fact, the lack of knowledge of the host society language is the main barrier for the integration of these children and parents, since it significantly limits their communication (Janta & Harte, 2016). Therefore, success in integrating first-generation migrants into the education system can lead to the inclusion in the host society of the outcoming generations (Dustmann, Frattini, & Lanzara, 2011; Nicolai et al., 2017).

As indicated, children face a multiplicity of settlement problems such as language difficulties, loss of identity, adaptation to the new culture and new educational systems. During the settlement period in a new country, children are under pressure, as they are the main link between their parents and the new society (Mehraby, Coello, & Haidary, 1999). Schools also struggle with alternative solutions to help the complex integration of not only these children, but also those from deprived neighborhoods, having little strategies to receive and integrate them.

Education plays a very important role in society because of its benefits. It not only contributes to how citizens understand the society in which they live, but it also helps to empower children with skills that will allow them to take advantage of opportunities to break the cycle of chronic poverty. The integration of these children into the education system thus plays an important role in their social inclusion in the host community, not only for themselves but also for their families. Above all, being understood and able to communicate in the host country can lead to effective integration (Dempster & Hargrave, 2017). Among the main barriers to integration is the lack of knowledge of the host country's language, as this significantly limits communication. Some children undergo negative experiences regarding their difficulties and may have developed fears, expectations of failure and negative feelings towards learning tasks. Including a therapy dog when children read aloud promotes a more enjoyable reading environment, which has a positive impact on children's self-confidence and self-esteem, increasing reading fluency and increasing their motivation to learn. Dogs are attentive and calm listeners, who have no prejudices; they do not judge or criticize and are less intimidating than adults.

The EU countries signed the Paris Declaration on "Promoting citizenship and common values of freedom, tolerance and non-discrimination through education," which involves joint efforts, both at local, national and regional level and at EU level, to implement activities "in order to prevent



and combat marginalization, intolerance, racism and radicalization and to preserve a framework of equal opportunities for all". The EU calls for cooperation and exchange of experiences ensuring that the best ideas and the best practices can be shared.

### **The project**

Read4Succeed aims to evaluate the effect of Animal Assisted Education on the acquisition of reading skills by children who come from a migrant, refugee or socio-economically disadvantaged background. The target population of the project is children aged between 7 and 10, who are enrolled in primary schools and have been identified by their teachers as having reading difficulties. It is believed that they may benefit from Dog Assisted Reading sessions, led by R.E.A.D. teams. The reading skills of these children will be assessed both prior to, and following, a one-year-long intervention, through a tool created by the consortium of 7 partner organizations to be applied in all the countries involved and thus allow a comparison of the results. In addition, a short story book and an interactive game, available in open access, will be created so that children can continue to improve their skills outside of school. The project is expected to show that holistic approaches, which combine formal and non-formal education, can be useful when solutions need to be found for complex situations such as those of the children from the target groups. These solutions will be described in the eHandbook on Animal Assisted Education which will be developed as an intellectual output of the project.

Our main objective is to share good practices and new approaches to help migrant and refugee children and children from disadvantaged neighborhoods overcome lack of knowledge of the language of the host society, which represents one of the main barriers to their integration, as it significantly restricts communication. These practices and approaches can be used at local, regional and international levels to improve schools' responses to the integration of these children. This strategic partnership, through the application of the R.E.A.D. (Reading Education Assistance Dogs) program, will help children acquire reading skills by and, thus, reduce school underachievement, helping them to become fully functional citizens. In this way, the project will contribute to the achievement of the following goals:

1. To ensure that children and young people acquire social, civic and intercultural skills, promoting democratic values and fundamental rights, social inclusion and non-discrimination, as well as active citizenship
2. To promote the education of disadvantaged children and young people, ensuring that education and training systems meet their needs; and
3. To promote intercultural dialogue through all forms of learning, in cooperation with other relevant policies and partners (Paris Declaration, 2015)

By helping children with poor reading skills, Read4Succeed will also contribute to the fulfillment of European policies, namely the goals set out in the Strategic Framework "Education and Training for 2020" (ET 2020) (one of the instruments for implementing the Paris Declaration), to: combat against educational underachievement: "the percentage of 15-year-olds with low levels of reading, mathematics and science skills must be less than 15%" and "the dropout rate for education and training must be less than 10%".

This project differs from other projects that address school dropout and illiteracy in high school students, such as "From writing to screens - Reading and Writing in Europe in a Digital Context of Change" or "Hands-on Development Strategies in a Content-Centered Context for Young and Adult

Learners with Poor Basic Skills in Literacy and Numeracy”, since it is an early intervention, aimed at the first years of schooling.

It also complements other projects regarding Animal Assisted Therapies (AAT) such as “Therapy Dog Training - European Standards”, which aims to work out the standards of dog therapist training, and “ZORO - Animal integration in the educational program”, which aims to develop a program for teachers on how to integrate the inclusion of animals in their classrooms.

The project will be developed in 4 countries. This transnational partnership adds value as it allows the project to be implemented and tested in all target groups. It also allows for more solid results, to give a clearer idea of the benefits and impact of the program as it facilitates replication in other countries. It widens the options for disseminating results and allows for a broader exchange of ideas and experiences.

### **1.3 OBJECTIVES, EXPECTED RESULTS AND INTELLECTUAL OUTPUTS**

European societies are increasingly diversified as a result of migratory flows that can have a negative effect on education systems, putting at risk the process of integration of migrant and refugee children and creating tensions within the host communities. Teachers face new challenges arising from the diversity of cultural, socio-economic and linguistic contexts and need new approaches to address them. The R.E.A.D. program will be used to improve the reading skills of the target groups and its effectiveness will be assessed.

The project objectives are related to the national goals of partner countries to develop an even more inclusive education system. The consortium aims at supporting processes that strengthen the capacity of the education systems to reach out to all learners. In other words, to help schools to become more inclusive, which means to become better at educating all children in their communities.

#### ***The main objectives of Read4Succeed are:***

- To establish synergies and complementarities between formal and non-formal education
- To show the potential of animal assisted therapies to help children with difficulties acquire reading skills in the language of the host country
- To contribute to the reduction of early school leaving by accelerating the process of acquiring reading skills
- To produce digital content teaching materials and instruments
- To create networks of schools that welcome children from these target groups, within which the sharing of experiences and good practices will be possible
- To contribute to the development of a tool designed to assess the acquisition of reading skills, which can be applied in all the partner countries to allow the comparison of results

#### ***During the implementation of the project, the expected results are:***

- To make the educational community aware of the potential of this program so that they can use it to complement the formal learning process. Given the complexity of the problems that schools currently face, holistic and complementary approaches to formal education may play an important role as they allow us to consider the specificity and cultural and economic context of each child, without jeopardizing the achievement of global education goals
- To create a network of schools that share the same challenges arising from multilingualism and multiculturalism, within which we will be able to exchange experiences and good practices
- To discuss solutions to accelerate and facilitate the integration of children from these target groups

- To involve parents and guardians in the educational process of the students and to show that schools are committed to finding solutions for their integration
- To obtain feedback from teachers, school principals, guardians and students involved in the project on the effectiveness of the program
- To contribute to the internationalization of the partner institutions (which include universities and schools and also non-governmental organizations and non-profit associations) and to the development of skills in the design, submission and implementation of European projects
- To organize events to publicize not only the intellectual products of the project but also its results, involving the largest possible number and the greatest possible diversity of institutions potentially interested in their use and in replicating the project
- To create a project web page with the objective of publicizing the activities and their results

***At the end of the project, the expected results are:***

- To assess whether and how the use of the R.E.A.D. program can help children from the target groups to overcome reading difficulties, speed up the learning of the language of the host country and thus help to reduce school underachievement and early dropout, as well as to facilitate the process of integration into the community
- To prepare a set of intellectual products that will be made available in open access and can be used by teachers, guardians and students after the end of the project, namely the eHandbook containing information on the R.E.A.D. program and its objectives, the story book and the digital game
- To discuss, with the education authorities in each of the partner countries, the possibility of extending the use of the reading skills assessment tool to more schools in order to test its validity beyond the target groups
- To replicate the project in other schools and expand the network of schools using the R.E.A.D. program
- To prepare a final project report
- To write scientific articles to disseminate the results of the project

***Intellectual outputs***

The project will deliver four intellectual outputs (IO).

***IO1: Read-aloud assessment tool for students aged between 7 and 10 years***

The assessment of the acquisition of oral reading skills is essential to understand the impact that Animal Assisted Education has on children.

In the partner countries there is no tool for assessing oral reading skills (fluency – speed, accuracy and prosody) which is used unanimously by all teachers. This gap makes it impossible for us to compare the results of studies conducted in different countries. Therefore, the partners have decided to develop an innovative tool for assessing the reading skills of students aged between 7 and 10 years, which may be used by all partners, to evaluate the effectiveness of the R.E.A.D. program on the target groups (migrant and refugee children, as well as children from disadvantaged neighborhoods).

***IO2: Interactive digital game to train comprehension and vocabulary***

Children are currently exposed to numerous digital stimuli and it is important to convey to them that reading is not out of fashion. The creation of a digital game, in the area of reading, will allow us to capture the interest of children and work on their reading skills in a playful way through either the eTwinning platform in the classroom, or the websites of the project at home.

This game will include read-aloud exercises, gap-filling exercises and searching for synonyms.

The game will have three different difficulty levels, depending on the child's age and the complexity of the exercises. Each level will have several exercises to help the child with vocabulary and

comprehension. A dog will be present virtually at all levels of the game and help the child give the correct answer.

The game introduces children to a feature that allows them to increase their vocabulary and simultaneously work on comprehension. It has different levels of difficulty and it is organized by themes to facilitate vocabulary acquisition (clothing, food, home, etc.). A dog will encourage the child to continue playing. The game will be available on the eTwinning platform and on the project's and partners' websites so that it can be freely accessed.

### ***IO3: eBook and printed book with stories designed to help teachers promote the integration of children from the target groups***

Children's stories are an important tool in shaping children's identity and values. They help to develop imagination, cognitive abilities and emotional intelligence and they help children become acquainted with different ways of seeing and feeling the world. When children identify with a character in a story or with experiences similar to the one they are living at a given moment, it becomes possible to address everyday themes in the context of the classroom.

The book will include stories that address the difficulties faced by each of the target groups in different countries, with the presence of a dog in all the stories. Children will be able to identify with the characters in the stories, which will make it easier to discuss themes such as multiculturalism, social integration and multilingualism. This educational resource will allow teachers to discuss sensitive topics in a playful and relaxed manner.

### ***IO4: eHandbook on Animal Assisted Education***

This document is the fourth intellectual output delivered by the project. Animal Assisted Education is a complement to formal education that teachers can turn to when faced with difficulties in the classroom. Of the books that currently exist in the international market on Animal Assisted Interventions, few are dedicated exclusively to Animal Assisted Education, and, of these, few have been translated into the official languages of the partner countries. Being aware of the various solutions that Animal Assisted Education offers, teachers can respond more quickly to the difficulties presented by their students and to which the formal offer is unable to respond so readily.

## **1.4 THE TARGET GROUPS**

The target groups are migrant and refugee children, as well as children from disadvantaged/deprived neighborhoods, aged 7 to 10 years, who are enrolled in primary schools. Despite the different socio-economic contexts and the specificity of each target group, these children face similar challenges and problems in their host contexts.

In 2016, Portugal was one of the European countries where, considering only the foreign population, citizens from non-EU countries outnumbered European citizens, with foreign nationals coming mainly from Brazil, Cape Verde, Angola and Guinea-Bissau. In 2016/2017, students of foreign nationality had a lower school performance (21.2%) than Portuguese students (8.7%). About a third of the foreign students were nationals of a country in the Community of Portuguese Speaking Countries (CPLP). This will be one of the target groups.

In Spain, 9.2% of the population is immigrant, hence the importance of improving language skills in all schools in the country. Language and reading have great power as integrating and understanding tools. We will read in two schools in Madrid, located in very poor areas. The reading students

come from different countries, including refugee students from Ukraine. The level of knowledge of Spanish is also highly variable; some of the readers are completely unaware of the language with reading with dogs their first contact with Spanish. All students come from disadvantaged socio-economic backgrounds. Many families are at risk of social exclusion.

In the Netherlands, 14,716 people from Syria, Afghanistan, Iraq, Somalia and China sought asylum in 2017. Among them were 1,181 children who arrived alone. Dutch law requires these children to have access to education, and to learn the host language. The target group will be children of immigrant origin, mainly from Syria, Eritrea, Morocco and Algeria as well as recently from Ukraine.

In Italy, there are about 5 million foreign nationals, that is, 8.5% of the total population. More than 35% come from Eastern European countries and 12% are children aged 0 to 9 years. In Lombardy, the region where the project will be implemented, the target group will be children from these countries who face integration difficulties and have poor school performance, due to low proficiency in Italian.

## **1.5 PARTICIPATING ORGANIZATIONS/THE CONSORTIUM MEMBERS (DESCRIPTION OF BACKGROUND, GOALS AND MISSION)**

All the partner organizations are in some way involved in the implementation of projects or research on Animal Assisted Interventions.

The R.E.A.D teams from Portugal, Spain, the Netherlands and Italy already have some years of experience collaborating with schools and using the program.

Schools have other social inclusion projects and are already working on educational and pedagogical strategies in order to be able to welcome and integrate migrant and refugee children in their classes in the best possible way. However, this project will be innovative for the partners and associated schools in the sense that it offers teachers the opportunity to set individual goals in the area of reading, as well as goals in socio-emotional development. These children arrive in the host country at different times of the school year and, in addition to the difficulties they face with all the changes in their lives, they also have to deal with the language barrier, which often results in academic underachievement. By providing children with an emotional base, as well as a base for learning a transversal competence, as is the case with reading, the school will be contributing to their school success and at the same time, to their integration into the host society.

### ***Faculdade de Ciências Sociais e Humanas (NOVA FCSH) (Lisbon, Portugal)***

CICS.NOVA and CLUNL

Universidade NOVA de Lisboa (NOVA) is one of two public universities located at Lisbon and was ranked in the top 9 in Europe in the QS World University Rankings 2021 among universities founded less than 50 years ago. Research at NOVA has been thriving both qualitatively and quantitatively: NOVA currently hosts 39 Research and Development (R&D) Units, 23 of which represent partnerships with other national institutions, and 92% were considered units of excellence.

With more than 1.500 researchers, the scientific community of NOVA FCSH develops cutting-edge research in its 14 R&D Units, in different scientific areas, all funded by FCT. There are currently over 80 ongoing research projects in NOVA FCSH, funded by the various national and international programs, including Horizon Europe, ERASMUS+ and FCT.

CICS.NOVA, that will host this project, conducts interdisciplinary research in social sciences, promotes critical thinking and disseminates the acquired knowledge in the concerned communities,

both on a national and international level, namely through the action of its regional Poles. The research unit's interdisciplinary framework brings together knowledge in sociology and geography, as central areas, alongside other social sciences and humanities. In addition, there are strong links with life sciences, environmental sciences and engineering, which render CICS.NOVA's scientific research particularly original and comprehensive.

The Linguistics Research Centre of NOVA University Lisbon (CLUNL) is a research unit that aims to promote research in theoretical and applied linguistics, to develop the advanced training of researchers and to promote of the dissemination of scientific data on those domains concerned with the nature and structure of languages and texts.

The work developed at CLUNL since its creation in 2000, has made a relevant and distinctive contribution to the study of linguistics in Portugal in areas such as language acquisition (native language and non-native language), discourse analysis, lexicology and lexicography, text theory and terminology, while developing research in domains such as lexicon and vocabulary (general and specialized), historical linguistics, morphology, syntax and semantics.

### ***ACL - Associação Cães e Livros (Lisbon, Portugal)/Cães&Livros R.E.A.D.® Portugal***

was founded in July, 2015, with the first team being formed by Cristina Lopes and Bagas. In July 2016, two other teams were formed: Cátia Lopes and Pepper, Cristina Lopes and Busy and in December 2017 another team was formed: Cristina Lopes and Mina.

In Portugal, Cães&Livros R.E.A.D. Portugal is the official Reading Education Assistance Dogs program representative and the only Intermountain Therapy Animals authorized organization to develop the program in Portugal. Its mission is to improve children's reading and communication skills through the emotional bond between the child and the dog.

Its teams work not only at schools along with educational professionals but also at private offices together with health professionals. The teams participating in this project are already working in schools with children having reading difficulties, poor social skills and special educational needs. In 2016/17 Cães&Livros R.E.A.D. Portugal took part in a PhD study to understand the use of Animal Assisted Therapy in overcoming reading difficulties in 2nd grade children in Portugal.

### ***Agrupamento de Escolas Cardoso Lopes (Amadora, Portugal)***

The Cardoso Lopes School Group is an organizational unit, made up of the following public education and teaching establishments:

- Cerrado da Bica Kindergarten
- School EB1/JI/Creche Aprígio Gomes
- School EB1/JI da Mina
- School EB23 Cardoso Lopes

The Grouping Schools serve a population of relative social and cultural heterogeneity.

At the moment, they welcome students from the surrounding neighborhoods, where children come from, most of whom can already integrate into medium socio-economic levels.

As for the nationalities of the students, those of Portuguese nationality predominate (88.8% of the students) and there are a further twenty-four nationalities, with Brazil being the most representative with 3.5% of the students.

In view of the above, the Cardoso Lopes School Grouping, that is, in the foundations of its organization and its practice, requires constant attention to the morphology of the social fabric in which it operates and from which it gathers elements that allow its necessary characterization. There is also a concern to detect possible cultural variables and/or socio-economic interactions that force changes or adaptations in the socio-educational intervention, so that there is continuity in the process leading to its fundamental objectives, school and educational success. These strategic objectives presuppose and require the construction of intervention mechanisms in the present school community that promote the mentioned successes.



### **Open Universiteit Nederland**

Faculty of Psychology, Department Anthrozoology (Heerlen). The Open University is one of the universities in the Netherlands and Belgium. There are, however, differences with the regular universities: the Open University is specifically dedicated to online education and research. The educational program is structured in such a way that it enables you to study part-time. In the department of Anthrozoology, research into human animal interactions is part of the Faculty of Psychology. The Anthrozoology group is and has been involved in many national and international research projects such as “Dogs in Schools”; “Equine Assisted Psychotherapy”; “Cost effectivity of epilepsy dogs”; “Attachment, children and pets”; “At Home living Elderly in long term care and their pets”; “Elderly with dementia in nursing homes and dog-visiting programs’ etc.

### **Stichting A.A.I.Z.O.O. (Sprundel)**

was founded to professionalize the field of Animal Assisted Interventions by bringing professionals together, sharing knowledge and best practices, developing and stimulating education and research in order to help the fast developing and diverse field to formulate quality standards and protocols. Collaboration of professionals and researchers is seen as necessary for further developments in practice and research. A.A.I.Z.O.O. organizes yearly symposia, courses for professionals and works together with the Open University and the Institute for Anthrozoology to develop the field. The Organization is a member of IAHAIO (International Association of Human Animal Interaction Organizations).

The Board is unpaid and is multidisciplinary: veterinarian, social scientist, an orthopedagogue, a lecturer at a university of applied sciences, a businessman and a clinical psychologist. There are about 60 member groups of professionals working with dogs/horses and other animals. The members of the organization are all skilled as professionals and as animal handlers/trainers and are working in the field of AAI, for example in hospitals, schools, nursing homes etc.

### **Stichting AAI-maatje (Gouda, the Netherlands)**

was founded in May 2019 to facilitate animal and nature assisted activities in an accessible way. It believes that animals can have a great influence on the wellbeing of human beings. Animals can help you to identify your strong points and weaknesses, increase confidence and develop a healthy way of connecting with yourself and others. Contact with an animal can also help you to increase empathy and social skills, to decrease fear, depression and loneliness.

Stichting AAI-maatje works with animals, without losing sight of the animal’s welfare and well-being. It received authorization from Intermountain Therapy to run the R.E.A.D. program in the Netherlands. With the R.E.A.D. program, Stichting AAI-maatje wants to contribute to a safe and healthy reading environment for children, in which they love to read for themselves and read aloud to others with confidence. Reading is crucial to being part of society. It helps to communicate and empathize with others. The more you read, the better you read and the more and better you read, the more you enjoy it. Therefore our mission is to spread the love of reading. To share a good book with a dog makes it possible to improve reading skills in a positive and safe way. Together with our teams we want to make sure that all children in the Netherlands receive the same professional and enjoyable reading experience. The teams always work with their own dogs, since they know them best. We aim to deliver good quality services, so we make sure that our teams are continually up to date on research and practice and participate in network meetings.

### **Asociación Perros y Letras - R.E.A.D.® ESPAÑA (Madrid, Spain)**

Perros y Letras - R.E.A.D. España was founded in 2011 and formed an association in 2014 to work with dogs and cats specially trained to improve people’s reading, emotional and social skills and quality of life. We are the only official Reading Education Assistance Dogs program representatives

in Spain and R.E.A.D. instructors since 2013. We have 23 R.E.A.D. teams in Spain (paid staff) and 4 volunteers (unpaid staff). Our therapy animals work in schools and libraries with children with learning disabilities or people who need educational, social or emotional support. More than 1,400 children have read with us since 2011 in more than 60 schools and 35 libraries. Our R.E.A.D. teams are teachers, psychologists, speech therapists or are qualified/graduated in other disciplines and have great knowledge and experience in Animal Assisted Therapy.

### ***Centro Ginnasio srl (Milan, Italy)***

is a company working in the field of education and after school programs. The company has been supporting students and families in the Paderno Dugnano and Milano area for more than 10 years. Our core business deals with the development and improvement of didactic, educational and life skills. The company is always interested in innovative and efficient ways to better aid kids and teens in becoming the best possible version of themselves.

Centro Ginnasio could be labeled as a micro-business, however enabled by the presence and precious support of several tutors – each specialized in a certain knowledge field (scientific studies, linguistics, humanistic, pedagogics etc.) – and educational experts, such as counselors and psychologists, carrying out their activities.

The main scope of the company is to support students and their families in improving their skills, both from an educational and personal standpoint.

The educational offer includes:

- after-school strengthening, consolidation or remedial programs
- tailor made support for special needs students
- pedagogic and/or educational meetings
- play and educational workshops for children, teenagers, and young adults
- family counseling options and projects aimed at adults and parents

## **1.6 TEAM MEMBERS**

### ***Ana Madeira***

Ana Madeira (PhD in Linguistics, University College London) is an Associate Professor at the Faculty of Social Sciences and Humanities, NOVA University of Lisbon (NOVA FCSH) and a researcher in the Formal and Experimental Group of CLUNL - Linguistics Research Centre of NOVA University of Lisbon. Her research centres both on the grammar of Romance languages and on second language acquisition and learning, with a special emphasis on Portuguese. She also has a strong interest in child bilingualism and language teaching. She has participated in projects in the following areas: Portuguese grammar; bilingual and second language acquisition of Portuguese; development of materials and resources for second language teaching; bilingual/multilingual education; language policies in education. She is currently the Director of the Master's Program in Language Sciences and of the Postgraduate Program in Teaching Portuguese as a Second Language at NOVA FCSH.

### ***Cátia Lopes***

Cátia Lopes has a postgraduate degree in Animal Assisted Therapies from the Instituto Superior de Psicologia Aplicada (ISPA-IU). She was trained as a Team and Coordinator by Perros y Letras - R.E.A.D. España and as a R.E.A.D. Instructor by Intermountain Therapy Animals. She is one of the co-founders of Cães&livros - R.E.A.D. Portugal.

### ***Claudia Marzano***

Claudia Marzano worked as a customer care operator part-time but her true passion is animals especially dogs and cats. She has been a Pet therapy operator since 2016 and works with her dog



Sunny with children, children with special needs, and Alzheimer's affected people. Certified as a R.E.A.D.team in 2018, she participated in R.E.A.D.programs in schools and private centers with the objective to improve the read aloud ability in students with dyslexia or experiencing other disadvantaged circumstances.

### ***Claudia Pianezzola***

Claudia Pianezzola has a degree in Psychology and works as a teacher in primary school. Since 2013, she has been working with special care needs, creating specific empowerment projects. She is a Feuerstain mediator, a cognitive enhancement program and an AAI practitioner. She collaborates with the R.E.A.D.dog Italia group to improve the skills and self-efficacy of children when reading aloud.

### ***Cristina Lopes***

Cristina Lopes is one of the co-founders of Cães&livros R.E.A.D.Portugal. She graduated in Applied Foreign Languages from the Universidade Católica Portuguesa and began her professional career as a Portuguese language assistant in Brussels at the Camões Institute. Through the R.E.A.D. program, she dedicated herself to Animal Assisted Education, undertaking Team and Coordinator R.E.A.D.training from Perros y Letras - R.E.A.D.España as well as the Animal Assisted Interventions training from Positivas Can. To complement her training, she took a postgraduate degree in Animal Assisted Therapies from the Instituto Superior de Psicologia Aplicada. In December 2017, she became an R.E.A.D.Instructor for Intermountain Therapy Animals. In addition, she expanded her knowledge with educational training oriented to reading difficulties. In February 2022 she wrote a chapter "Enhancing Children's Learning and Motivation through Animal-Assisted Education" for an international eBook entitled "Modern Reading Practices and Collaboration Between Schools, Family, and Community".

### ***Elsa Canelo***

Elsa Canelo graduated in Portuguese and French teaching at the School of Education of Lisbon. She holds a master's degree in Human Ecology and Contemporary Social Problems and a PhD in Human Ecology from the Faculty of Social Sciences and Humanities of the Universidade Nova de Lisboa. In her thesis she assessed the use of Animal Assisted Therapy in improving reading skills in children with reported reading difficulties. It aims to contribute to understanding how the biophilia hypothesis, through animals, can motivate learning to read, through Animal Assisted Interventions with a dog. The observation of behaviors and attitudes, in different contexts of reading, served as a support for this study. With the support of the team Cães&Livros R.E.A.D. Portugal, the R.E.A.D. program was applied in a group of 2nd grade children with reading difficulties from an elementary school during the school year 2016/2017; a paper was submitted to a scientific journal discussing the preliminary results.

### ***Federica Aste***

Federica Aste is a R.E.A.D.Instructor and Evaluator, dog trainer and dog handler, environmental educator, didactic zoo anthropology operator, cat behavior consultant, tutor at an educational farm and relational ethology operator. Federica has been involved in Animal Assisted Interventions since 2006 and involved in training in this field since 2010.

### ***Iva Pires***

Iva Pires is associate professor at the Universidade Nova de Lisboa – School of Social Sciences and Humanities, Faculty of Social Sciences and Humanities ((FCSH), Universidade Nova de Lisboa. She holds a degree in Geography from Universidade de Coimbra and a PhD in Human Geography from Universidade de Lisboa. She teaches at the Sociology Department where she also coordinates the

master's and PhD programs in Human Ecology. She is a senior researcher at the Interdisciplinary Centre of Social Sciences CICS.NOVA (CICS.NOVA.FCSH/UNL). She coordinated two research projects funded by the Portuguese Science Foundation (FCT); she was Scientific Coordinator of FELLOW Mundus (2014-2017), an Erasmus Mundus Consortium of 17 EU and Latin American Universities. She was team member of the project With Nature to Mutual Understanding (2016-2019), financed by Erasmus+ KA2 - Cooperation for Innovation and the Exchange of Good Practices (2016-1-CZ01-KA204-024071), coordinated by Lypka, Czech Republic.

### ***Joana Batalha***

Joana Batalha holds a PhD in Linguistics and Language Teaching. She is a researcher at the Linguistics Research Centre of NOVA University Lisbon (CLUNL) and teaches at the Linguistics Department of NOVA FCSH. She has participated in research projects in L1 and L2 acquisition and in different areas of Portuguese teaching such as language assessment, teacher development and the development of teaching materials. She is currently coordinating a project on early intervention in reading and writing (PIPALÉ) and conducting the project "Language and literacy at school" funded by the Portuguese national funding agency for science, research and technology (FCT).

### ***Marie-Jose Enders-Slegers***

Marie-Jose Enders-Slegers is an (emeritus) professor working at the Open University, Faculty of Psychology in Heerlen. She holds a PhD in psychology from the University of Utrecht, is a licensed health psychologist and has conducted research in the human animal interaction field for more than 30 years. She was appointed as a professor in Anthrozoology at the Open University 2013-2022. She still supervises many PhD students and is involved in national and international research projects. She is the President of IAHAIO, the International Association of Human Animal Interaction Organizations. Marie-Jose has published many articles and book chapters.

### ***Nicky Barendrecht-Jenken***

Nicky Barendrecht-Jenken has a master's degree in social sciences from the University of Utrecht and has worked as an AAI professional since 2016. She is mainly focused on Dog Assisted Reading, Dog Assisted Coaching and Animal Assisted Activities in the school system, care centers for elderly people and for victims of domestic violence. She worked for 5 years at Pets4Care as a trainer in AAI (Pets4Care educates people who want to work with their own dog(s) in AAI) and she is the founder of Stichting AAI-maatje in the Netherlands. She is an AAI educator, R.E.A.D.Instructor and R.E.A.D.team, dog trainer and dog handler, specializing in dog behavior, welfare and body language.

### ***Marlene Vettori***

Marlene Vettori holds a bachelor's degree in Psychology from the Università di Padova. She is a teacher, ADHD trainer, ADHD homework tutor, game trainer, didactic zoo-anthropology operator, outdoor educator, dog trainer, dog handler and author. She has worked in the field of AAI since 2007, in schools, kindergarten and daily care groups for people with special needs.

### ***Tiziana Bertoli***

Tiziana Bertoli is a R.E.A.D.Instructor and Evaluator, team R.E.A.D.with 4 of her dogs since 2013. She is an AAI practitioner and trainer and a dog trainer. She is also a physiotherapist and coordinator of a rehabilitation unit in a hospital near Milan. She has experienced the effectiveness of the R.E.A.D. program with several children, some of them with dyslexia. She believes in working in a team, so is proud to work in this project because it allows us to compare the international experiences of the program.

### ***Tynke de Winkel***

Drs. Tynke de Winkel (MSc) has worked as researcher for several international projects at the Open University of the Netherlands at the Faculty of Psychology, Department of Anthrozoology. She is also a PhD student at the same Faculty. Her research is focused on animal wellbeing within the human animal bond and within Animal Assisted Interventions (AAI). She is co-owner of a veterinary practice, a certified dog trainer and she works as a lecturer in animal behavior.

### ***Riki Verhoeven***

Riki Verhoeven studied pedagogy and obtained her MSc 'E-learning, Multimedia and Consultancy' in Sheffield. Her heart and passion lies with children where development does not come naturally and she has worked for many years in special and secondary special education, most of which in a management position.

In 1999, in addition to her work as principal of a school connected to a pedagogical institute, she started working at the Hogeschool Utrecht (HU). In 2000 she switched to the University of Applied Sciences and was co-designer and manager of the pedagogy courses as they are now offered by HU. She has also been a member of a lectorate and set up and implemented parts of a learning route for school leaders and supervised students. Supervising and designing education for professionals is her core business.

Expertise:

- Professionalization of teachers and management
- Animal Assisted Education
- Coaching

She is a PhD candidate at the Open University Heerlen, doing research on interventions in which dogs participate in regular education. The goal is to gain insight into the mechanisms of Animal Assisted Education and possible effects on the social-emotional development of children aged 8 - 13 with special needs.

### ***Elena Domínguez***

Elena Domínguez is the founder and Director of Perros y Letras R.E.A.D. Spain. She has a degree in law and is currently finishing a degree in psychology. She has extensive training and experience in AAI since 2004. She has been R.E.A.D. team since 2011 and a R.E.A.D. Instructor since 2013. She specializes in Animal Assisted Education for autistic and vulnerable students. She coordinates reading and emotional support projects throughout Spain, where she is in charge of developing the R.E.A.D. program in schools, institutes, libraries, and prisons, where she works with prisoners with mental disorders and women prisoners who are victims of gender violence.

### ***Carolina Gutiérrez***

Carolina Gutiérrez has a pedagogy degree. She is a dog educator, technician and AAI expert. She works as an AAI technician in hospitals with pediatric cancer patients and with adolescents and children with psychiatric disorders. She is been working as a R.E.A.D. team since 2021 and works in schools in disadvantaged areas, with autistic students at risk of exclusion.

### ***Ana María Molina***

Ana María Molina is the coordinator of Perros y Letras R.E.A.D.España in the region of Murcia. She is part of a R.E.A.D. team and is a canine therapist in schools, libraries and in the "Jesús Abandonado Foundation", reading with homeless people in a pioneering project at national level, "Read to advance". She is also the founder of "The eyes of the Black Cat", an artistic and educational project in which literature and stories are key to learning. She has collaborated as a teacher in different schools and programs around the world. She holds a Bachelor of Dramatic Arts specializing in drama techniques and social theatre and she is a professor of spanish language and literature.

## CHAPTER 2. ASSESSMENT OF LANGUAGE PROFICIENCY AND READING SKILLS OF NON-NATIVE PRIMARY SCHOOL CHILDREN

*Joana Batalha and Ana Madeira*

### 2.1. INTRODUCTION

This chapter describes the Read4Succeed Language Proficiency Test (LPT) and the Read4Succeed Reading Tool (RT), the two assessment tools constructed within the Erasmus+ project Read4Succeed: Improving migrant, refugee and from deprived neighborhood children reading skills through an Animal Assisted Reading program (2019-1-PT01-KA201-061410).

The RT is designed for children aged 7-10 years whose first language is not the language of the host country and comprises two versions: a version aimed at children at an elementary level (A1/A2 of the Common European Framework of Reference) and another version aimed at children at an intermediate level or above (B1+). The proficiency level of the children can be determined by administering the Read4Succeed LPT.

The tools were constructed first in Portuguese and adapted later to the other languages in the project (Italian, Spanish and Dutch, in the case of the RT, and Italian and Spanish, in the case of the LPT). The vocabulary and grammatical structures included in the tools were selected following consultation of Reference Level Descriptions such as the Referencial Camões PLE for Portuguese, and the Plan curricular del Instituto Cervantes. Niveles de referencia para el español for Spanish, as well as documents (e.g. word lists) available for other languages (e.g. A2 Key and A2 Key for Schools Vocabulary List; B1 Preliminary and B1 Preliminary for Schools Vocabulary List; English Vocabulary Profile). The findings from previous research on native and non-native child language acquisition were also taken into consideration, particularly studies which have investigated the course of language development, allowing us to understand at what developmental stages different linguistic phenomena are expected to emerge (e.g. Martohardjono et al, 2005).

### 2.2. LANGUAGE PROFICIENCY TEST

#### 2.2.1 Background

The children targeted in the project were non-native speakers of the language of schooling, aged 7 to 10, and had variable levels of proficiency in the language. Given that children's oral language proficiency may have an effect on their reading skills (e.g. Geva et al, 2019; Schaars, Segers, & Verhoeven, 2019; Morvay, 2012; Verhoeven, 2000), it was important to begin by collecting information on their proficiency in different linguistic domains, namely, lexical, grammatical and narrative competence. At the same time, given that the reading assessment tool was adjusted to the proficiency level, it was necessary to determine children's proficiency in the language of schooling in order to decide which version of the reading assessment tool should be administered to each child. Therefore, the Language Proficiency Test (LPT) was designed with the goal of placing the children in one of two broad proficiency bands – A1/A2 or B1+.

The LPT was originally constructed in Portuguese and was later adapted to Italian and Spanish. A document containing the guidelines for the adaptation of the LPT was produced and served as the basis for the adaptation of the LPT.

The LPT assesses only oral skills and is divided into two parts, each consisting of four tasks. Part 1 assesses oral comprehension skills and Part 2 assesses oral production skills.

The overall structure of the placement test is shown in Table 1.

<b>PART 1</b> <b><i>Oral comprehension</i></b>	<b>PART 2</b> <b><i>Oral production</i></b>
<b>Task 1</b> Matching words to pictures 12 items	<b>Task 5</b> Describing pictures 8 items
<b>Task 2</b> Following instructions 12 items	<b>Task 6</b> Answering questions on familiar topics 8 items
<b>Task 3</b> Matching sentences to pictures 12 items	<b>Task 7</b> Answering questions about a picture 8 items
<b>Task 4</b> Matching sequences of a short story to pictures 6 items	<b>Task 8</b> Telling a short story from pictures 1 item

Table 1: Structure of the placement test.

The LPT pack consists of the following materials:

- the screen presentation containing the pictures used in the tasks
- a record sheet containing the list of stimuli, where the children's answers are registered
- a spreadsheet, which is used to calculate the scores and automatically place the child in one of the two proficiency bands
- a manual, containing a description of the tasks and the stimuli, as well as the guidelines for administrating and scoring the test

In the following section, we provide a brief description of the eight tasks that make up the LPT.

## **2.2.2 Description of the tasks and task items**

### **2.2.2.1 Oral comprehension**

#### **Task 1 – Matching words to pictures**

The goal of this task is to assess the child's ability to recognise and understand words from everyday domains.

The task is a picture selection task, containing a total of 12 items: half the items correspond to vocabulary that children are expected to know at the A1 or A2 level of proficiency, and the other half correspond to vocabulary appropriate to the B1 level or above. The words were chosen from word lists available in the Reference Level Descriptions for each language or similar documents. All the words are nouns and belong to the following domains: home, school, clothes and accessories, food and drink, human body, everyday objects, transport, buildings, animals, the natural world, professions and leisure.

Each item contains three pictures: (1) one picture represents an object corresponding to the target word (the word which the child will hear); (2) one picture is the lexical distractor, i.e., it corresponds to a word belonging to the same lexical domain as the target word; (3) one picture is the phonological distractor, i.e., it corresponds to a word beginning with the same sound or syllable as the target word. The target word and the two distractors have the same length, measured in number of syllables; half the items for each proficiency band contain two-syllable words and the other half contain three-syllable words.

Given the lexical differences between Portuguese, Italian and Spanish, the adaptation of this task involved the search for corresponding words in each of the languages which met these criteria.

Examples of the items for the A1/A2 and B1+ bands are shown in Table 2 below (the pictures for the B1+ item are shown in Figure 1). In these examples, the words for B1+ item are equivalent in the three languages. In the A1/A2 item, the target word 'key' was maintained, but the distractors had to be adapted. Given that the initial sound of the word 'key' in Italian and Spanish is different from that of the Portuguese word, the phonological distractor had to be changed to a word starting with the same sound as *chiave* in the Italian word and *llave* in Spanish. Moreover, in Italian, the lexical distractor also had to be adapted, as the Italian equivalent of the word used in Portuguese (i.e. the word *carta* 'letter') has three syllables (*lettera*).

Language	Target word	Lexical distractor	Phonological distractor	No. of syllables	Band
PT	chave 'key'	carta 'letter'	chapéu 'hat'	2	A1/A2
IT	chiave 'key'	foglio 'paper sheet'	cuore 'heart'		
SP	llave 'key'	carta 'letter'	lluvia 'rain'		
PT	cereja 'cherry'	brócolos 'broccoli'	cegonha 'stork'	3	B1+
IT	ciliegia 'cherry'	broccoli 'broccoli'	cicogna 'stork'		
SP	cereza 'cherry'	brócoli 'broccoli'	cigüeña 'stork'		

Table 2: Examples of the items used in Task 1 in Portuguese (PT), Italian (IT) and Spanish (SP).

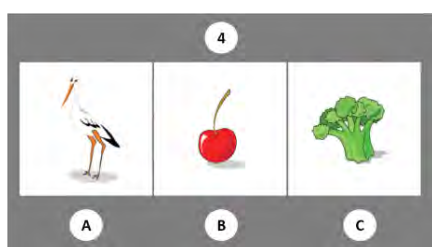


Figure 1: Example of pictures used in Task 1 (target word: 'cherry').

## Task 2 – Following instructions

The goal of this task is to assess the child's ability to understand instructions to perform simple actions. This task is composed of 12 items, half of which are at the A1/A2 level and half at the B1 level or above.

Each item consists of an oral instruction for the child to perform a simple everyday action involving a change in position (for example, standing up and sitting down), a change in location (for example, putting an object somewhere) or another activity (for example, drawing and clapping). In order to be able to complete this task, the child will need to understand the verbs which describe these actions, some nouns belonging to familiar domains (for example, school, house and the human body), as well as expressions of location (such as 'next to', 'inside', 'on', etc.).

Examples of the instructions included in Task 2 are presented in Table 3 below.

Instruction	Band
Desenha uma casa. (PT) Disegna una casa. (IT) Dibuja una casa. (SP) 'Draw a house.'	A1/A2
Põe os lápis de cera à volta da folha. (PT) Metti i pennarelli attorno al foglio. (IT) Pon las ceras de colores alrededor del folio. (SP) 'Place the crayons around the sheet.'	B1+

Table 3: Examples of the instructions given in Task 2 in Portuguese (PT), Italian (IT) and Spanish (SP).

## Task 3 – Matching sentences to pictures

The goal of this task is to assess the child's ability to understand complex syntactic structures.

The task is a picture selection task, containing a total of 12 items: half the items correspond to structures that children are expected to have mastered at the A1 or A2 level of proficiency, and the other half correspond to structures appropriate to the B1 level or above.

Each item contains three pictures: one picture corresponds to the target sentence (the sentence which the child will hear) and the other two pictures are distractors. Three structures are tested in this task, and there are four sentences for each structure: passive sentences, relative clauses and interrogative sentences. In all of these structures (with the exception of adjectival passives), the verbs are transitive, the action is always reversible, and a progressive verb form is used.

Table 4 (next page) shows an example of each of the structures included in Task 3 and an example of the pictures is provided in Figure 2.



Structure	Target	Distractor picture 1	Distractor picture 2	Band
Adjectival passive	A porta está fechada. (PT) La porta è chiusa. (IT) La puerta está cerrada. (SP) 'The door is closed.'	an open door	a door being closed	A1/A2
Verbal passive	A mãe está a ser penteada pela avó. (PT) La mamma viene pettinata dalla nonna. (IT) La madre está siendo peinada por la abuela. (SP) 'The mother is being combed by the grandmother.'	a grandmother being combed by a mother	a mother being combed by a girl	B1+
Subject relative clause	Escolhe a menina que está a molhar o elefante. (PT) Indica la ragazza che sta bagnando l'elefante. (IT) Elige a la niña que está mojando al elefante. (SP) 'Pick the girl that is wetting the elephant.'	an elephant wetting a girl	a girl wetting a hippo	A1/A2
Object relative clause	Escolhe o cão que o gato está a lamber. (PT) Indica il cane che il gatto sta leccando. (IT) Elige al perro que el gato está lamiendo. (SP) 'Pick the dog that the cat is licking.'	a dog licking a cat	a rabbit licking a dog	B1+
Subject interrogative	Que menino é que está a lavar o pai? (PT) Quale bambino lava il papà?(IT) ¿Qué niño está lavando a su padre? (SP) 'Which boy is washing his father?'	a father washing a boy	a boy washing his grandfather	A1/A2
Object interrogative	Que carro é que a mota está a puxar? (PT) Quale macchina la motocicletta traina? (IT) ¿Qué coche está a la motocicleta remolcando? (SP) 'Which car is the motorbike pulling?'	a car pulling a motorbike	a tractor pulling a car	B1+

Table 4: Types of structures used in Task 3 in Portuguese (PT), Italian (IT) and Spanish (SP).



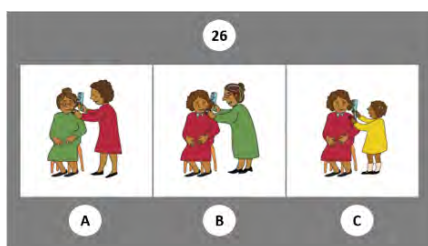


Figure 2: Example of pictures used in Task 3 (target sentence: 'The mother is being combed by the grandmother')

#### Task 4 – Matching sequences of a short story to pictures

The goal of this task is to assess the child's ability to understand a short narrative text.

The task is a picture selection task, containing a total of six items: half the items correspond to sentences containing vocabulary and structures that children are expected to have mastered at the A1 or A2 level of proficiency, and the other half to sentences appropriate to the B1 level or above. Two pictures are shown for each item.

The sentences corresponding to the A1/A2 proficiency band are simple sentences with verbs in the simple past and use basic vocabulary. The sentences corresponding to the B1+ band are complex sentences, containing subordinate clauses (complement and adverbial clauses expressing cause or time) and a wider range of verb forms (simple past/imperfect/past perfect and indicative vs. subjunctive), with more advanced vocabulary.

The short narrative text is divided in six sequences (the six items of the task). The tester reads each sequence of the text aloud, shows the child two pictures and asks the child a comprehension question. The child must then select the picture which corresponds to the right answer. Table 5 shows two examples of the items used in Task 4 and the corresponding pictures are shown in Figures 3 and 4.

Text	Question	Pictures	Band
<p>Numa tarde de verão, um menino e uma menina foram à praia. (PT)</p> <p>In un pomeriggio d'estate un ragazzo ed una ragazza andarono in spiaggia. (IT)</p> <p>Una tarde de verano, un chico y una chica fueron a la playa. (SP)</p> <p>'On a Summer afternoon, a boy and a girl went to the beach.'</p>	<p>Quem é que foi à praia? (PT)</p> <p>Chi andò in spiaggia? (IT)</p> <p>¿Quiénes fueron a la playa? (SP)</p> <p>'Who went to the beach?'</p>	<p><u>Target:</u> a boy and a girl</p> <p><u>Distractor:</u> two girls</p>	A1/A2
<p>Na praia, como estava muito calor, o menino pediu à menina que lhe pusesse protetor solar. (PT)</p> <p>In spiaggia, siccome faceva molto caldo, il ragazzo chiese alla ragazza che gli spalmasse un po' di crema solare. (IT)</p> <p>En la playa, como hacía mucho calor, el niño le pidió a la niña que le pusiera crema solar. (SP)</p> <p>'On the beach, as it was very hot, the boy asked the girl to put sunscreen on him.'</p>	<p>O que é que aconteceu? (PT)</p> <p>Cosa accadde? (IT)</p> <p>¿Qué sucedió? (SP)</p> <p>'What happened?'</p>	<p><u>Target:</u> the girl putting sunscreen on the boy's back</p> <p><u>Distractor:</u> the boy putting sunscreen on the girl's back</p>	B1+

Table 5: Examples of the items used in Task 4 in Portuguese (PT), Italian (IT) and Spanish (SP).

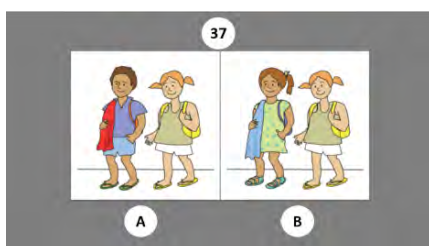


Figure 3: Pictures for A1/A2 item in Task 4 (question “Who went to the beach?”)

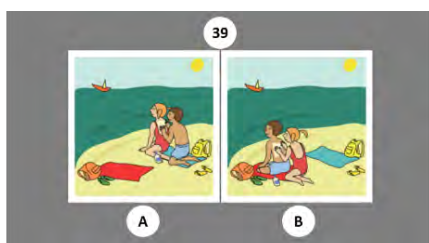


Figure 4: Pictures for B1+ item in Task 4 (question “What happened?”)

## 2.2.2.2 Oral production

### Task 5 – Describing pictures

The goal of this task is to assess the child’s ability to describe persons and objects.

The child is shown two pictures and is asked to describe the differences between them. Each difference corresponds to an item of the task, with a total of 8 items: half the items are at A1 or A2 level and half are at the B1 level or above. To describe the differences, the child will have to use vocabulary that he/she is expected to know at each of these proficiency bands. The vocabulary to be used belongs to the following domains: clothes, colours, physical characteristics, weather, shops, professions, and domain-specific objects.

Two examples of the items used in Task 5 can be seen in Table 6. The two pictures are shown in Figure 5.

Question	Band
carro amarelo / carro vermelho (PT) macchina gialla / macchina rossa (IT) coche amarillo / coche rojo (SP) 'yellow car / red car'	A1/A2
un músico a tocar violino / um músico a tocar flauta (PT) suonatore di violino / suonatore di flauto (IT) un músico tocando el violín / músico tocando la flauta (SP) 'musician playing the violin / musician playing the flute'	B1+

Table 6: Examples of the items used in Task 5 in Portuguese (PT), Italian (IT) and Spanish (SP).



Figure 5: Pictures used in Task 5

### Task 6 – Answering questions on familiar topics

The goal of this task is to assess the child's ability to give personal information and to talk about familiar topics.

The task is organized in a question/answer format and contains a total of eight items: half the items are questions to which children who are at A1 or A2 level of proficiency are expected to be able to answer and the other half are questions appropriate to the B1 level or above. The questions corresponding to the A1/A2 proficiency band are simple questions with verbs in the present. These questions focus on familiar domains and everyday routines. The questions corresponding to the B1+ band are more complex questions, containing a wider range of verb forms. They also focus on familiar topics but children are required to by talk about their likes or dislikes, express personal views and talk about past and future events.

Table 7 shows two examples of the items used in Task 6.

Question	Band
Tens algum animal de estimação? Que animal? (PT) Hai degli animali domestici? Quali? (IT) ¿Tienes alguna mascota? ¿Cuál? (SP) 'Do you have any pets?' [If the child answered yes, ask:] 'Which pets?'	A1/A2
Achas que é importante tratar bem dos animais? Porquê? (PT) Pensi che sia importante trattare bene gli animali? Perché? (IT) ¿Tú crees que es importante tratar bien a los animales? ¿Por qué? (SP) 'Do you think it is important to treat animals well? Why?'	B1+

Table 7: Examples of the items used in Task 6 in Portuguese (PT), Italian (IT) and Spanish (SP).

### Task 7 – Answering questions about a picture

The goal of this task is to assess the child's ability to describe activities and to talk about likes and personal experiences.

The task is based on a picture which represents different activities that people do in a park and it is organized in a question/answer format. It includes eight items: half the items are questions to which children who are at A1 or A2 level of proficiency are expected to answer and the other half are questions appropriate to the B1 level or above. The questions corresponding to the A1/A2 proficiency band are simple questions with verbs in the present. The answers to these questions demand the use of basic vocabulary in the domain of clothes, food, and leisure activities. The questions corresponding to the B1+ band are more complex questions, containing a wider range of verb forms and they require children to be able to talk about their likes, personal views and experiences related to leisure activities.

Two examples of the items used in Task 7 can be seen in Table 8. The picture is shown in Figure 6.

Question	Band
<p>O que é que estas pessoas estão a comer? (PT)</p> <p>Cosa stanno mangiando queste persone? (IT)</p> <p>¿Qué está comiendo esta gente? (SP)</p> <p>'What are these people eating?' (indicating the family having the picnic)</p>	A1/A2
<p>Se estivesses neste piquenique, qual destes alimentos é que gostarias de comer? Porquê? (PT)</p> <p>Se tu stessi facendo questo picnic, quale di questi cibi ti piacerebbe mangiare? Perchè? (IT)</p> <p>Si tú estuvieras haciendo un picnic, ¿qué tipo de comida te gustaría comer? ¿Por qué? (SP)</p> <p>'If you were having this picnic, which of these foods would you like to eat? Why?'</p>	B1+

Table 8: Examples of the items used in Task 7 in Portuguese (PT), Italian (IT) and Spanish (SP).



Figure 6: Picture used in Task 7

### Task 8 – Telling a short story from pictures

The goal of this task is to assess the child's ability to narrate a story. The task consists of telling a short narrative text using pictures. The child is shown four of the pictures used in Task 4; two of them were used as target pictures and the other two as distractor pictures in Task 4.

For the purposes of the task, it is not relevant whether children tell or retell the story. What is being assessed is how well the child is able to structure the narrative, how fluent his/her speech is, how well articulated the sentences are among themselves, and how diversified the vocabulary is.

The four pictures are shown in Figure 7 below.

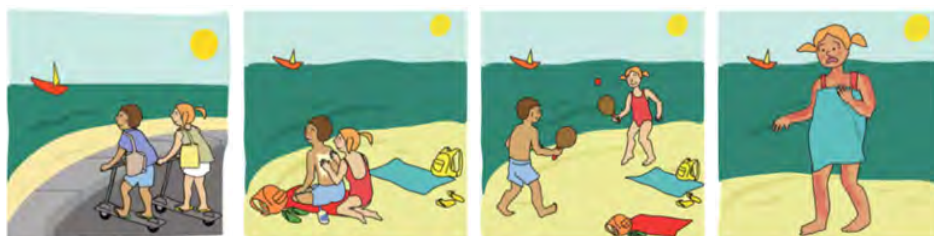


Figure 7: Pictures used in Task 8.

## 2.3. READING ASSESSMENT TOOL

### 2.3.1 Background

The Read4Succeed Reading Tool (RT) is a reading assessment tool constructed in Portuguese and

adapted to Dutch, Italian and Spanish within the Erasmus+ project Read4Succeed. However, the RT was not used in the Netherlands. Instead, the CITO toets was used, which is a reliable and validated instrument that measures the same constructs as the RT and is used regularly by all Dutch teachers with all children in their classes.

As indicated in Section 2.1., the RT is designed for children aged 7-10 years whose first language is not the language of the host country. It comes in two versions: a version aimed at children at an elementary level (A1/A2 on the Common European Framework of Reference) and a version aimed at children at an intermediate level or above (B1+). The proficiency level of the children can be determined by administering the Read4Succeed LPT (see section 2.2.).

The RT pack contains the following documents for each version:

- a manual, containing a description of the tasks and the stimuli, as well as the guidelines for administering and scoring each task
- a screen presentation containing the stimuli
- a printable record sheet, which contains the list of stimuli and where the tester registers the codes corresponding to the child's answers
- a spreadsheet to calculate the scores

The RT assesses different reading components in a total of four tasks for each version. The overall structure of the tool is shown in Table 9.

A1/A2 Version	B1+ Version
<b>Task 1</b> Word identification 24 items	<b>Task 1</b> Word identification 48 items
<b>Task 2</b> Sentence comprehension 8 items	<b>Task 2</b> Sentence comprehension 16 items
<b>Task 3</b> Reading fluency 1 item	<b>Task 3</b> Reading fluency 1 item
<b>Task 4</b> Text comprehension 4 items	<b>Task 4</b> Text comprehension 8 items

Table 9: Structure of the Reading Tool.

In the following section of this chapter, we will describe the four tasks included in the RT, considering both versions of the tool. It is important to note that the B1+ version includes the items of the A1/A2 version and additional items (for this reason, the B1+ version consists of twice as many items as the A1/A2 version, except in Task 3). The tasks are described mainly based on the Portuguese version. The adaptation of the RT is described in section 2.3.3., including examples from the Portuguese, Italian, and Spanish versions.

### 2.3.2 Description of the tasks and task items

#### Task 1 – Word identification

The goal of this task is to assess the ability to identify written words and pseudowords. The stimuli are read aloud by the child.

In the A1/A2 version, the task contains 24 items corresponding to 16 words and eight pseudowords[1]. These are orthographically regular[2] words and pseudowords.

In the B1+ version, the task contains 48 items corresponding to 32 written words and 16 written pseudowords. Stimuli are organized in two groups: 16 words and 8 pseudowords which are considered orthographically regular (these are the same stimuli used in the A1/A2 version); 16 words and 8 pseudowords which are considered orthographically irregular.

In both versions, the stimuli are controlled for two other criteria: syllabic length and syllabic structure of words and pseudowords selected for the task. Half of the words and half of the pseudowords have two syllables, whereas the other half consists of words and pseudowords with three syllables. Additionally, the words and the pseudowords present either a simple syllabic structure (CV or CVC) or a complex structure (CCV). In the B1+ version, these criteria are followed within each group of words: orthographically regular and orthographically irregular words.

All the words selected for the task are nouns and are expected to be familiar words to learners within each proficiency band (A1/A2 or B1+).

Table 10 below presents the written words and pseudowords in the Portuguese version.

Orthography	# syllables	Syllabic structure	Words		Pseudowords
Regular	2	Simple (CV/CVC)	luva fada filme barco	'glove' 'fairy' 'film' 'boat'	voba balno
		Complex (CCV)	livro pedra clube bloco	'book' 'stone' 'club' 'notepad'	mupre flida
	3	Simple (CV/CVC)	panela batata perfume malvado	'pot' 'potato' 'perfume' 'bad'	duvila virtala
		Complex (CCV)	cabrito palavra planeta teclado	'goatling' 'word' 'planet' 'keyboard'	tripafo lublito

Orthography	# syllables	Syllabic structure	Words		Pseudowords
Irregular	2	Simple (CV/CVC)	gancho rolha cesto parque	'hairpin' 'cork' 'basket' 'park'	guinha xalse
		Complex (CCV)	bruxa classe sogra templo	'witch' 'class' 'mother in law' 'temple'	cluncha quipro
	3	Simple (CV/CVC)	desenho borracha sardinha salsicha	'drawing' 'rubber' 'sardine' 'sausage'	gicompe caspisso
		Complex (CCV)	preguiça travessa blusinha flamingo	'sloth' 'platter' 'blouse' 'flamingo'	grasilho cimplacho

Table 10: List of words used in Task 1 (Portuguese version). The grey cells contain the words and pseudowords that are included only in the B1+ version.

## Task 2 – Sentence comprehension

The goal of Task 2 is to assess the ability to comprehend written sentences.

The task is a picture selection task, and the stimuli are written sentences. Each sentence is read by the child and associated with one of three pictures: one picture corresponds to the target sentence and the other two pictures are distractors.

In the A1/A2 version, the task contains eight items, corresponding to four types of syntactic structures (two items for each structure) which are expected to be known by A1/A2 learners: active sentences (subject + verb + object), e.g. 'The elephant is dirtying the monkey'; coordinate structures in which the subject is coordinated with e ('and'), e.g. 'The dog and the cat are wetting the mice'; *que* ('that') relative clauses in which the subject is being relativized, e.g. 'Pick the rabbit that is catching the cat'; and temporal adverbial clauses with *antes de* ('before') in which the subordinate occurs after the main clause, e.g. 'The teacher read the book before opening the window'.

The B1+ version contains the same items included in the A1/A2 version and additional items to assess syntactic structures which are expected to be known by B1+ learners (two items for each structure): verbal passive sentences with a by-phrase, e.g. 'The sheep is being licked by the cow'; coordinate structures in which two clauses with intransitive verbs are coordinated with e ('and'), e.g. 'The monkey is jumping and the tiger is running'; *que* ('that') relative clauses in which the object is being relativized, e.g. 'Pick the dancer that the singer is greeting'; temporal adverbial clauses with *antes de* ('before') in which the subordinate occurs before the main clause, e.g. 'Before pulling the hose, the firefighter turned on the siren'.



In active sentences, passive sentences, coordinate structures and relative clauses, the action is always reversible, and a progressive verb form is used. All the verbs are transitive, except in the two coordinate structures in which two clauses are coordinated.

Table 11 below presents the written sentences of the Portuguese version.

Type of syntactic structure	Sentence
Active	<i>A princesa está a abraçar a fada.</i> 'The princess is hugging the fairy'
	<i>O elefante está a sujar o macaco.</i> 'The elephant is dirtying the monkey'
Passive	<i>A mãe está a ser fotografada pela menina.</i> 'The mother is being photographed by the girl'
	<i>A ovelha está a ser lambida pela vaca.</i> 'The sheep is being licked by the cow'
Coordinate	<i>O cão e o gato estão a molhar os ratos.</i> 'The dog and the cat are wetting the mice'
	<i>O cavalo e o porco estão a empurrar os bois.</i> 'The horse and the pig are pushing the oxen'
	<i>O macaco está a saltar e o tigre está a correr.</i> 'The monkey is jumping and the tiger is running'
	<i>O pinguim está a andar e o pato está a nadar.</i> 'The penguin is walking and the duck is swimming'
Relative	<i>Escolhe o coelho que está a apanhar o gato.</i> 'Pick the rabbit that is catching the cat'
	<i>Escolhe a menina que está a acordar a mãe.</i> 'Pick the girl that is awakening the mother'
	<i>Escolhe a bailarina que a cantora está a cumprimentar.</i> 'Pick the dancer that the singer is greeting'
	<i>Escolhe o ladrão que o polícia está a filmar.</i> 'Pick the thief that the policeman is filming'
Temporal adverbial	<i>O professor leu o livro antes de abrir a janela.</i> 'The teacher read the book before opening the window'
	<i>O menino fez a cama antes de tomar banho.</i> 'The boy made the bed before taking a bath'
	<i>Antes de soprar o balão, o palhaço tocou violino.</i> 'Before blowing the balloon, the clown played the violin'
	<i>Antes de puxar a mangueira, o bombeiro ligou a sirene.</i> 'Before pulling the hose, the firefighter turned on the siren'

Table 11: List of sentences used in Task 2 (Portuguese version). The grey cells contain the syntactic structures that are included only in the B1+ version.

### Task 3 – Reading fluency

The goal of this task is to assess the ability to read a narrative text fluently.

Children are asked to read a text aloud. The text which the children are asked to read is the same to be used in Task 4 to assess reading comprehension (details about the text are given in the



description of Task 4). The measures of reading fluency considered in this task are the total number of words which are read correctly by the child and the total reading time in seconds. The reading is considered to be correct if the child does not make any errors, such as substitutions, insertions, omissions, or reordering of full words, syllables or segments, as well as misplacement of the word accent.

#### Task 4 – Text comprehension

The goal of Task 4 is to assess the ability to comprehend a narrative text. The task is a multiple-choice task, with three options each. The child reads the text silently and then completes the task.

The A1/A2 version contains four items, which test literal comprehension of the text. The text was designed according to the following criteria: (a) the vocabulary is appropriate to the A1 or A2 level of proficiency and belongs to domains with which children are expected to be familiar; (b) the sentences are short, and they are mostly simple or coordinated; the complex structures included are complement clauses (infinitival or introduced by *que* 'that'), relative clauses in which the subject is relativized, temporal clauses (introduced by *quando* 'when') and purpose clauses (introduced by *para* 'in order to'); (c) most of the information is presented explicitly. The text has a length of 164 words (in the Portuguese version).

In the B1+ version, the task contains the same items as the A1/A2 version and 4 additional items, testing literal and inferential comprehension of the text. The first half of the text is the same as the one used in the previous version. The second half of the text was designed according to the following criteria: (a) the vocabulary is appropriate to the B1+ level of proficiency and belongs to domains with which children are expected to be familiar; (b) some of the sentences are simple or coordinated sentences, but there are also more complex structures and forms, which children with higher proficiency are expected to have mastered: compared to the A1/A2 half of the text, there is a more diverse range of subordinate clauses (e.g., consecutive, conditional, modal), a wider variety of connectors (e.g., conditionals introduced by *se* 'if' and *desde que* 'as long as') and more complex verb forms (e.g., subjunctive, conditional, personal infinitive); (c) the information is presented both explicitly and implicitly. The text has a total length of 320 words (Portuguese version).

The full text and the items of this task are presented in Tables 12 and 13 below.

#### O cão que sonhava viajar 'The dog who dreamed of traveling'

<p>Era uma vez um cão que se chamava Xico. Ele vivia feliz com um menino, o Jaime, e os dois brincavam muito.</p>	<p>Once upon a time there was a dog who was called Xico. He lived happily with a boy, Jaime, and the two played a lot.</p>
<p>O Xico tinha o sonho de viajar pelo mundo e conhecer outros lugares. Um dia, ele teve uma ideia: –Vou à estação, compro um bilhete e apanho um comboio para outra cidade.</p>	<p>Xico had the dream of traveling around the world and getting to know other places. One day, he had an idea: –I will go to the station, buy a ticket, and take a train to another city.</p>
<p>Na estação, quando o Xico chegou à bilheteira, descobriu que não tinha dinheiro suficiente para comprar o bilhete. O cão voltou para casa muito triste, mas logo começou a pensar noutra ideia:</p>	<p>At the station, when Xico arrived at the ticket office, he found that he did not have enough money to buy the ticket. The dog returned home very sad, but soon began to think of another idea:</p>

<p>–Com uma bicicleta, posso ir a qualquer lado. Vou aprender a andar de bicicleta! –disse o Xico.</p> <p>Mas depressa percebeu que andar de bicicleta não é fácil para cães e ficou ainda mais triste. Nessa altura, o Jaime decidiu ajudar o Xico e disse-lhe:</p> <p>–Podemos viajar de muitas maneiras. Senta-te aqui.</p> <p>Então o Jaime abriu um livro, começou a ler uma história e os dois viajaram na sua imaginação para um lugar distante.</p>	<p>–With a bike, I can go anywhere. I will learn to ride a bike! –Xico said.</p> <p>But he soon realized that riding a bike is not easy for dogs and he became even sadder. At that time, Jaime decided to help Xico and told him:</p> <p>–We can travel in many ways. Sit here.</p> <p>So Jaime opened a book, started to read a story and the two traveled in their imagination to a distant place.</p>
<p>O Xico gostou tanto de ler com o Jaime que também quis aprender a ler.</p> <p>–Jaime, posso ir contigo à escola?</p> <p>O Jaime nem hesitou e, depois de falar com o seu professor, levou o Xico para a sala de aula. Não foi preciso muito tempo para que ele começasse a ler as primeiras palavras e depois os primeiros livros.</p> <p>Porém, o melhor momento ainda estava por chegar.</p> <p>–Anda, Xico, vou mostrar-te um lugar muito especial –disse-lhe o Jaime, um dia, levando-o a conhecer a biblioteca.</p> <p>–Se eu pudesse, ficaria a viver aqui para sempre! –disse o Xico, entusiasmado, ao ver as estantes cheias de livros.</p> <p>–Podes levar livros para casa desde que cuides bem deles –explicou o Jaime.</p> <p>Nesse dia, muito animado, o Xico convidou os cães da sua rua para o ouvirem ler.</p> <p>E a partir de então, o Xico e os amigos puderam viajar por todo o mundo sem nunca sair da cidade.</p>	<p>Xico enjoyed reading with Jaime so much that he also wanted to learn to read.</p> <p>–Jaime, can I go to school with you?</p> <p>Jaime did not even hesitate and, after talking to his teacher, he took Xico to the classroom. It did not take long for him to start reading the first words and then the first books.</p> <p>However, the best moment was yet to come.</p> <p>–Come, Xico, I am going to show you a very special place - Jaime told him one day, taking him to visit the library.</p> <p>–If I could, I would live here forever! –said Xico, enthusiastic, seeing the shelves full of books.</p> <p>–You can take books home as long as you take good care of them –Jaime explained.</p> <p>On that day, Xico, very excited, invited the dogs from his street to listen to him read.</p> <p>And from then on, Xico and his friends were able to travel around the world without ever leaving the city.</p>

Table 12: Text used in Task 3 and 4 (Portuguese version). The grey cells contain the part of the text that is included only in the B1+ version.

<p>O Xico sonhava</p> <p>a) conhecer outros lugares. b) ficar na mesma cidade. c) voltar para casa.</p> <p>O Xico não comprou um bilhete porque</p> <p>a) pensou noutra ideia. b) a bilheteira estava fechada. c) tinha pouco dinheiro.</p> <p>O Xico percebeu que</p> <p>a) é fácil andar de bicicleta. b) podemos viajar através de histórias. c) o Jaime não o queria ajudar.</p> <p>A ideia de ler uma história foi</p> <p>a) do Xico. b) do Jaime. c) dos dois.</p>	<p>Xico dreamed about</p> <p>a) getting to know other places. b) staying in the same city. c) returning home.</p> <p>Xico did not buy a ticket because</p> <p>a) he thought of another idea. b) the ticket office was closed. c) he had little money.</p> <p>Xico realized that</p> <p>a) it is easy to ride a bike. b) we can travel through stories. c) Jaime did not want to help him.</p> <p>The idea of reading a story came from</p> <p>a) Xico. b) Jaime. c) the two.</p>
<p>O Xico quis aprender a ler,</p> <p>a) porque detestou ler com o Jaime. b) mas precisou de muito tempo. c) por isso pediu para ir à escola.</p> <p>Antes de levar o Xico para a aula, o Jaime</p> <p>a) ficou com dúvidas. b) falou com o professor. c) levou-o à biblioteca.</p> <p>Quando mostrou a biblioteca ao Xico, o Jaime disse que</p> <p>a) queria ficar a viver lá para sempre. b) os livros ficavam na biblioteca. c) era preciso cuidar dos livros.</p> <p>O Xico</p> <p>a) continuou a ler livros com os amigos. b) nunca mais terá ido à biblioteca. c) mudou-se para outra cidade.</p>	<p>Xico wanted to learn to read,</p> <p>a) because he hated reading with Jaime. b) but it took him a long time. c) therefore, he asked to go to school.</p> <p>Before taking Xico to the classroom, Jaime</p> <p>a) was in doubt. b) spoke with the teacher. c) took him to the library.</p> <p>When he showed Xico the library, Jaime said that</p> <p>a) he wanted to live there forever. b) the books stayed in the library. c) it was necessary to take care of the books.</p> <p>Xico</p> <p>a) continued to read books with his friends. b) probably never went to the library again. c) moved to another city.</p>

Table 13: List of items used in Task 4 (Portuguese version). The grey cells contain items that are included only in the B1+ version.

### 2.3.3. Adaptation to Italian and Spanish

The Portuguese version of the Read4Succeed Reading Tool was adapted to Dutch, Italian and Spanish. The process did not consist of a simple test translation, but a broader process which included selecting a person to adapt the tool, choosing necessary accommodations to the target language and meeting with the team of the Portuguese version to discuss the adaptations. In this section, we briefly compare the tasks of the tool in three languages – Portuguese, Italian and Spanish.

## Task 1 – Word identification

As described in the previous section, the criteria to select the stimuli for this task included orthographic regularity/irregularity, syllabic length (2 or 3 syllables), and syllabic structure (simple or complex). Translating the words from the Portuguese tool was insufficient to guarantee that these criteria were followed in the three languages. In some cases, an equivalent word was found in the three languages that met all the criteria, such as the word for 'book' (livro in Portuguese, and libro in Italian and Spanish) or 'boat' (barco in Portuguese and Spanish, and barca in Italian). However, in other cases, words had to be changed to meet the criteria in each target language. Table 14 below shows some examples of different words selected in each language. For example, in the regular two-syllable words with a complex structure, it was not possible to find an equivalent of the Portuguese word *clube*, given that in Italian and Spanish this word has only one syllable (*club*). The words *treno* and *blusa* were used instead as these meet all the criteria, including a complex onset in the first syllable.

Orthography	# syllables	Syllabic structure	Words		
			PT	IT	SP
Regular	2	Simple (CV/CVC)	<i>fada</i> 'fair'	<i>casa</i> 'house'	<i>cine</i> 'cinema'
		Complex (CCV)	<i>clube</i> 'club'	<i>treno</i> 'train'	<i>blusa</i> 'blouse'
	3	Simple (CV/CVC)	<i>perfume</i> 'perfum'	<i>cartone</i> 'cardboard'	<i>perfume</i> 'perfum'
		Complex (CCV)	<i>planeta</i> 'planet'	<i>fragola</i> 'strawberry'	<i>planeta</i> 'planet'
Irregular	2	Simple (CV/CVC)	<i>gancho</i> 'hairpin'	<i>pancia</i> 'belly'	<i>corcho</i> 'cork'
		Complex (CCV)	<i>bruxa</i> 'witch'	<i>spugna</i> 'sponge'	<i>clavo</i> 'nail'
	3	Simple (CV/CVC)	<i>sardinha</i> 'sardine'	<i>formiche</i> 'ant'	<i>barquillo</i> 'waffer'
		Complex (CCV)	<i>flamingo</i> 'flamingo'	<i>criceto</i> 'hamster'	<i>palabra</i> 'word'

Table 14: Examples of different words used in Task 1 in Portuguese (PT), Italian (IT) and Spanish (SP). The grey cells contain items that are included only in the B1+ version.

## Task 2 – Sentence comprehension

In this task, children are assessed on their ability to comprehend different written sentences. To adapt the stimuli from Portuguese to Italian and Spanish, it was necessary to ensure that the same syntactic structures were used in the three languages. Besides maintaining the same syntactic structures, the use of the same verb tenses (particularly, the progressive form) was also checked in the adaptation process.

Table 15 below shows an example of each syntactic structure included in the RT in the three languages.

Type of syntactic structure	Sentence
Active	A princesa está a abraçar a fada. (PT)
	La principessa sta abbracciando la fata. (IT)
	La princesa está abrazando al hada. (SP)
	'The princess is hugging the fairy'
Passive	A ovelha está a ser lambida pela vaca. (PT)
	La pecora è leccata dalla mucca. (IT)
	La oveja está siendo lamida por la vaca. (SP)
	'The sheep is being licked by the cow'
Coordinate	O cão e o gato estão a molhar os ratos. (PT)
	Il cane ed il gatto stanno bagnando i topi. (IT)
	El perro y el gato están mojando a los ratones. (SP)
	'The dog and the cat are wetting the mice'
	O pinguim está a andar e o pato está a nadar. (PT)
	Il pinguino sta camminando e l'anatra sta nuotando. (IT)
	El pingüino está andando y el pato está nadando. (SP)
	'The penguin is walking and the duck is swimming'
Relative	Escolhe a menina que está a acordar a mãe. (PT)
	Scegli la ragazza che sta svegliando la mamma. (IT)
	Elige a la niña que está despertando a la madre. (SP)
	'Pick the girl that is awakening the mother'
	Escolhe o ladrão que o polícia está a filmar. (PT)
	Scegli il ladro che il poliziotto sta filmando. (IT)
	Elige al ladrón que el policía está grabando. (SP)
	'Pick the thief that the policeman is filming'
Temporal adverbial	O professor leu o livro antes de abrir a janela. (PT)
	L'insegnante ha letto il libro prima di aprire la finestra. (IT)
	El profesor leyó el libro antes de cerrar la ventana. (SP)
	'The teacher read the book before opening the window'
	Antes de soprar o balão, o palhaço tocou violino. (PT)
	Prima di gonfiare il palloncino, il pagliaccio ha suonato il violino. (IT)
	Antes de inflar la pelota, el payaso tocó el violín. (SP)
	'Before blowing the balloon, the clown played the violin'

Table 15: Examples of the syntactic structures used in Task 2 in Portuguese (PT), Italian (IT) and Spanish (SP). The grey cells contain items that are included only in the B1+ version.

### Tasks 3 and 4 – Reading fluency and text comprehension

The stimulus for Tasks 3 and 4 was a narrative text. As previously described, the vocabulary, the syntactic structures, and the length of the text (in number of words) were controlled in the construction of these tasks. The adaptation from Portuguese to Italian and Spanish consisted mainly of translating the text. A final revision was made to guarantee that the vocabulary and syntactic structures were equivalent and adequate in terms of the proficiency band of the tool (A1/A2 or B1+). Two text excerpts in the three languages are shown below (Table 16), as well as an example of an item included in the reading comprehension task (Table 17).

	Text excerpt
PT	<p>Era uma vez um cão que se chamava Xico. Ele vivia feliz com um menino, o Jaime, e os dois brincavam muito.</p> <p>O Xico tinha o sonho de viajar pelo mundo e conhecer outros lugares. Um dia, ele teve uma ideia:</p> <p>–Vou à estação, compro um bilhete e apanho um comboio para outra cidade.</p> <p>Na estação, quando o Xico chegou à bilheteira, descobriu que não tinha dinheiro suficiente para comprar o bilhete. O cão voltou para casa muito triste, mas logo começou a pensar noutra ideia:</p> <p>–Com uma bicicleta, posso ir a qualquer lado. Vou aprender a andar de bicicleta! – disse o Xico.</p>
IT	<p>C'era una volta un cane che si chiamava Xico. Viveva felicemente con un ragazzo, Jaime, e i due giocavano molto.</p> <p>Xico aveva il sogno di viaggiare per il mondo e conoscere altri luoghi. Un giorno ebbe un'idea:</p> <p>–Andrò alla stazione, comprerò un biglietto e prenderò un treno per un'altra città.</p> <p>Alla stazione, quando Xico arrivò alla biglietteria, scoprì che non aveva abbastanza soldi per comprare il biglietto. Il cane tornò a casa molto triste, ma presto cominciò a pensare ad un'altra idea:</p> <p>–Con una bicicletta posso andare ovunque. Imparerò ad andare in bicicletta! – disse Xico.</p>
SP	<p>Érase una vez un perro que se llamaba Chico. Vivía muy feliz con un niño, Jaime, y los dos jugaban mucho juntos.</p> <p>Chico soñaba con viajar por todo el mundo y conocer otros lugares. Un día tuvo una idea:</p> <p>–Voy a ir a la estación, voy a comprar un billete y voy a tomar un tren a otra ciudad.</p> <p>En la estación, cuando Chico llegó a la taquilla, se encontró que no tenía suficiente dinero para comprar el billete.</p> <p>El perro volvió muy triste a casa pero pronto empezó a pensar en otra idea.</p> <p>–Con una bicicleta puedo llegar a cualquier sitio. Voy a aprender a montar en bicicleta – pensó Chico.</p>
	<p>Once upon a time there was a dog who was called Xico. He lived happily with a boy, Jaime, and the two played a lot.</p> <p>Xico had the dream of traveling around the world and getting to know other places. One day, he had an idea:</p> <p>–I will go to the station, buy a ticket, and take a train to another city.</p> <p>At the station, when Xico arrived at the ticket office, he found that he did not have enough money to buy the ticket. The dog returned home very sad, but soon began to think of another idea:</p> <p>–With a bike, I can go anywhere. I will learn to ride a bike! – Xico said.</p>

	Text excerpt
PT	<p>O Xico gostou tanto de ler com o Jaime que também quis aprender a ler.          –Jaime, posso ir contigo à escola?          O Jaime nem hesitou e, depois de falar com o seu professor, levou o Xico para a sala de aula. Não foi preciso muito tempo para que ele comesse a ler as primeiras palavras e depois os primeiros livros.          Porém, o melhor momento ainda estava por chegar.          –Anda, Xico, vou mostrar-te um lugar muito especial –disse-lhe o Jaime, um dia, levando-o a conhecer a biblioteca.          –Se eu pudesse, ficaria a viver aqui para sempre! –disse o Xico, entusiasmado, ao ver as estantes cheias de livros.</p>
IT	<p>A Xico piacque così tanto leggere con Jaime che volle anche imparare a leggere.          –Jaime, posso venire a scuola con te?          Jaime non esitò e, dopo aver parlato con la sua maestra, portò Xico in classe. Non ci volle molto tempo perché iniziasse a leggere le prime parole e poi i primi libri.          Tuttavia, il momento migliore doveva ancora arrivare.          –Vieni, Xico, ti mostrerò un posto molto speciale –gli disse un giorno Jaime, portandolo a visitare la biblioteca.          –Se potessi, vivrei qui per sempre! –disse Xico, entusiasta, vedendo gli scaffali pieni di libri.</p>
SP	<p>Chico se divirtió tanto leyendo con Jaime que le dijo que él también quería aprender a leer.          –Jaime, ¿puedo ir contigo al colegio?          Jaime no lo dudó, y después de hablar con su profesor, llevó a Chico a su clase. No le tomó mucho tiempo empezar a leer sus primeras palabras y, después, su primer libro. Sin embargo, el mejor momento estaba por llegar.          –Vamos Chico, te voy a enseñar un lugar muy especial le dijo Jaime un día, llevándolo a visitar la biblioteca.          –Si pudiera, me quedaría a vivir aquí para siempre dijo Chico entusiasmado, viendo las estanterías llenas de libros.</p>
	<p>Xico enjoyed reading with Jaime so much that he also wanted to learn to read.          –Jaime, can I go to school with you?          Jaime did not even hesitate and, after talking to his teacher, he took Xico to the classroom. It did not take long for him to start reading the first words and then the first books.          However, the best moment was yet to come.          –Come, Xico, I am going to show you a very special place –Jaime told him one day, taking him to visit the library.          –If I could, I would live here forever! –said Xico, enthusiastic, seeing the shelves full of books.</p>

Table 16: Excerpts of the text used in Tasks 3 and 4 in Portuguese (PT), Italian (IT) and Spanish (SP). The grey cells contain items that are included only in the B1+ version.

	Item
PT	O Xico não comprou um bilhete porque a) pensou noutra ideia. b) a bilheteira estava fechada. c) tinha pouco dinheiro.
IT	Xico non comprò il biglietto perché a) ha pensato ad un'altra idea. b) la biglietteria era chiusa. c) aveva pochi soldi.
SP	Chico no compró el billete porque a) Tuvo otra idea. b) La taquilla estaba cerrada. c) Tenía poco dinero.
	Xico did not buy a ticket because a) he thought of another idea. b) the ticket office was closed. c) he had little money.

Table 17: Example of an item included in Task 4 in Portuguese (PT), Italian (IT) and Spanish (SP).

[1] We understand pseudoword as a string of sounds/letters which could be an actual word in terms of its phonological/orthographic structure, but does not occur in the language.

[2] Regularity/irregularity refers to the way in which letters and sounds are associated in an orthographic system. Regular words have straightforward relationships between graphemes and phonemes. In the Portuguese RT: (i) all the regular words and pseudowords have the same number of letters and sounds; (ii) the letters representing consonants correspond only to a single sound, either in absolute terms (e.g., <f> only represents [f]) or in highly predictable contexts (e.g., <c> only represents [k] when followed by <a, o, u>); (iii) because most of the letters representing vowels may be associated with more than one sound, only oral vowels were included, most of them occurring in predictable contexts.

[3] This was not the case for the pseudowords as these were created for each language according to the defined criteria.

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## CHAPTER 3. THE R.E.A.D. PROGRAM

*Nicky Barendrecht-Jenken, Catia Lopes, Cristina Lopes, Ana Maria Molina, Elena Dominguez*

### 3.1 EXPLAINING THE R.E.A.D. PROGRAM

The R.E.A.D. program is a special reading program for young readers (generally aged 4 to 8 years) who struggle with words and reading out loud. The special thing that is added to this reading program is that there is a furry colleague, a trained and well-behaved trained animal, that is participating in the session. Children gain self-esteem as they begin to like reading aloud for the animal and therefore master the skill of reading. Another advantage of this program is that all R.E.A.D. teams are professionals in Animal Assisted Interventions. R.E.A.D. programs, and how they are facilitated, differ from country to country.

#### 3.1.1 Why read to an animal?

Research of interactions between children and animals shows that people, especially children with low self-esteem, are often more willing to interact with an animal than with another person. What happens during this interaction is that they focus better on an activity or discussion when an animal is present, and refer back to the sessions many times in later conversations. They are also inclined to forget about their own fears and limitations, because they are focusing on the animal instead. Physiological benefits of this type of interaction also include an increased relaxation and lower blood pressure.

When it comes to reading, children find reading to, and with, an animal less intimidating. For them it is a special time that is helpful and fun and makes them sort of forget the bad experiences they may have had with reading in the past. It literally transforms reading from a bad experience to a positive experience. It is in that positive environment when the magic happens, which makes it possible for children to start learning to read better. Key to the relationship with the child is that questions are focused on the dog, instead of targeting the child and putting pressure on him/her. This keeps the child from freezing in fear and helps the interaction flow. It also helps the child feel s/he is helping the dog instead of vice-versa. This role-reversal turns out to be vital to helping the kids enjoy the program. When children feel safe, welcome and relaxed, their minds are also more open to learning. But when they stay in the same negative environment they aren't able to open up to new learning experiences: they are unable to learn. It is the animal that is the primary motivator for the children to read. They really want to perform well for their animal friend. One of the key successes of the R.E.A.D. program is the experience for children that they are no longer the target of yet another remedial program, but are the tutor and helper for the dog. That really helps them to feel more empowered, satisfied and valuable.

The R.E.A.D. program therefore promotes a way that animals can make a positive difference in children's lives. It is extremely flexible and can be implemented in many settings. You can see reading partners in schools, libraries, care centers for domestic violence, day-care centers, hospitals, prisons, bookshops etc. The program can be implemented in different socio-economic and cultural contexts, since the animals are without bias and judgment. The program addresses the "whole person" of the child, thus the benefits overflow into other areas of the child's life, beyond reading and intellectual skills.

#### 3.1.2 Two types of R.E.A.D. programs

There are two types of R.E.A.D. programs: a program designed for libraries and one designed for schools. There is a difference: reading in a library is mainly seen as AAA (Animal Assisted Activities) and reading in schools is seen as AAE (Animal Assisted Education). The programs will be explained in the next chapter, but at a glance, the main differences are:

### **R.E.A.D. in a library**

Being a R.E.A.D. team in a library is a wonderful way for handlers and their reading dog to work together with children of all ages and reading abilities. This part of R.E.A.D. work is defined as an Animal Assisted Activity because the experience is motivational, educational and fun, but not treatment. Whether the team is reading with reading-challenged kids, kids who don't read at all yet, or with excellent readers, the primary focus is on being an inspiration for kids to practice, making them literally feel good and demonstrating that reading is FUN-and that will make a difference throughout each child's life.

### **R.E.A.D. in schools**

Being a R.E.A.D. team in schools is very satisfying for those who enjoy - and have the time for - a serious and extended commitment to a small number of children. While lots of fun, it is not a casual undertaking. It is usually a form of Animal Assisted Education because it is, the same as in the library, one-on-one, but specific goals are established for each participating child, and their progress is monitored and documented. R.E.A.D. in the school setting requires some extra specific skills, not least of which is a willingness and ability to engage personally with each of the young clients without overstepping inappropriate boundaries. The temptation to get overly-involved in their lives can be ever-present. At the same time, the opportunity is there for the handler and his/her trained animal to have a significant positive impact on every child's life.

### **3.1.3 About the R.E.A.D. teams**

#### **The team**

A R.E.A.D. team always consists of an educated handler with his/her own certified and registered animal(s). Most of the animals are dogs, but cats, horses and other animals are also sometimes used as reading partners. The R.E.A.D. program utilizes registered animals that have been trained and tested for health, safety, skills and temperament. Potential reading teams (handler and animal) need training on "both ends of the leash," as Intermountain Therapy Animals promotes. When working as a R.E.A.D. team, the handlers and their animals are offering children an irresistible opportunity to improve their reading in a setting which has proven not only effective but fun. And fun is a powerful, motivating force for learning, something grown-ups often overlook.

When working together in a R.E.A.D. session, both handler and dog must be able to work well together. The handler should always be present with the animal when reading with a child. The animal needs his 'translator'. First, when a child gets stuck or frustrated, the animal is simply unable to help, and the child's frustration and feelings of incompetence—or even hopelessness—will only increase. Secondly, there are unlimited positive ways to help and support a child's efforts that are not demeaning, critical or discouraging. The team is trained in those skills so that the child will feel encouraged, proud of accomplishments, and eager to keep learning more. That's why we say one key of the success of the R.E.A.D. program is that the team is like a pair of scissors: one half is not more important than the other, and both halves are needed to perform the task at hand; they need each other to function well. A child will feel this partnership while reading with a dog. The team should be able to make the child feel comfortable and should watch out that children are viewing themselves as the target of yet another remedial program. They should make the shift toward them seeing themselves as tutors and helpers for the dog. This is validating, empowering and satisfying for the children.

Because there are so many different testing and licensing entities in Europe and elsewhere around the world, with different training regiments, and because potential R.E.A.D. teams have different levels of experience with animal assisted interactions, let's now describe the responsibilities and expectations for a visiting team in the R.E.A.D. program.

## **The handler**

Firstly, the handler working with R.E.A.D. should also enjoy reading, should have compassion for and patience with children and is willing to explore children's books. They should be willing to get to know the children, understand their challenges, and remember things about them.

Secondly, handlers must have had educational training in AAI. They must be their dog's best advocate and know how to be a true partner to their animal. They need to know what they like and don't like, know how to read their communication signals and how to communicate with them through body language. Some of them are also dog assisted coaches, school staff personnel or reading specialists, but this is not mandatory. In addition to their education, they follow a specialized R.E.A.D. training course, in which they learn all about the R.E.A.D. program, of Animal Assisted Reading, how to respond in certain situations and how to be the best advocate for their animal during reading sessions.

Be your animal's advocate. By this we mean that your animal companion is not simply a piece of equipment to be taken off the shelf and out of the house whenever you want to. S/he is a living being with opinions and preferences and is truly your colleague and partner, the one who makes the magic happen. It is your obligation as a handler to keep the animal happy and confident, to keep working on your mutual understanding and to act when it seems necessary.

The handler should become a student of his/her animal, not solely a student of Animal Assisted Interventions for clients. While working together they must be their animal's best advocate, which also means that they support their animal before attending to the needs of the client. It is therefore important to find out what your animal likes and doesn't like. Allow your animal to make decisions, because animals who have a say in what they do, enjoy their work even more. Treat your animal like your best friend; really listen to her/him; really learn from her/him. When the animal is safe and happy, the client can be too. By doing this we make the reading session a rewarding, wonderful and magical experience for all parties involved.

## **The animal partner**

Not all dogs are suitable for R.E.A.D. work. The animal that is a partner in the R.E.A.D. session should be trained and tested for health, safety, skills and temperament. By this we mean that an animal should have, for instance, social skills: it must be able to thrive and flourish in human society. They must like the attention, love to have contact with humans they don't know, be comfortable in low-key settings and be able to deal with strange noises (school bells, surprises, puppets in the face, and costumes are just a few of the things our teams have encountered), close contact and unexpected events. This is very important since during R.E.A.D. sessions the animal is mostly in a strange environment, close to the child and can be petted during sessions. An animal that doesn't like all this, might not be the perfect reading partner.

### **3.1.4 Preparing for a R.E.A.D. session**

Before even going to a facility to present yourself as a professional R.E.A.D. team, you should train together with your animal. You can, for example, start by sitting on the floor and reading aloud to your animal (with a special blanket or other 'space definer'), to help your animal acclimatize to what they will experience. After home-training your animal, you can take your blanket to other places like a park or a parking lot to help your animal get used to distractions. You can start with simple cues such as 'look' when you want your animal to look at the page (you can, for example, use small treats hidden between the pages to encourage the animal's interest in a book). Hiding the treats in the book at home to train and practice with the animal will help them to become very attentive to the book. Your reader will also appreciate the animal's incredible command of the written word! More tips and tricks you will find later on in Chapter 6.

### **Before entering a facility**

If you want to visit a school, library or another facility with your dog, it is good to take precautions. You should make preparations for the animal's health and welfare and have a contact person who will help you during your visit. You should discuss what might be best for all participants (the facility doesn't always know what space might be good for you or your animals, so you might need to help them with that) and about your readers' abilities, confidence level and reading skills, including vocabulary and proficiency.

You should talk about the length of the sessions: Keep your R.E.A.D. visits to about an hour, or perhaps an hour and a half for an experienced animal. Even when a dog is a seasoned R.E.A.D. companion, the absolute maximum length of a visit should be no more than two hours. Best is to keep a maximum of 1 hour at school in which one reads with 3 children (20 minutes per child) and taking time afterwards to let the dog rest up after his exertions.

### **Preparing your reading space**

Maybe the most important thing to take with you and to prepare for your reading session is the R.E.A.D. blanket. The environment of the R.E.A.D. blanket is one of the most intimate and potentially rewarding settings for a therapy team and young readers. But as such, it requires you, the animal handler, to be continually aware of everything going on around your animal and what s/he may be telling you. It is your job as a handler to tune in to your animal to ensure a safe and rewarding reading experience.

### **During a R.E.A.D. session**

During a R.E.A.D. session the handler is always near the animal. They should be able to pay attention to his/her animal's behavior at all times and know how their particular animal companion expresses stress and be aware of his/her stress level at all times during a session. Besides that, they also need to pay attention to their reader, his/her signals and reading abilities. This can be a really hard job to do at the same time. During their R.E.A.D. training, handlers are taught how to be their dog's best advocate at all times and how they can keep their focus on both the reader and the dog at the same time.

### **After a R.E.A.D. session**

You can always end your session with a little game for reader and dog, but then it is time to give your animal his well-deserved free time to do what s/he loves best. It depends on the handler and his animal and how well they know each other to properly give them what they need afterwards. Some animals need to run free, others need to sniff around, while others just need some sleep to recover. Recognize that the animal is probably tired and needs some quiet time afterwards.

Give your animal the time needed to recover, time to regain himself and to rest, after all the efforts of that day.

R.E.A.D. sessions are so much more than just reading with a dog on a blanket.

## **3.2. BACKGROUND AND PRINCIPLES OF THE R.E.A.D. PROGRAM**

The *Reading Education Assistance Dogs* (R.E.A.D.®) is a reading program of *Intermountain Therapy Animals* (ITA) with the aim of improving children's reading skills supported by registered therapy teams that act as mentors during the reading process.

*Intermountain Therapy Animals* (ITA) is an American organization with over 20 years of experience that seeks to improve the quality of life of people through the bonds they establish with animals. In 1999, it launched the first literacy support program with dogs, based on an organized structure and on the welcoming concept of reading to a dog, with models for schools, libraries and other settings around this appealing idea. With this program, ITA won several awards and mentions and in 2009, the American Senate declared November 14 as national R.E.A.D. day.

### **Goals and mission**

The mission of the R.E.A.D. program is to improve the literacy skills of children, utilizing the companionship of therapy animals as catalysts and mentors specifically for literacy support. The goal is to encourage children to love books, creating an inviting reading environment so that the positive emotion of the experience is associated with the reading process.

### **R.E.A.D. teams**

After 20 years from its inception, more than 6000 R.E.A.D. teams across all continents have been trained and registered. The teams are reassessed every two years and the dog must have a specific work insurance for this type of intervention.

The dogs of the R.E.A.D. program are trained and submitted to rigorous evaluation according to the health, safety, aptitude and temperament requirements demanded by ITA.

The dog should enjoy interaction and have fun during sessions, and not forced to participate. The handler should always be the animal's advocate and protect their individual needs and honour their preferences.

### **R.E.A.D. sessions**

In some countries, the R.E.A.D. program is starting to be implemented in settings such as prisons or nursing homes, but it is mainly carried out in libraries and schools. In libraries, it is a leisure and educational activity, classified as Animal Assisted Activity (AAA). Children are not pre-selected, goals are not set, documentation is not kept and sessions are on a one-on-one basis, usually lasting from 15 to 20 minutes. In schools, the teachers select and establish goals for the students who would most benefit from the program; documentation is kept and progress is recorded. It is therefore classified as Animal Assisted Education (AAE). In addition, to measure the success of the program, some countries rely on the student's tests scores provided by their teachers, while in other countries specific reading tools are used to evaluate the students before and after engaging with the program. During each session, a visit report is usually completed by the handler and left at school in a folder, so that teachers can monitor and follow up the intervention. Sessions have a duration of 20 to 30 minutes and teams read with the same children on a weekly basis. In order to help the handler define the space of the dog, the sessions usually take place on the floor, with the child, the dog and the handler sitting on a blanket. The child is usually petting and stroking the dog while he is reading which induces relaxation, and before you know it, the child forgets how hard he thinks reading is.

The main concept of the R.E.A.D. program relies on the opportunity each child has to practice and enjoy reading individually to a dog. Children with reading difficulties tend not to read in front of their classmates, afraid of making mistakes. The dog is always ready to listen to the child reading at its own pace, with no judgement or criticism. This type of support is less intimidating compared to the support of an adult. On the other hand, the fact that students are selected to participate in the R.E.A.D. program awakens the curiosity of peers and becomes a topic of conversation in the classroom and in the playground, thus contributing to integration, to increased confidence and self-esteem, as well as a greater desire to search for expertise and knowledge. Children feel safe and relaxed while petting the dog, disregarding the surroundings and their own difficulties. In fact, readers feel important, since they are the "chosen ones" to read to the dogs. They see it as something very positive and motivating since they are going to act as "teachers" of someone who

knows less than they do and who listens carefully. At the same time, an appealing setting is created in order to promote a more pleasant reading environment, enhancing motivation, concentration and attention during the reading process. The handler follows the reading without pressuring the child, with the dog a wonderful vehicle for communication. The handler can speak for and about the dog to make many valid points about pronunciation and comprehension. Along with these skills, other competences are also developed such as fluency, reading comprehension, vocabulary, oral expression, attention, concentration, self-esteem and enhanced social relationships.

### **Exclusion factors**

The reasons why a student cannot participate on the R.E.A.D. program can be due to animal hair and saliva allergies, dog phobias, children not wanting to participate or whose parents do not give consent.

### **3.3 WORK STANDARDS FOR DOGS IN AAE, ESPECIALLY FOR WORKING IN R.E.A.D.**

It is very important to safeguard animal's wellbeing during interventions. IAHAIO has developed guidelines that are published on their website and that are composed using the latest scientific insights: [IAHAIO international guidelines on care, training and welfare requirements for small animals in animal-assisted interventions](#)

These guidelines and IAHAIO's White Paper, available in many languages, are also valid for dogs involved in AAE and working in R.E.A.D. see [www.iahaio.org/guidelines/white](http://www.iahaio.org/guidelines/white) paper on animal assisted interventions

### **3.4 DOG'S EXAMINATION AND ABILITIES (TRAINING) FOR AAE, ESPECIALLY FOR WORKING IN R.E.A.D.**

The main basis of the training of a R.E.A.D. dog, as well as the examination, is **the bond between human and dog** based on love, respect and active listening. It is a dynamic, living bidirectional relationship that is in continuous development and that evolves with each reading session, each walk, in all interaction that we share, whether in the personal or professional sphere. This commitment to our animal, our work partner, and also our family member will determine how we train and examine R.E.A.D. dogs. And how we work with them.

In addition to the human animal bond, in a R.E.A.D. exam we will test other important aspects such as obedience, resilience, permanence on the blanket, the response to external stimuli: food, noise, crowds, abrupt interactions, dog-reader relationship, stress situations, handling in safe or unsafe situations and/or interactions, etc.

We finish this point by talking about **animal welfare**, crucial for R.E.A.D. This, under no circumstances should be violated, so the training and the exam is focused on respect, even interrupting an exam or not taking it if the human part of the team considers that the dog is not in an optimal physical or emotional condition to perform the exam at that time.

#### **3.4.1 Dogs and assisted intervention: the context of training with R.E.A.D.**

Dogs dedicated to assisted interventions must be dogs with adequate socialization and habituation to stressful stimuli and complex environments. Dogs of a shy and/or asocial nature would not be the most suitable for this type of action. It is essential that they do not appear fearful or distrustful of new and unknown elements, noises, crowds, invasive interactions -for example, many children caressing at the same time, a quite common situation when we go to read in a school, people who have abnormal motor patterns, who carry crutches or use wheelchairs, etc. It is therefore



important and necessary to normalize the environment and stimuli with the animal before the intervention. This point, in fact, is a key and fundamental part of the training itself. As is the work of habituation and enrichment prior to the contexts where the sessions are going to take place, since the dog must feel comfortable and confident in the work environment.

The training of therapy dogs, in our case, R.E.A.D. dogs, in which static positions prevail, staying in a posture or on the blanket, is focused on proprioceptive work. Proprioception is the sense that informs the body of the position of the muscles and is the ability to feel the relative position of contiguous body parts. Proprioception has many functions. It regulates direction, range of motion; it allows automatic reactions and responses; intervenes in the development of the body scheme and its relationship with space; helps control balance and coordination on both sides of the body, maintains the level of alertness and influences emotional and behavioral development. Ultimately it is the consciousness of the body. Working on proprioception improves coordination, balance, concentration and muscle memory. We must not forget that many dogs are not aware that their hind legs exist and can be very sensitive to manipulation in this area, feeling insecure if they notice that something touches that part. The purpose of training proprioception is the generation of body awareness and safety against manipulations since these dogs are sometimes manipulated even with rough interactions. In addition to proprioceptive work, it is necessary to work on staying in position, since reading sessions require the dog to stay in the same position for long periods.

The training sessions must be short and focused on short-term objectives, which are part of a broader objective that is worked in the medium term. Only the completed exercises will be used in the reading sessions.

It is also very important to record the training and attitude of the dog and the handler in the reading sessions. In this way, we will be able to test the development of the human animal team. Without a doubt, we are an active part of the training, which we will always carry out as a team. The creation and reinforcement of the bond, communication, and trust are key to creating a well-rounded team in which respect is the basis of everything.

R.E.A.D. training **never** uses punishments and aversive elements that, in addition to being unethical and not very respectful of the animal, are counterproductive in establishing healthy bonds. As we said before, the rhythm of the dog should be respected at all times, as well as its stages of development. Depending on the age, h/she will manifest some needs or others that we must take into account, not only in the learning process but also in its day to day activities. We should not force anything on him that he does not want to do, nor should we saturate him with excessive hours of training or work.

### **3.4.2. Training session of a R.E.A.D. team: how to build a dog/guide team**

In the previous section, we have discussed broadly the type of training that a R.E.A.D. team undertakes. At this point, we will describe it in more detail, step by step.

- **Work communication.** The basis of correct communication with our dog is when we are in control of ourselves. In many situations, it is not necessary to control the environment or control the dog, but rather to control ourselves to emit the correct information and thus obtain the desired response. Everything we do/say provokes responses in the dog. It is our mission to be responsible and aware of what we communicate and how we communicate it to achieve our objectives. For this, it is essential to handle different types of communication:
- **Non-verbal:** Body language; facial expressions (animal and human)

- **Verbal:** language (humans); vocalizations (dogs)

The summary scheme of good communication is coherence and consistency between body language and words.

Communication with the dog through:

1. **Signals.** A signal is anything that intentionally changes the behavior of the receiver. It must be unambiguous and have the correct shape and intensity to compete with other environmental stimuli. And, of course, it must be easily understood by the dog.
2. **Commands.** A command is a verbal and/or visual signal that modifies the dog's behavior in a specific way without variations or with minimal variations.
3. **Indications.** Indications are everything that unintentionally modify the behavior of the person who receives it or interprets it (dog).

A clue can eventually become a sign. In therapy dogs, the signs are very present in the sessions. R.E.A.D. dogs learn to "read our thoughts" and get ahead ... rather, they interpret a cue correctly and respond with the correct behavior.

Important: Communication must be two-way: our commitment is to learn to properly interpret the signals that our dogs send us.

There will, however, be situations in which things do not flow as we want and for which we must be prepared to face. Part of the training of a R.E.A.D. team is to equip ourselves with the tools to face them. This is our proposal:

- ✓ Stop
- ✓ Breath (calm down and calm the animal)
- ✓ Rationally analyze the situation, not from emotion
- ✓ Put another plan in motion.

• **Work the bond and mutual respect.** A healthy, effective bond is built through affiliative behaviors: feeding, protection and social behaviors such as games and affection. A suitable bond contributes to the relationship, trust and security. This, together with consistent, coherent and simple communication, contributes to the team coordination and motivation for the work.

Likewise, respecting the needs, time and space of our dog will provide the team, and the relationship with our dog, with balance and emotional wellbeing.

• **Create a work space.** The optimal way to do this is by providing the dog with a set of signals that indicate that the therapy time has begun. This includes the placement of the scarf and blanket which should help to evoke the behavior that we request in this context. It is important to always follow a stable and consistent routine.

• **Stay on the blanket.** The command still/wait on the blanket should be taught. The dog's attitude should be calm and patient. During these training sessions, the dog will wear his work scarf.

There are three phases in the permanence training that are summarized in achieving a 10-minute wait on the blanket, where the dog can see us, but in which we can move away and move freely without the dog moving from the blanket. A second phase is reading while sitting on the blanket with the dog, during which the animal should not seek playful interaction or show attention-

demanding behaviors. The last phase is where we train with a reader. The dog must remain calm on the blanket and seek interaction with the reader who will reward those interactions with strokes, never with food.

We will integrate the demand for attention towards the guide within the normal dynamics of a session but we will not give them more importance. At the end of the session, we share our dog games off the blanket with caresses, a walk etc. This is also important to do before each reading session.

### **3.4.3 Advanced specific training: Corrections in reading**

The corrections in the reading by the dog are a widely accepted and integrated Spanish contribution within the R.E.A.D. program. The animal, gently and discreetly, like a game, corrects the child without him feeling that he has made a mistake. And he does it utilizing a natural gesture for him: moving an ear, the paw, the tail. This type of more marked, more directed signal should always be as respectful as possible with the nature of the animal.

This does not prevent the use of some more classical techniques to reinforce a touch or a movement, to communicate with the reader. In the training sessions, we dedicate about five minutes specifically to the corrections.

We review here the basic outline of a training:

- ✓ Place the blanket and the handkerchief.
- ✓ Train 5-10 minutes waiting.
- ✓ Sit on the blanket to read for 10 min.
- ✓ Train corrections for 5 minutes.
- ✓ Start with a low difficulty level and continue to the level of the last session.
- ✓ End training with games outside the blanket or have a good walk.

We can enrich the training sessions by working on skills that involve the reader, such as the dog taking a book from them, putting the paw on the arm, or the head in the lap while they read. Little "magic" gestures will make the session even more special and unique.

### **3.4.4 Safety**

It is essential to ensure the wellbeing of the dog during the sessions and to avoid negative interactions that could lead to rejection of the reading sessions. For that reason, safety is an important aspect that is given attention to during training.

• **Unsafe interactions.** The most common ones to be aware of include:

- ✓ Approaches of children (faces) to the head or mouth of the dog. This simple movement may cause shock and injury.
- ✓ Prevent children from leaning or leaning on the dog's head or neck.
- ✓ Do not allow children to hold their heads or stare at the dog. In this position children are vulnerable and any movement can cause them harm. In addition, this manipulation is not suitable from the canine point of view: the dog will not develop a correct bond or work comfortably with an unknown child who touches him incorrectly.

• **Safe interactions.** *These include:*

- ✓ Delivery of prizes to the dog by the children (no sweets). This should always take place after the session and off the blanket. This needs to be supervised – placed in front of the dog and taken when indicated; child giving the reward with an open hand or the handler's hand underneath the child's hand, guiding the movement.
- ✓ Control children's interactions with the dog (grabbing the tail, pinching, pulling the ears, grabbing

the limbs) as it will allow us to educate the child in the good treatment of an animal and will prevent the dog from having to say “this doesn’t do it for me. ”

Always taking safety measures into account. It will avoid accidents, guarantee the dog’s peace of mind and his positive predisposition to work with children, and reduce stress in the sessions as much as possible.

### **3.4.5 Therapy team assessment exam R.E.A.D.**

Finally, every therapy team must pass a test if they want to become a registered R.E.A.D. team. We are not going to dwell on the genetic or behavioral characteristics or resilience of R.E.A.D. dogs. because we have already talked about it in previous sections, nor about the importance of caring for the bond or human animal bi-directionality, also listed above. All teams are trained to work with children with reading difficulties. They have great reading skills and extensive knowledge of canine behavior. They all work with their dogs and have passed the examination according to the international requirements for this type of therapy. The exam is repeated every two years, thus certifying the suitability of the R.E.A.D. team.

In the exam, the following aspects are assessed:

- ✓ Basic obedience (sitting, lifting, accepting or not food ...)
- ✓ Evaluation of temperament (balanced, not afraid of noise, wheelchairs, crowds, unwanted caresses ...)
- ✓ Evaluation of the team: evaluation of the relationship between guide dogs. (human animal bond)
- ✓ Sanitary wellbeing and appearance and care of the animal (vaccinations in order, insurance, good appearance ...)

Failure to comply with any of the items required by Intermountain Therapy Animals (ITA), the creator and owner of the R.E.A.D. program, as well as failure to pass the exam, will result in the automatic expulsion of a R.E.A.D. team. This may include not abiding by the program protocols, not carrying insurance or vaccines in order, unfair competition ...

It is true that these situations rarely occur but they must be taken into account. When these appear, those in charge of managing them and sending them to ITA are the national directors of the respective countries where the R.E.A.D. program is implemented. In the same way, these directors are in charge of the exams, always accompanied by an expert in behavior and ethology.

## CHAPTER 4. THE HUMAN ANIMAL BOND

*Marie-Jose Enders-Slegers and Riki Verhoeven*

### 4.1 THEORETICAL FRAMEWORKS EXPLAINING WHY ANIMALS CAN HAVE POSITIVE EFFECTS ON HUMANS

The human animal bond has existed for many ages and it is known from cave drawings, paintings, sculptures and writings that animals played various – and important - roles in the life of our ancestors (Clutton-Brock, 1995). Animals served as food, as hunters, as co-warriors and as companions. Nowadays their roles are still many and diverse in different parts of the world.

Companion animals, such as cats and dogs, are often considered as ‘family members’ in huge parts of the world (Honeycutt, 2018).

Dogs, horses and sometimes cats, donkeys and other small animals often play a role in the field of Animal Assisted interventions (AAI). AAI, to which the R.E.A.D. program belongs, is growing very fast all over the world. In this chapter we will briefly explain the theoretical constructs that shine light on the mechanisms of the human-animal bond and human-animal interactions, and will address the definitions used in the field of AAI.

#### 4.1.1 *Animals and humans can form a bond*

First of all, it is important to acknowledge that humans and animals both are able to relate to other species and that in this dynamic system of living beings, mutually fully embodied attunement takes place (Verheggen et al. 2017).

This attunement may result in a relationship, a bond, in which new behavioral patterns, emotions and cognitions develop.

In recent research (Griffioen et al. 2020) children with autism and/or Down syndrome and animals attuned to each other in AAI, synchronicity in behavior patterns developed and as a result ‘problem behavior’ decreased.

#### 4.1.2 *Biophilia hypothesis*

The biophilia hypothesis suggests that humans have an innate tendency to seek connections with nature and other forms of life (Wilson, 1984). It is suggested that the presence of an animal has a calming, relaxing effect.

#### 4.1.3 *Attachment*

Attachment theory (Bowlby, 1969) is an evolutionary theory suggesting that children come into the world biologically preprogrammed to form attachments with others for survival.

The main attachment figure in a child’s life is mostly the mother or primary caretaker.

In a (secure) attachment relationship safety is derived from the proximity of the attachment figure e.g. in a stressful situation (Ainsworth, 1964). The bond between animal and human has many features of an attachment bond (Julius et al, 2013) and offers support and security (Enders-Slegers, 2000). Many studies examined the bond between humans and animals and focused on ‘attachment’ to pets (Sable, 2014).

#### 4.1.4 *Social support*

Humans, like many other animals, need others to survive and therefore form bonds. In those bonds, social support is provided: the feeling that one can count on each other when needed, and/

or in difficult circumstances.

As in other relationships, the human-animal bond may offer support in daily life as well offer a buffer against the effects of stressful life events. Research has found that companion animals can fulfill basic needs: offer emotional closeness (attachment), social integration, the opportunity for nurturance, reassurance of worth, guidance and a reliable alliance (Enders-Slegers, 2000), thus providing social support (Meehan et al, 2017).

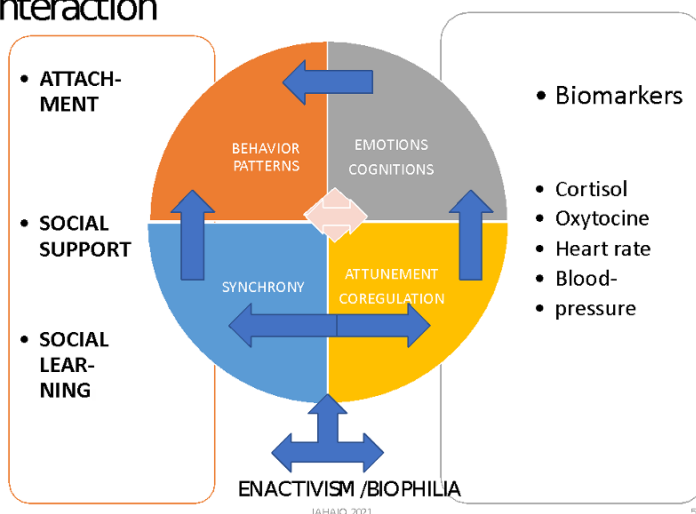
#### 4.1.5. Physiological measures

In interactions with other humans, physiological processes take place. It is well known that when breastfeeding a baby, or gazing at the baby, mothers produce oxytocin, a hormone which makes you feel caring, happy and relaxed (Uvnas-Moberg, 2015).

The same process happens in the human-animal bond and in AAI: oxytocin is released and cortisol decreases in the interaction with the animal (Julius et al., 2013; Petersson et al, 2017). It is also known that the interaction can have a positive effect on heart functioning and blood pressure (Friedmann et al, 1983).

#### 4.1.6 A model of human-animal interaction

##### Integrative embodied model human-animal interaction



Model of human-animal interaction: M.J. Enders-Slegers

The premise of this model is that all organisms seek to connect to each other. Our theoretical framework integrates theories that all are about embodied **relations**; it is all about bonding, connecting, relating and the influences of those processes on living systems.

Enactivism, the first theory we introduced, explains that all living systems in the dynamic interaction with the environment, learn about themselves and the world around them through their bodies, via their senses: feeling, smelling, hearing, seeing, the sensory-motor processes that take place. As the philosopher Maurice Merleau-Ponty stated: 'the body is our general medium for having a world.'

The second theory that we present is the Biophilia Hypothesis: humans have an innate tendency to connect with animals and nature (Wilson, 1984).

Enactivism and biophilia form the base of our model.

In interactions, the human and animal attune to each other, coregulate their behavior, act in synchrony, develop (new) behavior patterns and develop emotions about what is happening and cognitions (give meaning) about what is happening in the interaction. New behavior patterns can develop.

Very important is the Attachment Theory (Bowlby, 1969, Ainsworth & Bell, 1970): this theory explains how a parent and a child bond. Fogel (1993) and Stern (1984) describe this process by co-regulation, affect-attunement, synchrony. If this process develops in a good way, secure attachment develops. The same processes can take place between parents, lovers, pet owners and their animals.

What the social cognitive theory brings adds is that we learn from each other, and why should we not learn from other animals than human animals? Kruger & Serpell discusses this in their chapter in A. Fine's Handbook on Animal Assisted Interventions in Mental Health (2010).

Social support is what we get in relationships and what buffers against the negative effects of stress in daily life or from life events. Animals can offer social support, filling in human's basic needs (Enders-Slegers, 2000). Social learning is what we learn from others in our interactions. In a learning context, animals are themselves, non-judgmental, unambiguous, providing a safe environment.

During interactions with animals, in those embodied encounters, where our senses provide us information and cognitions are developed, our bodies react with the release of a hormone such as oxytocin and the decrease of the stress hormone cortisol. Our blood pressure lowers, our heart rate slows down. In the interaction we simultaneously attune to each other and synchronize our behavior. The changes in the levels of biomarkers will make us feel more pleasant and relaxed. New behavior patterns can develop. In a relaxed state we feel better, we can open up for new information, we can learn. Animal Assisted Interventions can help children to relax and help to learn (reading).

#### **4.1.7 Bronfenbrenner's bio-ecological development theory**

Besides studying the relationship between humans and animals and the theoretical framework about 'how this works', we also need to address Bronfenbrenner's bio-ecological development system (2009). This theory is very explicit about the influence relations can have. The development of a child depends on the processes that evolve in the interactions between the child and its internal (parents, peers, pets) and more external (family, teachers, friends) system. The results of Animal Assisted Reading will be influenced by the perceptions of the participants of the system. Canelo (2020) took the bio-ecological system to frame her study about the perceptions of Animal Assisted Reading and its results. She tried to get more insight into the significance of proximal processes supporting schoolchildren to overcome difficulties in reading. In the study of Canelo, parents as well as teachers were very positive about the presence of the dog at school and said that they believed that this kind of support had been useful for their child in order to promote respect for the animal and their focus on reading tasks. The teachers also considered the sessions as helpful for themselves and the students. The Bronfenbrenner model will be more explained in Chapter 6.

## **4.2 THE DEFINITIONS**

There is a lot of confusion about definitions. There is a tendency to call all Animal Assisted Activities 'therapy'. That is not right. Therapy only can be given by a therapist. A therapist can



provide Animal Assisted Therapy in cases where a dog, cat, horse or other animal joins him/her in a session and helps to reach a treatment goal. Using the wrong definitions has huge consequences for research and practice.

Animal Assisted Intervention (AAI) is an umbrella term. IAHAIO, the International Association of Human-Animal Interaction Organizations, published a White Paper about Definitions and Animal Welfare in Animal Assisted Interventions (IAHAIO, 2014, 2018). We retrieved it from website [www.iahaio.whitepaper.org](http://www.iahaio.whitepaper.org).

The White Paper is published in many languages.

### **Animal Assisted Intervention (AAI)**

*An Animal Assisted Intervention is a goal oriented and structured intervention that intentionally includes or incorporates animals in health, education and human services (e.g. social work) for the purpose of therapeutic gains in humans. It involves people with knowledge of the people and animals involved. Animal Assisted Interventions incorporate human-animal teams in formal human services such as Animal Assisted Therapy (AAT), Animal Assisted Education (AAE) or under certain conditions Animal Assisted Activity (AAA). Such interventions should be developed and implemented using an interdisciplinary approach.*

### **Animal Assisted Therapy (AAT)**

*Animal Assisted Therapy is a goal oriented, planned and structured therapeutic intervention directed and/or delivered by health, education and human service professionals. Intervention progress is measured and included in professional documentation. AAT is delivered and/or directed by a formally trained (with active licensure, degree or equivalent) professional with expertise within the scope of the professionals' practice. AAT focuses on enhancing physical, cognitive, behavioral and/or socio-emotional functioning of the particular human recipient. The professional delivering AAT (or the person handling the animal under the supervision of the human service professional) must have adequate knowledge about the behavior, needs, health and indicators and regulation of stress of the animals involved.*

### **Animal Assisted Education (or Animal Assisted Pedagogy)**

*Animal Assisted Education (AAE) is a goal oriented, planned and structured intervention directed and/or delivered by educational and related service professionals. AAE is conducted by qualified (with degree) general and special education teachers. An example of AAE delivered by a regular education teacher is an educational visit that promotes responsible pet ownership. AAE, when done by special (remedial) education teachers is also considered therapeutic and a goal oriented intervention. The focus of the activities is on academic goals, pro-social skills and cognitive functioning. The student's progress is measured and documented. An example of AAE delivered by a special education teacher is a dog-assisted reading program. The professional delivering AAE, including regular school teachers (or the person handling the animal under the supervision of the education professional) must have adequate knowledge about the behavior, needs, health and indicators and regulation of stress of the animals involved.*

### **Animal Assisted Activity (AAA)**

*AAA is a planned and goal oriented informal interaction and visitation conducted by the human-animal team for motivational, educational and recreational purposes. Human-animal teams must have received at least introductory training, preparation and assessment to participate in informal visitations. Human-animal teams who provide AAA may also work formally and directly with a healthcare, educator and/or human service provider on specific documentable goals. In this case they are participating in AAT or AAE that is conducted by a specialist in his/her profession.*

Examples of AAA include animal assisted crisis response that focuses on providing comfort and support for trauma, crisis and disaster survivors, and visiting companion animals for 'meet and greet' activities with residents in nursing homes. The person delivering AAA must have adequate knowledge about the behavior, needs, health and indicators of stress of the animals involved.

### **Animal Assisted Coaching/Counseling (AAC)**

Animal Assisted Coaching/Counseling is a goal oriented, planned and structured animal assisted intervention directed and/or delivered by professionals licensed as coaches or counselors. Intervention progress is measured and included in professional documentation. AAC is delivered and/or directed by a formally trained (with active licensure, degree or equivalent) professional coach or counselor with expertise within the scope of the professionals' practice. AAC focuses on enhancing personal growth of the recipient, on insight and enhancement of groups processes, or on social skills and/or socio-emotional functioning of the coachee(s) or client(s). The coach/counselor delivering AAC (or the person handling the animal under the supervision of the coach/counselor) must have adequate training about the behavior, needs, health and indicators and regulation of stress of the animals involved.

Form	Education professional	Goal	Target group
Animal Assisted Activities, AAA  Goal-oriented, activation, recreation and relaxation, is evaluated	No formal vocational training. Animal-assisted interventions course is achieved	General wellbeing, promotion of quality of life	From young to old
Animal Assisted Therapy, AAT  Targeted, planned, program is recorded, evaluated	Formal vocational training with diploma in the therapeutic and/or psychological sector and training AAI Higher Education/ University	Therapy for the recovery or development of physical, cognitive, behavioral and/or social-emotional functioning in vulnerable people	Children, (young) adults who need an intervention for a psychological and/or physical reason
Animal Assisted Education, AAE  Targeted, planned, program is recorded, evaluated	Formal training with diploma in the educational sector and an AAI-training Higher Education/ University	Learning Oriented in academic goals, social-emotional and/or cognitive functions	Children and young adults
Animal Assisted Coaching or Counseling, AAC Targeted, planned and evaluated	Targeted, planned program and evaluation Higher Education/ University	Life skills	All age groups

Table 1. Forms of Animal-Assisted Interventions (IAHAIO, 2018)

According to IAHAIO, the participation of animals should always be carried out by professionals who are trained and certified in their profession and who are also trained in the responsible implementation of Animal Assisted Interventions. Professionalism and context determine whether a professional uses the AAI intervention as AAA, AAT, AAE or AAC.

In this framework, R.E.A.D. fits into the category of Animal Assisted Activity when work takes place in a library - the teams are qualified to do R.E.A.D.®, however they don't necessarily have to be educational professions and there aren't clear educational goals. However, in a school environment, working with a teacher with a well-defined goal for the intervention and where the intervention is evaluated, it is considered Animal Assisted Education.

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## CHAPTER 5: COMMUNICATION BETWEEN HUMANS AND DOGS

*Tynke de Winkel*

### 5.1 COMMUNICATION IN GENERAL

Communication has very diverse functions, such as recognition, warning, reinforcing social bonds, inciting joint behavior, limiting aggressive behavior, etc. Each animal species has its own signals and a certain signal does not necessarily have the same meaning in all species (Rediers, 2020). When dealing with two animal species such as dogs and humans, it is therefore essential to speak each other's 'language'. Thanks to centuries of coexistence with humans, the dog is actually miraculously adapted to communicate with humans.

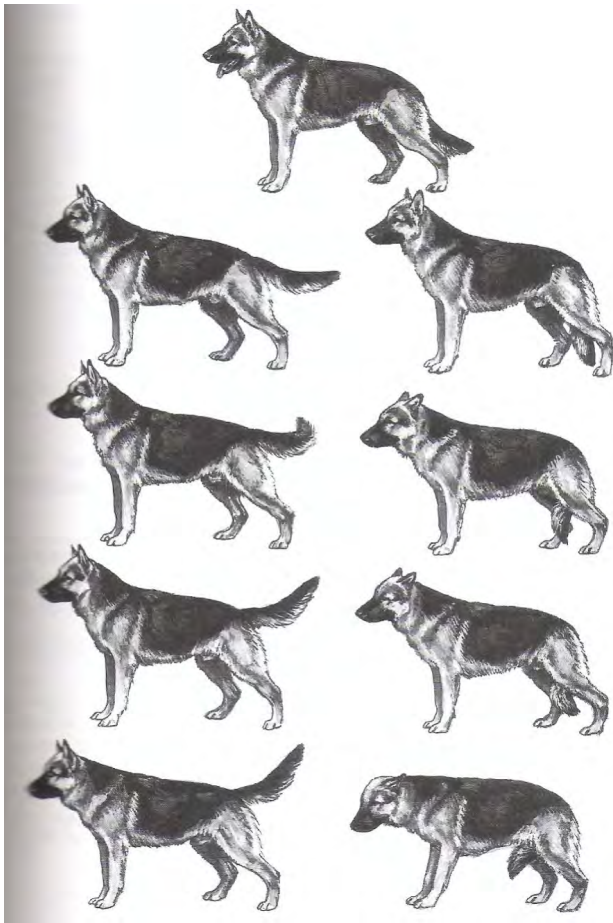
Communication is very complex and can take place in a variety of ways: using scents (olfactory or chemical), through sounds (auditory or acoustic), visually with images or through touch (tactile) (Serpell, 2017). Often a combination of the above is used, depending on, for example, distance and speed of information exchange (Rediers, 2020). For humans, the acoustic signals of the dog (barking, growling, whining, crying, squeaking) in combination with visual communication are the most important, although there are still many misunderstandings in their interpretation (Serpell, 2017). Whereas for dogs, smell is very important. Only by combining all types of communication tools do we get the correct overall picture of what a dog is communicating.

Eye contact is one of the most important aspects within dog-human communication. From the dog's point of view, this seems to be an evolutionary adaptation from domestication. Research shows that dogs tongue more and raise their eyebrows more when they know people are looking at them. They are also able to read our emotions from our faces. Humans use many words (commands) towards dogs (Serpell, 2017). Possibly dogs combine the words we use (including pitch and intonation) with our facial expression to estimate what we mean. Visual cues such as pointing at something also appear to have an effect. In other words, a combination of acoustic signals with visual signals works best for many dogs (Serpell, 2017).

When reading the body language of dogs, the big picture is important; one signal by itself has little significance. When looking at body language, we pay attention to the posture of different body parts, as well as the facial expressions, the movements and sounds a dog makes. In addition, it is important to take into account the context in which a dog shows certain behavior. It is also important to include the differences between breeds (Rediers, 2020).

When reading body posture, we pay attention to (Rediers, 2020):

- the posture of the head (position of head, position of ears, the eyes/eyebrows, forehead, visibility of teeth and tongue and the corners of the mouth)
- the posture of the body: posture high or low, tension in the body, posture of the back/belly and limbs, hair standing up or not and showing certain body parts such as throat, belly, genital area
- the tail posture, position, and movement (pay attention to what is the 'neutral' posture for that individual dog!)



Ultimately, the overall picture determines our interpretation of how the dog is feeling. Reading each other's body language (visual communication) is important and understanding the communication can prevent a lot of stress for the dog and sometimes even prevent (biting) incidents. Knowledge and understanding of how a dog communicates, in addition to awareness of what we as humans communicate to a dog, is crucial. This mainly involves looking at it from the dog's point of view: even if our intention is good, if it is threatening to the dog it will react from that point of view (Rediers, 2020).

Anyone who is handling or working with dogs, will need to learn about communication with dogs. There are plenty of books available for this and this is beyond the scope of this eBook. At a minimum, stress signals (see the following paragraphs) and the ladder of aggression should be known to avoid misunderstandings in communication.

Within the work with dogs and children, it is even more important for the safety and wellbeing of all parties that there is always supervision of the dog and child.

## 5.2 THE ROLE OF BEHAVIOR, COGNITION AND EMOTIONS OF DOGS WITHIN COMMUNICATION

Every behavioral change occurs in response to an internal or external stimulus. Internal stimuli arise in the body (such as pain or hunger) while external stimuli come from outside the body, such as sounds, touch, etc. Motivation then is the process by which behavior change occurs. The brain plays an important role in how and when this behavior change occurs. In processing stimuli, emotional processes also play a role: perception, namely how the stimulus is perceived, but also attention to the stimulus and the degree of arousal (Rediers, 2020).

The final behavior is determined by the species, the individual and the context. And the expectation pattern also plays a role: the more often a dog gets a positive experience with certain behavior the more often he will exhibit this behavior. With negative experiences he will repeat the behavior less or not at all.

Since the beginning of this century the dog as a species has enjoyed an explosive growth in attention within scientific research (Stahl, 2016) and much more is known regarding the behavior, emotions and cognition of dogs and their interaction with humans (Miklosí, 2015; Serpell, 2017). Dogs owe their cognitive and emotional characteristics to live with humans the way they do to the following: from evolution, wolves already had certain social skills; the dog has probably developed additional skills to adapt to the human environment and finally, individual learning and training processes contribute to the further success to build a relationship with humans (Serpell, 2017).

Cognition involves the processing of information and thinking (Rediers, 2020). Over the last three decades, there has been a tremendous increase in research on the cognitive abilities of the domestic dog (Horowitz, 2014). Much of this research focuses on what dogs learn from human actions, gestures and attentional states and how they adapt their behavior accordingly (Horowitz, 2014). And this concerns mainly domestic and working dogs; non-domesticated and non human-socialized (wild) dogs are hardly included in these studies of canine cognition. Research results thus only concern 10% of all dogs worldwide (Horowitz, 2014). Another disadvantage of these studies on canine cognition/emotion is that mainly visual communication between humans and dogs is included, while scent is a more important way of communication for dogs (Serpell, 2017).

Scientific research on canine cognition and behavior focuses primarily on analogous cognitive skills to humans. One such skill is social attention. Several studies show that dogs give more attention (special attention) to people with whom they have a close relationship compared to other people. They also seek eye-contact with the human with whom they have a close relationship when encountering new objects, probably more to gain information than because of emotional support (Serpell, 2017).

Cognition in dogs has also been studied through the skills of social learning. Individuals benefit from observing other conspecifics, for example, where to find food, what new behaviors to learn, etc. The extent to which dogs can imitate is a subject of debate; this has been widely studied using the 'Do-as-I-do' paradigm (Serpell, 2017).

There are several studies showing that dogs are capable of learning words, some individuals even up to several hundred words. The underlying mechanisms for this are not known exactly; possibly this works on the basis of exclusion when learning names of objects and/or with the support of non-verbal communication such as 'body posture' (Serpell, 2017).

Like other animal species, dogs can also follow the direction of someone's gaze and also provide information to, for example, their owner by looking from an object to the owner and back. Further research has yet to determine if this is intended from the dog as communication or if it is learned behavior based on the outcome (Serpell, 2017).

It is known from research that dogs take other people's behaviors into account to assess the intent of the person, but what cognitive and/or emotional processes underlie this is not yet known (Serpell 2017).

For years, the topic of "emotions in animals" has been avoided in science because we simply "cannot know what animals feel" (De Waal, 2011). After all, just like very young children, animals cannot name the emotions they experience (Konok et al., 2015).

For a long time, animal behavior was explained exclusively from behaviorism, where all behavior was attributed to (mainly operant) conditioning (De Waal, 2011; Konok et al., 2015). Later, there was limited room for only a few basic emotions in animals. Bekoff (2000) has been arguing for decades for a more open attitude among scientists that animals know a whole range of emotions. De Waal has also argued that, if animals react in a similar way under similar circumstances, it is plausible that in animals the same emotions underlie their reactions. In his view, there is no a-priori reason present to assume different emotions in humans than in other animals. And although brain research cannot show which emotions an animal feels, it has made clear the homology between humans and animals (De Waal, 2011).

Another researcher who has caused a paradigm shift in the way science looks at emotions in animals is Jaak Panksepp. His neuroscience research focused on affect in animals for several reasons. First, animals seek the same rewards/neurotransmitters as humans. Second, homology



in subcortical brain systems gives rise to this and finally, artificial activation of certain brain structures using deep-brain-stimulation techniques shows that, in other animal species, exactly the same approach or avoidance behavior is activated as in humans (Panksepp, 1998).

Although talking about emotions in animals is now no longer taboo, the challenge of what definitions to use for this purpose remains. The disagreement on what constitutes emotions has led to stagnation in research on emotions in animals (Bekoff, 2000). However, defining emotion is also challenging within psychology (Paul & Mendl, 2018) and assumes cognitive, neurobiological and behavioral components of emotions (Barett, Lewis & Haviland-Jones, 2016). Many definitions are prescriptive (Paul & Mendl, 2018). Anderson and Adolphs (2014) describe the paradox of emotions as being very clear and evident on the one hand and extremely difficult to formulate objectively and scientifically on the other (Anderson & Adolphs, 2014).

De Waal (2011) gives the following definition for emotions: “an emotion is a temporary state caused by biologically relevant stimuli, either aversive or attractive. Emotions are characterized by specific changes in the body and brain of the organism. Which emotion is triggered is often predicted by the situation in which the organism finds itself and can be inferred from behavioral changes and communication signals, although there is no one-to-one relationship between an emotion and particular behavior. Emotions, combined with individual experience and a cognitive assessment of the situation prepare an organism for an optimal response” (De Waal, 2011). Animals have an emotional system that, unlike instinct, is not completely predetermined and is influenced by experience. And although emotions take place within the animal, they are triggered by inputs from the environment (De Waal, 2011).

Anderson and Adolphs (2014) argue that an emotion is “an internal central state, triggered by specific intrinsic or extrinsic stimuli,” which then influences behavioral, cognitive and somatic responses. In doing so, they view emotions as the cause of observable behavior, unlike many other scholars (Anderson & Adolphs, 2014).

The verbiage surrounding emotions is sometimes confusing. Emotions and feelings are often used as an extension of each other (De Waal, 2011). Other terms often mentioned in relation to emotions are affect and mood (Gray & Bjorklund, 2014). Gray describes an emotion as a subjective feeling that is mentally linked to an object. The feelings that are linked to the emotion, but not to the object, are called affect. Mood then refers to a long-term emotional state that affects all aspects of thoughts and behavior (Gray & Bjorklund, 2014). In this regard, moods are often lower in intensity but longer in duration (Boissy et al., 2007). Moods are often less clearly defined than emotional responses and these often do not change after just one experience because mood creates bias: humans and animals often pick up from the environment the things that fit the current mood (Mills, Braem Dube & Zulch, 2013).

The categorization of emotions in animals is a major challenge (De Waal, 2011). Which emotions occur in which animal species depends on how the emotions are defined (Paul & Mendl, 2018). In humans, a distinction is often made between basic or primary and secondary emotions, with secondary emotions being complex emotions, often a mixture of primary emotions, such as guilt and jealousy (Konok et al., 2015). Bekoff (2000) defines secondary emotions as emotions that are experienced, evaluated, and reflected upon. Secondary emotions involve other parts of the brain (the cerebral cortex) (Bekoff, 2000).

Often only basic emotions are discussed in animals, but in primates, behaviors have now been studied that may be expressions of emotions such as shame and guilt. Again, as long as we

cannot exclude that animals know these emotions, the homology principle argues for keeping open the option that animals can also experience secondary emotions (De Waal, 2011).

Another classification within emotions is that of positive and negative emotions. However, these are not two extremes of a spectrum; the absence of negative emotions is not the same as the presence of positive emotions. Thus, these two categories must be studied separately, or in parallel, from each other (Barrett, Lewis & Haviland-Jones, 2016). Until the beginning of this century, research on negative emotions received significantly more attention than that on positive emotions (Boissy et al., 2007; Burgdorf & Panksepp, 2006; Špinka, 2012).

Emotions are often represented in emotional systems, based on the research of Jaak Panksepp. In doing so, the exact interpretation, classification and designations of the systems and/or associated emotions vary among different researchers (Tracy & Randles, 2011). Mills, Braem Dube, and Zulch (2013) assume eight emotional systems: three within the category of self-preservation, namely the PAIN system, ANXIETY-FEAR system, and PANIC-GRIEVE system, two within the category of stimulation, namely the DESIRE-SEEKING system and FRUSTRATION system, and finally three within the category of social interaction, namely the LUST system, the CARE system, and the SOCIAL-PLAY system.

For each system, the emotion can be placed along two axes, that of arousal (arousal) and value (valence) in the sense of positive or negative (Travain et al., 2016). This creates four quadrants: one with positive state of mind with high arousal (happy, excited), one with positive state of mind with low arousal (calm, relaxed), one with negative state of mind with low arousal (sad, depressed) and finally one with negative state of mind with high arousal (fearful, anxious).

Emotions affect health, and thus wellbeing, through several routes. Directly, negative emotions affect physiological processes, such as the sympathetic and parasympathetic nervous systems, and thus can deregulate the immune system. Indirectly, both negative and positive emotions affect behavior through changes in motivation and decision making (Barrett, Lewis & Haviland-Jones, 2016). Positive emotions contribute to an improved immune system, better DNA repair and fewer inflammatory responses in the body. Regulating emotions, such as controlling urges and expressing emotions, also affects health (Barrett, Lewis & Haviland-Jones, 2016).

Emotions can be expressed in humans and animals through facial expressions, vocalizations and postures (Barrett, Lewis & Haviland-Jones, 2016). Communicating emotions through facial expressions, behaviors, and vocalizations has an important social function (De Waal, 2011; Konok et al., 2015). It brings animals together and alerts others when there is danger (De Waal, 2011). Within groups of animals, the emotions of one might even influence the emotions and thus the wellbeing of others, as transmission of emotions is also known to occur in humans (Špinka, 2012). The duration and intensity of an emotion depends on the individual, and the cognitive, neurobiological, and behavioral components differ for each emotion (Barrett, Lewis, & Haviland-Jones, 2016).

Research on facial expressions as an expression of emotion has been on the rise in recent decades, although facial expressions were studied in various dogs as early as the 1960s (Bloom & Friedman, 2013). Darwin was the first to study facial expressions as an expression of emotion in humans and animals (Barrett, Lewis & Haviland-Jones, 2016). Although humans express certain emotions differently than dogs, for example, all humans do have the same facial expression when experiencing a particular emotion and it is likely that other animal species do as well (De Waal, 2011).

Many studies of facial expressions in humans rely on the hypothesis of basic emotions (Ekman, 2013). There are studies on facial expressions in rats as an expression of positive emotions (Finlayson, Lampe, Hintze, Würbel, & Melotti, 2016), on a Facial Coding System in horses (Wathan, Burrows, Waller & McComb, 2015), on a Facial Coding System in relation to emotions in cats (Bennett, Gourkow, & Mills, 2017) and in dogs (Bloom & Friedman, 2013; Cátia, Kun & Daniel, 2017; Waller et al. 2013). The analysis of concrete facial movements based on muscle contractions continues to unravel facial expressions across animal species and offers the prospect of an objective coding system for facial expressions in animals (Bennett et al., 2017; Wathan et al., 2015). In addition to facial muscle contractions, analysis related to the ears and eyes is of interest (Bennett et al., 2017). Although almost all, mostly exploratory, studies on facial expressions in animals conclude that much more research and validation for this is still needed (Bennett et al., 2017; Cátia et al., 2017; Finlayson et al., 2016; Waller et al., 2013).

### **5.3 STRESS, STRESSORS AND STRESS SIGNS IN DOGS**

In today's society, it is hard to imagine life without the word stress. Almost everyone experiences stress at one time or another, for example, before giving a presentation, meeting your new in-laws, or taking an exam. For our dogs too, there are various reasons to experience stress: having to be home alone every day, no or too many house rules, meeting a dog you are afraid of, having to perform at a sports competition, certain noises, being used as an Animal Assisted Activity dog where you are cuddled by strangers, and so on. But what exactly is stress?

The word stress was introduced in 1955 by Hans Seley (Barrett, Lewis & Haviland-Jones, 2016). However, the term stress is often poorly defined. It is a catch-all term (Nagel & Reinhardt, 2014). Originally, stress was viewed as external circumstances that placed psychosocial or physical stress on an individual resulting in psychosocial changes (Barrett, Lewis & Haviland-Jones, 2016). Broom (2011) defines stress as follows: stress is the effect of the environment on an individual that overloads the individual's control system and therefore reduces or is expected to reduce health. Stress implies an animal's inability to adapt to the situation at hand.

However, stress is often used for both the animal's response and what causes the response (Mills, Braem Dube, & Zulch, 2013; Barrett, Lewis, & Haviland-Jones, 2016). This chapter uses the terms as proposed by Mills, Dube and Zulch (2013): a stressor is the trigger from the environment that produces a response from the animal, the stress response. A stressor brings the animal out of the optimal state (Barrett, Lewis & Haviland-Jones, 2016; Mills, Braem Dube & Zulch, 2013). However, a stressor can evoke different emotions, for example anger or depression. Thus, emotions are mediators of the effect of stressors (Barrett, Lewis & Haviland-Jones, 2016).

The response to the stressor is called the coping strategy and aims to make the stress disappear. Possible responses include 'fight, flight, freeze, fiddle about'. The stressor can be internal or external, always with predictability, controllability and recovery playing an important role (Rediers, 2020).

In addition, in the literature, a distinction is sometimes made between eustress, a necessary activation of the system to achieve self-development, such as hunting and reproduction (Peralta and Fine, 2021) and which is experienced by the animal as pleasant, and distress, in which the response system is overloaded and is experienced by the animal as unpleasant (Mills, Braem Dube & Zulch, 2013). Often eustress and distress are seen as two extremes of a continuum. Research shows that they are only linked at a certain level of distress and negative effects can be offset by positive effects (Barrett, Lewis & Haviland-Jones, 2016). In this chapter, the word stress is used for distress, or negative experience.

Acute stress is evolutionarily the most common form of stress in the wild. The function of this stress is to respond appropriately to any sudden change so that an animal can survive the situation. It is a normal physiological response after which recovery occurs. In humans and animals in captivity, however, chronic stress often occurs: a stressor that causes no problems when it occurs briefly causes major problems in the long run. The body does not recover and physical and psychological problems arise that actually reduce the chances of survival in the long run (Rediers, 2020).

When stress occurs, three systems are activated: the Sympathetic-Adreno-Medullar (SAM) axis, the Hypothalamic-Pituitary-Adrenal (HPA) axis and the Neutrophil-Neuropeptide axis (NNA). The first (SAM axis) triggers the production of the hormones adrenaline and noradrenaline, which, among other things, increases heart rate and blood pressure. It makes the body ready to respond to potential dangers. The HPA axis causes cortisol to be released from the adrenal glands in a 15-30 minute time frame, releasing more energy in the body to respond to the situation and allowing tissues to recover more quickly. Cortisol also has several other functions within the body. The third axis, the NNA axis, causes activation of substances that affect inflammatory responses. Chronic inflammatory reactions can be both the cause and a consequence of chronic stress. In chronic stress, hormone levels do not drop or drop very slowly to normal levels resulting in medical and psychological problems (Rediers, 2020).

It is often stated that the body strives for homeostasis (Nagel & Reinhardt, 2014), to return to the state prior to the changes. Mills et al. (2013) argue that instead of talking about homeostasis, we should talk about allostasis, where the body changes to anticipate change, because humans and animals were originally set up precisely for change. An animal is better able to cope with change and thus will have less stress response if it has a secure base in the form of an attachment figure and a safe haven in the form of a physical place (Mills, Braem Dube & Zulch, 2013).

How an individual animal responds to stressors depends on the types and number of stressors, the intensity, frequency and duration of the stressor, the predictability of the stressor and the degree of control the animal has over the stressor (Mills, Braem Dube & Zulch, 2013; Palestini et al., 2017). Previous effects of the potential stressor and the learning experience of the animal in question also influence the stress response (Mills, Braem Dube & Zulch, 2013).

Often, when estimating the effect of a stressor on an animal, too much emphasis is placed on the properties of the stressor and not enough on the animal's ability to cope with the situation. Indeed, there are enormous individual differences between the stress responses of animals to the same stressor (Mills et al., 2013). Palestini et al. (2017) also emphasize the individual differences between an animal's response, coping and the same stressor. The perception of the animal determines how the effect of a stressor is on that particular animal (Mills, Braem Dube & Zulch, 2013; Veissier & Boissy, 2007).

According to Veissier and Boissy (2007), an animal's stress is determined by an animal's evaluation of the situation, with welfare being the result of that evaluation. Expectations play a role: stress and reduced wellbeing occur when there is a discrepancy between what an animal expects and what an animal perceives in the environment. Positive expectations correspond to better welfare and vice versa. Stress and wellbeing are "opposite mirrors of an individual's mental state" (Veissier & Boissy, 2007). On the contrary, Ohl and Van der Staay (2012) say that an animal voluntarily exposes itself to stress in order to exhibit natural behaviors as part of good welfare; think, for example, of exploration in a new environment. And if welfare is seen as avoiding stressors, then an animal does not learn any coping mechanisms. Instead, an animal should be

exposed to stressors that are within the limits of what an animal can handle (Mills, Braem Dube & Zulch, 2013).

Chronic stressors reduce resistance, which can lead to various diseases (Mills, Braem Dube & Zulch, 2013; Part et al., 2014). In addition, they lower the concentration of the neurotransmitter dopamine, which can cause an animal to become depressed (Mills, Braem Dube & Zulch, 2013; Part et al., 2014). Communication and learning are inhibited in chronic stress and information already learned cannot be reached. It can also result in an animal not being able to handle situations that it was previously able to handle: dishabituation to certain conditions (Mills, Braem Dube & Zulch, 2013).

Determining the degree of stress in an animal is not easy. Physically, biochemical parameters such as stress hormones can be determined in blood, saliva or urine. Physiological responses such as blood pressure, heart rate, respiration and temperature can provide a picture, provided that the normal values of the individual animal concerned are known. Health or disease status can also be an indicator of stress (Rediers, 2020).

Behavior is often used as an indicator of stress. This always has a subjective component. It looks at whether normal behavior and behavior associated with positive emotions (such as play) is being exhibited by a dog. Pathological behavior (such as apathetic behavior, compulsive behavior or auto-mutilation), or inappropriate behavior (normal behavior that does not fit the context) and behavior associated with negative emotions indicate decreased wellbeing and stress (Redier, 2020). Which of a dog's expressions are seen as stress signals sometimes varies by source. Rediers (2020) names the following stress signals in dogs, among others: yawning, tongue licking, lip licking, sweaty feet, vocalization (squealing, whining, shrill barking), enlarged pupils, panting, blinking eyes, looking away, shivering, shaking out, scraping penis, scratching itself, stretching, sneezing, sniffing surroundings, paw lifting, eye whitening, drooling. Sometimes some of these signals are named calming signals. More important than what name is given to a signal, is recognizing that the dog is trying to make something clear!

Signals for chronic stress include: destruction of objects, sensitivity to touch, panting/shaking, dripping nose, restlessness or apathy, no appetite/diarrhea/eating attacks, stereotypy, hair loss/bad coat, allergies, changing body odor. Peralta and Fine (2021) add reduced exploration behavior, changed sleep behavior, increased aggressiveness and change in social behavior.

## **5.4 HOW TO PREVENT STRESS AND HOW TO REDUCE STRESS IN DOGS IN AAI**

It is often assumed in public opinion that an AAI session is also fun for a dog to do. For many dogs this is (hopefully!) the case, but for many animals it can also be a source of distress. Fortunately, there is increasing attention to the welfare of animals used in AAI and guidelines are being developed on how to ensure welfare (Peralta & Fine 2021). See for example the 'White paper: Definitions for Animal Assisted Interventions and guidelines for the wellness of animals involved' ([www.iahaio.org](http://www.iahaio.org)).

In developing guidelines, the heterogeneity in both the animals (species as well as the individual animal) and the AAI settings are a major challenge. In addition, a good definition for welfare is lacking and societal thinking influences what is acceptable or not in terms of animal welfare (Peralta & Fine, 2021).

With the increasing understanding of the dog's emotional world and cognition, we have also had to adjust our understanding of stress and dog welfare. Indeed, the wellbeing implications of many

aspects of a dog's daily life are influenced by a dog's emotions and cognitive abilities (Horowitz, 2014). This is also reflected in the shift of focus when it comes to animal welfare: no longer is the focus on avoidance of unpleasant things and minimal requirement for exhibiting normal behavior, but rather on 'quality of life (QoL)', 'a life worth living' and positive emotions (Peralta & Fine, 2021). So, although this chapter focuses on the reduction and prevention of stress, it is clear that the bar is higher when dogs are working in Animal Assisted Interventions (AAI). So the goal would be that the wellbeing of the dog also improves as a result of the AAI sessions. How exactly this can be achieved depends on many factors. Crucial here is to involve the characteristics of the handler, the client, the environment and the intervention itself and see how these can be adapted as best as possible for the maximum wellbeing of the dog (Horowitz, 2014).

Fatjo and Bowen developed a multi-axis approach with 5 axes for behavioral observation of pets. This brings together behavioral patterns, temperament, health and nutrition, the environment and the ability to function as a pet. This model, originally intended for veterinary behavioral medicine, can also be used as a framework for a welfare assessment (Peralta & Fine, 2021).

The first axis involves a behavioral profile. Because AAI situations require more from a dog than a daily home situation, dog behavior should be frequently screened both during sessions and outside of them. Attention should be paid to sensitivity to sounds, fear, stress and aggression. Important is the training of AAI animals: in addition to obedience, other things are required of an animal such as frequent contact with strangers, being able to hold attention longer when a child is reading, and so on. Aversive training is out of the question!

The second axis concerns personal traits. Besides personal characteristics this also includes the 'coping style' of a dog. The traits reflect the individual differences in cognition and emotions and they influence behavior. By understanding the personality traits of a dog we can better assess whether the dog can function within an AAI program. Several questionnaires and behavioral tests are available to identify personality traits, although development of these is still in its infancy. Characteristics that are looked for in AAI dogs include general shyness, social shyness, aggressive behavior, lack of impulse control and poor tolerance for frustration (Peralto & Fine 2021).

The third axis concerns a dog's health. Behavioral changes can be a sign of decreased health. Health problems can decrease behavior, such as attention, play and social contact, or increase it, such as aggression and self-mutilation. A periodic health check is recommended for dogs that participate in AAI and, of course, also if health problems are suspected. A good health of a dog working within AAI is obviously important for the dog itself, but also in relation to the risk of zoonosis (Peralto & Fine 2021).

The fourth axis concerns the environment, which includes the social and physical environment, the fulfillment of basic needs, and the ability to experience positive emotions. In AAI dogs, this involves both the environment during the session and that between sessions.

**Social Environment:** social interactions within AAI sessions include those with peers, with the handler/staff, and with the client. Here, research shows that in the presence of its owner, a securely attached dog explores more, has greater willingness to engage in social interactions and experiences less stress. There are also research results that show the other side of the dyad: an owner with a less good psychological health influences the behavior and the level of stress of the dog. However, further research on this is needed. When interacting with children, always pay close attention to unpredictable behavior of the children towards the dog, unexpected movements and screaming. In this way, stress in the dog can be prevented (Peralto & Fine 2021).

Physical environment: regarding the physical environment, it is important that the dog has plenty of positive (emotional) experiences between sessions, such as playing with peers, limitation in duration of kenneling and sufficient rest. Within the working environment, unexpected noises or unfamiliar smells should be taken into account, which can cause the dog a lot of stress (Peralto & Fine 2021). However, slippery floors can also be a source of stress for a dog. Dogs that are off leash often experience less stress during an AAI session than dogs that are leashed (Glenk, 2017).

For a positive experience, training and preventing overexertion is important. This can be done, for example, by limiting the duration of work and stopping a session when there are too many stress signals from the dog or signs of decreased wellbeing (Peralto & Fine 2021).

The fifth axis, functioning, includes in the context of AAI, the wellbeing of the dog and its ability “to perform within its working role. Because of the diversity of AAI sessions, there is no standard tool for the assessment of the performance of animals in AAI and there may never be one. Therefore, continuous observation of the dog in terms of behavior is necessary (Peralto & Fine 2021). This requires knowledge of dog behavior in general (stress signals, ladder of aggression, body language), but also knowledge of the individual animal being used. This axis also includes the retirement of the dog (Peralto & Fine 2021): when a dog indicates that the AAI work is becoming too demanding we must respect that, by no longer including the animal within AAI.

Because the situation within an AAI session is usually not entirely predictable, the risk of a less than satisfactory experience is present. The dogs must have great resilience to unexpected and unfamiliar stimuli. The nature of the stimuli, the intensity and the duration will help determine the effect on the dog. In the event of an unpleasant experience, training techniques such as desensitization and counterconditioning can sometimes be helpful (Peralto & Fine 2021).

Predictability and the degree to which a dog has control over the situation contributes a lot to reducing stress (Peralto & Fine 2021). If a dog can get away from the situation on its own and, for example, has a place within the space where it can go if it experiences stress contributes to better wellbeing.

However, the absence of certain stimuli, such as contact with conspecifics, can also cause stress and frustration in dogs deployed to AAI.

Early experience of exposure to a limited degree of stress, i.e. getting used to the AAI setting at an early age, contributes to a nervous system that is “sensitized” to stress. In addition, genetic background also influences how the dog copes with stress, so selective breeding and proper selection of AAI animals are of great importance (Peralto & Fine 2021).

Social support from conspecifics or familiar people can also be stress-reducing in a situation that is exciting for the dog (Peralto & Fine 2021).

Finally, in addition, there are many options for supporting a dog with resources to reduce stress, and these options are only growing over time. These include massage (TTouch, acupressure), homeopathy, enrichment of the environment, music therapy and so on. But sufficient sleep is also important: apart from individual differences and differences in age, a general guideline is that a dog sleeps 60-80% of the night and 30-37% during the day (Todd, 2020).

For anyone working with dogs within AAI, it is essential to recognize the dog as a peer, a living being and not as a thing or object that can be used for the benefit of humans. In addition, stress



and/or reduced wellbeing of dogs used in AAI can only be prevented if everyone who works with dogs in AAI also ensures they have knowledge of dogs, in addition to knowledge of the client(s). After all, without recognizing the signals of the dog you cannot act on it.

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## CHAPTER 6. BASICS OF ANIMAL ASSISTED EDUCATION

*Riki Verhoeven and Marie-José Enders-Slegers*

### 6.1. DEFINING ANIMAL ASSISTED EDUCATION AND THE SPECIFIC THEORETICAL FRAMEWORKS TO EXPLAIN THE POSITIVE EFFECTS OF AAE

#### 6.1.1 Introduction

In Chapter 4 we explained Animal Assisted Interventions (AAI) using the IAHAIO definitions. An Animal Assisted Intervention in education (AAE) is an innovative yet relatively unknown and increasingly used intervention in educational settings for pedagogical and social purposes, to support children in which a professional, along with a trained animal, helps to develop children's behavior and academic skills in a positive "playfully" way (Verhoeven & Enders-Slegers, 2020). Such interventions have a number of special features. For example, we found that, in addition to the play and learning elements, AAE contains a reciprocal physical contact between child and animal which occurs in an entirely natural way. It is well known that physical contact is necessary for children's development, in education as well (Bowlby, 1988; Van Manen, 1991, 2014; Moberg, 2010). A major challenge relating to the growing popularity of animal participation in the classroom/school is that the effectiveness of the interventions has not yet been adequately theorized or empirically researched. In research there is insufficient transparency about the required expertise of AAE professionals and about what protocols are used. Results of AAE interventions are therefore almost impossible to compare.

#### 6.1.2 Animal Assisted Education (AAE)

Animal Assisted Education (AAE) is a special form of Animal Assisted Intervention for children and young adults within the spectrum of Animal Assisted Interventions (AAI). It focuses on the development of academic, social-emotional, and cognitive functions in education (IAHAIO, 2018). AAE is a purposeful, planned and programmatic intervention delivered by professional facilitators in the educational setting. The professionals are trained and certified in education and are also trained in animal assisted interventions to implement them responsibly (IAHAIO, 2018). Animal assisted interventions in education have increased in recent years. All kinds of animals participate for this purpose including fish, dogs, rabbits, guinea pigs and horses. The intervention ranges from specifically designed programs with read-aloud dogs to dogs that are in the classroom or cared for daily (Breisford et al., 2017; Fine, 2015). All interventions provide many social interactive moments in the classroom.

Vygotsky (in Masschelein, 2019) suggested that children's development is mediated by social interaction. Ter Horst (in Maschelein, 2019, p. 505) stated "...education and development constitute a dynamic and reciprocal interaction process..." and Piaget (in Masschelein, 2019) argued that children can build their knowledge by interacting with their environment through experiences. A widely accepted framework for describing the influence of the social environment on child development comes from Bronfenbrenner (1979). Bronfenbrenner developed an evolving theory that emphasizes the interplay between the biological and environmental elements within a learning system and its relevance to contemporary practice of teaching and educating children. Three phases can be identified in Bronfenbrenner's thinking (O'Toole, Hayes & Halpenny in Barnett and Jackson, 2020). The first phase is the design of the ecological model. In it, Bronfenbrenner (Bengelsdorf, 2010) sees individual development in a context characterized by four nested systems: microsystem, mesosystem, exosystem and macrosystem. The microsystem includes the aspects of the environment that influence the learner's daily life. Parents, friends, family, educators and the everyday environment constitute the microsystems that directly influence development. The mesosystem is a system of two or more microsystems and may include an

encounter between a parent (from the family microsystem) and a teacher (from the school microsystem). Exosystems include settings that influence learning and development but in which the individual does not participate directly, such as educational policy. Finally, macrosystems include influences at the cultural level, for example, sociocultural beliefs about the value of education and the rights of children and youth in society. Bronfenbrenner (1986a, 1986b) later introduced the chronosystem, which represents change or continuity over time and influences each of the other systems.

In the second phase, the bio-ecological model, roughly between 1980 and 1994, Bronfenbrenner began to emphasize the active role that the developing individual plays within contexts, emphasizing biological components and personal characteristics. In the third phase of Bronfenbrenner's theory, he drew attention to the key concept of "proximal processes" (Bronfenbrenner and Morris, 2006, p. 797) in which children make sense of the world by engaging with it. From a bio-ecological perspective, the role of educators is to create contexts that invite students to participate and that provoke curiosity, cognitive flexibility and exploration. Biesta (2015), an educational philosopher, argues that education is ultimately about finding a balance between qualification, socialization and subjectification to support the formation towards a mature way of being in the world, in which we recognize and care for what is at stake in terms of democracy, ecology and care.

Educators recognize the value of animals in education as a way to achieve students' developmental and educational goals (Uttley, 2013). The above suggests that the participation of animals in education can enrich children's environments and provide more opportunities for positive learning experiences in social and physical interactions.

Figure 1 presents a modified model from Gee and Fine (in Fine, 2019, p. 279) that includes three key elements for AAE in schools.

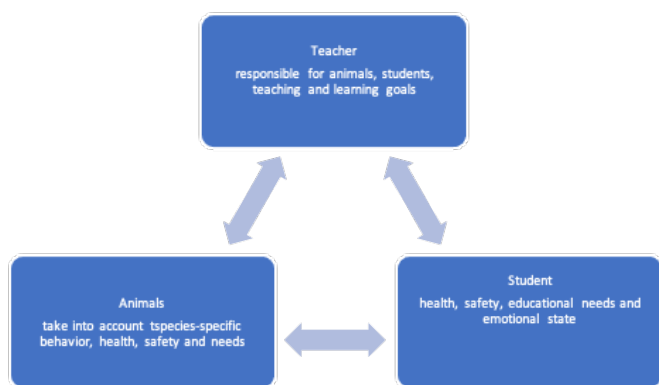


Figure 1. Relationship Teacher – Animals - Student

A first attempt at a theory of AAE comes from Gee et al. (2017). This framework explains how the presence of animals in classrooms can have an (indirect) effect on learning. In their research, they summarize that the presence of animals increases motivation, tolerance and even enjoyment of classroom activities in a way that can improve stress levels and social connectedness in students; see Figure 2.

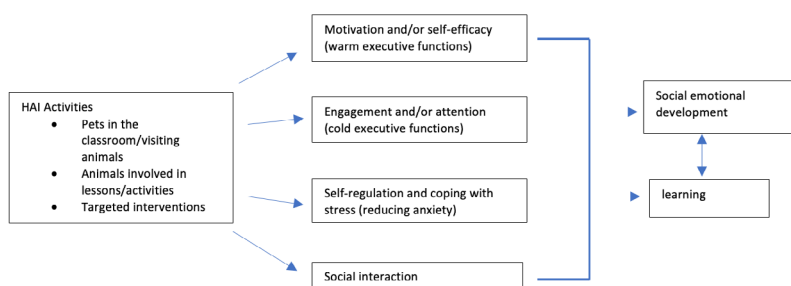


Figure 2. This theoretical framework (Gee et al., 2017) represents the direct effects of human-child- animal interaction (HAI)

Gee et al. (2017, p. 3) explain, in this overview, which animal-supported interventions can be distinguished and what effects they aim to achieve. This model assumes that human animal interaction influences children's learning and may also influence children's social-emotional development. In further research on AAE, this model can be important because it can be used to understand which interventions in AAE influence learning and the child's social emotional development.

### **6.1.3 Theoretical embedding: AAE and Self Determination Theory (motivation theory)**

Many studies have shown that children with social emotional issues are often difficult to motivate and have learning difficulties (Malti & Noam, 2016). Therapy dogs can contribute to children's learning and emotional wellbeing (Jalango, Astorino & Bombay, 2004).

Several theories have been established about motivation (de Brabander & Martens, 2014; Maslow, 1968; McClelland, & David, 2009). One model for understanding the mechanisms in motivation is the Self Determination Theory (SDT) by Ryan and Deci (2002). The SDT is based on a positive human view (Sheldon et al., 2003) and recognizes the innate intrinsic need to develop, as well as the influence of the social environment. The SDT identifies three basic needs that contribute to general wellbeing, namely: 1) competence: an interaction with, and in, the social environment that is effective; 2) relationship: the sense of belonging to a group, being cared for, and 3) autonomy: the experience and perception of self-determination.

The SDT indicates that goal-directed behavior, as well as psychological development and wellbeing, cannot be achieved through intrinsic motivation alone. Intrinsic motivation implies that activities are undertaken because they provide pleasure from within. In the case of extrinsic motivation, other reasons are used to undertake the activity. This might include the ice cream a child receives if he/she empties the dishwasher. An interaction with an animal could also be an extrinsic motivator to continue participating in an intervention program.

Dogs are able to playfully help children develop behavior, skills and knowledge (Verhoeven & Enders-Slegers, 2020). Moreover, this form of intervention (AAE) offers a lot of fun. In this sense, animal-supported interventions can contribute to student's emotional development and learning outcomes.

### **6.1.4 AAE and mutual embodied attunement**

A relatively large amount of research has been done on the origins of attachment in relationships, and theories about the human animal bond have also developed. Stern (1985) assumes mutual behavioral attunement in a mother-child relationship. This is strongly related to the key mechanism 'complete reciprocal attunement' from enactive anthrozoology (Verheggen et al., 2017) and is thus worth exploring in AAE as well. Stern (1985) describes that, in the first months of a baby's life, mother and baby frequently imitate each other's behavior. During the first (six) weeks the mother mainly follows the baby and the baby gradually learns to imitate. Once a baby gets older, at about nine months, the imitative behavior shifts to affect attunement (Stern, 1985), more and more attuning to each other's emotional world. In the mutual attunement, the child's inner world of experience gets an increasingly visible and important role. This attunement is not achieved without effort (Stern, 1985). The mother must be able to recognize the baby's inner experience and attune the behavioral response accordingly. In addition to this behavior of the mother, the baby must also be able to recognize the mother's behavior and attune to it. Thus, there is mutual attunement. For both the baby and the mother, behavior then becomes recognizable in patterns of intensity, timing and form (Stern, 1985).

Attunement, as described by Stern (1985) is not reserved for interpersonal contact. Research shows that dogs are able to recognize emotions of humans and dogs visually and aurally (Alberque et al., 2016), are adept at social learning from humans and can imitate human actions (Fugazza et al., 2018).

In the case of AAE, this means that in addition to motivation, an Animal Assisted Intervention can also help children experience attunement in positive interactions between child and animal which can encourage relationship building. The role of nonverbal communication and the dependence on the use and interpretation of body language provide the opportunity for mutual attunement, thus contributing to children's development.

### **6.1.5 AAE, social-emotional development and play**

Multiple studies, albeit with a wide variety of target groups and methodological approaches, point to the effect of animals on children's social-emotional development (Breisford et al., 2017; Gee et al., 2017). Thus, AAE could potentially play a bridging role in children's learning. An important element within an Animal Assisted Intervention in education is "play". In co-evolution, play has always played an important role in both animals and humans (Gray, 2013; Smith & Roopnarine, 2018). According to Panksepp (2011), through play, animals also develop skills, social behavior and furthermore learn to play and live together.

For psychologists and educators alike, it is given that children develop through playing games. Groothoff et al. (2010, p. 6) describe this importance as "...play is the language of the child and the child plays itself". Play is used when learning difficult things; instinctively children and animals know what play is and use all their senses. Verhoeven and Enders-Slegers (2020) describe the power of the play element in an animal assisted intervention. In a guided play intervention with an animal, both the animal and the child can develop self-confidence, resilience, emotions and social skills. In the case of AAE, this means that the playful form of interaction between dog and child contributes to the social-emotional development and, if possible, positively contributes to student's academic success.

## **6.2 State of art AAE research**

In recent literature reviews of AAE between 2015 -2019 (Verhoeven et al., 2021), '**reading**' is the subject of study in eleven of the eighteen selected studies (Table 1). All studies were conducted in schools, but because they involved distinctly different populations of children and different research designs, a direct comparison of the results in these studies is not possible. The articles in question described increased motivation, mutual physical and emotional behavioral attunement between child and animal, and the playful nature of the intervention, as a result of AAE.

Ten of the eleven articles on a reading intervention indicated that AAE influenced children's motivation toward reading. We can tentatively conclude that in children with emotional and behavioral problems, **motivation and reading performance** increased with the presence of a dog (Basette & Taber-Doughty, 2016). Schretzmayer et al. (2017) concludes that the presence of a dog had a small positive effect on **motivation and reading achievement**. In addition to this effect on motivation, Schretzmayer indicates that there was **mutual coordination** between student and dog. The dogs used in this intervention had a calming effect on the students. More recent research by Rousseau and Tardif-Williams (2019) examined the effect of reading aloud with and without a dog in 17 children aged 6 to 8. They too concluded that **motivation** to read was significantly higher in the presence of the dog. The therapy dog was especially perceived as fun and relaxing and contributed to a positive feedback process. Participants reported increased motivation to read, supporting Barber

and Proops' (2019) belief that reading aloud to dogs builds **motivation and focus**. This increased self-confidence and self-efficacy could have a positive effect on students by stimulating their development by motivating them to take on more challenges. Several studies have shown that motivation plays an important role in learning to read (Levinson et al., 2017). Motivation affects not only the willingness to start and persist an activity, but also the level of engagement in the activity and the enjoyment of it (Jalongo et al, 2004; Levinson et al., 2017).

In addition to motivation and mutual attunement, '**play**' is mentioned (Connell et al., 2019). In all forms of AAE there is the element of '**play**'. The casual, playful and relaxed nature of AAE is mentioned in a number of studies (Barber & Proops, 2019; Basette & Taber-Doughty, 2016; Dicé et al., 2017; Stevenson et al., 2015)

It can be concluded from the eleven articles that by having an animal, usually a dog, participating in AAE in a playful way, emotional development is positively influenced, which possibly has an effect on the children's learning.

The eleven articles seem to indicate that the presence of a dog affects reading skills, with the long-term effect still remaining unclear.

The empirical support for the results of the individual studies is diverse with a positive idea prevailing about the use of dogs in reading instruction.

Further research on this can advance the field's understanding of, and insight into, the significance of AAE for primary school children's reading skills.

	Author	Title	Animal	Population	Research question and characteristics	Results
1	Barber & Proops (2019)	Low-ability secondary school students show emotional, motivational, and performance benefits when reading to a dog versus a teacher	Dog	Basic Education 20 students: 14 boys, 6 girls Age: 11-12 years	This study aims to assess the direct effects of reading aloud to a dog versus reading aloud to a teacher and on student reading performance, reading motivation, and mood.	It was found that students who read to the dog performed significantly better than when reading to a teacher. After reading aloud to the dog, participants also returned more positive emotions and their written feedback about the experience was overwhelmingly positive. There was no significant difference in attitude toward the reading questionnaire when comparing students' scores after reading to the dog to those at baseline and after reading to the adult.



	Author	Title	Animal	Population	Research question and characteristics	Results
2	Bassette, & Taber-Doughty (2016)	Analysis of an animal-assisted reading intervention for young adolescents with Emotional/ Behavioral disabilities	Dog	4 students in grade 5 with emotional/ behavioral problems Age: 12 - 13 years	The purpose of this study was to investigate whether the presence/ absence of a dog in the classroom affected reading comprehension in four fifth grade students with emotional/ behavioral problems.	All students indicated at the end of the study that they had enjoyed participating. 3 Students preferred the dog present. They enjoyed giving treats, reading to the dog, petting, cuddling, and sitting behind the teacher's desk. 1 student enjoyed both conditions. The dog made reading more fun. All students enjoyed repeating the words, enjoyed learning how to pronounce words correctly, and noted that they had multiple opportunities to do better and work toward a goal.
3	Connell et al. (2019)	Dogs in schools: The impact of specific Human Dog interactions on reading ability in children aged 6 to 8 years	Dog	63 students, 36 girls, 27 boys Age 6-8 years	The primary purpose of the study was to compare the effects of three different dog assisted programs on the reading ability of elementary school age students. Three conditions were compared. Three conditions: 1) eight sessions of 15 -20 minutes over four weeks. Task: in pairs train dog to complete obstacle course. 2) in pairs read aloud for 15 -	The results did not support the hypothesis, as no group or interaction effects were statistically significant, even in the Reading condition. Instead, there was evidence of relatively robust improvement over time in all three groups on most of the variables examined. In the absence of a dogless control condition, it is impossible to determine whether

					<p>20 minutes to a dog. 3) normal activities and a dog present in the group. It was expected that all students in the study would show improved reading skills over the course of the four-week intervention, as normal classroom activities including reading lessons, were not disrupted. It was hypothesized that students in the reading condition would show greater improvements in their reading skills, compared to students in the other conditions, due to the nature of their interaction with the dog.</p>	<p>the robust effect reflects normal developmental processes, a practice effect, or any number of other possible influences. What can be concluded with some confidence, however, is that implementing a structured and intensive reading program with dog support did not provide any more than simply having a dog present during normal classroom activities. Simply having a dog in the classroom may provide as many reading benefits as specific interventions.</p>
4	Fung (2019)	Effect of a canine-assisted read aloud intervention on reading ability and physiological response: A pilot study	Dog	3 students from group 3 with the lowest performance in their group Age: unspecified	<p>The study is an initial evaluative study of a dog-supported reading program for Hong Kong students. Physiological responses of the learners were measured. Specifically, heart rate variability (HRV) responses. Real-time physiological stress responses were recorded from the learners during a pre-test, during the program, and a post-test.</p>	<p>The result of this pilot study implied that the canine reading aloud program is a viable reading exercise and has good potential to develop as an effective reading intervention. The next step of development is to ensure sufficient sample size to conduct a statistical analysis of reading comprehension and physiological measures. There was in-</p>

					<p>This pilot study was designed to evaluate a short dog reading program for three Hong Kong Chinese third graders with poor reading performance. It was designed to determine whether there was an increase in reading comprehension after participation in the program; whether there was an increase in reading accuracy after participation in the program; and whether there was an increase in the relaxation level of the poorly performing third graders during and after participation in the program of reading to a dog. The program consisted of 7 20-minute sessions.</p>	<p>creased relaxation while reading, lower stress levels, and increased reading comprehension.</p>
5	Kirnan et al. (2016)	The impact of a therapy dog program on children's reading skills and attitudes toward reading	Dog	<p>Kindergarten to fourth grade 152 students, 2010 -2011 cohort control group. Composition Kindergarten: 32; group 1: 30; group 2: 24; group 3: 37; group 4: 29 students.</p>	<p>The purpose of this study was to examine the effects of a reading program with a dog on students' reading comprehension and attitudes. The design involved a mixed-method with a quasi-experimental design. Students were not randomly assigned</p>	<p>No differences were found for the comparisons of groups 1 through 4. The analysis found a statistically significant difference in the Kindergarten group. Students in the experimental group ended the school year with significantly higher reading scores than</p>

				<p>169 students, cohort 2011-2012 experimental group. Composition. Kindergarten: 28; group 1: 39; group 2: 35; group 3: 27; group 4: 40 students.</p> <p>Age: unspecified.</p>	<p>to the control group or the reading program. In addition, interviews were conducted with five owners of the dogs and 12 school employees (teachers, library staff).</p>	<p>the control group. Interviews with dog owners the school staff were analyzed to determine their perspectives on the reading program. In general, they mentioned self-confidence, the motivational and relaxing aspects of the program for the students. As gains for the students, both staff and owners noted an increase in confidence and interest in reading. In addition, the school staff noted an increase in focus and ability to stay on task. Also, they say that special education students got the most out of the program. The interviewees further indicated that the students in the program gained a more positive attitude toward reading and their enthusiasm increased.</p>
6	Kirnan, J et al. (2018)	The impact of a therapy dog program on children's reading: Follow-up and extension to ELL students.	Dog	<p>Kindergarten to fourth grade 152 students, 2010 -2011 cohort control group. Composition Kindergarten:</p>	<p>The purpose of this study was to examine the effects of a dog reading program on students' reading comprehension and attitudes. This included</p>	<p>A statistically significant difference was found in Kindergarten students from the experimental group for the second year in a row. Students in the experimental</p>

				<p>32; group 1: 30; group 2: 24; group 3: 37; group 4: 29 students.</p> <p>157 students, cohort 2012-2013 experimental group.</p> <p>Composition. Kindergarten: 30; group 1: 27; group 2: 38; group 3: 35; group 4: 27 students.</p> <p>Age: unspecified</p>	<p>an effect study on the difference between the students in the Kindergarten experimental group with English- (ELL) and non-English background (non-ELL).</p> <p>The design involved a mixed-method with a quasi-experimental design. Students were not randomly assigned to the control group or the reading program</p>	<p>group had higher average reading scores than the control group. The experimental group in first grade ended the year with significantly higher reading scores than the control group. No mean differences were found for groups 2, 3, and 4. This study is a follow-up study. By combining the data from both studies, the researchers were able to generate data for ELL and non-ELL students in kindergarten. The data showed significantly higher reading scores for students who participated in the dog program compared to the control for ELL and non-ELL students.</p>
7	le Roux et al. (2015)	Die effek van troeteldier-supported readingprogram on word recognition skills of grade 3 learners	Dog	<p>Primary education group 3</p> <p>All grade 3 children were assessed with a test of reading and spelling. Those identified as poor readers (N= 102) were randomly assigned to three experimental</p>	<p>The purpose of this study was to determine the effect of an animal-assisted reading program on the word recognition and spelling skills of grade 3 children in a working-class South African rural school.</p> <p>Data collection took place before the start of the reading program (Time 1) and</p>	<p>After 10 weeks, students in the dog group read significantly better than students in the other groups.</p> <p>After a 10-week reading program, the children in the dog group were reading at a significantly higher level than the children in the adult group, the teddy bear group, and the</p>

				<p>groups and one control group: 27 reading for dog 24 reading for adults 26 read for teddy bear 25 control group</p> <p>63.7% were girls and 36.3% boys. The age ranged from 7 to 13 years with an average of 8 years and 2 months</p>	<p>immediately after completion of the program (Time 2) with a follow-up measurement eight weeks later (Time 3). The Reading Educational Assistance Dogs (R.E.A.D.®) program from Intermountain Therapy Animals was followed. Once a week during the 10-week reading with animal assistance, all students read aloud for approximately 20 minutes from group 1, 2, and 3 reading books they had chosen. They read to 1) a dog with an adult 2) an adult alone or 3) a teddy bear with an adult. Nothing changed for the students in the control group.</p>	<p>control group. By the follow-up measurement, the children in the dog group were still performing at a significantly higher level than the other groups.</p>
8	Levinson et al. (2017)	Effects of reading with adult tutor/therapy dog teams on elementary students reading achievement and attitudes	Dog	<p>Primary School 45 students from grades 2 to 5; 31 girls and 17 boys. Age: unspecified</p>	<p>In this study, the effect of reading aloud to guide/therapy dogs, on students' fluent reading, was assessed using a control group with repeated measurements. Group 1) reading to handler/dog. Group 2) reading aloud to fellow students. One group was randomly selected</p>	<p>The analysis showed differences between the groups and within the groups for the first five weeks and the second five weeks. Overall, the findings suggested that reading aloud to an adult with a guide/therapy dog resulted in children's scores on a test of fluent reading being increased much more than</p>

					to read to dogs twice a week for 15 minutes. During that time, the other group read to fellow students for the same amount of time. The entire program lasted 10 weeks.	reading aloud to peers. No significant effects were found on general attitudes toward reading.
9	Linder et al. (2018)	Effects of an animal-assisted intervention on reading skills and attitudes in second grade students	Dog	Primary School 28 students of group 2 Group 1) 14 students reading to a dog; Group 2) 14 students reading standard classroom curriculum Age: unspecified.	The purpose of this study was to assess the feasibility and effects on reading skills of a 6-week after-school dog supported reading program in a public elementary school. To be eligible, children had to meet guidelines for grade 2 average reading ability. Students were randomly assigned to a group. The intervention group participated in 1-hour sessions for 6 weeks, including 30 minutes of reading aloud to a registered dog/guide team and a 30-minute information session. Children in the control group completed the standard curriculum in the classroom. Children in the intervention group also completed weekly	The after-school dog reading program was feasible at this elementary school. All students in the intervention group responded with positive feedback to participating in the program with a score average of 4.7 out of 5. Students in program group for reading with dogs had a statistically significant improvement in attitude toward school reading skills, but not in attitude toward recreational reading. Reading attitudes scores did not change significantly for either group. Although scores on recreational reading attitudes did not change significantly for either group, scores on school reading attitudes increased significantly in the intervention group

					assessments of the information sessions. The researchers asked each child in the intervention group how she or he liked the session.	but not in the control group.
10	Rousseau & Tardif-Williams (2019)	Turning the page for spot: The potential of therapy dogs to support reading motivation among young children	Dog	17 students, 8 girls and 9 boys. Primary education from group 1 - 3 Ages 6-8 The parents, mostly mothers, of the students	The purpose of this study was to assess the feasibility of engaging children with therapy dogs to increase children's reading motivation and persistence. The design of this study included the introduction of a challenging reading passage, creating an environment where it might be more important to introduce a reading facilitator, such as a therapy dog. The study consisted of five parts. 1) students participated in a short individual interview. 2) learners completed two subtests to assess their over reading skills. 3) students were randomly assigned to reading without a therapy dog or reading in the presence of a therapy dog. 4) after the reading session, students completed a test.	The results of this study indicate that the presence of a therapy dog may have positive effects on children's self-perceived reading motivation and their persistence to read. If children are more motivated to read and persist longer when they read to a therapy dog, there is a greater likelihood of literacy growth. Children reported that they were more interested in reading and felt more capable when reading challenging passages in the presence of a therapy dog.



					<p>5) a posttest interview in which children responded to questions about their reading experience.</p> <p>In addition, parents were asked to complete a questionnaire about their child's general reading behavior.</p>	
11	Schretzmayer et al. (2017)	Minor immediate effects of a dog on children's reading performance and physiology	Dog	<p>36 grade 3 students, 17 boys, 19 girls from three different elementary schools</p> <p>Age: 9-10 years</p>	<p>The purpose of the study was to investigate the spontaneous and immediate effects of dogs on reading performance in students with below average reading skills. It is a crossover design in which all students participated in two test settings (with/without dog) half of which started in the setting with dog, half in the setting without, using standardized measures for assessing reading performance. In both sessions, students were read to a tutor with and without a dog and companion.</p> <p>Studied the short-term effects of dogs on reading performance in 36 third-grade students. Measure-</p>	<p>Comparing the two test sessions regardless of whether a dog was present or not, no differences were found for the physiological variables or the behavioral variables The two reading tests did differ between the first and second test session independent of the setting.</p> <p>The behavior of the students indicated a calming effect of the dog. No influence was found on HR and HRV. Overall conclusion is that the presence of a dog had a small positive effect on students' motivation and reading performance in the short term.</p>

					ments were made of physiological effects (heart rate (HR) heart rate variability (HRV) and salivary cortisol) and measurements of behavioral variables based on video recordings.	
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Table 1. Overview of articles 2015 - 2019 with a focus on reading

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## CHAPTER 7. PRACTICE

*Nicky Barendrecht-Jenken, Catia Lopes, Cristina Lopes, Tiziana Bertolli, Claudia Marzano, Ana Maria Molina, Elena Domingues*

### 7.1 RUNNING A R.E.A.D. SESSION IN A SCHOOL: TIPS AND TRICKS

Before we start about this interesting topic, we all should be aware that a R.E.A.D. session is not a time to show the children all the tricks your dog can do. The tricks a read dog learns are therefore better called 'skills', since the primary goal of tricks is that they should not distract the reader from reading. Instead, they should enhance the reading experience for the child, with the dog's involvement.

We advocate only positive, reward-based training; most R.E.A.D. teams recommend clicker training and shaping the desired behavior. Force should never be used to train dogs. Training should be a fun and interactive way to communicate together. The most powerful skill is the dog itself, because some skills are already inside a dog. By this we mean that some dogs already anticipate the child's behavior. When a child is really nervous about reading, you might see something else in the body language of your dog, than when a child is full of self-confidence and feeling happy about himself while reading. The movements of paws, tails and ears are the main tricks for amending the children's reading mistakes in a polite and unnoticeable way during the session. This is a non-verbal code existing between the dogs and the readers to understand each other. When children are struggling to read, the dog sometimes might even give his paw to help them calm down and overcome the difficulties. Some dogs also snuggle up to the child so that they can pet it while overcoming these difficulties.

Reading and translating your dog's body language is the greatest gift you can give to the child. That's where the magic happens.

Of course, learning (new) tricks really depends on the dog. Some dogs are really eager to learn new tricks; others might find it more difficult. So if you decide to use tricks, make them useful to the reading experience. Make sure you never force your dog to do these tricks if s/he's not comfortable with them. This means that as a handler, you should be focused on their calming and stress signals, and body language at all times.

The most important thing to remember about tricks is that they are a valuable means to enhance your R.E.A.D. session, but they are not the object of your session. Use them to enhance your session, not to distract your reader from why s/he is there. We recommend that you enjoy sharing your dog primarily by letting his real self shine without extra embellishment.

#### 7.1.1 Other tricks you can teach your dog

In the Netherlands they sometimes use small brain games for the dog when a dog or a child is not really focused on the task, when a child meets the reading team for the first time or as a reward at the end of a session. One of the things teams use is a 'reading meter': a measuring tape that is fixed on the back of a picture of the dog and coming out of its mouth to the front side of the paper. For every page the child reads at home, they can pull out an inch. Every centimetre equals a small dog treat to be given in the dog's favorite game, the next time they come to read to you.

This makes the child want to read more and more, and really do their best for their reading buddy. The games the teams use are mostly made of soft materials and can be a nice way to get the dog's attention onto the child, help both of them to focus more on each other or to end a reading session. This is a really natural and fun game for the dog since s/he can do what s/he likes best: use their nose!



Some other 'skills' you can teach your dog could be:

**Look** – a word that indicates the dog should look at a page or the book. You can also use the word 'what'. You can say both words in a sentence which helps the dog focus on the book if you want them to. You can also teach your dog to look at a book when it is presented to them. Children might show the book and explain the story to the dog. It is really funny and gives them a good feeling if a dog looks at it very attentively. You can train this skill at home by hiding treats in between pages until your dog learns the word; or discreetly hold a treat in the hand that you have used to point to a place in the book.

**Touch** – or choose the book. When a child does not feel comfortable with choosing a book themselves, you can let the dog choose a book. You can train this skill with the dog at home by letting him touch a book with his nose or paw and then reward him with a nice treat. When s/he masters that skill you can have three books on the floor and ask to 'touch' one book again (and of course followed by a nice treat). So every time your dog is touching a book you can reward him with a treat or with your voice. This is the same with touching a page; make it look like your dog really 'reads' a book or puts his head on a book when a child enters the room. On the pictures below you can see Australian Shepherds Lappi and Pete from the Dutch writer Judith Lissenberg



**Take a picture walk with the dog.** For young readers starting to read, a picture walk through books and stories is a powerful instrument to develop their language and pre-reading skills. This tip is about having a conversation around a book, looking at pictures and getting to know the book together, before you start reading it. You can, for example, look at the cover, ask the child what he thinks the book will be about or point to a picture and ask "what"-questions – "What's this?" "What do you think is happening?" (or let them tell the dog!) By doing this, you encourage them to speak more. Explain words and that they mean (you could also let them use a dictionary) and



add a bit more information to what the child says (this helps the child to make connections to past experiences and future events).

**All done** – A nice way to end the sessions is by training your dog to lift its head when a book is closed; this is particularly handy when a dog lies down with his head on the child's lap or on the floor. You can start by training your dog to respond at closing the book first with some more noise and then working up to subtly closing the book (and, of course, give him a nice treat when he lifts his head every time you say, for example, "all done" and close the book).

**Paw stay** – a word that indicates to the dog that s/he can hold the book open or to mark the reader's place.

**To carry a book** – Have your dog walk into the library or classroom carrying his favorite book.

**Turn the page** – Some reading partners are trained to flip a page with their nose or paw.

**Yes or no questions** – You can train your dog to respond to your subtle (hand)cues to nod or shake his head in answer to a yes or no question.

### **7.1.2 Tips for the handler**

Make sure that you provide a variety of materials during your read sessions. You can use, for example, a read bingo or a bookmark with your reading partner on it. Keep track of what books the kids enjoy in a so-called read logbook with smileys. You can also give them fun reading exercises to do when they are at home or collect some books yourself with a dog as the main character which they can read when they finish their must-read book at school.

Another fun way to practise with words and reading is to move some things around and use stepstones, small round pieces of blankets, for example. Underneath those stepstones you can hide words or pictures. Let the dog search for them with the child. When they find the words/pictures you can ask them to create their own story with those words/pictures.

As a handler your main goal is to make the read experience a fun experience for all involved; be creative as you can be without losing sight of the true read experience or your dog's signals. You can always take, for example:

- Bookmarks shaped as a bone as advertising for your services and/or rewards
- Bookmarks printed with pictures of your R.E.A.D. dog, or the dogs in your group
- Nametag-sized stickers with your dog's picture on them to give kids at the end of their session with "I read with Maggie today at \_\_\_\_ Library/school"
- Use stickers or pawprint stamps to keep track of each book completed
- Put giant pawprints on the facility floor the day of your event, leading to the area where the dogs will be
- Ask the librarians, teachers or reading specialist to make a special display on R.E.A.D. days, pulling together a selection of possible books to read
- Bookplates of the dogs in your group to personalize the books the children read during the program

***Enjoy reading!***



## 7.2 CHALLENGES IN A R.E.A.D. SESSION AND HOW TO OVERCOME THEM

- **Children with a phobia of dogs**, who do not dare to approach a dog, who squeal or cry at the mere presence of the animal.

In these cases, we work from a distance and the child is placed off of the blanket. We begin by introducing the dog slowly and repeatedly, even talking about the animal's own "phobias" (for example, Ro-Ro is afraid of water). The goal is to empathize with him, to feel identified, as a living being who can also suffer fear, such as the phobic reader. On the other hand, the common points are also worked on, for example, if the reader likes to walk through the forest, we will talk about how much the dog enjoys doing the same. We have to make the phobic reader feel the same, in fears and likes, as the dog. Once we achieve this identification (which usually occurs during the first or second session), we can start reading with the child, letting him mark the appropriate distance, without forcing anything. We let the child himself get closer to the dog, at his own pace. We never force physical contact with the animal. All movements must be calm so that the reader does not feel threatened.

- With an **elderly reader**, with a lot of insecurity and medium cognitive impairment, who does not want to read for fear of not doing well and who constantly seeks the approval or support of her therapist. After several sessions in which we read old songs and poems to her, she began to read thanks to old cuplés-typical songs of Madrid- and Andalusian verses. We read the first verses to her and she continued, half-reading, half-singing. We connected using her music and her youth songs and shortly after that, she began to read a novel.
- He was an **eight-year-old gifted boy**. He loved to read in English, his mother tongue, but Spanish was difficult for him, not only in reading but also in verbal communication. At school, he also had relational problems with his peers.  
He was a tight-lipped boy who didn't express his emotions with others. These were the aspects taken as goals for the reading sessions. He hadn't any interest in dogs, so we had to begin to build a therapeutic bond with the guide. Little by little, his attitude changed and he began to feel more comfortable in the sessions and began to communicate his concerns; this allowed him to work through the implications of being a gifted person. Furthermore, we worked on writing. He had a bad experience at school: he enjoyed writing stories, but one day, a teacher criticized his writing and the untidiness of his work, and then, he stopped doing writing. So, we used the dog as the main character to create stories and, in this way, improve letter formation and the sequencing of information, another problematic area detected during the reading sessions.

## 7.3 R.E.A.D. IN TIMES OF COVID-19 IN SPAIN

The confinement caused by COVID-19 meant that the face-to-face reading sessions had to be developed online. It was a challenge. Never before had the R.E.A.D. program been delivered remotely. The accumulated experience with more than 500 readers during COVID lockdown brought us a new way of working with R.E.A.D. that brings many advantages.

### 7.3.1 R.E.A.D. online in schools and high schools - options

**Option 1:** The children read from their school or high school during school hours. A person from the center is responsible for the online connection with the R.E.A.D. team.

**Option 2:** The children read from their home. We agree with the families the time for the connection, outside of school hours. Before starting the sessions, we inform families and schools of all the technical requirements necessary for the correct development of reading. We require a computer, mobile or tablet with a video camera and microphone. We also need to download the programs to enable us to see the reader so that he or she can also see the dog and share the texts on the screen. In addition, we explain to families and educational centers the guidelines for the correct development of the sessions, such as placing the reader in a quiet room, without noise, with natural light, without distractions. The school or the high school selects the readers and shares the requirements of each reader, before starting the sessions. Online reading is individual and personalized, as in face-to-face sessions. In libraries, we also offer the possibility for readers to read from the library or their home. In both cases, the library spreads the activity among its users, who choose the most convenient option for them.

### **7.3.2 Selection of bibliographic funds in times of COVID**

Another challenge that we faced in developing the online mode was the selection of the bibliography and its/our adaptation to the new medium and how we reached the readers. The free circulation of books - "free creative commons" - which took place during the months of lockdown, helped a lot in the provision of bibliographic funds. This allowed us to create a library, within our virtual workspace. This library was accessed by all R.E.A.D. teams, from which we "nourish" ourselves not only with these new titles but also with the digital versions of the paper books and any title that arose during the development of the sessions. In this way, we achieved greater versatility and adaptability to the necessities of readers. This virtual library is divided into different areas having as its main focus the tastes of the readers and the objectives to on with them. We have sections of books with pictograms (for autistic girls and boys), or for children with high intellectual capacities, youth novels, equality education books, emotional, travel, science, books for pre-readers, going through to titles designed for older readers in residences for the elderly, such as poetry, theater, biographies, zarzuelas or popular legends. And not only have we opened the range of possibilities in terms of titles, but we are also more accurate when it comes to working on a specific objective more naturally and inclusively. We have developed an adapted reading experience for the reader.

### **7.3.4 Options to share the texts for reading**

When selecting texts, it is essential to coordinate with the families and those responsible for the activity in the centers and/or libraries where it is taking place. We consider the objectives to be achieved, the personality of the reader, hobbies etc. when we choose the text to read.

**Option 1:** Read the paper books that are kept at home or in the center. We buy them or find them through the "Free commons"; or ask parents/educators to send us photos via mail or WhatsApp of the pages to be read on the day of the session.

**Option 2:** Share the screen with the reader through the platform or computer program that we use for the session. Prior to the session, we will have given them a choice between several books in our library according to the personal, emotional, and academic criteria mentioned above.

**Option 3:** Send them the books in pdf, free of copyright, and have them print and read them on paper while we do it from the PC. We have only used this last option with readers in a vulnerable situation. These children do not have the resources to access any books or devices. Furthermore, they don't have the technological skills to be able to share the screen, requiring us to read with them by WhatsApp video call. This way, we ensure that no reader feels at a disadvantage compared

to others since all have had access to the texts that they wanted to read, regardless of their family, economic or academic situations.

### **7.3.5 Development of an online session**

The fundamental thing for us has been that the online session resembles the face-to-face session as much as possible. For this, the chosen space at home is decorated with books, with the R.E.A.D. work blanket, is well-lit, has a good internet connection, is quiet and peaceful and contains all the material necessary for reading. All this, so that when the reader connects, they have the impression of being in a library. Like the room, the reading team is also ready: the dog in his red R.E.A.D. bandana and the therapist in his/her uniform. The device-pc, tablet, or mobile is placed in a strategic place so that the reader can see us perfectly and does not miss any gesture or signal that the animal makes to communicate that it needs his/her help, or if necessary to explain some words that the reader does not understand. The corresponding platform or software is connected and the book open and ready to read. It is also important to keep the "magic triangle R.E.A.D. -the reader -dog- book- and that at all times both sit close, so much so that it gives the impression that they can be touching. The reading person does not lose a single movement of the ear, leg, eye, tail ... for this we use a new element introduced in the online sessions, a sound signal, the Whistling doll "Muñeco pitón," which we use to draw attention to a specific word or gesture of the dog that has gone unnoticed because the reader is concentrating on reading. "Whistling doll" has become an important part of the session, so much so that the reader notices when it is not there, or asks about it.

Five minutes before finishing, we ask the reader to tell us the number of the page we are reading; we close the book and pet the dog using a stuffed animal, which the child touches where he wants us to pet. "Magic hand" is another possibility based on the therapist bringing her hand to the screen; the reader places his/her hand on it virtually and tells us where to touch the dog. It has happened in nursing homes, that the reader, at the time of petting, reaches out to the screen to touch us, the assistant who accompanies them, very discreetly, touches the part that the reader is petting: head, back, paws, etc. After this, the dog stands up and gives a paw and says goodbye until the next session.

### **7.3.6 Do we achieve personal goals with online sessions?**

In general, we have found that the goals of improving reading skills (reading fluency and comprehension) and increasing motivation towards reading can be maintained in online sessions. This is also the case for goals of increased relaxation, attention, concentration and self-control. This point is mainly notable in boys and girls with many attention problems and some children with ASD. We have been surprised by the interest developed by some children with speech difficulties to make themselves understood by the dog. They worried about whether the dog understood them or not and have greatly improved their vocalization and oral expression. We have also been amazed that children who have never read in person with dogs before, have felt very close to the dogs. The link has been created through the computer screen. This has been the most impressive. The children were concerned about the welfare of the animal and looking forward to meeting it at school. In terms of the effect of the online sessions on the self-esteem of readers, schools indicate that there has been a significant increase. Parents, schools and educators agree that they have noticed greater security, not only academically speaking but also in other areas of life.

### **7.3.7 Advantages and disadvantages of online reading sessions with dogs**

#### **Advantages**

We can read with people anywhere in the country; there is no need for a R.E.A.D. team to be physically close. We have expanded the bibliographic funds and we have adjusted to the reading needs of the readers. The printed book has actually received more praise compared to the digital one - many readers confessed to us preferring to read on paper rather than the pc or tablet, tired of so much screen and hyper connection. We can read with school children outside the school environment, that is, with those children who do not benefit from R.E.A.D. in their schools or their library. The online sessions allow greater flexibility of schedules. They also allow a greater adaptation to the sensory needs of the reader. For example, for those with great visual difficulties, we can adjust the size of the letter very easily. We can read with children with serious allergies to dogs or with disabling phobia (for their initial desensitization). Online sessions allow reading with people with health problems who do not advise physical contact with an animal. They allow us to see the environment of our readers by "entering their house" each day of reading and, in this way, to know and understand them better, thus allowing a more versatile adjustment.

#### **Disadvantages**

With the online sessions, we lose the relational/social part of the program. If children read at home, their classmates cannot see them. We can't go with the dog to pick them up from their classes, so they can't talk about it naturally. We depend on technology, and sometimes it doesn't work perfectly. There may be failures in the connection and the technological means themselves. We depend on the educational and technological level of the families. This is especially important in families in vulnerable situations and with limited resources, with insufficient knowledge of the use of technological devices.

We have to make a great effort to communicate the objectives of R.E.A.D. and its importance for readers with families with a low educational level, to encourage their commitment to the program and the development of the sessions from their home. These types of readers often have truancy problems, so it can be difficult for families to assume the responsibility of maintaining an online educational activity from home. By developing at home, he/she feels in his "habitat" and runs the risk of not taking the activity as seriously as an activity done at school.

### **7.4.8 Conclusions**

We are living in times and situations that are forcing us every day to learn, renew ourselves, improvise and that are making us open our minds to methods and ways that we never thought of before. Online reading sessions have come to stay, as they have proven to be useful, effective and 100% safe in situations in which it is difficult or impossible to carry out the sessions in person. They can be held as a viable option (for readers far from R.E.A.D. teams, with allergies or other impairments) or as additional support with readers who already enjoy face-to-face sessions and want or need to increase or extend their reading (for example, in non-school period).

## **7.4 BEST PRACTICE: EXAMPLES**

- Child with reading difficulties, short vocabulary and emotional blockage. No social relationships. We increased vocabulary, relaxation and improved his social relationships. We got him interested in books about his favorite sport - football- naming him the dog's "football teacher." This was his main motivation.



- One child, who was very shy and unable to read in front of his classmates, volunteered to read a book that he had read to the dog, standing on a chair to the entire class, in a very enthusiastic way. This was after 8 sessions with the R.E.A.D. program.
- One child from a foreign country, who spoke very little Portuguese, at the beginning of the R.E.A.D. program said that what he would like the most was that one day he was able to read an entire book to the dog. With this goal his motivation was very high, and by the end of the school year he managed to achieve it.
- After some sessions of the R.E.A.D. program, some children who didn't like to read at all, have started to read the labels on the products, the titles in magazines, newspapers or outdoors. The parents were astonished and shared this progress with the teachers and the R.E.A.D. teams.
- M., 8 years old, with severe dyslexia, hated reading because it was very difficult for her. During R.E.A.D. sessions she read a very funny book and we laughed a lot together; after that she went to the public library with her Mum and took out the same book because she wanted to read it to her mother and to her classroom and make them laugh. After 8 sessions, in spite of her dyslexia, she began to read in the classroom and she wrote this sweet thought for us:

#### LA MIA ESPERIENZA DI R.E.A.D. . DOG

La mia esperienza di R.E.A.D. . dog è stata fantastica, la cagnolina che era con me (Havana) mi ha fatto molto ridere, poi non parliamo di Tiziana, lei mi faceva super ridere e a volte anche rilassare. La cosa che mi è piaciuta di più è che Tiziana si impegnava a cercare libri molto divertenti, il libro che mi è piaciuto di più è stato «I coniglietti tontoloni».

La cosa che non mi è piaciuta tanto è a volte su, intanto che aspettavo, faceva molto caldo.

La cosa che non mi è piaciuta affatto è che il tempo con Tiziana e Havana è passato troppo in fretta, in questo momento vorrei essere ancora all'inizio. Questa attività è bellissima perché io adoro i cani e voi con me siete state bravissime. Io però voglio tornare e spero di rivedervi (M...)

#### My R.E.A.D.dog experience

My R.E.A.D.dog experience was fantastic, the dog who was with me, (Havana) made me laugh a lot, then let's not talk about Tiziana, she made me super laugh and sometimes even relax.

The thing I mostly liked is that Tiziana was committed to looking for very funny books, the book I liked the most was «I coniglietti tontoloni».

The thing I didn't like so much is that sometimes, while I was waiting, it was very hot.

The thing that I didn't like at all is that the time with Tiziana and Havana has passed too quickly, at this moment I would like to be still at the beginning.

This activity is beautiful because I love dogs and you have been very good with me.

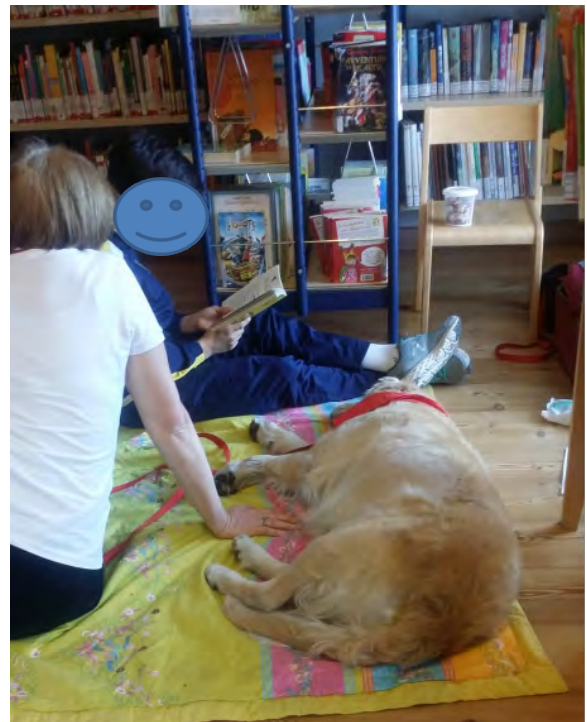
But I want to go back and I hope to see you again (M ...)



- Child S., 7 years old, was very excited and arrived elegantly dressed. At the beginning he read very quickly without lingering on the pictures, then started to slow down explaining to Brie, who was always relaxed but attentive, what was going on. The first book was about the fear of the wolf and a friendship with a rabbit; with a sigh S said that he was a little scared, then he chose the second book about another peculiar friendship: a dog and a hedgehog and he decided to borrow it to read it again at home.



- P., 7 years old, was showing the pictures to Nina and he already knew the story. He said that he was so excited that he had borrowed the book and had prepared himself a lot at home before the session because he wanted to make a good impression on Nina.
- In an education center, A., 9 years old with a social closure diagnosis – he never spoke in the classroom. In the first session, he didn't sit on the blanket near the dog but he sat on an armchair at 1 meter distance from the dog; he read with very low monotone voice. One session after another, spontaneously, he got closer and closer to the dog. After ten sessions he stood on the blanket, very close to the dog, and he read with a good voice tone. His teacher told us that at school he volunteered to read to the classroom for the first time; she was amazed.



First session



Tenth session

- We had lots of fun during our weekly reading session with school dog Pieter. The boy started laughing because he saw a picture of a naked man under the shower. He puts his hand in front of his mouth while laughing. He puts the book with the 'dirty picture' under the dogs nose and laughs: "Look Pieter! Don't you tell this to Miss Erna!" Gently and with great interest, Pieter sniffs the book and starts wagging his tail. The boy starts laughing again and says: "I knew you would also think it's funny!"

It is so nice to see the interaction between kids and Pieter and how they involve him in reading aloud. Pieter responds with so much enthusiasm that they can see that reading can really be fun after all!

*Schoolhond Pieter and his handler Erna Nijeboer-Schiphorst*

*Pieter Teamwork*

*READ-team bij Stichting AAI-maatje, the Netherlands*



*Photo 1. (2021). READ sessie with Pieter.  
Erna Nijeboer-Schiphorst*

- Soef was reading with kids in shelter locations for domestic violence when a young girl crossed our path. She wanted to read her favorite book to Soef and talked really slowly and with a quiet voice. Soef lay down against her while reading aloud. I heard in her voice that she gained some more confidence as she spoke and showed Soef the pictures in her book. He moved closer to her. She felt his presence and laughed at me: "This is so nice! Now I want to read more and more pages! Can you please come back soon?"

*Soef and his handler Nicky Barendrecht-Jenken*

*CoDi – Coaching met Dieren*

*READ-team and founder of Stichting AAI-maatje, the Netherlands*



*(2022) READ session with Soef  
N.E Barendrecht-Jenken*



*(2018) READ session with Soef  
N.E Barendrecht-Jenken*



*(2022) READ session with Soef  
N.E Barendrecht-Jenken*

## 7.5 RECOMMENDATIONS

In all R.E.A.D. sessions there are some measures that good R.E.A.D. dog handlers, as responsible handlers, can take to ensure the wellbeing of their dog and their clients.

The R.E.A.D. dog handler must be aware of his/her dog, what it is doing and how it is feeling/ reacting to the circumstances.

He has to:

- Praise the dog, regularly and consistently
- Allow the dog to relieve itself before the visit, in an area away from the entrance of the facility
- Be sure to pick up waste and dispose of it properly
- Act professionally from the moment he arrives
- Keep the animal under control at all times
- Keep R.E.A.D. visits to about an hour, or perhaps an hour and a half for an experienced dog. Even when a dog is a seasoned R.E.A.D. companion, the absolute maximum length of a visit should be no more than two hours
- If he is a teacher who brings his dog to class, he has to make sure that dog has a crate in a private place where it can go to rest and recuperate from the constant exposure to lots of children, noise and non-stop action. If there are multiple children running and yelling, even the calmest animal can become excited and unpredictable
- Remove the dog from the situation if he is jumpy or exhibits any unusual behavior
- If other teams are visiting at the same time, keep dogs at a safe distance from one another
- Never leave a dog unattended with a child, regardless of the circumstances
- Remember that it is OK to leave after a short period of time, even five minutes, if either dog or dog handler is becoming stressed. It is better to have a short, enjoyable visit than to "stick it out" beyond a point where the team is comfortable
- Give the dog a break and a chance to relieve itself every 20 or 30 minutes because the demands of the visit may cause stress, leading dog to need more frequent breaks
- Allow dogs that will be visiting at the same time to greet one another or notice each other before entering the facility to visit
- Be sensitive to signs of stress in the dog during the session and he put into practice "Techniques for Preventing and Reducing Stress" (See Chapter 5)
- Be cautious of dog overheating
- Provide water periodically, and perhaps a special treat at the end of the session
- Recognize when the dog is tired and needs some quiet time
- Support the dog before the clients; the first priority is always his dog

Every R.E.A.D. team has to subscribe Policies & Procedures and has a great responsibility representing program R.E.A.D. all over the world, so is important to remember that a team R.E.A.D. has to:

- Remain members of good standing in the therapy organization with whom he has his registration, credentials and insurance, and comply with their ethics, policies and procedures
- Keep their animal teammate up to date on all required vaccinations and licensing requirements in the area where they live
- Visit only with registered therapy animals, and with only one animal at a time
- Ensure that the parameters, scope and services to be provided by his R.E.A.D. program are fully understood and agreed upon by both the facility and all participating R.E.A.D. teams. A Facility Agreement should be in place
- Abide by all policies, procedures and precautions required by the facility hosting R.E.A.D. program
- Check in with the facility staff/supervisor upon arrival for each session



- Observe all rules of privacy and confidentiality, and represent the R.E.A.D. program with discretion and a professional manner at all times
- Not take pictures of clients without appropriate prior clearance from the child, his parents or caretakers, and the facility where the program is held. If permission is granted, signed photo releases must be obtained
- Be on time for each session and always notify the appropriate facility contact if he must cancel due to illness or emergency
- Be responsible at all times for his animal, considering its needs and humane care first. Always to stay with his animal and be in control at all times. All animals must wear a collar/harness and be on a lead at all times.

#### **Prior to each visit:**

- assess the animal's overall health and attitude
- clean and brush the animal so that it will be positively irresistible to the children s/he will be with
- cut and file nails, clean eyes and ears
- allow the animal time for exercise and elimination before and after the session
- Dress appropriately for R.E.A.D. sessions: comfortable, neat, washable and well-groomed
- Clean up after the animal, inside and outside the facility
- Not tie the animal to other people, equipment or furniture during the sessions
- Not use drugs and/or alcohol within twelve (12) hours of any visit
- Not be alone with any child, nor leave the premises with children unless
- accompanied by staff
- a release has been obtained from the facility and/or parent or guardian (as appropriate)
- Not routinely give or accept gifts from people he visits (other than the typical bookmarks, business cards, stickers, etc. that are associated with the R.E.A.D. activities)
- Charge no fees for his individual services
- Not solicit donations for his group and/or program during R.E.A.D. session, nor request that privilege
- Not participate in a therapy visit without appropriate staff supervision. He never hesitates to stop a session or procedure that feels unsafe or uncomfortable for his animal, his client or himself
- If there is an accident or injury with his animal, real or perceived, during a reading session, he will follow the appropriate reporting procedures as dictated by the organization with which he has his registration and the facility in which the program is operating
- Encourage his animal to kiss or lick a client only with their permission. All kisses should be given on request only
- Remember that not all animals are comfortable interacting with other animals. He will assess the situation with the other handler(s) before allowing any two or more animals to meet and greet each other at close range
- Not give his animal treats while it is working with a client unless asked to do so as part of the therapeutic technique, and then only when other animals are a safe distance away. He will always be ready to share treats with the other animals present!
- Provide or participate in documentation, testing and student progress notes as agreed with school, and share with Intermountain Therapy Animals any research results and/or publications that he participates in
- Conduct an evaluation and review of his R.E.A.D. program with each facility at least once per year or school year, and share that review with Intermountain Therapy Animals

## CHAPTER 8. CLOSING REMARKS

*Marie-Jose Enders-Slegers and Iva Pires*

With gratitude, we reflect on the period of READ4Succeed, that was led by prof. Iva Pires and coordinated by CICS.NOVA, in which we worked together with colleagues of different disciplinary backgrounds, from different European countries in a timespan that was characterized by a pandemic that caused many challenges in the execution of the project.

Meeting each other in person only happened in the last year; prior to that all communication was online. Nevertheless, the collaboration worked out to be very fruitful and pleasant and we all hope that the results of our project will be helpful in the dissemination of this new 'method' to help children with disadvantaged backgrounds to read and learn language assisted by reading dogs and their handlers. This is of utmost importance as in the last decades, European societies have become increasingly diverse, mainly due to the intra-European Union mobility and the immigration from third countries. Therefore, schools in the European Union host/welcome students from a wide range of cultural, socio-economic and linguistic backgrounds. This increases pressure on teachers who are now facing new challenges and seeking new strategies in order to provide a good, planned and prompt response to this new reality. Being understood and able to communicate in the host country can lead to an effective integration of these children and their families. We are convinced that with the help of the tools, developed in this project, and that can be used by teachers, children will be more confident to read and will achieve better results in their school career, especially those children with an immigrant/refugee background and those who have difficulties in reading for other reasons.

We are grateful to the Erasmus+ project who made this effort possible and thank all participants that in one way or another collaborated with us and were helpful in making this innovative dog-assisted intervention for children a success. We thank all R.E.A.D. teams, the handlers and the dogs, for their cooperation and thank the children for their participation.

We all have enjoyed this great project and are grateful for having been part of it.