

Autism Education in the Czech Republic

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Chapter 1: Introduction

Autism Spectrum Disorder (ASD) is a developmental disability that can affect a person's ability to learn social and communicative skills that are essential to childhood development. Children with autism can struggle with their language skills, executive function, sensory experience, and more. Doctors diagnose ASD in children through observation of the child's development, rather than an objective method such as a blood test. However, as medical professionals study autism at a greater rate, doctors are able to recognize and diagnose it more reliably.

Children with ASD have difficulties communicating and building relationships with the people in their life, and while therapy is a common and important way to help autistic children, a secure relationship with their caregiver (see Appendix G for definition) is crucial. It is important that caregivers understand how to work with their child, and a key part of that is having access to information. The child can only prosper if the caregiver is able to understand and work with the child. Therefore, it is essential that basic information about ASD and techniques for how to connect with children with the disorder be readily available for caregivers.

In the Czech Republic, there is an insufficient amount of accessible information and resources regarding ASD, and even with an increased need for such resources, there are very few therapy centers in the country, and the ones that are available have year-long waiting lists (Krosnar, 2008; Čížková, 2021). Private organizations have been attempting to mitigate this

problem by developing their own techniques to address and assist families with autistic children. One such group is our sponsor, Abaceda, a Prague-based therapeutic center founded by Mgr. Kateřina Čížková, BCBA, Bc. Lucie Junková, and Bc. Kateřina Jandáčková that works with young children with autism. Abaceda works closely with both the child and their caregiver to help the child develop. Even with their efforts, Abaceda still finds that there are too many families that need guidance.

One way that Abaceda is trying to make the knowledge of therapeutic methods more widely accessible to caregivers is through the development of free educational video material. These materials provide caregivers the opportunity to review and learn about general information regarding ASD childcare. To make the content as applicable as possible, the research opportunity presented focuses on analyzing the connection between the information taught by Abaceda and the information caregivers find to be most relevant. By knowing what information was most helpful to the caregivers of the ASD child, Abaceda can improve the knowledge they provide in the educational video.

The goal of this project is to develop an introductory educational video to assist Abaceda in their mission to educate caregivers on how to raise children diagnosed with ASD. The video will contain various “topics” (see Appendix G for definition) in the child’s day-to-day life that involve caregivers, such as eating, selfcare, potty training, etc., and corresponding “methods” (see Appendix G for definition) the caregiver can utilize to teach children these skills. This proposal will detail how our team plans to research these topics and methods, assess these methods in the eyes of the caregivers, and create an educational video that Abaceda can distribute online.

Chapter 2: Background

This chapter focuses on contextualizing the project and Autism Spectrum Disorder, sometimes referred to as ASD or autism. It provides essential background on ASD's relationship with childhood development and the establishment of specific therapies for ASD-diagnosed children, particularly Applied Behavioral Analysis (ABA). The chapter considers the Czech Republic and discusses the advancements made towards diagnosing ASD and policies associated with disabled persons. To conclude, the chapter argues about the importance of providing caregivers access to information regarding ASD as it supports an easier process for both the ASD child and the caregivers, and introduces the sponsor for this project, Abaceda.

2.1 Autism and its Effects on Development

Autism Spectrum Disorder (ASD) is a developmental disability which hinders a person's communication, social, and emotional skills as well as behavioral development. While doctors do not know what causes autism, they theorize both genetic and environmental factors play a role (CDC, 2021; "What Is Autism?", 2021). Autism causes difficulty in both verbal and non-verbal communication, social interaction with other people, and in some cases causes repetitive behavior which makes it difficult for them to react to the people and situations they face in day-to-day life ("What Is Autism?", 2021). Experienced symptoms and severity levels make every ASD diagnosis unique, and therefore the treatment necessary is also unique for every individual.

A majority of children with ASD have trouble communicating and have problems with expressing themselves using words and gestures. Some ASD children speak in a manner that is incomprehensible and repetitive, and they may struggle to understand other people's facial

expressions or their tone of voice. The severity of one's symptoms will also affect an individual's ability to perform the aforementioned actions. About 25% to 35% of children with ASD are nonverbal, meaning they may only say a few words or no words at all (Rose et al., 2016). They tend to be withdrawn and spend their time alone. However, they could also display acts of aggression towards other children and disregard other people around them. They could perform repetitive actions such as spinning continuously, clicking flapping ("What Are the Symptoms of Autism?", 2021). These kinds of behaviors have a negative effect on the relationships they form with different people.

Developmental pediatricians, child psychologists, child psychiatrists and pediatric neurologists can diagnose ASD in a child when they are about two to three years old (Center for Disease Control and Prevention [CDC], 2020), but the signs of autism can appear in children as young as 18 months old. According to the US Center for Disease Control and Prevention's (CDC) Autism and Developmental Disabilities Monitoring (ADDM) Network, about 1.85% of children have autism in the United States in 2020. Our team constructed Figure 2.1 from CDC ADDM data showing the estimated percentage of autism among children for the last 20 years. Figure 2.1 includes a point estimate for each year, along with a range of estimates across ADDM sites (Maenner et. al., 2016). Figure 2.1 shows the increase in the prevalence of autism over the last two decades.

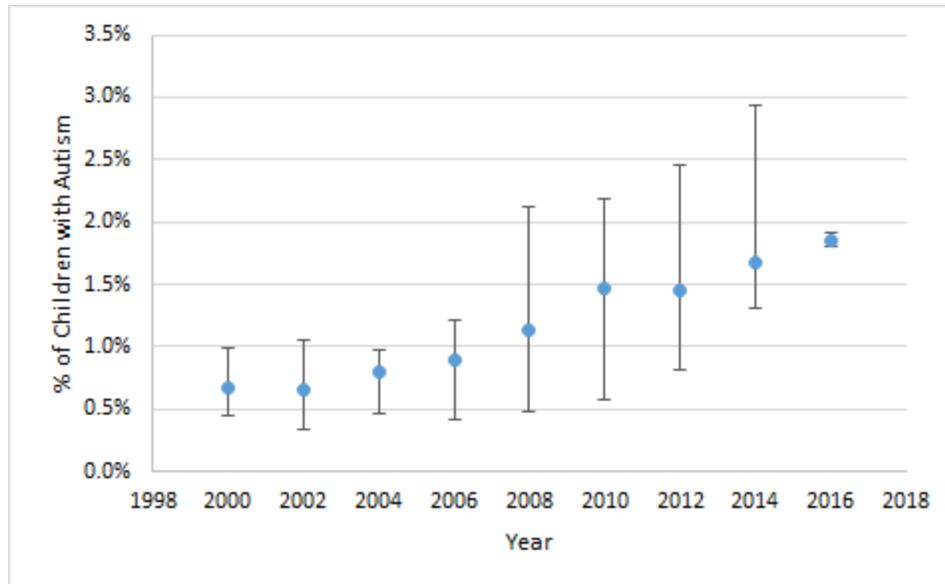


Figure 2.1: The Estimated Percentage of Children with Autism

The perception of the prevalence of autism gradually increased due to improved awareness about the disorder, improved medical diagnosis, and implementation of new policies. Therefore, it is crucial that nations focus and provide more resources related to Autism Spectrum Disorder. This help should be both in the form of educational resources and also financial assistance. Therapy is a huge financial burden to many caregivers; according to the CDC (2020), the expenditures are about \$11.5 billion USD - \$60.9 billion USD per year for care and therapy for ASD children in the United States.

2.2 Applied Behavioral Analysis (ABA) Therapy

Over time, the therapists' methods to educate children and families about autism have continuously changed. Today, the most common therapy is Applied Behavioral Analysis (ABA). Ivar Lovaas was the first to develop an effective version of ABA therapy (Roane et al., 2015).

Ivar Lovaas developed the first full treatment plan for ABA therapy in 1987. His treatment plan, Early and Intensive Behavioral Intervention (EIBI), is the best-known treatment for ABA therapy. EIBI focuses on discrete-trial teaching (DTT). DTT is the most popular form of ABA therapy, where the therapist commands the child to do a certain task and they reward the child if their response is the correct behavior (Roane et al., 2015). The treatment process of EIBI follows a process where the child first starts treatment by having one-on-one sessions with a professional to try to eliminate any inappropriate behaviors that are unique to the child (Roane et al., 2015). The rationale for one-on-one sessions, as previously mentioned, is that no two cases of autism are exactly alike. Each child, with assistance from a therapist and caregiver, has to tackle their unique behaviors before the more general behavioral issues seen in the majority of children with autism. This was exactly the approach Lovaas had in mind with EIBI because after the one-on-one sessions, the therapist put the children into groups to work on communication and cognitive skills (Roane et al., 2015). There are several problems with this treatment, the biggest being that the training can be intense for the child. They have to train 5-7 days a week for as much as 40 hours per week (Roane et al., 2015). This can be onerous for the child. The American Psychological Association has stated that ABA therapy is the “evidence based best practice treatment,” for children with autism (Autism Speaks, 2015).

Originally, ABA rigidly focused on positive reinforcement from a therapist when a child exhibits desirable behaviors (Roane et al., 2016). Unlike therapy methods in the past that focused on discouraging “undesirable” behavior, ABA rewards the child for certain behaviors, which makes it more likely they will repeat them (Autism Speaks, 2015). The original definition of “desired” and “undesired” behavior was very rigid, but over the years, ABA has evolved and

become more flexible, and therapists now adopt unique strategies for each individual child and their needs.

In the ABA teaching process, a therapist or professional performs an action and observes the child's response. The child receives positive reinforcement for any desired behavior or receives no reinforcement for undesired behavior (Autism Speaks, 2015). This process helps the professional understand the child's behavior and uncover methods to resolve this incorrect behavior. A trained ABA therapist will learn the specific skills a child needs to improve on the most and will adapt their ABA program to those needs (Autism Speaks, 2015).

There is a limited number of ABA therapy organization options available and often ones that do exist are quite expensive, making it crucial that the government supports families through special education programs. Countries like the Czech Republic have been making efforts to provide this type of aid to families and individuals with ASD.

2.3 Czech Republic Policy Changes Towards Autism and Special Education

In the Czech Republic, the government policies towards special education have greatly evolved since the Czech Republic became its own country in 1993. The Czech Republic has built on policies and conventions of the United Nations and made building a more inclusive society a priority (Roleska et. al., 2018). The United Nations ratified the Universal Declaration of Human Rights (UDHR) in 1948, setting the future baseline for the policies of the Czech Republic by establishing a fundamental right to education for people with disabilities (United Nations, 1948). The Convention on the Rights of the Child (CRC) and The Convention on the Rights of Persons with Disabilities (CRPD) both influenced the Czech Republic's attitude towards education (United Nations, 1986; United Nations, 2007).

Guided by these United Nations conventions, the Czech Republic passed legislation to assist with the inclusion of autistic children in education. In 2004, the Czech Republic passed the Education Act, which emphasized the need for schools to adapt education for children with special needs into their systems (van Kessel et al., 2020). Subsequently, in 2015 the Czech Republic published the National Plan for the Promotion of Equal Opportunities for Persons with Disabilities (Czech Republic, 2015), the goal of which was to provide equal opportunities to children with disabilities, including autism (van Kessel et al., 2020). Neither of these policies has been specifically about autism, however autistic children are within their scope (van Kessel et al., 2020). Additionally, the Czech Republic contributed to the Mapping the Implementation of Policy for Inclusive Education (MIPIE) project, which aims to track the implementation of educational policies at the national level and the European level (European Agency for Special Needs and Inclusive Education, 2019). There is insufficient research and evidence regarding whether the inclusion of children with autism in the education systems in the Czech Republic will lead to an increase in awareness of autism. The government of the Czech Republic certainly plays a role in improving the awareness and education about autism. However, this project will not examine their role at a closer level.

2.4 Advancements in the Diagnosing of Autism in the Czech Republic

The need for additional government policies and special needs education programs has become a greater issue in recent years, as medical professionals have a greater ability to diagnose autism. When doctors in the Czech Republic first started developing programs to diagnose people with autism in the late 1990s, Czech citizens had much less knowledge on autism than they do today (Hrdlicka et al., 2016). This research also showed that during the 1990s, most of the children diagnosed with autism “were described as mentally retarded” (Hrdlicka et. al.,

2016). This description persisted, and in 2004 a separate study conducted by Hrdlicka labelled 79.7% of children diagnosed with autism as mentally retarded. The tendency for the general public to perceive and label autistic children as mentally retarded would hold until Hrdlicka's most recent study where Hrdlicka found that this was not the case. The current study found 40.8% of ASD children had a normal IQ (Hrdlicka et al., 2016). This shift away from associating mental retardation with autism has aided the Czech specialists and therapists in diagnosing children with autism while reducing the stigma surrounding autism.

One of the major factors in the increase in doctors' abilities to diagnose autism is the increase in the level of education on this topic that the average adult has in the Czech Republic. When a caregiver's education level is higher, they are more likely to recognize that their child is showing signs of a developmental problem and will seek guidance from a doctor when they start to see these signs (Hrdlicka et al., 2016). If the caregiver notices signs and brings their child to a doctor at the early stages, then the diagnosis and therapy can begin earlier. In 2003, statistical data on educational attainment showed that only 12% of adults in the Czech Republic, ages 25-64, had some sort of tertiary education regarding the topic, and that percentage rose to 22% in 2015 (Rabušicová, 2006; Organisation for Economic Co-operation and Development [OECD], 2016).

Another factor in the increase in diagnosis of autism, as studies by Hrdlicka (2016) and the OECD (2016) demonstrate, is the increase in education levels of women, especially mothers, in the Czech Republic. As of 2016, women made up more than 60% of all graduates from master's and bachelor's programs in the Czech Republic (OECD, 2016). This is important because mothers are traditionally the primary caregiver that searches for information when they

start seeing signs that their child has behavioral issues that could relate to a developmental disability (Hrdlicka et al., 2016).

2.5 The Importance of Parental Understanding

A strong relationship between a child and their parents is crucial for all children to ensure that they feel safe and comfortable in their environment. Parents must understand autism, especially in relation to their child's diagnosis, so that they are able to establish security in their relationship. Each case is unique, and "the challenge of joining the child, of meeting the child where [they are], can generate otherwise unreachable creative responses in the parents and can result in an enhanced perspective that can open up and grow parents' personal values and beliefs, that otherwise wouldn't have been attainable without the parents' effort" (Papaneophytou, 2021, p. 241). The relationship between the parent and the child is stronger when the therapist is able to assess and bolster the strengths of the parent-child relationship. This means when considering a child, it is important to acknowledge that there will be challenges, but it is more constructive to focus on potential methods to overcome them (Papaneophytou, 2021, p. 508).

The core concept of parental empathy and understanding extends to other child caregivers as well. It is essential that any person who frequently interacts with an autistic child has access to tools to support their child and understand what that support should look like. If caregivers understand how to relate with the ASD child, it can lead to opportunities for the child to build relationships and establish communicative skills. Problems may arise, however, when resources on how to provide such care appropriately and effectively for ASD children are widely unavailable.

2.6 Background on Abaceda

In the Czech Republic, autism-centric programs and resources for parents are growing slowly, but still scarce. Historically, Czech education has been unsupportive of widespread education on autism, and though awareness of the issue has increased, any policy changes related to it are coming slowly. There is little to no governmental aid in the Czech Republic available for parents with ASD children, and many established services come with high costs that not everyone can afford. Caregivers must navigate years-long waiting lists to even receive the assistance (Čížková, 2021). Some small, therapeutic organizations are beginning to provide guidance and therapy for families with ASD children, one of which is this project's sponsor: Abaceda, a shared therapeutic space founded by Mgr. Kateřina Čížková, BCBA, Bc. Lucie Junková, and Bc. Kateřina Jandáčková. The therapists work with ASD children, their families, and other caregivers to help them gain awareness of self, awareness of autism, and understanding and overcoming the challenges that come with it.

Upon initial consultation with a child and family, the therapists of Abaceda will begin assessing the child's needs. Using ABA as a guide, they can better understand the most helpful methods available for improving communication between the child and their family. Abaceda remains flexible in their methods, however, and knows that ABA may not be the most effective approach for every child and family situation, so they are well equipped to provide services when working with a child that does not use ABA methodology including occupational therapy (OT), physiotherapy, and speech therapy. They are adaptive to the client's needs and are available for caregiver meetings at the Abaceda office space, virtually, and are even able to travel to the client's residence or school to ensure a feeling of comfort and security for those involved (Čížková, 2021).

In addition to direct work with the child, Abaceda stresses the importance of training all the important figures in a child's life, including parents, teachers, nannies, and other caregivers, on how to support a child with ASD. They offer a variety of consultations, training, and therapies for both parent and child, and emphasize the importance of the caregiver's role and health. In a message the team received from Mgr. Čížková on Abaceda's training and therapy for parents, she said, "We have noticed that the child can only prosper if the parent is doing well so we are very much focused on teaching the parents to take care of themselves" (Čížková, 2021). She emphasizes that the parent needs to take care of themselves so that they are better able to take care of their child and nurture their growth. One of Abaceda's programs reflects this statement by directly teaching parents how to maintain their own self-care so that they can better overcome the challenges they or their autistic child may face.

One problem that Abaceda is encountering, however, is that the scale of their influence is limited by their direct clientele. Caregivers who feel ready with the tools that Abaceda gives them can leave the center and free a space for a new family, but that process can take years. This circles back to the problem of growing waitlists of parents and children that do not have easy access to educational materials. Caregivers still have to pay out-of-pocket at most Czech therapy centers, including Abaceda, because there is no substantial government aid, which creates an even larger barrier. Abaceda has been actively looking into new mechanisms to minimize this obstacle, as well as increase the options available for families needing assistance.

Abaceda hopes to broaden their reach and help spread information online with educational videos. The research opportunity presented for this project focuses on analyzing the connection between the information Abaceda teaches and the information caregivers find to be most applicable. This research will allow this project team and Abaceda to effectively create

videos to educate and spread information to caregivers outside their normal reach and provide additional materials to those within Abaceda's programs currently.

Chapter 3: Methodology

The goal of this project is to work with Abaceda to develop an educational video on essential methods that caregivers can use to care for children diagnosed with ASD. This video will broaden Abaceda's reach and educate caregivers on methods for caring for a child with ASD. The team developed three objectives to achieve this goal:

1. Identify essential topics and methods that Abaceda teaches caregivers.
2. Assess the effectiveness of different training methods for each topic in the minds of caregivers.
3. Iteratively develop a storyboard for the video and analyze feedback from the therapists.

These objectives will serve as intermediate guideposts to keep the execution of the educational video moving in the right direction. Figure 3.1 below connects our methods with the corresponding objectives and deliverable. This chapter contains a detailed explanation of each objective, as well as discussing our final deliverable.

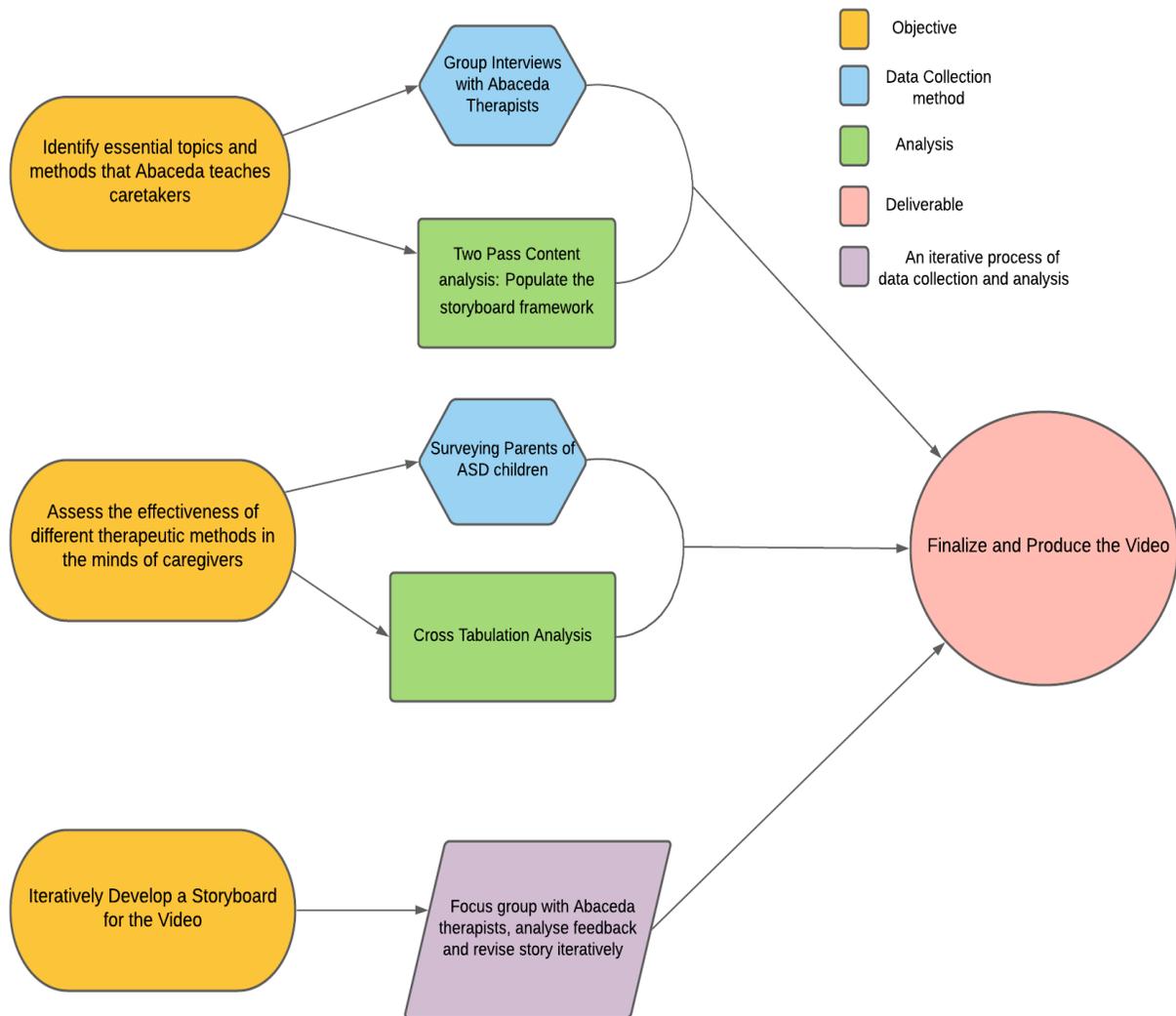


Figure 3.1: Autism Project Overview

3.1 Objective 1: Identify Relevant Topics and Methods that Abaceda Teaches Caregivers.

The team will first conduct a practice interview with a volunteer Abaceda therapist. The goal of this interview is to obtain feedback about our interview technique and questions prior to the other therapists' interviews. We will then conduct individual interviews with the other Abaceda therapists. The goal is to interview 3-5 of the Abaceda therapists. For the interviews, two team members will be present; one member will act as primary interviewer and ask questions and follow-ups, while the other member will act as the secretary and take notes on the responses. We will record the interview with the therapists' consent and will provide them with a project introductory statement (see Appendix A). The style of this interview will be semi-structured with the goal of starting an in-depth conversation about the different topics and methods that the Abaceda therapists use themselves and the methods that they teach the caregivers. Appendix C contains the questions that will guide the conversation for the therapist interviews.

Once our team completes the individual interviews, we will transcribe them, and then we will identify the relevant topics and the specific training methods that the therapists teach the caregivers pertaining to these topics. We will accomplish this by performing a two-pass content analysis (see Appendix G for definition) on each interview, which consists of our team reading through the interview transcripts two times. Each time, we will systematically evaluate the transcripts and make educated inferences on how we interpret the data. In the first pass, we will identify the 3-4 most relevant topics that the therapists talked about during the interviews. Our team will determine this by seeing how often therapists mention each topic and how important

they deem it. If we still have too many topics and cannot narrow them down, then we will ask our sponsor which topics she thinks are the most important for the video. The second pass will identify the corresponding methods that the therapists teach the caregivers on these topics. These methods will consist of the techniques that the therapists use when they are working with the child. With this analysis, our team will generate an initial reference document (see Appendix G for definition) that includes a list of categorized topics and a set of methods for each topic, the format of which is shown in Figure 3.2. This reference document will be a document that we put all the information and data in from the two-pass content analysis so that we can refer back to this information later on in the project. This data will include the list of topics, and the set of methods for each topic.

Topic 1	Topic 2	Topic 3	Topic 4
Method 1	Method 1	Method 1	Method 1
Method 2	Method 2	Method 2	Method 2

Figure 3.2: Example of Reference Document Format

3.2 Objective 2: Assess the Effectiveness of Various Therapeutic Methods from the Caregivers' Perspective.

Once our team creates the initial reference document, the next step is to create a survey to learn more about the importance of these topics and the caregivers' perception of the corresponding training methods. The team plans to research the use frequency of the methods, and which of the methods caregivers reported to have the most satisfactory results. The survey for the caregivers will contain 3-4 topics we select and related methods. We plan to do this by using an anonymous online survey with a consent statement presented at the top of each survey (see our consent statement in Appendix B). We will keep this anonymous by not requiring the participants to state their name, not looking at their email addresses, and not looking at who has responded to the survey.

Our team will use the WPI licensed survey creation program Qualtrics to implement our survey. Qualtrics will keep the survey anonymous by storing the email addresses of respondents without us having access to them. Qualtrics will also allow us to create and send out our survey in a secure manner, as well as providing tools to aid in the analysis of the survey data. In our discussions with our sponsor, Mgr. Čížková described that Abaceda has sent out questionnaires to caregivers in the past when they wanted feedback, so they would be able to distribute our survey to caregivers who have gone through Abaceda's program. Currently, we do not know how many caregivers Abaceda will be able to send the survey to, but our goal is to receive at least 10 - 15 responses on the survey. Since all the participants who take this survey have worked with Abaceda, we recognize that their responses will have a bias towards the training methods taught by the Abaceda therapists. We cannot assume that the caregivers speak English, so the

survey will be entirely in Czech. Our team will create the survey in English and use Google Translate to make a rough translation of the survey in Czech and Mgr. Čížková stated that Abaceda would assist us with translations, so we will give her our translated survey and have her look over it to make any necessary changes. The team will keep the original English text for the survey so we can refer to it when reviewing the results of the completed surveys in Czech. Abaceda is also able to assist us in translating survey responses from Czech to English so we can analyze them.

As described in Appendix D, our survey will focus on how caregivers learned about the different methods they have learned from Abaceda or outside of it, how they use them in the home, what has been useful, and what kinds of reinforcement and training methods they would find useful.

The main body of the survey will focus on evaluating each method for each topic. For each of the topics, the survey will present the caregivers with a topic and ask the caregivers to respond with how often they use each method for that topic from a Likert scale of “Always”, “Often”, “Sometimes”, “Rarely”, and “Never”. From the survey answers, including demographics information, we will collect the data and create averages with this data that will inform us the caregivers' opinions on the topics and methods.

Additionally, we hope to show a draft of our educational video to caregivers to get feedback on the video. Our survey will include a final statement asking if the caregiver would be comfortable watching a draft of the video and providing feedback. If yes, the survey will ask the caregivers to respond to Abaceda and say that they are willing to provide future feedback on the video. Abaceda will know the identities of these respondents, but they will keep that information

confidential from our team. This final step in the survey is completely optional, and the caregiver is free to skip these questions if they wish.

Once we have gotten responses from our survey, we will be able to analyze the results using the data analysis tools provided by Qualtrics. Using these tools, we will refine the methods listed for each topic to be the ones the caregivers thought were the most useful. We will review what each of the respondents' answers are for the methods for each topic. From the responses, we will devise techniques to measure the effectiveness and frequency of use for each therapeutic method. We will use these techniques to rank the top 1-2 methods for each topic and select which methods we will highlight in our educational video. If the caregivers do not respond after 4-5 days, then we will send a reminder asking them to fill out the survey. Once we have analyzed all the surveys and selected the therapeutic methods that will be in our educational video, we will update our reference document by removing the methods that we did not select. The team will use this refined reference document as a guide to create the storyboard (see Appendix G for definition) for the video.

3.3 Objective 3: Iteratively Develop a Storyboard for the Video

After establishing a reference document of topics and methods and achieving insight into the use of these topics and methods by caregivers, our team will develop a preliminary set of interview questions that will allow us to storyboard and prepare both the written and visual representation of the video. The set of questions will guide the interview-like recording later on that will make up the bulk of our video.

Storyboarding is a process to create an outline of a film, video, book, or other form of media that has become widely used in business to plan advertising campaigns, proposals, and

videos. Creating storyboards is a multi-step process where the creator will visualize a series of images or illustrations that will give an idea of what the final product will look like (Blank, Head, 2019). These storyboards will then be put into an animatic (see Appendix G for definition), which is simply taking the images generated from the storyboarding phase and roughly timing them to what we envision for the video. Storyboarding and animatic making will allow the team to start making connections between linguistic, visual, and auditory elements.

We will present the animatic, alongside the interview questions, to our direct sponsor at Abaceda, Mgr. Čížková. We will record these sessions and gather consent as required (see Appendix A). After she has given us feedback, we will revise the storyboard and questions as needed. We will continue this process of feedback from the sponsor and revisions until we feel that we have developed a strong set of questions and storyboard. When this happens, we will gather our sponsor and 2-3 of the other Abaceda therapists and have a final presentation of the storyboard and questions. If the therapists approve of the storyboard and set of questions we created, we will be ready for the next step in our process, which is the creation of the video. The outcome of this process will be the refined storyboards that will be the guide for recording and developing the final educational video.

3.4 Deliverable: Produce and Finalize the Video

Once our team finalizes the set of questions and storyboard and the sponsor and other necessary parties approve them, video production can take place. This phase of production will span several days, covering scheduling, recording, asset creation, compiling, editing, and mastering. At present, the sponsor has told us to assume an interview-like style featuring Mgr. Čížková as the sole “interviewee” talking to the camera, however this may change when we go

to the project site. We are currently under the assumption that the recording of this video will take place at Abaceda. We also may need to record extra voice-over with Mgr. Čížková and have the team produce light infographics (see Appendix G for definition) to highlight key points of the video. The team will bring the necessary hardware, such as a camera, tripod, and microphone, and software, such as Adobe Premiere and Adobe Photoshop, on site to Prague. Appendix F lists the full details of the hardware and software our team plans to bring.

Once we have concluded the recording and asset production (see Appendix G for definition), we will transform the content within the necessary software to refine, compile, and edit it into a video that is approximately eight minutes long. This process will take 2-5 days depending on the video length, the language of the video, and the complexity of the assets put in the video. After bringing content into a singular video, we will present the video to the sponsor for any critique and review. This will be an iterative process similar to the storyboard review, where we will receive feedback from the sponsor and then make the necessary changes.

As part of this iterative process, we also intend to present a draft of the video to caregivers to get their feedback. If caregivers chose to respond to Abaceda as discussed in section 3.2, Abaceda will reach out to them with a draft of the video, as well as a short feedback survey that we will create, and share with Abaceda. Appendix E lists the questions for this feedback survey. This survey is completely optional, and no quotes from the survey will be published. Abaceda will know the identities of these respondents, but they will keep that information confidential from our team. Qualtrics will also be used for this feedback survey, and responses will be kept anonymous. If we do not receive caregiver responses, we will proceed with critiques gathered from Abaceda. The feedback we receive from caregivers will help us determine which sections of the video need more work. Once our team feels that the video has

been finalized, we will present it to our sponsor, and additional Abaceda therapists. We will use any final feedback we receive to polish the video, which will be ready for use online for widespread viewing and education.

3.5 Schedule

Figure 3.3 shows the Gantt chart of how our team plans to spend our time in Prague. One important week in our schedule is Thanksgiving week, starting on Monday, 11/22/2021. Our team will be observing the standard American Thanksgiving break from Wednesday, 11/24/2021, to Sunday 11/28/2021. Our team aims to have the video finalized and approved by all necessary parties before the Thanksgiving break so the team can work on the final presentation and final report the weeks following the break.

Timeline	Week 0 10/19-10/24	Week 1 10/25-10/31	Week 2 11/01-11/07	Week 3 11/08-11/14	Week 4 11/15-11/21	Week 5 11/22-11/23 2 days	Thanks- giving Break	Week 6 11/29-12/05	Week 7 12/06-12/11
Meeting the Abaceda therapists and conducting individual interviews with them									
Creating the Survey and send it out to caregivers									
Analyze the data collected and create the storyboard. Get confirmation on the storyboard from Prof. Kinicki and Mgr. Čížková									
Make and test the video and get feedback from Sponsor and caregivers									
Test Video with caregiver feedback survey									
Work on final Presentation and final report									

Figure 3.3: Gantt Chart predicting the timeline of the Project

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Appendices

Appendix A: Introduction and Consent Statement for Therapist Interviews

We are a team of four students from Worcester Polytechnic Institute in Worcester, MA in the United States currently working on a research project with Abaceda. The goal of this research is to identify the relevant topics and corresponding training methods that Abaceda therapists teach caregivers on how to raise a child with autism. We will use all the information that we collect for educational purposes only. If there are any questions that you are not comfortable answering, please let us know and we will skip them and move on with the interview. If at any point someone feels that they need to leave the interview for any reason, they are free to do so.

We plan to record this interview to assist with our research. We will be using our research to help with our final presentation. Do you consent to us recording the interview, using your name, and quoting your responses?

I, _____, consent to the above being used in Autism Education in the Czech Republic documents and projects completed by students from Worcester Polytechnic Institute.

Appendix B: Introduction and Consent Statement for Caregiver Surveys

We are a team of four students from Worcester Polytechnic Institute in Worcester, MA in the United States currently working on a research project with Abaceda. The goal of this research is to identify the relevant topics and corresponding training methods that Abaceda therapists teach caregivers on how to care for a child with autism. We will use all of the information that we collect for educational purposes only. If there are any questions that you are not comfortable answering, you can skip them.

We plan to keep a record of the response to assist with our research. We will be using our research to help with our final project and final report. Our team will not be collecting personal or identifying information such as email addresses from this survey, and our software will keep any identifying information confidential. We will not make your individual survey responses public; however we will publish aggregate data from this survey in a final report.

Do you consent to us using your response for our research and quoting your responses anonymously?

I, _____, consent to my response to the being used in Autism Education in the Czech Republic documents and projects completed by students from Worcester Polytechnic Institute.

Appendix C: Therapist Individual Interview

Demographics:

Name: _____ Gender: _____

Title: _____

Date: _____ Age (Optional): _____

Interview Questions

C.1 What is your highest educational qualification?

C.2 When did you start working as a therapist at Abaceda?

C.3 Could you describe how you see your role at Abaceda? Do you have multiple roles? Does your role change based on who you are working with at the time?

C.4 How often do you meet with the same family during a week? A month?

C.5 What does your typical schedule look like?

C.6 How often do you work with children?

C.7 How often do you work with caregivers?

C.8 What topics do you focus on developing when working with the children and caregivers?

C.9 How do you develop these topics when working with the children and the caregivers?

C.10 What training methods do you use to develop these topics?

C.11 Are you satisfied with the training methods that you use?

C.12 What are the topics that you cover with the caregivers over the time that they work with you at Abaceda?

(Examples: eating, selfcare, potty training, etc.)

C.13 What particular training methods do you teach the caregivers relating to these topics? Do they vary depending on the child?

C.14 When you are working with the child are the caregivers present so they can observe how you are working with their child?

C.15 Which methods do you think the caregivers find most helpful?

C.16 Do you ever need to change the specific ABA therapy plan that you have for a child? If so, does this affect the training methods that you teach the caregivers?

Appendix D: Caregiver Survey

Thank you for participating in this survey. The purpose of this survey is to assess the effectiveness of different therapeutic methods for a variety of situations that you, the caregiver(s), and the child(ren) in your care may face.

Your responses are valuable to our research, and we encourage you to answer as honestly as possible about the methods you personally found the most effective with your child. However, your participation in this survey is completely voluntary and you may feel free to leave blank any questions you are not comfortable answering. Thank you for your participation!

Section 1: Demographics (Optional)

D1.1 Gender Identity: _____

D1.2 Age Range: [24 & Below] [25 - 40] [41 - 55] [56 - 70] [71 & Above]

Section 2: Introductory Questions

D2.1 Are you answering this as an individual or a group of caregivers? _____

D2.2 What is/are your relationship(s) to the child?

D2.3 How long have you been consulting with Abaceda?

Section 3: Survey Questions

EXAMPLE: For [topic 1]:

[Method 1]

D3.1 Have you ever been taught [method 1]?

Yes No

D3.2 If you selected yes, did you learn [method 1] from Abaceda? If not please specify where you learned [method 1].

Yes No _____

D3.3 How often do you use [method 1]? Please mark the circle corresponding to your answer.

Never Rarely Sometimes Often Always

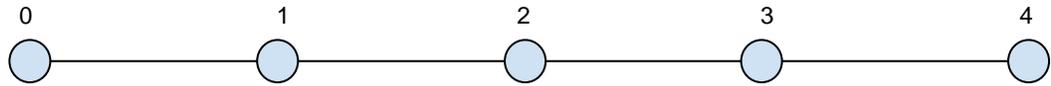
————— ————— ————— —————

(a) If you used it before, how effective is this method from never works to always works?

Never works Rarely Sometime^s Often Always Works

————— ————— ————— —————

(b) If you have never tried it, how helpful do you think this method might be for you in the future from 0 to 4 (0 being the least and 4 being the most)?



Questions in Section 3 will be repeated for the methods that we select for the chosen topics.

Additional Comments: If there are any additional methods that you find useful that we did not cover in the survey, please briefly describe those methods below.

Future Feedback (optional):

Our project will produce a video that will be distributed online detailing training methods. We would love to get feedback on a draft of the video to help improve the content. If you would be willing to watch a draft of the video and provide feedback, please respond to Abaceda and once the video is ready, they will send it to you, along with a short feedback survey. This is completely optional, and we will not know any identifying information about you.

Appendix E: Caregiver Video Feedback Survey

Thank you for participating in this feedback survey. The purpose of this survey is to gather feedback as to how we can improve our educational video. We will use all of the information that we collect for educational purposes only. We will not make your survey responses public, and no quotes you provide will be published.

Your responses are valuable to the development of our video, and we encourage you to answer as honestly as possible. However, your participation in this survey is completely voluntary and you may feel free to leave blank any questions you are not comfortable answering. Thank you for your participation!

Survey Questions:

E.1 Which parts of the video were covered well in your opinion? Why?

E.2 Do you wish any content had been covered in greater depth? Why?

E.3 Were there any parts of the video you found unclear? Why?

E.4 Is there anything you wish had been in the video that was not? Why?

E.5 Do you think this video would be helpful for caregivers who have not worked with Abaceda? Why?

Appendix F: Video Production Equipment and Software

Figure F.1 below shows the details of each piece of hardware and software that our team will bring to Prague. All hardware belongs to Sydney Gardner and all software is licensed both on Sydney Gardner's personal computer and extra laptop obtained from WPI's Academic Technology Center (ATC).

Name	Type	Short Description/Purpose	Product Page
Panasonic Lumix DMC-G7	Hardware	Camera for recording necessary videos.	https://www.bhphotovideo.com/lit_files/118675.pdf
Sunpak 5858D	Hardware	Tripod for stabilizing camera for recording.	https://www.bhphotovideo.com/c/product/1026794-REG/sunpak_620_585_5858d_tripod.html
CAD u37 Condenser	Hardware	Microphone for voice-over work.	https://www.cadaudio.com/images/uploads/u37_user_manual.pdf
16ft Single Head PopVoice Lavalier Microphone	Hardware	Lapel microphone for recording one individual.	https://popvoice-us.com/collections/lavalier-microphone
Wacom Intuos Pen & Touch CTH-680	Hardware	Drawing tablet for the creation of visual assets.	http://101.wacom.com/UserHelp/en/TOC/CTH-480.html
Adobe Photoshop	Software	Used for developing visual content for video; likely infographics.	https://www.adobe.com/products/photoshop.html
Adobe Premiere Pro	Software	Used for bringing components together into one space to edit.	https://www.adobe.com/products/premiere.html
Adobe Animate	Software	Used if individual animations need to be developed	https://www.adobe.com/products/animate.html
Adobe Media Encoder	Software	Used for ensuring all files work together and are compatible.	https://www.adobe.com/products/media-encoder.html
Reaper	Software	Used for editing audio in a more robust manner.	https://www.reaper.fm/

Figure F.1: Description of Video Production Equipment

Appendix G: Glossary of Terms

Animatic: Taking images generated from a storyboard and creating a slideshow that roughly shows what the timing of the video will look like.

Asset Production: Refers to drawing or generating visual assets for the final video. This includes infographics or logos, or any custom effects and transitions that could be used.

Caregivers: The parent or guardian that cares for the child at home.

Content Analysis: A research technique where one systematically evaluates and interprets a text and then the researcher makes educated inferences based on the text.

Infographics: A visual image that is used to represent information.

Methods: A technique that the therapists use to help a child to improve in a certain topic.

Reference Document: A document that is used to store key details on a certain subject so that it can be referred back to at any time.

Storyboard: The process of creating an outline of a film, video, book, or other form of media that uses a multi-step process where the creator will visualize a series of images or illustrations that will give an idea of what the final product will look like

Topics: A topic consists of a certain task that a child struggles with on a day-to-day basis.