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Supporting Services for Learning Disabilities

End-user Perspective of the Service System in Helsinki, Finland

Multiple-case Study of the Service Paths for Learning Disabilities

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This multiple-case study investigates the end-user perspective of the supporting services for learning disabilities. Moreover, in the case of comprehensive school aged children who have learning disabilities that cannot be solely supported by the three-step intervention/support model at the Finnish schools. The objective was to explore cases, children with more demanding learning disabilities, to depict the service paths that are formed for service development insight.

Thematic interviews with parents of such children provided data for speculation and analysis was conducted with an individual level logic model, illustrating the initial theoretical propositions and the cases. The interviewees were sought via closed peer support groups in Facebook, for parents of children who have neuropsychological symptoms.

The service paths in the cases reveal a multitude of service providers in the public sector of health care and social services. Some private and third sector service providers are present as well. Assessments and tests appear in a considerable role while the corresponding effective assisting or rehabilitative services are perhaps in a lesser role. Accessibility concerning the services that would help, assist, rehabilitate or remediate the child is therefore questionable. Scattered field of services seem to prolong the process and cause significant time and resource demanding evolvement for the parents in question. Evidently, need for additional support continues throughout the years.

Development proposal is framed by value based service design ideas - introducing a modern neuroscience remediation program for educational purposes, a cognitive training program in Finnish. A program with permanent, far reaching results, truly mitigating effects of cognitive deficits.

Keywords	learning disability, special educational needs

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1 Introduction

The Finnish school system has gained appraisals internationally for years. Young people in Finland are still among the best according the PISA 2015 assessment (Ministry of Education and Culture, 2016). Early intervention (Mengoni and Oates, 2014) is generally named as one of the keys to success. As early as day-care and preschool, children's performances are observed and deviations of the peer group lead to further considerations of possible psychological or neurological evaluation. These evaluations aim to a correct intervention, adequate support as early as possible to prevent difficulties in progressing with the curriculum determined by the liability to participate in compulsory education.

The Trade Union of Education (OAJ) published results of a survey conducted at spring 2017, reporting that the currently used three-step intervention and support model at comprehensive schools is not satisfactorily implemented at all schools and availability of adequate support has considerable shortcomings in many schools. This report claims that the support for pupils at comprehensive schools does not materialize according to the law. Only three percent of the teaching staff considered the resources for special education to be satisfactory. A release by the OAJ states that it is the budget of the school that determines the support the children get, rather than their actual needs for support (OAJ, 2017). General discussions and prevailing opinions of special education can be summarized by words of the Director of Comprehensive Education in Helsinki City Office. Her short reader's column in Helsingin Sanomat concluded - The needs for special education have diversified during the last years and the need for small class room arrangements have increased (Salo, 2017).

1.1 Challenges in the Service System for Children with Learning Disabilities

Many children need additional support especially during the first school years as they all have different skills and talents and develop individually. The current support model at schools has been established in 2010 (Opetushallitus, 2018) and it is still somewhat early to conclude its benefits and/or development needs but some indications can be drawn, such as the OAJ survey that consisted opinions of 564 teachers and headmasters. Other surveys and studies of the fairly new support system have been carried out as well, consisting merely opinions of local officials but not surveying the situation nearer the end

users or the professionals performing in the teacher role. Differences between schools are considerable and in the case of insufficient resources the children in question do not get the support they need at school (OAJ, 2017). The three-step intervention model categorizes children between general, intensified and special support. Even if the resources are satisfactory, the specific needs of the child may require further testing and outside resources, support means outside the traditional pedagogical spectrum.

Children that are not performing well enough despite the support at school typically first undergo tests by the school psychologist. Consequently, with the school doctor's referral additional testing at neurological or psychological departments can be applied. Tests are conducted as means to reveal the reasons for the prevailing problems for the child at his or her school performance. Meanwhile the lack of support can additionally result in further problems in form of anxiety for instance, as the child falls further and further behind in learning and perhaps is faced with unwanted negative attention by peers (Kelly, 2018).

If the resources or abilities to help the child at the school environment are not adequate the responsibility and treatment is scattered. As the services are sought outside school environment the process is in danger of getting prolonged. In addition, challenges in practical co-operation or difficulties in communication between different service provides, whether it is the school in charge of the daily teaching methods and tutoring by special education methods, the child psychiatry in charge of conducting additional assessment or an outside, private rehabilitation center performing reading tutoring, may jeopardize the coherent and efficient progression.

The general concern of social exclusion among young adults in Finland is rising. The number of youth patients with a psychiatric or neurodevelopmental disorders is on the rise. A national research comparing population born 1987 and 1997 shows a significant increase (Junko, 2018). Another recently conducted research by University of Jyväskylä, searched for associations between childhood learning disabilities and social and other problems later in life. Conclusions of the study are straight forward, the effects of poor school performance due to learning disabilities and its side-effects are in fact correlated and can be considered a major influence towards unwanted development (Aro et al, 2018).

As described above, the overall societal appearances implicate the importance of this topic. This multiple-case study is demonstrating one aspect of the current system in real life terms by discovering the client view and perspective of the entirety in practice.

1.2 Objective and Scope of the Multiple-Case Study

The aim of this thesis is to investigate the scenario in real-life terms and realistically illustrate the overall process of a service system for children with learning disabilities that require additional, outside school support. Particularly addressing the situation from the client's perspective by interviewing the parents of these children. This thesis work will describe what the service system consists of in case of children who have more demanding learning disabilities, in Helsinki area, to be able to analyse functionality, availability and accessibility of the service system entirety.

The research questions for this thesis are:
- What services and support are available for children with more demanding learning disabilities according to the parent's experiences?
- How do the parents of these children with learning disabilities themselves evaluate the service system and the accessibility and availability of the services?

Original research plan was to collect data through interviews of five parents. These cases were considered appropriate for some analytical generalization to be made through analysing the individual service paths that had been formed.

Purpose of this case study research, or case study research in general, is to make analytic judgements throughout the data collection phase, not merely mechanically collecting information as perhaps in some other types of researches (Yin, p. 76) for later analytical phase.

1.3 Defining Key Terminology

As the audience of this thesis is not entirely clear or predetermined while the scope is in fact interdisciplinary including education, health care and social services, some of the terminology and contexts are explained for clarity. The explanations include facts from sources that are referenced, researchers own confinements that specify the target and

purpose of this multiple-case study research design and partly explanations of courses of conduct that are the common practise in these cases that this research is concerning, practicalities in the Helsinki area.

1.3.1 Demanding Learning Disabilities

This research focuses on children that have difficulties to perform or proceed, learn within the normal class room setting. With school-aged children learning disabilities are most often difficulties with reading, reading comprehension, writing or basic mathematics or the lack of attention or executive functioning skills (Niilo Mäki Instituutti, 2018). If the available three-step intervention model activities at school prove inadequate, the child is guided to seek help outside school environment. This does not define a specific level of difficulty in a specific school subject. Rather depending on the school and the budgetary choices and arrangements the school has made and the level of competence and motivation the special education teachers hold on the other hand and the specific level of support the child would need on the other, determines whether the support available at a school is adequate or inadequate. For this case study research, *more demanding learning disabilities* are such difficulties that have led to outside school proceedings at some point. The term learning disability is widely used at both national and international literature, learning dysfunction is another common term. Learning difficulties and learning differences are also regularly used terms while describing these issues. This thesis work may refer to these with an abbreviation LD.

1.3.2 Service System for Learning Disabilities

The policy of intervening as early as possible (HUS), places the start of these services often in the child health center or the pre-school. Referral for further evaluation may result with occupational therapy before starting school. When at school, the components of service are the special education teachers, their evaluation, different supportive arrangements, along with the school psychologist test. School doctor's referral for further evaluations and tests may lead to the child psychiatry and/or the neurology department, which generally can provide testing and possibly additional tutoring, rehabilitation or therapy. Additionally, private sector service providers provide services as well. These are possible steps of the service path in Helsinki. For instance, Helsinki does not approve occupational therapies after starting school, this is a local policy presumably. Another

similar policy choice is the fact that most learning disabilities are directed to psychiatry department, rather than neurology.

By researching the service system, this thesis is intending to view the different components of services, including various providers of services, the communication involved, the required infrastructure that support the different constituents and the interaction between providers and customers, by listening the end-user opinion and experience. As defined in multiple sources, the co-creation of value is the confining factor when defining a service system (Fonseca and Pinto, 2014). In the case of children with learning disabilities and their parents, as the customer and day care, schools, special education, psychologists, psychiatric and/or neurologic evaluations, treatments or therapies, social insurance institution and other similar instances that oversee the eligible service providers, public and private, the system includes a wide variety components.

2   Multiple-Case Study Research with Thematic Interviews

2.1   Research Approach and Design

The multiple-case study method was chosen to approach the issue from service design perspective, emphasizing the end user perspective. The empirical data is collected from the clients of the service system by interviewing the parents of children with more demanding learning disabilities.

Case studies as a research method has had a controversial reputation. It has been considered a preliminary stage for other research methods, exploring the initial and operational settings. Another perception has been to confuse the method with ethnographic fieldwork and participant-observation. Robert Yin, the author of Case Study Research; Design and Methods (2014), defines case studies as a research method with two distinct features. Firstly, it is an empirical inquiry that investigates a contemporary situation profoundly in real-life context declaring perhaps unclear boundaries between the situation and context. Secondly, Yin focuses on the fact that as in real life surroundings the phenomena and context are not easily seen as separate entities, 'the case' consists of many variables of interest and results depend on condensing the data in the light of previous propositions that have guided the data collection and analysis (p.16).

In these phenomena, the cases of children with more demanding learning disabilities, are for fact situations effected by many different aspects and variables. Naturally these children are distinct individuals with personalities and different histories. Their difficulties at school environment may be caused by endless combinations of psychological, visual, auditory, executive functioning or other neurological qualities or psychological symptoms. The education system, health care system and other service providers are the players attempting to provide help and assistance. It could be argued that it is either difficult or impossible to distinguish the boundaries between variables in these cases.

Focus is to illustrate the overall process when in search for assisting and supporting services outside school, in other words, the accessibility. Meanwhile this research attempts to disclose the amount of resources and time used by all parties involved, to consider the efficiency. To accomplish consistency and context these cases are within same municipality, Helsinki. Service arrangements differ depending on the city or district. This research is focusing on children with demanding learning disabilities, demanding in this context imply a level of difficulty that was beyond the three-step support offered at school, therefore it is not an indication of any diagnosis. Multiple-case study through thematic interviews was chosen to provide the empirical qualitative data. Analysis of the data will provide conclusive and summarizing picture of the entity, the service system.

To be able to interpret the information as it is being collected the researcher needs to understand the issues well beforehand. In addition, theory books strongly recommend defining propositions if there are some to be made (Yin, p. 37, 2014) (Saunders, p. 180, 2012). If not, it is suggested to address the issue with exploratory analogy. This research has an exploratory angle, as to explore what are the options, alternative services when the three-step intervention support model at comprehensive school is failing to give needed support. This research does, though, hold some propositions, as follows:

- This case study will demonstrate that the time and resources required by the parents and the child for applying additional services and attaining them throughout years indicates inefficiencies and overlapping in the service system
- The case study will show that evaluation and testing outside school and even at school are perhaps not providing tools or enough usable knowledge for practical everyday school work

These propositions are partly formed by the experiences of the researcher, which is indeed what Yin's case study theory book suggests. The book suggests executing a pilot-case, here personal experience of the author is regarded as an assimilation of a pilot-case. The writers own two children both have learning disabilities, have applied and received a special educational needs placement and undergone neuropsychological evaluation by the child psychiatric department and received a period of neuropsychological rehabilitation by a money order from the public sector, by a private rehabilitation provider.

Equivalent ideas, propositions have been suggested several times in the near past in some respectable Finnish media, such as Yle News and Helsingin Sanomat. Here are some headlines translated, with references enclosed. *My child did not get adequate support for four years – a survey by Yle reveals the crude experiences by parents of children with special needs* (Jämsen, 2018). Letters to the editor at Helsingin Sanomat (2018) call after attention to similar issues with headlines: *Children must receive support for their learning disabilities: The presence of teaching assistant is not adequate support, if the pedagogical means of the teacher are not adequate for the school class in question.* And, *Attaining support for a child with special needs is difficult and coincidental.*

This research aims to answer the research questions, attempts to verify the propositions and conceptualize the service paths of these cases through individual-level logic model providing framework for analysis. The design for this research provides logical sequencing that connects the empirical data to study's initial research questions and ultimately to its conclusion (Yin, 2014, p.28). The thematic interviews provide a tool to collect a trail of evidence of the different building blocks in the service system, forming individual service paths for analytical speculation. Analysis is constructed for providing service development insights or reorganizational development needs.

The data from the interviews is intended to answer altogether five levels of questions (Yin, 2014). Naturally, first level of questions is asked from the parent of the child. Yet, more important was to discover how these service paths are formed, what is required for the process to go further and to continue, what is required from the child, the parent, the institutions involved, the weight of the second level of questions are more on the case specific level and perhaps more about the institutions involved and less about the child. This was the enclosed agenda, while the interview proceeded with questions about the child.

The third level of questions arise while looking for patterns across the cases, while building the visual model to conceptualize the service path for more demanding learning disabilities in our service system. Fourth level of questions are addressed when the entire material is collected and reported, the model analysed in the light of the chosen theoretical approaches. Finally, the fifth level of questions, in Yin's book, are named 'normative questions'. These are the policy recommendation and conclusions that go beyond the scope of this research, that are addressed while considering validity of the proposal at the end of this thesis.
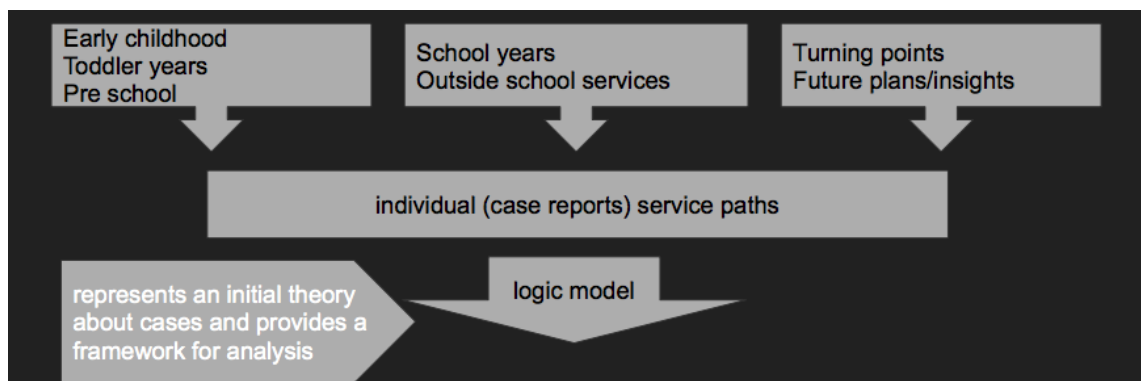

Figure 1. Structure of the interviews, collection of data to form individual service paths

As the figure 1 describes, the interviews were designed to be thematic by nature to cover the same topics and time frames to collect reliable data also on temporal sequence of the different steps in the process of attaining additional help for learning for the child. The design will, through the analysis of the interviews, answer the research questions and offer a framework for analyzing.

2.2   Data Collection and Technique for Analysis

Interviewees were sought from independent, closed support groups in Facebook. Other sources were formerly considered. As this research does not aim at aligning according to diagnosis, interviewees were not sought via different diagnosis specific associations such as ADHD-liitto (ADHD-liitto).

The author herself, is a member of *Pro nepsy nuoret ja lapset* and *ADHD-lasten vanhemmat* groups. The groups are closed, for members only, peer support groups in Facebook. Membership does not require diagnosis. The former is for parents and

guardians of children that have neuropsychological symptoms or diagnosis and the latter is for parents with children that have ADHD symptoms. The groups differ in content and style, clearly the variety of different neuropsychological symptoms effects the line of discussion towards more diverse topics in the former support group. These Facebook support groups have thousands of members nationwide. The members were approached with a short introduction of the research, the purpose and targets. Many expressed appreciation of the possible outcomes of the research. A few expressed interest on participating an interview. Very few could spare the time.

The interviews were kept reasonably short and concise for practical reasons. In fact, more detailed or for instance more time specific details would have required additional data collection methods in the form of documents and statements. These secondary data collection methods were considered, yet overruled and found un-necessary to accomplish the goals of this thesis, furthermore it would have extended the scale of the research considerably. These interviews covered the parents' perceptions and opinions of an approximately 10 years of occurrences in the child's life, regarding learning issues.

Table 1. Examples of interview questions per theme

1	Early childhood Toddler years Preschool	- What was your son/daughter like when he/she was a baby? - Was he/she the first/only child? - What kind of child was he/she when growing through toddler years? - Did he/she attend day care, what kind, at what age? - Was there any comments or concerns raised by the day care staff? - Who's initiative led to psychological or other evaluations?
2	School years Outside school services	- What school did he/she enter, what kind of class? - What happened/has happened at school? Additional teaching, three-step support model, school psychologist evaluations? - Has there been a need to change school due to difficulties in learning? - Any outside school evaluations or support? - How many times tested, what kinds of tests - How many sessions of tutoring or other rehabilitation?
3	Turning points Future insights	- How would you describe the situation now? - What could be described as turning points in the process? - Are there any plans for future or concerns at this point?

Naturally the long period may have evaded many details and perhaps even distort some of the facts. More precise approach would have required documentation from all events, from different institutions throughout the years.

The interviews were conversational and informal in style. Themes were visible during the interview on a timeline drawn on a sheet of paper and notes were added during the conversation. This helped, both the interviewer and the interviewee to collect thoughts from a long period of time and perhaps more easily remember if something had been left out. First theme was to cover the early childhood years. Second, concentrating on the events and experiences during school years. Third, looking at the turning points in the events and discovering future insights.

Interview questions cover the entire timeline of early signs of learning difficulties until present, actions and steps taken towards solutions for better learning methods and experience for the child. Table 1. lists examples of questions that were raised during the conversation.

Altogether 31 pages were transcribed from two separate interviewees. One interviewee from each peer support group. The following Table 2. lists details of each interview.

Table 2. Details of the interviews

Date	Time	Duration	Interviewee	Pages
26th April, 2018	10:20 AM	33 min	Mother of boy Brandon, 13 yr	11
22nd August, 2018	09:45 AM	8 min		2
8th May, 2018	13:10 PM	50 min	Mother of girl Amanda, 13 yr	18

Overall strategy for the data collection was to explore the cases to the extent that would reveal the service paths for the children in these cases. A technique, further developed form pattern matching, logic model, is used to specifically stipulate and operationalize complex chain of occurrences and events over an extended period, of time (Yin, 2014, p.155). Pattern matching (Saunders et al., 2012, p. 579) is predicting a pattern of outcomes based on propositions with an attempt to enlighten the expectations of analysis. The proposition of this research is that the variables are not as dependent of each other as generally predicted.

Creating an individual level logic model, was chosen to allow the data to reveal the extent of the overall process and the implications on the family in question among other things. Yin describes the use of logic models as a somewhat contemporary analysis method for phenomena that are complex chain of occurrences or events over an extended period, of time (2014). These cases represent both to some degree. Matching empirically observed events to theoretically predicted events, is the consistency of these models. The steps towards finding solutions to learning disabilities are to be staged on a repeated cause-effect-cause-effect pattern. The events are variables that are supposedly leading to progress, some causal procedure in the next stage. The purpose is to trace interventions that are intended to produce certain outcomes, and in these cases, sequential stages of interventions. The key ingredient for this method is the claimed existence of cause-and-effect sequence of events. (Yin, 2014, p. 155-159) The interventions, different services provided, are presented in a visual form, where the logic and flow of the events is on display.

2.3   Trustworthiness

This research topic was chosen due to the writers own personal interest and a decade of experience on the field of services and arrangements for children with demanding learning difficulties. Her own experiences on the field formed the propositions mentioned earlier (in 2.1) and true motivation lied on the possibility to find development reasoning and/or rationale that could eventually help the ongoing struggles of her own two children, hence this thesis has a real life constructive perspective. This work is not searching to find neutral or impartial views, as such, rather through conscious and committed reflexivity finding reflections and analysing how the writers own perspective interacts with the perspective encountered (Patton, 2002. pp. 569-570). As Patton suggests in his book; Qualitative research & Evaluation Methods, the more traditional aim of remaining objective while doing research, should be replaced by trustworthiness and authenticity. Considerate and justified fairness, true reflection and representation of the phenomena is what ought to be aimed for. It is evident that multiple realities, sides and truths co-exist, depending on stakeholder (Patton, 2002). The stakeholders in this inquiry and analysis are the child with demanding learning issues and the parents.

In attempt of gaining trustworthiness and authenticity, hereby following thoughts of authors Lincoln and Guba. Their book, Naturalistic Inquiry suggest, to answer four questions to accomplish adequate level of trustworthiness (Lincoln and Guba, 1985, pp.

301-331). All the precise and short answers here refer to the corresponding parts in this report and the gathered data, and are lined with answers named in the Lincoln and Guba; Naturalistic Inquiry. Lincoln and Guba have exchanged the internal validity, external validity, reliability and objectivity, generally practised and demanded in research by credibility, transferability, dependability and confirmability. First, how to establish confidence in the credibility? The writer of this thesis has prolonged engagement and prior and ongoing persistent observation on the field, those are activities that increase the probability that credible findings will be produced. Second, how can one determine the extent to which the findings are applicable in other context or with other subjects? Thorough reporting of interviews and representations of the results along with profound description of the data gathering and interview structure and style, act as evidence of transferability. Third, would the findings be repeated if replicated? Proof for consistency and dependability are difficult to present, but strong arguments can be found if the method and execution of this research is considered credible and if the writer is considered to have demonstrated enough competencies and fairness in presentation. Fourth, to what degree are the findings of this inquiry determined by the subjects and not by the biases, motivations, interests, or perspectives of the inquirer? For this question, to prove neutrality, Lincoln and Guba present three alternatives; conformability audit, triangulation or keeping a reflective journal. None of these are available at this point. In which case the writer is referring to the previous paragraph, to Patton's consideration of conscious and committed reflexivity in finding reflections and analysis. And, how the trustworthiness of the data is tied directly to the trustworthiness of the person who collects and analyses the data (Patton, 2002, pp. 569-570).

As the writer has been a close observer of similar chain of events for a decade, objective reporting and loyalty to the research data has required arduous attentiveness. Continuous vigilance while analysing had to be practised. Each sentence was written with caution and revision of the cases to verify content. Interpreting the content of the interviews includes and utilizes the experiences gained and is accordingly an in-depth insight to the service paths.

2.4   Ethical Considerations

The assimilation of a pilot case, the writers own two children are hereby identifiable and interventions relating to their learning disabilities were exposed. The consideration, whether these revealed details could cause harm to the children appeared somewhat

indifferent at first as their learning disabilities have become a very apparent, normal and casual topic over the years and no secrecy was held around the issues. The family had always openly discussed the process and benefits of the neuro psychologic rehabilitation they have had. Later in the process, while analysing and reporting, considerations such as whether the findings could adversely affect the collective interest of those who participated (Saunders et al., p 244-246, 2012), theoretically, also seemed distant as the study did not focus on any single service provider or process, rather emphasis was on the entity of the service system. Nevertheless, the writer holds preconceptions on how the findings of this study may be perceived. It does reveal an impressive service system, while pointing out the overall burden, economic and other, it bears. Furthermore, analysis is questioning even the effectiveness of the outcomes.

The interviewees were voluntary participants from peer support groups in Facebook, for parents with children that have neuropsychological symptoms. Therefore, they do not represent a specific association or organization, and were guaranteed anonymity. Names of the parents, or the child are not revealed at this written report. The children have personas indicating their gender and age. Details of school names, teachers or other such information are not used in reporting nor analysis, are merely visible in the transcribed data records. Recordings of interviews are deleted after receiving a verification from the instructors and/or evaluators of this work. Transcribed documents are stored at the school server and erased as the student account is deleted after graduation. (TENK, 2018) (Saunders, pp. 231-232, 2012)

The interviewees were presented with the purpose of the interview and use of the data, as well as the analysis method, the logic model, depicting the service path, the flow of the services in the process of attaining support for learning disabilities. A consent-form, example seen as Attachment 1, was signed by the interviewees (Saunders, pp.226-251, 2012).

3   Results of the Study

Reports of the two cases have many similarities. For instance, placement in an inclusion class. Both children received placement in an inclusion-class, as a pedagogical arrangement due to learning difficulties. Inclusion-classes are becoming more common, beside and in addition to the small-class arrangement where students that have special

educational needs are within a small classroom accompanied with a teacher, whereas the inclusion-class combines maximum 10 students with a special educational needs placement, with students that have no apparent difficulties with learning. Inclusion classroom setting in Helsinki, generally has two full time teachers and a teaching assistant, as in these two cases.

Below are written reports of each case, Amanda and Brandon. These reports include observations and comments that are important when evaluating accessibility and effectivity of the service system. The services themselves are additionally represented in a time-line figure, attempting to bring forward the continuum of different procedures and some disjointedness of the services. In Figure 4. on page 25, a logic model depicts the flow of the services.

3.1   Girl, Amanda, 13 years

At the time of the interview Amanda is 13-years-old, she had just finished her 5th class, attending school at one of the southern-Helsinki district comprehensive schools, participating schooling within an inclusion-class. Amanda was transferred to this school five years ago, to attend 2nd class and needed to redo the second school year due to severe difficulties with reading. Before receiving a placement in an integrated class Amanda attended pre-school and 1st school year at a Steiner school. Amanda had participated day care from the age three onwards.

Prior experiences are described in the following paragraphs. Amanda has had occupational therapy for five years, between ages 5 and 10. This was arranged by a referral by a child health centre psychologist and doctor. The occupational therapist was a private sector entrepreneur but expenses were covered by a money order from the public sector. Altogether the process of getting the therapy ongoing, took a year and a half of meetings, negotiations, appointments and test at the child health centre and doctors. For the first two years, Amanda's mother took her to her weekly sessions. After that they were introduced the possibility of a taxi fare, covered by a money order.

The pre-school year and first class at Steiner were stigmatized by restless behaviour and the personnel expressed views that perhaps Steiner was not a good choice for Amanda. The mother thought the contrary. Amanda was offered additional eurythmy lessons (Woods et al., 2005) as a support measure. Circumstances, merely the negative

atmosphere got more intense and Amanda's wellbeing suffered considerably, a change of school seemed inevitable. Amanda's mother contacted the district planner in the local educational department (later referred as SENCo, Special Educational Needs Co-ordinator) and managed to convince her of the need for special needs education placement. Statement by the occupational therapist may have helped to receive the placement. Furthermore, Amanda was already undergoing evaluation at the child psychiatry. The school psychologist and the doctor at Steiner school, had written this referral to child psychiatry.

Since age seven Amanda has visited the child psychiatry department, approximately once a week. These sessions have included three sets of neuropsychological tests and some form of neuropsychological rehabilitation. As Amanda further struggled with basic reading, she was offered additional weekly reading tutoring sessions for two years. This took place between ages 10 and 12. With the tutoring, Amanda has achieved basics in reading, yet her reading is not fluent. The latest neuropsychological tests were concluded during the previous spring and a meeting at school was held to overview the results. Conversation on the topic was brief, according to the mother and resulted with a semi-official ruling that if Amanda wanted she could alternatively give test answers orally, instead of in writing.

Placement at the integrated class has had its challenges. It was not clear that the school was able to arrange adequate support, as a matter of fact re-location to a special school was suggested after two years. At that point, Amanda had already had her pre-school and 1st grade at Steiner, 2nd grade in the new school, and by re-doing the 2nd grade had to relocate to a new class and the teacher changed, evidently, in between as well. Consequently, three major changes in three years. Her mother thought that that was enough and was simultaneously convinced that a normal school with additional help would suit her daughter better, rather than a placement into a school where mandatory curriculum and syllabus were not followed.

Mother's thoughts subsequently of the years between ages 6 and 10, are horrendous due to the amount of stress, effort and procedures that was required in attempt to get the help and support they needed. She, Amanda's mother, felt necessary to seek after additional support for the family and was in contact with the child welfare bureau. It was agreed that she can call for a support person to participate in meetings at school or at child psychiatry if she feels that the meeting in question is particularly demanding.

Previously, the child welfare had assisted when Amanda was in 1st class, arranged a family worker to help, once a week, by picking up Amanda from school and spending some time with her. This was an arrangement for a year, while the mother was still attempting to complete her studies. Child welfare has additionally offered that a family worker could visit and discuss issues that have been a concern of the mother already for two years, yet the child psychiatry has not reacted on the issue.

The most helpful service, in terms of looking at turning points in the service path, was when an employee at the child psychiatry took a role as a co-ordinator for common meetings and acting as a support person for Amanda's mother. This lowered the amount of work and stress considerably. This arrangement fell through once that employee was retired and the employee replacing her, would not fulfil similar therapeutic and supportive role.

Amanda's mother keeps pointing out the struggles and the amount of effort needed for achieving a doctor-patient relationship in a facility that is providing the additional services for learning disabilities. Moreover, it still does not mean you are necessarily getting any help for the child. It may well take up to two years. Additionally, her opinion is that the amount of work and time required for all these arrangements makes it impossible to maintain a position in working life, or even complete studies. The most arduous years for this family had been from age 7 onwards, continuing for 2 to 4 years. During the most intense years, Amanda's mother estimated that she had attended in 50-80 appointments each year. It was minimum 2 appointment per week, which she mostly experienced as poor in level of productiveness and the information could have been shared via other means. These appointments that concern the child's needs of assistance for school work, the parent needs to be convincing enough, repeatedly emphasize the difficulties and persistently repeat the obstacles, otherwise the situation would not be taken seriously enough. This kind of repetitive talk is bound to influence mentally and Amanda's mother would later choose to prolong the appointments simply to add statements about happy and successful events and details of their family life. She made clear that the problems and difficulties remain severe, yet she needed to speak out some positive points in name of her own metal health.

Near future holds insecurities as the continuation of the care relationship at the youth psychiatric department is uncertain. Once 13, the care relationship is no longer possible at the child psychiatry. The transfer is not self-evident, still an undecided situation. Even

though the current school is far better with supporting learning disabilities than the former facility, it is not taking a full responsibility and has not taken the initiative role in the process, rather repeatedly claiming on lack of resources and keeping additional support at minimum level. The overall responsibility and in practical terms 'making sure that things happen' is left for the parent solely, and often consists of lot of work, frustration and fighting for your child's best interest, according to Amanda's mother. Services related to Amanda's learning disabilities are represented on a time-line, Figure 2. below.

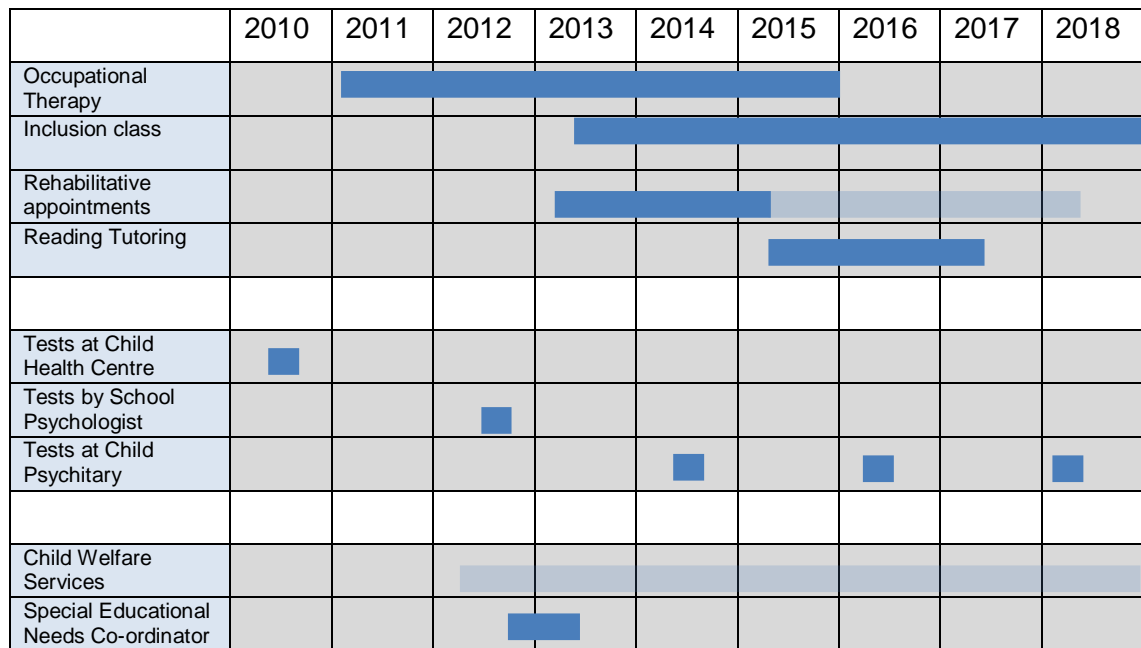|	2010	2011	2012	2013	2014	2015	2016	2017	2018
Occupational Therapy		██	██	██	██	██			
Inclusion class				██	██	██	██	██	██
Rehabilitative appointments				██	██	██	░░	░░	░░
Reading Tutoring						██	██	██	
Tests at Child Health Centre	■								
Tests by School Psychologist			■						
Tests at Child Psychitary					■		■		■
Child Welfare Services			░░	░░	░░	░░	░░	░░	░░
Special Educational Needs Co-ordinator			██	██					

Figure 2. Supporting services for Amanda and family on a timeline

The dark blue block's in the above time-line figure, represent continuum of regular visits, light blue block's a continuum of the care relationship, but irregular or few visits.

3.2   Boy, Brandon, 13 years

At the time of the interview, Brandon is also thirteen years old. He has finished 6th class at an inclusion class in a comprehensive school at southern Helsinki district. He started at this school the previous fall. On basis of one year experience, support could be considered somewhat adequate. Prior to the placement on this inclusion class, Brandon spent half a school year at a local school in another part of Helsinki, near his home. During that term, it became obvious that his learning disabilities required a placement in a special class, he received SEN (Special Educational Needs) by pedagogical review. Previously Brandon attended school and pre-school at a Steiner school (Woods et al.,

2005), where his difficulties with learning were not taken seriously enough, according to his mother, despite the mother's persistent demands. Before school years Brandon was by a private childminder from the age of two onwards and later, one year in a bigger day-care facility, prior to his Steiner pre-school year.

Prior experiences related to Brandon's learning difficulties are explained in the following paragraphs. First services related to some early signs of difficulties in learning were tests conducted by child health centre psychologist at the age of 6. Approximately four separate appointments for tests. Brandon's mother had a growing concern as some hypersensitive reactiveness was distractive to notable degree. Further tests by occupational therapists led to weekly occupational therapy for one year.

Brandon's mother demanded further actions to be taken at school, as she clearly saw her child struggling with schoolwork and falling behind. First psychological tests were carried out by the school psychologist during the 2nd class. These tests were carried out at minimum four individual appointments. The school psychologist's evaluation concluded that Brandon's difficulties originated mostly on lack of willpower and motivation. Dance therapy, eurythmy, was the support that was considered adequate.

As the interest towards Brandon's challenges were falling short at the Steiner school, the mother contacted family counselling centre (perheneuvola). Some tests were conducted, which led to LAKU, Lasten Perhekuntoutus (children's family-rehabilitation). This was an undertaking by third sector institutions in co-operation with the public services (Kela, 2018) consisting of neuropsychological rehabilitation for the child, approximately every other week, for two years and some discussions with a social worker as means for supporting parenting for the parent, according to the mother. Family counselling centre initiated transfer to the child psychiatric department once the LAKU rehabilitation for Brandon was over. Meanwhile things at school were still not even close to satisfactory and as the mother demanded more action to be taken, a new set of psychological tests were run sometime during the 4th class, similarly consisting of approximately four separate appointments. These test results freed Brandon from joined-up handwriting, which is otherwise a mandatory requirement at Steiner pedagogy. In addition, Brandon was admitted a book in mathematics to help the orientation, as books are seldom used normally in Steiner primary school. A few additional special education teacher lessons were available at this point.

As the challenges with learning and the provided support was repeatedly undermined, Brandon's mother started to plan for transfer. At this stage, Brandon was extremely anxious and was not able to get enough sleep. Sleeping had been somewhat problematic earlier as well, but now it escalated into crises. Brandon was hospitalized for a week, and solution was primarily sought by suitable medication, sedatives helped through the crises and child psychiatry offered weekly appointments with a psychologist afterwards.

In the middle of the 5th class Brandon transferred to a local school. As earlier pedagogical reviews and school psychologist test at Steiner were not indicating needs for special education, rather suggesting the child was lacking will power and enthusiasm, Brandon was placed in a normal class room setting. Very soon the teacher and special education teacher concluded that the resources for support were not enough at the local school. With pedagogical evaluation, placement to a special class was sought and Brandon started 6th class in an inclusion class in another part of Helsinki. During 6th class tests were conducted the 3rd time. According to the mother, these were the same tests that were supervised by the school psychologist at the Steiner school twice, and now at child psychiatric department. These tests require minimum four appointments, most often in Brandon's case, lack of energy determined that additional appointments were needed. In addition to tests that were evaluating learning, emotional wellbeing has been assessed at least twice by test sets, first at the family counselling centre and later at child psychiatric department. Brandon has met with a psychologist at the child psychiatry weekly, for about a half a year.

Neuropsychological rehabilitation was eventually provided for a half a year period by the child psychiatry. Now the services by child psychiatry are no longer available as Brandon has turned 13. The family wishes to continue services at the youth psychiatric department. This contact is seen essential as often statements by specialists are needed to successfully apply for support and services for learning at school.

Looking back at the approximately ten-year continuum of events, tests, services, educational and pedagogical solutions etc., Brandon's mother sees the placement at the inclusion class as a turning point. Though, the future remains very uncertain and insecure even. This continuum of events over the past ten years, requires a considerable amount of time and effort from the child and the parent in question, in addition the resources by the different service providers. Brandon's mother estimated the number of appointment and meeting she has been to during this time-period well exceeds 100 meetings. Now

that Brandon is older and can attend some of the services on his own, Brandon's mother still estimates that yearly she attends more than 10 meetings/appointments. More intense years have had many more appointments. Below, the Figure 3. allocates different services for Brandon on a timeline.

	2011	2012	2013	2014	2015	2016	2017	2018
Occupational Therapy		▬						
LAKU (Lasten perhe-Kuntoutus)				▬	▬	▬		
Special Ed Tutoring						▬		
Special Ed Eurythmy				▬				
Inclusion class							▬	▬
Therapeutic appointments							▬	▬
Neuropsychological Rehabilitation								▬
Tests at Child Health Centre	▪							
Tests by School Psychologist			▪		▪			
Tests at HUS Child Neurology						\\		
Tests at HUS Child Psychiatry							▪	
Tests at Family Counselling Centre				▪				
Acute treatment/ Hospitalization						▪		

Figure 3. Supportive services for Brandon and family on a timeline

Services for Brandon are illustrated with the dark blue bars. Tests at the Child Neurology are singled out as that care relationship was limited to just two visits, unlike the other care relationships.

3.3   Cross Case Report in Form of a Logic Model

The logic model (Figure 4.) depicts interventions for a child with learning disabilities that cannot be supported solely by the 3-step intervention/support model at school, rather additional support is needed. The interventions, services flow from left to right, in series of boxes and arrows. On the far left is the initiative, the beginning of the service path, the

start of the alternative routes for the service providers. Second column of boxes represents the assessments and evaluations, the sets of psychological, psychoeducational and/or neuropsychological tests that are executed. Third column lists operations and actions that are, perhaps helping the child to overcome some of the challenges. The top right hand corner shows the desired outcome, result of adequate supportive and assistive services. The bottom right hand corner indicates the undesirable alternatives, the increased risks of unemployment, mental health issues and lack of education as predicted by the resent study conducted by University of Jyväskylä and Niilo Mäki Institute (Aro et al., 2018). This model additionally shows a set of numbers aligned with some of the arrows. Each of these represent an event, requirement or a shortcoming in the sequence of services, according to observations in the cases. While analysing the cases via the logic model, that represents the initial theory and both cases, a few distinct and conclusive speculations rise.

School is present in the child's life for minimum 9 consecutive years. A child with demanding learning disabilities is logically on his/her way to the small class room arrangement or placement in an inclusion class. This designates relocating, co-ordinated by an area designated co-ordinator for special educational needs (abbrev. Senco), also depicted on the logic model. These places are scarce and in demand.

As shown, the service system has numerous players. They represent one the best educational systems on earth, in addition to a broad range of health care services. Speculatively, too many. If we consider the child who is about to step into this path of services, he or she is supposedly already spending most of his/her days at day care/pre-school or school, struggling within a learning environment which is unsuitable to him/her. Further demanding assessments with new instructors are required before even considering actions that could prove assisting. Generally, the overall length of these processes, of receiving a referral to a facility, getting tests accomplished and correspondingly attending rehabilitation or other form of support, take long, over a year. It is perhaps justifiable to question the efficiency of this process if we take the end-user perspective. It would seem, by looking at the overall system, that the professionalism and available services are overly scattered, again from the end-user perspective.
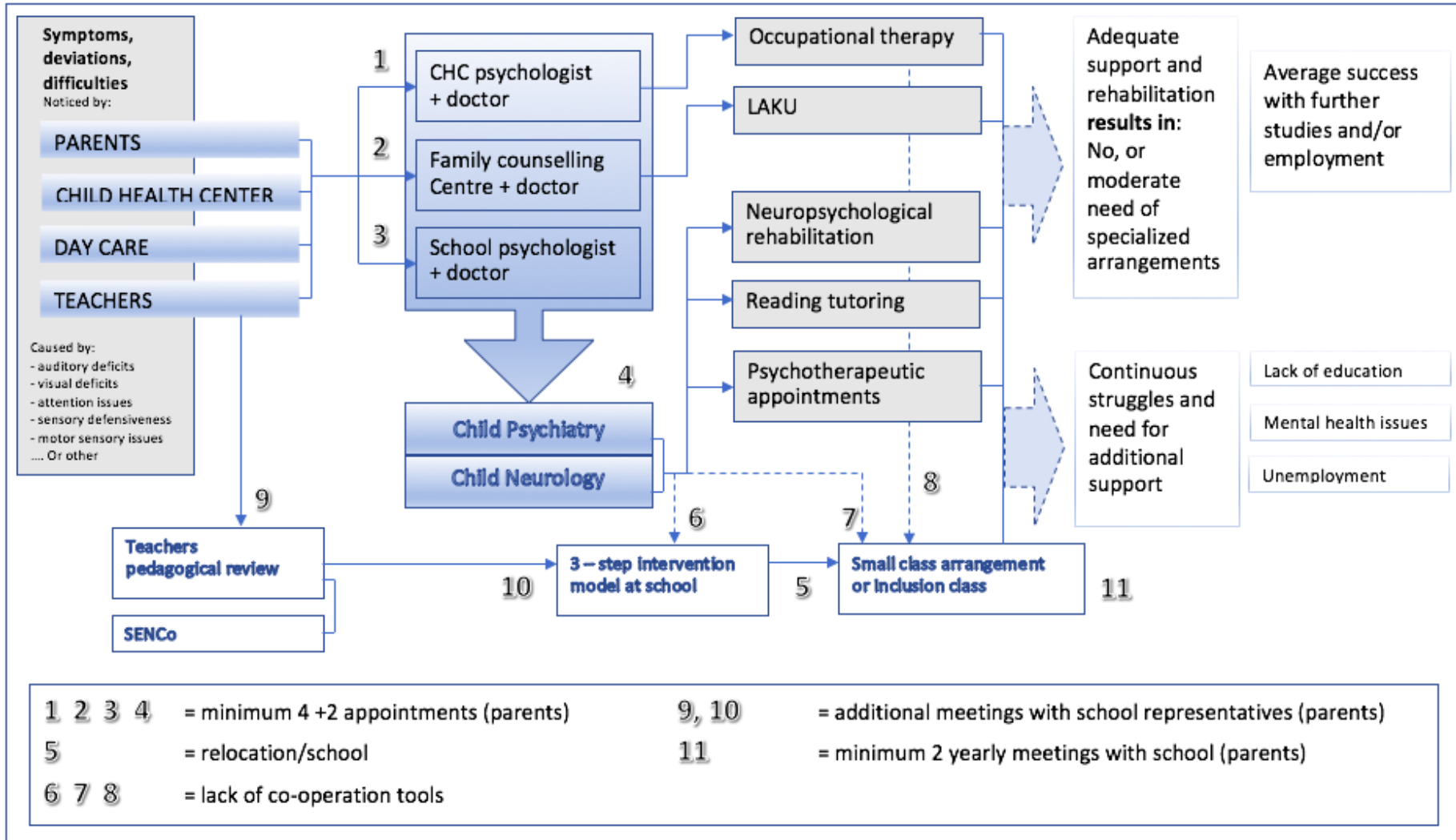
Figure 4. Outside school services for learning disabilities and possible events along the process

Significant drawback would seem to be the lack of efficient co-operative tools. The involved facilities, different service providers, keep arranging meetings where information is shared, while tools for everyday school work for instance, are few from the end-user perspective. An immense amount of resources is used in vain if the time consuming and demanding psychoeducational tests, for instance, do not produce information that can be transformed into practical knowledge and tools to assist the child.

Another extravagance, from the end-user perspective, is the time spent on these numerous arrangements by and with numerous service providers. The responsible party is the parent. Evidently any parent will make every effort to ensure the best possible help for their child. Minding here the societal effect and the consequences of engaging in repetitive meetings concerning assessments, therapies, rehabilitations with the various parties involved, along with special educational needs meetings and correspondence. These are not once in a life time arrangements, the cases present that these children seem to always have a need for additional support or rehabilitation.

Everyday environment and surroundings would, undoubtedly, be far more efficient and less stressful choice for the client, the child and the parents. In this case-study it can be indisputably shown that it is not solely the child's wellbeing at stake. Other studies reveal similar conclusions (Vuori et al., 2017). Either the three-step intervention and support model to all intents and purposes is not sufficient or is lacking resources for implementation in the case of these children and many others as has been shown by other studies as well. The alternative route to services is somewhat complicated, arduous for the child and the parents in question. Furthermore, considerable speculation should be placed on the overall costs of this service system as well. Time, money and resources spent on commuting, travel and transfer arrangements, just to mention the most obvious additional cost.

4 Framework for Future Development Proposal

Approaches for development proposal were chosen to be found through ideas in service design and value based health care. These paradigms, concepts both place the end-user to the forefront in the design of services, hereby the service system. In addition, the prolonged situation clearly depicted in the logic model led to exploring alternatives for more profound solution, ideally a remediation, instead of a continuum of support or

rehabilitative activities, so to speak. Arrowsmith Program would offer considerable restoration of hope to many, if not most people suffering from diverse learning disability and attention deficit symptoms.

4.1   Service Design and Value Based Health Care

Any book or material of service design will focus around the end-user experience as one of the key components. Hereby referring to statements published in a book by Aalto University and the city of Helsinki in co-operation (Hakio et al., 2015), which is suitable content for this context, service paths of Helsinki children that have demanding learning disabilities. The authors of this book refer to value creation by end-user perspective innovation multiple times. Similarly, the world-famous competition strategist, Porter has introduced an industry saving strategy for health care that names several components, one of them value-based health care (2013).

The past decades of growth have allowed our service system to develop by merely increasing the amount of public services. The demographics and slow economic growth will make, have already made this equation unbearable, resources diminish meanwhile demand for services increase. It is simply not a sustainable model to keep adding more services to the pallet. Mere cost reductions to increase productivity are proving very unsatisfactory. Reorganization of knowhow and services that will optimise value for the end-user and focus on productivity could describe the ideal future strategy. As the Aalto University and city of Helsinki book concludes, this would not result in optimized services for any single group of people, clients, rather it would serve as a learning process with end-users to be able to identify the avenues for creating best value with scarce resources. Innovation has been brought to public services via different Lab's, which still function as somewhat external sources of development ideas, ideally the process would be ongoing and consist of mutual learning through experiments (Hakio et al., 2013). Mutual, in the sense of involving different parties including the end-user and the different parties involved. Public services have multiple obstacles for this idealism to ever succeed though (Greger and Hatami, 2013), politics often restrain the willingness for truly beneficial co-operations through and across different sectors. Public sector innovations seem to be operating via different development projects which often include the third sector.

Porter emphasises on creating best possible value with costs that the society can afford. For such services to be successfully created, health care and education would need to engage in proper cost accounting systems, to be able to allocate costs per patient/student. Correspondingly, there are no clear outcome measurements available in neither one, the health care sector services nor the school system. By having costs per patient and outcomes per patient, there could be an indication of value, and thereby increasing value (Porter and Lee, 2013) (The Boston Consulting Group, 2012). The world we live in today, the focus is still on interventions, unfortunately not per patient or client outcome measures. The logic model points out series of interventions that can be refined, tuned, combined and developed further to produce useful information, useful information to the educator, tools for everyday work, to increase value (TEDx, 2014). The writer questions the efficiency and purpose of psychological, psychoeducational and/or neuropsychological tests, as their focus is very skills based (Laasonen and Niskakangas). The children are tested, in these cases, repeatedly, to compare performance in skills to peer group. Supposedly this verification is needed in health care sector to rationalize additional tutoring, for instance. The underlying cognitive weaknesses that cause learning difficulties (Eaton, 2011) are mostly bypassed and the rehabilitation is finding substituting strengths to overcome the weaknesses to learn specific skills. To repeatedly test achievement skills year after year, will reveal perhaps individually different lacking skills and hence direct the tutoring correspondingly. What is evident, without the repetitive testing, is that these children will always fall short on these tests as the underlying cognitive weaknesses are not addressed. In other words, these services are, to some degree, an ineffective treadmill in effort to catch peers in skills, while these children have neurological dysfunctions that hinder the acquisition of the skills (Eaton, 2011). In the light of this conclusion the value creation, in retrospect of measuring outcomes, is proving very poor with the current services available.

4.2   The Arrowsmith Program

Arrowsmith-Young's lifework has developed cognitive remediation programs that addresses 19 different cognitive deficits typically associated with learning (Arrowsmith-Young, 2012). Her book: The woman who changed her brain, is a testimony of her own life and many other transforming life stories by practicing the programs. Another testimonial is published by Eaton (2011), who had spent most of his educational career on different assessment programs for learning disabilities, up until he discovered the Arrowsmith Program and since is running the program in three Eaton-Arrowsmith

schools. Arrowsmith Program has spread internationally through English speaking and international schools (Arrowsmith Program, 2018).

The Arrowsmith Program improves cognitive abilities, the brain changes itself. This notion of modern neuroscience, cognitive remediation is not easily transferred to education, as Eaton mentions in his book. The focus on skill-based achievement programs and use of accommodations is the norm to address learning disabilities and attention issues, and attitudes around these concepts are buried deep. Yet, the thinking and acceptance of neuroplasticity is spreading. The parents should see themselves as the forefront of this change. After all, they are the ones who witness their children undergoing accommodations and receiving reading tutoring, all the same still struggling in school (Eaton, 2011).

As an example of the remediation programs, shortly naming just two, out of the nineteen available ones, of the distinguished cognitive deficits and their common features. Weakness in *Symbol Relations*: the ability to understand the relationships among two or more ideas or concepts. Typically, weakness in this area causes, for instance, difficulty in learning how to read an analogue clock. And, weakness in *Abstract Reasoning*: the ability carry out a task in the proper sequence of steps. The Arrowsmith Program has designed testing that reveal the level of capabilities in each of these nineteen areas (Eaton, 2011) (Arrowsmith-Young, 2012). The exercises are adjusted accordingly to suit the individual. (Arrowsmith Program, 2018)

The Arrowsmith schools and Eaton-Arrowsmith schools both have full time programs where the children are attending the cognitive remediation program designed specifically to address their individual weakness areas, instead of curriculum comparable to ordinary schools. Part time programs are also available for people regardless of age (Arrowsmith Program, 2018) (Eaton Arrowsmith, 2018).

5   Forming a Development Proposal

The current situation in Helsinki could benefit from reconstructing for simpler, leaner structure of effective steps towards increased value for the stakeholders, including and particularly the children with LD and their parents. The following preliminary development proposal is in line with the service design ideas in Palvelumuotoilu saapuu verkostojen kaupunkiin –book mentioned earlier (2015), which has been written in co-operation with

Aalto University and city of Helsinki, and the ideas presented by M. Porter though out his writings and lectures about value based health care revision.

5.1   The Arrowsmith Program, Cognitive Exercises in Finnish

Remediation for many attention issues and learning deficits are available with the Arrowsmith Program. The assessments that are part of the Arrowsmith Program are designed to distinguish the causes of learning difficulties and correspondingly the exercises strengthen or remediate the underlying cognitive weaknesses (Eaton, 2013), instead of the currently used skills-based methods. Many studies at Arrowsmith show how the results of this program are far reaching and permanent (Arrowsmith Program Research Summary, 2017). Once these services could be offered in Finnish we could possibly revise the study that researched the associations between learning disabilities and mental health problems, lack of education and unemployment (Aro et al., 2018). As there are no previous experiences or examples of translating the Arrowsmith evaluation and test material, the training/exercises material, the tutor material, this project would require establishing a completely new type of contract or licencing agreement altogether

As mentioned earlier, increasing the amount of services should not be the target. The development proposal suggests that once operational in Finnish, the Arrowsmith assessments would be used partly concurrently or instead of the currently typical school psychologist's psychoeducational tests and special education would include partial programs run at schools. As this is a dramatic gesture, one that will take decades to materialize even in the best-case scenario, the preliminary development proposal suggests proceeding via the third sector service providers, hereby briefly introduced.

The pioneers could well be, according to the writer's knowledge and perception of the prevailing conditions, Kuntoutussäätiö, Me-säätiö and/or Lasten ja Nuorten Säätiö. Kuntoutussäätiö (Kuntoutussäätiö, 2016) has an existing infrastructure and considerable resources to support nation-wide coverage to different age groups. Me-säätiö, as a reasonably new, 15 year fixed-term foundation, names activities against social inequality and exclusion as their goals and has established presence in two comprehensive schools in southern Finland (Me., 2018). Lasten ja Nuorten Säätiö has determined four cornerstones for their sustainable development, Aganda 2030, one of them is good education (Nuori.fi, 2018).

Providing the Finnish speaking individuals with demanding learning issues and attention issues a remediation possibility by utilizing neuroplasticity, the ability of the brain to change would, perhaps, be a bold movement. The writer would assume that, due to the world-renowned status with comprehensive education and existence of such pioneers as Niilo Mäki Institute with advantageous research on the field, introducing an external, outside Finland, method can create adversaries. The logic model depicts a reality, though, that questions the effectiveness of the current methods and/or the effectiveness of the system. If this program, the Arrowsmith Program is translated and some local results can be announced to public, as soon as in three months in some instances, the lobbying to higher instances could yield results. Typically, a child with broad variety of learning issues, spends one or two school years with the Arrowsmith Program before returning to a normal school (Eaton, 2013).

5.2 Redefining Roles and Responsibilities

Long term objective should be to be able to provide support and tools for learning at school. That would, without a doubt, be the most value adding solution for all parties. Child psychiatry could then concentrate on evaluation whether the child needs therapeutic help to overcome the possible anxiety symptoms that may have developed due learning issues or if there are other underlying reasons for therapy work. Today, the child psychiatry is performing perhaps overlapping tests, provably repetitive tests that direct to services outside school. The costs and time associated with the travelling to outside school locations on regular bases should be accounted more realistically.

Presented by Eaton and Arrowsmith-Young, among many others, is the fact that attention issues and learning disabilities are neurological. Effective solution is through modern neuroscience applied within education (Eaton, 2013). While looking at the logic model that presents the currently prevailing service paths, it is the psychiatry and psychiatric department that is playing a major role in the equation. Hence, another insinuator for redefining of roles.

Direct consequence of the scattering of services is the inevitable prolonging of the process. Time and effort used to travel for both the child and parents, also the costs associated, are a factor. Repetitive tests to show the lack of skills, already evident without the testing can be interpreted as none value creating activities. These are the key focus

areas through case observations, that seem to be in clear need of reorganization, in search for value creation.

Different science fields and fields of public services held boundaries. Those are not easily overcome, and policies and budgets play a major role as well. The writers clear position through the long observation and case analysis is that the school environment should be able carry a considerably larger role of the responsibility with learning disabilities. Lack of resources, is the answer that parents hear repeatedly. The admirable goal should be more resources to be able to provide tools that:

> … works on improving the neurological dysfunctions that hinder the acquisition of achievement skills in a classroom environment, including social perception and life functioning.
>
> Eaton, 2011, p.233

Schools with enough resources to provide the support that is needed. Hence, the remediation that can be available by boundary braking neuroscience in education.

6 Discussion

Investigating the end-user perspective of the service system for children with more demanding learning disabilities was the purpose of this thesis work. This topic, rather a question, was brought up by emeritus professor Hautamäki, Helsinki University. He gave one of the opening statements at a symposium for learning disabilities, arranged by Karvi (Finnish Education Evaluation Centre), spring 2017 (Hautamäki, 2017). His talk was headlined *Erityisopetus palveluna: Yksilö ja yhteiskunta.* This translates to *Special education as a service: Individual and the society.* His expertise on the field introduced the audience with the latest developments and trends well and concisely. He raised a question towards the end of his speech - how does our service system provide for the children in practise?

Interviewing parents was chosen as the method to investigate the real-life scenario for the service development perspective. The cases in this study show service paths that two 13-year-old children in Helsinki have undergone. Key observations through analysis are: the assessment process is extensive and is not yet helping the child, the number of meetings at school and at different service providers escalates to stressful amounts for

the child and the parents, and the inevitable fact of the endless continuum of need for additional support.

6.1   Evaluation and Limitations

While evaluating the early process and reporting of this thesis, a few notable judgements can be distinguished. A considerable shortcoming could be considered the number of interviews. And, particularly the emphasis on Steiner, in this case. Both children had started their school at Steiner pedagogy pre-school and 1st class as well. This was a mere coincidence, though. Evaluating the relevance of the data, Steiner pedagogy could be indicated as a cause for prolonging of the process, for instance. Whereas the researcher herself cannot observe any difference in the actual service paths between the experiences that simulated as a pilot case and formed the theoretical propositions and the actual data collection cases. Her two own children have not participated Steiner at any point, and the service paths have very similar pattern to the cases. Therefore, this should not be read as a ruling factor in the analysis, perhaps even on the contrary. Nevertheless, this is a shortcoming. Suitable and perhaps more diverse informants could have been sought through Erilaisten oppijoiden liitto ry (Erilaisten Oppijoiden Liitto ry), for instance. This association has focus on learning differently, regardless of age or diagnosis. Their activities are lately oriented also towards younger children, comprehensive school aged children, while previously largely on adults. The membership of this association could have resulted in suitable informants, yet, at the time being, the Facebook groups were far more easily approached and needed no considerations of affiliations to official or registered institutions.

This thesis work considers a few different sectors. At least social services, health care services, education and schools and the municipality, the city of Helsinki as a service provider as well, therefore, dealing with multitude of special terminology. Some inaccuracy in the use of terminology is caused by the translating, some due to the end-user perspective and lack of true professional experience for insight on any of the fields. As an example of this concern, erityisopetuspäätös (decision about the special education) is translated, referred to as SEN, Special Educational Needs, which is an equivalent in the English system, not a term that would appear as such in the city of Helsinki material. Depending on the institution, source of information in Finnish, many different expressions are used as translations. This report has been written with an attempt to bridge the gap between Finnish and English. Additionally, the language that

is used is trying to consider, to certain degree, readers of other cultures by detailing out some practicalities that prevail in Finland for instance.

Due the approach of this research as a contemporary, end-user perspective, many of the references are of non-scientific nature. The writer considers these sources to be trustworthy, relevant and appropriate to the phenomena and the study in question.

6.2   Reflection

The end-user experience is essential when considering the service design development perspective. Throughout the process of this thesis the writer has evaluated whether this method of data collection, interviewing the end users of the actualized service path, depicting the structure and its conceptualization and analysis with a logic model, offers reasonable and trustworthy findings for evaluation, to fulfil the objective of this thesis? The researcher wanted to investigate raw data to seek validation to the propositions that indicated certain ineffectiveness in the service system, the inefficient use of time and resources, monetary and other, for all parties included by investigating the formation of service paths via answering the research questions. Apart from the unfortunate incident of both subjects co-incidentally having the same Steiner pedagogy start for their school career and the reasonably small sample, just two cases, this method does expose the entity of the service system quite well. Improvement would consist of more diverse cases, up to the originally planned five cases to analyse. Additionally, a follow up study to investigate whether children that have had outside school services to this extent, for their LD, will be guided or drifted towards the upper right hand corner in the logic model, or will they carry the increased risk of unemployment, mental health issues and lack of education. The formerly conducted research that studied the associations of childhood LD to adult-age difficulties (Aro et al. 2018) considered partly young adults that had attended the Clinic for Learning Disorders by the Niilo Mäki Institute and Jyväskylä City's Family Counselling Centre during their childhood. Presumably, additional services for LD would have been somewhat concisely arranged while attending this clinic, unlike the cases presented in this thesis.

Health Business Management is the name of the degree program of this graduate work. Originally, mere and sole focus for master theses were to be business cases that would go beyond current state analysing and deliver solution suggestions for prevailing business problems that have some association with the health care or social service

sector. Learning disabilities that are more demanding are directed to the health care sector. The service design and value based development ideas integrate business thinking to this diverse collection or assortment of service selection. Although, in all honesty, while the current construction of diverse public services represents, in fact, highly notable input on these children's additional demands – it has evolved perhaps without a sustainable strategy and by reading the results of research done on the field, is not a successful model in terms of the outcomes. Learning disabilities are, undoubtedly, stuck in the rivalry between whether it is an educational issue or health care/medication issue. Similar messages can be heard from around the world. Arrowsmith Program takes a stance with combining neuroscience with education. Considerable choice to be made, here in Finland as well.

Part of the dilemma in the prevailing situation is caused by the boundaries and disciplines that exist between fields, whether scientific or budgetary or other, causing the system to fail in its attempts to serve the end-user in the most efficient way. There are notable hindrances for creating the most value while keeping the overall costs to minimum (Greger and Hatami, 2013) (Hakio et al.,2015). The fact that these boundaries do evolve though, always have evolved through time should pave the way for boundary braking choices. Even futuristic and fiction movements influence science, and the boundary work that exists has its limitations (Granqvist and Laurila, 2011). Therefore, neuroscience in education is not that farfetched, is the argument by the writer.

6.3   Afterword

The results of this multiple-case study, the outcome in the form of the logic model for analysis to be made, serves the original purposes and objectives reasonably well. The most enlightening discovery, could be considered as a creative leap in the attempt to compromisingly resolve this ill-defined problem (Cross, 2006), came through the literature reviewing part and discovering the Arrowsmith Program. The writer would not recommend additional research on this topic, the functionality of the service system, rather practical steps towards implementing this cognitive training program in Finland, that has shown to result with significant benefits for LD. Naturally this process should be followed step by step, gathering adequate data and analysing the results correspondingly. If the development proposal will actualize through some of the foundations mentioned, research is generally incorporated to activities and projects. University of Jyväskylä CIBR, Centre for Interdisciplinary Brain Research should be

contacted, to possibly gain high-class scientific involvement (Jyväskylä Centre for Interdisciplinary Brain Research). This would be a perfect opportunity for an action research dissertation, making an academic case out of a practical process. It would present more than an argument for the credibility of Arrowsmith Program, but also be a formal effort to locate the existence of this type of cognitive remediation in an academic context (Coghlan and Brannick, p. 165, 2014).

Health care is under revision as we speak, whether the overall structural future solutions provide more value adding possibilities, and how, is yet to be seen. Porters value based ideas are sound, but possibly still very far in the future as most of the services on these sectors in Finland are publically offered and interest for business like cost accounting seem somewhat distant, consequently difficult to measure outcomes. But, the value creation can originate from the other end of the equation. For LD, Arrowsmith-Young has developed remediation methods, she has researched her own brain and trained it to become renewed and to function on average or above average level on all the previously deficit areas (Arrowsmith-Young, 2012). Additionally, she has proven that it is not just her brain that was able to change itself, she has helped thousands and thousands of other people, of all ages, already. This cognitive intervention program would facilitate for, and fast forward the effects of the supporting and rehabilitative skills oriented services currently offered and would override the need for the continuum of support measures as the neurological ability to acquire skills is restored (Eaton, 2011).

If the reader of this thesis has any interest on the notion of neuroplasticity, the abilities of the human brain, in general, not necessarily the aspect of learning disabilities or attention issues, spending 14 minutes with Arrowsmith-Young, by listening her TEDx Toronto talk (https://www.youtube.com/watch?v=o0td5aw1KXA), is highly recommended (TEDx, 2013). If in need of further convincing evidence, a brief overview of arrowsmith.org and/or eatonarrowsmith.com will quickly reveal how this method is practiced in Canada and around the world, in English though, for the time being. Hopefully that can be changed very soon.

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Consent form

Allekirjoituksellani vahvistan suostumukseni ja osallistumiseni tutkimukseen:

Asiakaskokemus palvelujärjestelmästä

lapsille joilla on vaativia oppimisvaikeuksia

Tutkimuksen aineistoksi Metropolian opiskelija, Minna Arponen, haastattelee vanhempia, joiden lapsilla on vaativia oppimisvaikeuksia.

Minulle on kerrottu tutkimuksen tavoitteista ja käyttötarkoituksesta. Olen tietoinen haastattelutilanteessa nauhoitetun materiaalin käsittelystä ja tutkimuksen tuloksen raportoinnista. Julkisissa materiaaleissa ei tulla käyttämään yksilön tunnistamisen mahdollistavia yksityiskohtia.

Haastateltavan nimi:_____

Syntymäaika:_____

Osoite:_____

Puhelinnumero:_____

Sähköposti:_____

Paikka:_____

Päiväys:_____

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