

Validation of non-formal and informal learning with Autism Spectrum Disorder

Finnish Workshop as
Vocational learning environment

Tuija Kinnunen

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Validation of non-formal and informal learning with Autism Spectrum Disorder

Finnish Workshop as Vocational learning environment

Submitted in partial fulfilment of the requirements of the academic degree

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Abstract <p>Persons with Autism Spectrum Disorder (ASD) are as capable as anyone, even though some may have special needs for education, guidance and support in life. Research shows that a person with ASD has obstacles in participation, difficulties with social interaction and with communication. When needed support is adequate, appropriate and scheduled appropriately throughout the lifespan, vocational studies and employment are realistic goals to achieve. In this way, a person with ASD could have a meaningful life, family, work, salary and connection to society.</p> <p>The objective of this Master's Thesis was to examine the validation of the non-formal and informal learning procedure in a Finnish workshop as a vocational learning environment (NGO) and a person with ASD in NGOs. The study was carried out as an integrative literature review. The information search covered the electronic databases: Academic Search Elite, Business Source Elite, Cinahl, ERIC and Teacher Reference Center. According to inclusion and exclusion criteria, eight (n = 8) studies were selected.</p> <p>The methods that were used in work or work related settings with ASD person were chosen to help ASD persons participate more actively in their own transition planning and assess behavior and work performance. This is necessary for making individual plans, facilitating and developing a special program for providing rehearsal of various skills to build more close relationships. Also, the frequency-building procedure was used on a daily basis for easing retention problems.</p>		
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1 INTRODUCTION

1.1 Background and purpose of the Master's Thesis

According to the European Centre for the Development of Vocational Training (CEDEFOP) education and training policies should expand and diversify. Flexible routes to qualification widen the lifelong learning perspectives. People, with or without any symptoms or illness, learn throughout their lifetime formal, non-formal or informal ways. Validating non-formal and informal learning may help the social and economic situations by offering different ways to attain a profession. CEDEFOP states that validation of non-formal and informal learning is organised differently across European countries. It might be integrated, operated in parallel with the formal system or it can also be an entirely separate process without an institutional, standard or certification link to existing formal education and training systems. (CEDEFOP 2009, 16-17.)

In accordance with CEDEFOP (2009) and the United Nations Educational, Scientific and Cultural Organization UNESCO Guidelines (2012), validation is the confirmation about learning outcomes, knowledge, skills and competences in formal, non-formal or informal settings, by official authorities. Kovanen (2013) points out that validation and recognition of non-formal and informal learning is based on the societal and educational equality of learning in different learning environments. Validation and recognition of non-formal and informal learning makes visible learning by doing; values, objectives, practices and methodological choices. (Kovanen 2013, 7.)

Validation is not only a matter of the formal vocational education system. Voluntary organizations and Non-Governmental Organizations (NGO) are administratively independent from formal education and the labour market. NGOs have an important role within certain groups such as immigrants, older workers and the unemployed or marginalized groups of younger and older people as well as learners with special educational needs. (CEDEFOP 2009, 43-44.)

In the future, NGOs might have bigger role within vocational education. The European Agency for Development in Special Needs Education in the literature

review Vocational Education and training Policy and Practice in the field of Special Needs Education (2012, 11-17) has pointed out that it is not easy to find vocational education and training programmes designed to meet the needs of certain particular groups in Europe. The European Agency for Development in Special Needs Education points out accordingly (ILO, 2008) that students with special educational needs might have been denied access to basic education. They are a marginalized group of people and at risk of social exclusion because they cannot access the formal education system and are not a part of a school community. Denial is limiting acquisition skills for the future and is causing a very specific and notable disadvantage which also reflects on the lack of access and participation in economic growth. (European Agency for Development in Special Needs Education 2012, 18.)

The author is the responsible person and an occupational therapist in the Valtone – Project which operates during 2013 – 2015 in North Karelia in eastern Finland. The Project is funded by the Slot Machine Association (RAY) and is managed by Honkalampi-Foundation. The Valtone -Project works with adults with neuropsychiatric disorders such as Attention Deficit Hyperactivity Disorder (ADHD), Tourette Syndrome or Asperger Syndrome. The main target is to help the clients to learn their own life management skills in various situations so that they might get to school or to work. The work at the Valtone-Project started locally, but the operating area has been expanded throughout Finland. Information and sharing knowledge of the characteristics and their impact on everyday life has been a major target of this project.

Personal interest in the issue is based on the need to gain more knowledge about the validation system of non-formal and informal learning especially in a workshop environment. It was known in the beginning of doing this master's thesis that the issue will be quite difficult because of lack of research. Therefore, from a wider perspective, interest in this issue is based on the words of the European Agency for Development in Special Needs Education literature review (2012, 18) "the lack of available data must be noticed". Based on the work with the client group, it has been demonstrated, that there are lack of services, service producers, knowledge and skills

to meet the needs of this client group in the healthcare and social service system in Finland. Kovanen (2013, 7) has brought out that the validation and recognition of non-formal and informal learning in a workshop environment might be seen as a way to prevent exclusion and a way to achieve vocational studies and a profession when schooling has been difficult.

The results of this master's thesis can be used for improving the way and methods to gain a profession in a workshop as a non-formal vocational learning environment if formal vocational education has been difficult. New knowledge and information will help the field of workshops to achieve stronger cooperation with formal vocational education. The validation system might be seen as a quality tool in a workshop environment, especially when using the same methods as in validation and recognition system across Europe. Expectations and demands on working life are growing and Finland needs all possible workforces. Using validation and recognition of non-formal and informal learning might be one way to prevent exclusion from society. It might also be seen as an opportunity and way for non-educated marginalized people to get a vocational degree.

1.2 Structure and key concepts of the Master's Thesis

In Figure 1. could be seen the progress of a master's thesis from the theoretical background to the previous studies of the theme. Key concepts in this master's thesis are validation and recognition, formal, non-formal and informal learning, workshop and ASD.

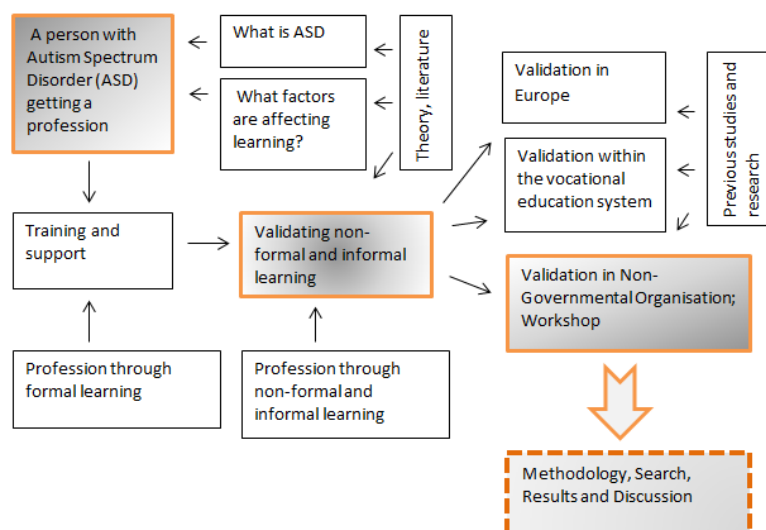


Figure 1. Progress of the Master's Thesis

Validation and recognition according to CEDEFOP (2009) and UNESCO Guidelines (2012) is the evaluation and confirmation process about learning outcomes in formal, non-formal or informal settings. The whole process leads to a Certificate of Competence about a person's knowledge, skills and competences. The European Union Council Recommendation (2012/C 398/01) of outcomes from the validation of formal and informal learning can play an important role to improve employability and mobility and increase motivation for lifelong learning, particularly in socioeconomically disadvantaged or low-skilled people. Validation is the process where an individual has reached the relevant requirements of the achieved learning outcomes determined by the official authorized body. Validation consists of four distinct stages; identification, documentation, official assessment and marking the results of the evaluation to the documents. Validation can lead to a degree.

Formal learning is organized, takes place and occurs in organized and structured environments. Formal learning includes general education, basic vocational training and higher education systems and is recognized by the authorities. It is designed as learning within the framework of the education system and curriculum. It leads to recognized certificates and qualifications. (Perulli 2009; UNESCO Guidelines 2012; Colardyn & Bjornavold, 2004, 71; The European Union Council Recommendation (2012/C 398/01.)

Non-formal learning could be educationally structured and arranged, but is more flexible and may be provided through activities e.g. at the workplace, associations and Non-Governmental Organizations. Non-formal learning can also lead to qualifications through the recognition system. (UNESCO Guidelines 2012; Perulli 2009.) According to The European Union Council Recommendation (2012/C 398/01) non-formal learning means learning that takes place by planned activities including some type of learning support, tasks guidance, adult literacy teaching and basic education for school leavers.

Informal learning is non-intentional or incidental learning; it is not organized or structured in any way. It occurs in normal daily life in all situations related to work, family or leisure time through interests and hobbies. (Perulli 2009; UNESCO Institute for Lifelong Learning UNESCO 2012; The European Union Council Recommendation (2012/C 398/01.)

As Non-Governmental Organization (NGO) **Workshop** in Finland is a communal, operational and labour-intensive learning environment. Workshop activities are an effective tool for reducing unemployment, increasing life management skills, and improving the education to the labour market. Workshop as a learning environment is comparable to a working environment. Learning in workshops is personalized, collaborative and systematic training and is based on learning by doing in a flexible environment. (Työpajatieto 2014; Hietalahti 2013, 29.)

Autism Spectrum Disorder (**ASD**) is a central nervous system developmental disorder that does not include mental retardation (Autism Speaks 2015).

2 DIFFERENT PERSPECTIVES OF LEARNING

2.1 Autism Spectrum Disorder

According to the American Psychiatric Association (2013), the Diagnostic and Statistical Manual of Mental Disorders (DSM) provides a standardized classification system for the diagnosis of mental health disorders for both children and adults. The manual has been developed and maintained by the American Psychiatric Association. The new 2013-updated version DSM-5 shifts the traditional categorical approach to a dimensional approach. The DSM is the most widely known and accepted classification on mental disorders used by researchers, clinicians, therapists, nurses, social workers, and others involved in the field of mental health. The DSM is connected by terms to the International Classification of Diseases, previously known as ICD-9 and the new one, the 2014 updated version ICD-10. According to the World Health Organization (WHO) (2015), ICD is the standard diagnostic tool for epidemiology, health management and clinical purposes.

In the new DSM-5 Autism Spectrum Disorder (ASD) is a new name. This is a result of a scientific consensus out of the four previously separated disorders in DSM-4: autistic disorder (autism), Asperger's disorder, childhood disintegrative disorder, and a pervasive developmental disorder not otherwise specified. Now these disorders are actually seen as a single condition with different levels of symptoms and severity in two core areas: 1. Deficits in social communication and social interaction and 2. Restricted repetitive behaviours, interests, and activities (abbreviated form is RRBs). Both components are required for a diagnosis of ASD. A social communication disorder is diagnosed if no RRBs are present. (Highlights of Changes from DSM-IV-TR to DSM-5.) See Appendix 1 for Diagnostic criteria and Appendix 2 for severity levels for Autism Spectrum Disorder.

ASD is not mental retardation but a central nervous system developmental disorder that causes varying operational obstacles and difficulties. An ASD-persons sensory-

mediated information and interpretation are considerably different than a person without ASD. Motoric development may be delayed, which leads to clumsiness or uncoordinated motoric movements. People with ASD do not have significant delays or difficulties in language or cognitive development. Some ASD-persons might demonstrate vocabulary at a very early age, and often have some highly specialized fields of interest. (Autism Speaks 2015.)

According to Autism Speaks (2015), ASD may often remain undiagnosed. When a person begins to have problems at school, in work or in personal affairs, they are seeking help. People with ASD have problems in social interactions. These cause difficulties because of limited or inappropriate social behaviour. A person with ASD does not understand what to say and when. They might have repetitive or monotonic speech, challenges with nonverbal communication (gestures, facial expression, etc.) and sometimes this coupled with better than average verbal skills. Conversations might also be one-sided and there is a lack of reciprocal conversation. Obsession with specific, often unusual, topics might occur. (Autism Speaks 2015.)

Nylander (2010) describes the root problems of ASD as consisting of a limited ability of social interaction, mutual communication, as well as a limited range of behaviours. Lack of eye contact and social perception is difficult and this might bring with it an inability to understand social or emotional issues or nonliteral phrases. A person with ASD might have awkward movements and mannerisms. There might also be an incapability to think of things that are not real. Problems vary in degrees of minor harm to incapability. A strong need of things staying the same, strong routines, lead easily to an inflexible and stereotyped behaviour. Requirements in life and own life management and skills determine what kind of effects ASD has on life. (Nylander 2010, 25-28.)

Everybody is unique and one of a kind. In addition, persons with ASD are their own personalities despite the similarity in difficulties or problems. The Autism- and Asperger's Syndrome Association's publication Nylander (2009, 29) describes that a person with ASD needs guidance to ease activities and performance as well as

permanent routines, information of changes in advance and sufficient time to prepare for the change. As Attwood (2013) accounts, possible sensory sensitivities must be also noticed. It is essential that a person with ASD discovers his/her own strengths and difficulties early on in order to find suitable vocational studies and a career. (Attwood 2013, 285-291.)

2.2 Learning and ASD

Humans are learning throughout their lifetime from every experience. Learning is a psychological process. According to Illeris (2009), childhood lasts from birth to puberty. Youth lasts from puberty until the preconditions for a more or less stable identity is established. It is typical in this age to form relationships with partners and work. Adulthood is accepting that life is more in the back than in the front. Mature adulthood lasts until death. (Illeris 2009, 403.) When speaking about learning in different ages, a child learns due to growth and development but also due to curiosity and in social interaction with others. Adults' motivation for learning comes from taking advantage of the learning process. People will learn from experiences when tasks are meaningful enough. At any age, learning has been described as an increase of information, remembering and repeating, application of knowledge, understanding the meanings and application in new situations, new ways of thinking and seeing the matter in a new perspective, and a way of thinking due to changes in the person. (Vainiomäki, Helin-Salmivaara, Holmberg-Mattila, Meriranta & Timonen 2013, 24–27.)

The human capacity for learning is characterised and possible by the language, thinking and consciousness. When a human learns, there are two processes going on simultaneously in an integrated way so that these two are experienced as one. The first process is external interaction between an individual and his/her environment; social, cultural and societal. The second one is how these environmental impressions and influences, tips and hints, are taken in, accepted and internalized. This process is individual and psychological and depends on various differentiated capacities of the human brain. (Illeris 2009, 401.)

Illeris (2009) continues that learning content in school and education is usually perceived as knowledge and skills. It could also be understanding, insight, meaning, attitudes, methods, viewpoints, culture, qualifications and competencies. It is essential to realise that emotion, motivation and will are an integrated part of all the learning processes and outcomes. When learning something in an active way and in a positive mood, the learning results will be easier to transfer and apply to new situations. Negative feelings affect learning results enormously. (Illeris 2009, 402.)

According to Attwood (2013) and Nylander (2010), a person with ASD might manage well in studies whether it is in a formal, non-formal or informal way. The transferring of learned skills to new situations and challenges may cause difficulties such as blockages, leaving the situation, nervousness or even aggressive behaviour. Poor social skills and different interpretations in social situations, may complicate the performance in, for example, a group work. Despite of all this, a person with ASD is intelligent; average intelligence is often a mid-range and people with ASD can continue their education all the way up, for example to the doctorate level according to their own interests. (Attwood 2013, 285-291; Nylander 2010, 25-28.)

2.3 Lifelong learning

Lifelong learning means that learning is not limited to a certain stage or age in life, but learning takes place throughout life. The existential definition for lifelong learning is a transforming process from experience into knowledge and skills. The results of learning can be seen in a person who has grown and developed. Learning is seen as a driving force of human living. When pictured like this, learning is an essential part of the growth and development of a human, as essential as food and water for the body. If the human is willing to grow and develop, learning is assumed to be of value and considered to be self-evidently good and worth engaging in. As a result of this engaging is useful for members of society. Learning is seen as a valuable human process and the more one learns, the richer the human being. (Jarvis 2009, 11-12.)

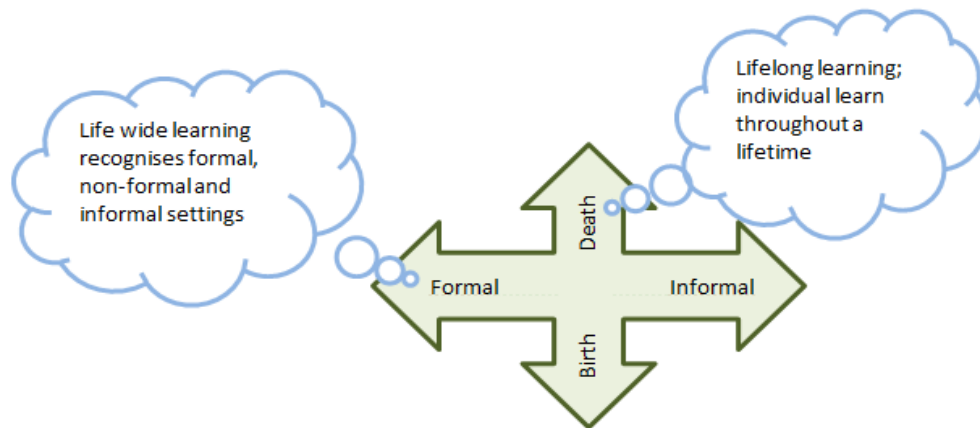


Figure 2. Dimensions of lifelong learning

UNESCO, United Nations Educational, Scientific and Cultural Organization, has an important role when speaking of developing lifelong learning for all (UNESCO Guidelines 2012, 1). Lifelong learning begins long before compulsory education and it covers learning opportunities throughout the lifespan, all the way from the formal education to non-formal and informal learning. On the basis of the Lisbon Strategy in 2006, the EU recommends eight key competences for lifelong learning. These key competencies are: communication in mother tongue and foreign languages, mathematical, technical and digital competence, learning to learn, interpersonal and social skills, intercultural and social competencies and civic competence, entrepreneurship and cultural expression. (Ehlers, Wärvik & Larson 2012, 9.)

Lifelong learning key competences were reflected in the GOETE report. The GOETE report is a part of an international research project funded by the European Commission's 7th framework programme Governance of Educational Trajectories in Europe (GOETE). This report examines the perspectives of various actors on understanding of the relevance of education. The countries that have participated in this study were Finland, France, Germany, Italy, The Netherlands, Poland, Slovenia and United Kingdom. Teachers in all GOETE countries emphasize that from their point of view, it is an undeniable fact that education is about transferring knowledge and social and life skills acquisition. These are based on knowledge involving competencies in certain areas such as language proficiency or numeracy. It also

covers the whole personality including behaviour, manners and general competence when dealing with wishes of what students can do or planning to do in their future. (Litau, McDowell, Salovaara, Zivoder, Dale, Tolomelli & Cramer 2012, 62-65.)

Teachers tend to differentiate between students and socially disadvantaged students. They describe socially disadvantaged students as lacking important basic requirements, especially those needed in order to succeed in school. One of the most important factors for teachers seems to be, according to Litau et al. (2012), guiding students in a vocational and professional orientation. For this, it is emphasized that knowledge transfer and social skills are the keys to coping well with the demands in transition stages. These skills are helping also with the demands of work life and integrating into society. (Litau et al. 2012, 62-65.)

The report brings out the critical discussion if the school needs also to accept and take over upbringing tasks in addition to traditional academic tasks. Finnish teachers consider upbringing tasks as their integral and main tasks as teachers. In other countries, teachers think that searching for individual solutions and adjusting their methods to teach also socially disadvantaged students is seen a burden. (Litau et al. 2012, 62-65.)

2.4 Formal learning, comprehensive school and support

Formal education is the institutionalized basic education system from pre-school to graduate studies (Schugurensky 2006, 164). According to the International Standard Classification of Education ISCED 2011, formal education is also intentional and planned through public organizations and recognised private bodies, and forms the formal education system of a country. Vocational education, special needs education and some parts of adult education are usually recognised as part of the formal education system. (UNESCO Institute for Statistics 2012.)

Basic education varies in each country; usually it ranges between 6-12 years of compulsory education (Schugurensky 2006, 164). Compulsory education in Finland starts at comprehensive school, usually in the year when a child turns seven years of

age. Comprehensive school lasts nine years and ends when a pupil has completed the comprehensive school curriculum or when ten years have passed since the start of a compulsory education. Before comprehensive school, one might go through one year pre-primary education, which takes place at school or at day-care centres. (Opetus ja kulttuuriministeriö; Välimaa, Kannas, Lahtinen, Peltonen, Tynjälä & Villberg 2007, 95.)

After obligatory comprehensive school with completed basic education, students can proceed to upper secondary education, to vocational education or leave studies behind and look for, for example, an apprenticeship place. Universities (focus on research) and Polytechnics (more practical studies) are offering higher education. In addition adult education has studies at all levels; general education diploma, vocational qualification, courses to develop work skills or study in free time. Adult education and training can be arranged at schools, companies and as personnel training in the workplace. (Opetus ja kulttuuriministeriö; Välimaa et al. 2007, 95.)

The European Agency for Special Need and Inclusive Education (2012) in Special needs education within the education system – Finland, states that all schoolwork should take abilities and needs into account as well as opportunities to receive guidance and support for learning and school attendance in school work. A responsible teacher takes the whole teaching group with different personalities, abilities and needs on working together and guides everybody to recognize his/her own resources, learning-related strengths and challenges. Self-esteem, study motivation and learning-to-learn skills are part of all learning situations and subjects. In this way, all students' abilities and the responsibility of own learning, planning, implementation and assessment can be strengthened. Students can be supported at a **general support** level by using remedial teaching, learning plans, part-time special-needs education and school assistants. At this level, differentiation and cooperation between teachers and also modified groups can be arranged when needed. (OAJ; Peda.net 2013.)

Intensified support is based on a pedagogical assessment in accordance with a learning plan prepared for the student. Intensified support as more intense and persistent support is provided when the general support for learning or school attendance is not sufficient enough or there is a need for several forms of support at the same time. At this stage, students learning and school attendance is supported systematically by trying to prevent problems from escalating and diversifying. During intensified support, learning and school attendance must be monitored and assessed regularly and if the situation changes, the learning plan will be revised to match a new need for support. When necessary, the transition back to general support is based on the pedagogical assessment done by multidisciplinary pupil welfare staff. Measures of the assessment will be recorded to the personal learning plan. (OAJ; Peda.net 2013.)

Before the decision of **special support**, an education provider must consult the student and parents or guardians and prepare a pedagogical statement about the student. This statement must be reviewed during education whenever a student's support needs change. A new pedagogical statement will be prepared and the student might proceed within special support if the need for ongoing support is confirmed. If there is no need for further special support, the decision to terminate support measures must be made and the student will start to receive intensified support. (OAJ; Peda.net 2013.)

Raudasoja & Rentola (2013) point out that at the special support stage, the Individual Education Plan (IEP) is prepared. A need for IEP might be due to disability, illness, delayed development, emotional disorder or for any other reason when there is a need for special teaching or student welfare services. In Finland the Statistical Office has a 12-stage classification of special education. Classification categories 1-3 and 12 are "other reasons" for an Individual Education Plan (IEP) and to justify the preparation could be based on a teacher's observation. Using categories 4-11, the doctor's medical opinion is always needed. (Raudasoja & Rentola 2013, 32-33.)

Table 1. The 12-stage Classification of Special Education (Raudasoja & Rentola 2013, 32-33)

1	Perception and attention deficit disorders (e.g. Adhd, Add)	7	Physical chronic diseases; asthma, allergy, diabetes, epilepsy, cancer
2	Linguistic problems (e.g. dysphasia, dyslexia)	8	Autism and Asperger's syndrome related learning disabilities
3	Interaction and behavioural disorders (e.g. social maladjustment)	9	Movement and motor function difficulties (e.g. Cerebral palsy, short stature)
4	Mild delayed development	10	Hearing injury
5	Difficult delayed development; moderate or severe mental retardation	11	Visual impairment
6	Psychiatric chronic diseases; mental health problems	12	The other reason that requires special education

2.5 Formal learning and vocational studies

In ISCED 2011 (UNESCO Institute for Statistics 2012) vocational education is defined as educational programmes designed for students to acquire the necessary knowledge, skills and competencies specific to a particular profession. Student and pupil counsellors from basic education and vocational education and training work together to find a good place to study for all students according to the student's own wishes. Students who need special support may apply to ordinary vocational institutions within the normal joint application system or through the related flexible application procedure. Vocational special needs education and training is designed for students who require some kind of special support in studies due to disability, illness, delayed development or for some other reason. Students who have special needs can use various pedagogical means and welfare services during their studies. The goal is to support in a way that helps students to qualify for a profession. Special needs education and training builds on every student's personal abilities combined with self-development and growth as a human being. (Finnish National Board of Education 2010, 13-14.)

A personal Study Plan, which is a tool for study planning, monitoring and execution as well as for self-assessment, is drawn up for every student in the beginning of the

studies. Personal Study Plans serve individual and flexible learning paths such as support teaching, enhanced career counselling, different teaching arrangements and student welfare services. The Individual Education Plan (IEP) must be made for all of those students who are in need of special education according to how the law defines it. An IEP document should adjust with the progress of the student's. (Raudasoja & Rentola 2013, 32-33.)

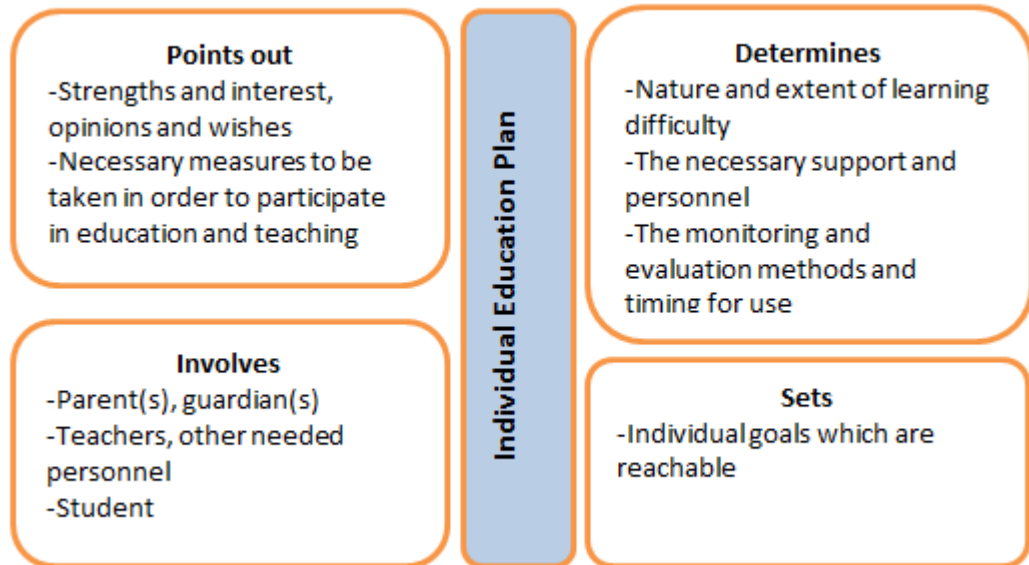


Figure 3. Formation of a Personal Study Plan (IEP)

Other kinds of support in vocational education and training are more the responsibility of the student. The education provider must make sure the students are aware of available health and welfare services and that they use the needed services. The Board of Education drives the development of the individual and flexible learning paths. In vocational studies guidance, counselling and coaching was added over the years. (Hietalahti 2013, 11.)

Whether or not students have special needs in vocational education and training, the vocational school aims to give students the needed skills to achieve the knowledge (learning results; work or study-related facts, principles, theories and practices), skills and capabilities to pursue the profession. In Finland, the National Board of Education decides the field qualifications of studies objectives and core contents. Vocational qualifications are designed so that the degree provides extensive basic professional

skills of various tasks and specialized competence and qualifications for working life. Therefore, training providers must cooperate with local business and industry. (Opetusministeriö 2009, 24.)

The qualification requirements of needed **skills** (ability to apply knowledge and use know-how to complete tasks and solve problems), basic contents and objectives of studies are defined as **competence** which is individual performance within a specific context. Performance is a proven ability, measurable and possible to be detailed for learning purposes into knowledge, attitudes, skills and personal, social and / or methodological abilities in work or study situations and in professional and personal development. According to the UNESCO guidelines, competences are a satisfactory state of knowledge, skills and attitudes and the ability to use them in different situations. (Perulli 2009, 95; UNESCO Guidelines 2012, 8; Opetusministeriö 2009, 15.)

Qualifications criteria are part of specified lifelong learning key skills, such as learning and problem-solving skills, interpersonal and teamwork skills, ethical skills, sustainable development, as well as multicultural and an active citizenship. The student is evaluated as means to guide and encourage learning and also to develop capacity for self-evaluation. Evaluation should be wide ranging and consist of learning, working and know-how skills. (Tutkintojen ja muun osaamisen kansallinen viitekehys 2009, 24.)

Even though many teachers, employers and parents might think today's youngsters are not motivated, the GOETE report shows the numbers of the students themselves in regards as to what they are planning to do after compulsory education. Even though the GOETE report is not pointing out especially the wish and dreams of an ASD person, it is obvious ASD people would like to have a normal life also; get a full time job, look after their home and family, and become a parent. They have dreams also. Future transition pathways vary across countries as seen in Table 2. None of the students wish to be unemployed, but in almost every country 56-88% wishes to remain in full time education except in the Netherlands 41%. In the Netherlands and also in France, it is strongly favoured to enter into the world of work as a full time

job, apprenticeship or work placement instead of education. It seems that across the EU a certain sector tends to have school leavers with higher general education qualifications. Therefore, all education has to be taken quite seriously all over Europe in order to get better places and opportunities. (Litau et al. 2012, 28-30.)

Table 2. Students wishes after comprehensive education (Litau et al. 2012, 28-30.)

Country	IT	FI	FR	DE	NL	PL	SI	UK	Total
	%	%	%	%	%	%	%	%	%
Remain in full time education	88	83	56	75	41	83	70	71	71
Get a full time job	4	2	16	4	17	4	17	16	10
Enter a work placement	5	5	0	*	30	8	4	4	7
Enter an apprenticeship	1	2	19	1	5	*	1	6	4
Look after home or family	1	*	*	0	0	*	2	*	*
Become a full-time parent	0	*	5	0	*	2	3	*	1
Be unemployed	*	*	*	*	*	*	*	*	*
Other	*	6	1	18	5	*	2	2	4
Total	100	100	100	100	100	100	100	100	100
N	802	772	737	783	790	762	773	768	6187

IT = Italy, FI = Finland, FR = France, DE = Germany, NL = Netherlands, PL = Poland, SI = Slovenia, UK = United Kingdom, * Under 1%

2.6 ASD and gaps between vocational education and work

People with ASD very easily build their day around routines to make life easier and predictable. Routines are also one way to prevent stress and increase relaxation. Many changes, at least if too quick, may cause enormous anxiety. (Nylander 2010, 25-28.) At the same time, the labor market is in constant change due to reflecting technologies and markets. Organisations require that skills and competencies are transferable and usable also in new environments. Employees must be very flexible to transfer their knowledge and experience in changes to a new enterprise, sectors and even abroad. (Colardyn & Bjornavold, 2004, 69.)

Table 3. General required work skills (Ruohotie 2000, 40)

General Work Skills			
Life management skills	Communication skills	People and Task Management	Innovation and Change
Learning ability	Interaction skills	Ability to coordinate	Perception skills
Ability to organize	Listening skills	Decision-making skills	Creative, innovation and change sensitivity
Time management	Oral communication	Ability to lead	Ability to take risks
Problem solving skills	Written communication	Ability to manage conflicts	Visionary
Analytical skills		Planning and organizational skills	

The general required work skills, as described in Table 3, may be difficult for anybody, but for people with ASD, some of these described features can be very difficult to learn, achieve and maintain. Life management skills are seen as the ability to take responsibility for one's own life including awareness of own skills and knowledge, development and application. Life management include self-awareness, the ability to manage changes, uncertainty and conflicts as well as adaptation to new situations. Communication skills are tools to define ourselves in relation to the outer world. Communication is a two way process; interaction between people. People and task management skills are not only connected to leadership but also at a personal level to make decisions about one's own actions and self-confidence to manage at work. Nowadays, more results with less support are expected. Innovation and change are challenging because the world is in constant change. People react to change in different ways. For some, change is uncomfortable and causes confusion. Others perceive change as a challenge to go forward. (Ruohotie 2000, 43-47.)

The European Qualifications Framework (EQF) was established to promote lifelong learning with aims to promote mobility between different countries. The framework links qualification systems in different countries together, makes them more

readable and understandable, and facilitates comparison and transfer of qualifications across countries and different education and training systems in Europe. EQF helps also recognition and validation of non-formal and informal learning. EQF is a frame of The European Credit system for Vocational Education and Training (ECVET) in which learning outcomes are described in a knowledge-based entity according to knowledge, skill and competence units. The units are documentable, collectable and transferable between countries and between different systems. ECVET promotes the qualification competence transparency and produces numeric information about qualifications and qualification of components, each of which can be described as part of the study points. (Kovanen 2013, 15; The European Qualification Framework for Lifelong Learning 2014.)

In EQF (2014), learning outcomes are statements of what the learner knows, understands and can do to complete the learning process. The learning process is defined in terms of knowledge, skills and competence. Knowledge is the absorption of gained information through learning; facts, principles, theories and practices needed in a certain field of work or study. Skills are described as cognitive and practical. Competence is a proven ability for completing tasks in work or study. EQF has descriptors defining different levels in accordance to knowledge, skills and competencies. (Appendix 3)

Attwood (2013) has pointed out there might be times when a person with ASD is not interested at all to take part in social interaction. On the other hand, there might be a lot of one-sided conversation on the part of a person with ASD when the issue is of interest and the person might talk about the same thing repeatedly. If a person with ASD is not interested in the subject, conversation is a waste of time. There might also occur talking over or interrupting. Sometimes an ASD person is described as indiscreet and socially naive because of always telling the truth that might be contextually inappropriate and might hurt somebody's feelings. Also the fact that a person with ASD usually understands literally all that has been said, might bring confusion to others. The reactions of others might bring the same confusion for an ASD person who is not aware of what happened or what was done wrong. When

working an ASD person does not tolerate inaccuracy or irregularities. All advice and guidance is best when given by using several sensory channels; vision (pictures, notes), hearing and very precise speech. People with ASD have difficulties in doing many things at the same time because of an ability to concentrate on one thing at a time. A person with ASD is using a lot of energy to do many things, many times much more than a so called normal worker is using. Doing things is not automated and functions needs constant thinking, which drives the energy level low. (Attwood 2013, 201-219.)

Working memory is the ability to keep needed knowledge in mind when solving problems. Attwood (2013) continues that a person with ASD is described to have problems in control reactions and dealing with new strategies because his/her working memory is short and learned things are forgotten fast. Attwood points out according to Shu et al. (2001) a person with ASD might continue to keep on going with wrong strategies and in frustration thinks why nothing is working. An ASD person seems to not learn from his/her own mistakes. When working, a person might need more often support, guidance and counselling. Also ASD person's sensory-mediated information and its interpretation differ from the mainstream. All this could bring problems in social interaction and limited behaviour as well as routines may lead to challenges in settings at work, not only for an ASD person himself but also for co-workers. (Attwood 2013, 226-227.)

The project *"Youth Policy and Participation. Potentials of participation and informal learning in young people's transitions to the labour market. A comparative analysis in 10 European regions"* (November 2004) has focused on young people's active participation in their transition stages to the labour market and its impact on both formal and informal learning. The study does not mention ASD, but persons with ASD could have similar dreams than everybody else. The project's aim has been to understand more about bridging gaps between education and training, labour market and youth work. The project collected data from nine European countries: Denmark, Germany, Ireland, Italy, Netherlands, Portugal, Romania, Spain and the United Kingdom. (Walther 2007.)

Many young people in these countries wish to move from education into the world of work. This movement is guided by dreams and wishes to do meaningful work and earn money for a living. For those with poorer qualifications, dreams and wishes are more limited to achieve in the labour market. Transition places will not always match the needs of the labour market which then neglects individual aspirations and strengths. The results are a lack of motivation and disengagement. (Walther 2007.)

Key recommendations of this project were e.g. rather than addressing a lack of motivation, access to relevant and meaningful careers should be provided. It is also essential to overcome the structural limitations between formal and non-formal learning i.e. between youth work, education, training and labour market policies. According to Walther (2007) there should be opportunities for young people to choose appropriate careers, to develop trust, a feeling of belonging and self-confidence, to have enough space for experimentations, to orientate and plan their individual destinations, and to focus on strengths.

Like everybody, also people with ASD might succeed in training and work without much guidance, support or special arrangements. People with ASD are employed in various professions e.g. postman, International business owner, doctor, scientist, President and CEO, teacher, pilot, psychologist, electrician. Even though ASD- people have quite unique behaviour patterns and problems in own activity regulation and operation and in social relations, they also have special skills, which are virtues in working life. They are reliable, resilient, incorruptible, dutifully and honest. They make the work assigned to them carefully, accurately and neatly. All this is worth money for the business. When working, an ASD-person succeeds if the work-related routines and expectations are clearly described. (Attwood 2013, 285-288.)

2.7 Workshop and learning by doing

The National Workshop Association (NWA), as the head-organization in the field of NGOs workshops and social employment organizations in Finland, was established in 1997. NWA is one of the youth and development centres nominated by the Ministry

of Education and Culture. The Ministry's Youth Division is responsible for funding NWA's basic functions by giving an annual operating grant. NWA promotes identification and recognition mechanisms and development of institutional cooperation. The association promotes the idea that everyone must be able to build a unique path to qualification and work and that everyone should be able to move to the labour market according to his/her own needs and abilities. Clients at workshops are prolonged unemployed people who have difficulty in education and employment or problems with impaired functional capacity and outdated training.

(Valtakunnallinen työpajayhdistys 2014.)

Workshop partners are labour -administration in different units, labour service, the municipal social welfare, adult and youth psychiatric services, substance abuse services, Social Insurance Institution (KELA), local businesses and increasingly also various schools and colleges. Workshop activities can be arranged by municipalities, registered associations, foundations or communities. They are profitable, economic and productive. Workshop activities are an effective tool for cutting unemployment, increasing life management skills and improving of education and staying in the labour market. Work and work related training aims to improve an individual's ability and capacity to seek training or employment, to improve everyday life management skills and to learn a variety of job skills. (Työpajatieto 2014; Hietalahti 2013, 29.)

Workshop activities are systematic, goal-oriented while also guided by guidelines and principles. As a learning environment, workshops, emphasizes learning by doing based on John Dewey's (1859-1952) philosophy of experiential learning. As Hämäläinen & Palo (2014) bring out, Dewey stresses the human ability to learn through experiences and learning is seen as a lifelong process. The learning process emphasizes pragmatism and understanding is developed through own experience. Dewey believes that learning is influenced the most by growth in which he has five ideas; education is not a separate part of life, individual tendencies guide the learning not external objectives, learning is done by experimenting not only by receiving, learning is based on the continuum of experience and learning aims to experience continuous renewal. (Hämäläinen & Palo 2014, 24-25.)

The value of the workshop is based on a community where members of the workshop have shared values and togetherness to achieve the goals. The community is built on interaction and dialogue. In practice, this means that everybody ought to be heard, seen and understood. The workshop environment supports personal growth, inclusion and competence development, therefore it is good a learning environment to learn skills that are needed in work and in life. There are also opportunities to build up supportive work as well as to cooperate with schools. Time and support are given as needed by a private or group coach for personal growth. Learning by doing through real work is primary in coaching. Real working situations make individuals aware of their own strengths and abilities. Coaching always has reasonable targets and objectives made together with the client and coach.

(Hämäläinen & Palo 2014, 24 – 25.)

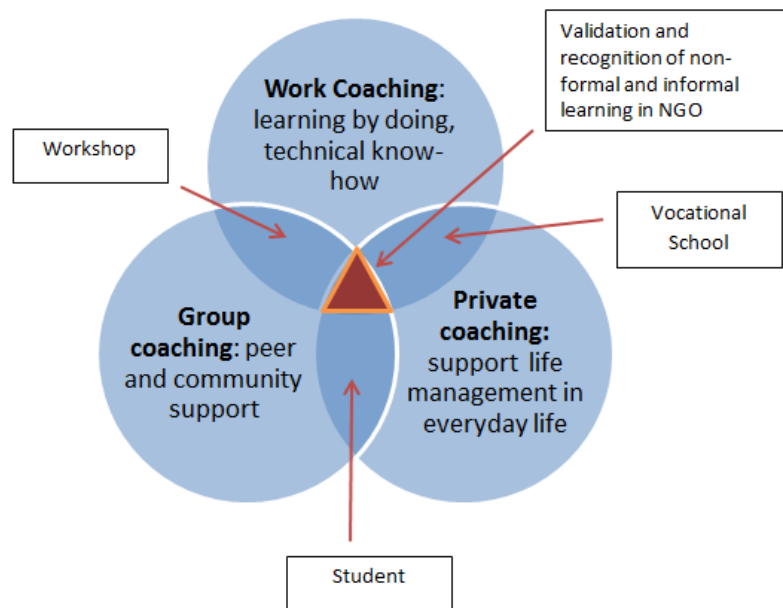


Figure 4. Workshop training methods and frame of validation and recognition of non-formal and informal learning in workshop field

3 VALIDATION AND RECOGNITION IN THE VOCATIONAL LEARNING ENVIRONMENT

3.1 Definition of validation and recognition

Validation and recognition might be seen as a way to get a diploma when education has been difficult. Validation and recognition, according to CEDEFOP (2009, 41) and UNESCO Guidelines (2012), is a process of confirmation about vocational learning outcomes (knowledge, skills and competences) in formal, non-formal or informal settings by a qualified authorised body. Validation is the evaluation of gained and acquired vocational experience, accumulated knowledge, skills and expertise. The Council of the European Union in Council Recommendation (2012/C 398/01) sees validation of learning outcomes acquired through non-formal and informal learning to be important in enhancing employability and mobility. It is also seen as a motivator for lifelong learning and access to the labour market, especially for socio-economically disadvantaged people.

3.2 Procedure of validation

CEDEFOP (2009) mentions, that the whole validation procedure should be effective, fair and efficient. In every effective validation process belongs assessment and quality assurance. Reliability, validity, safety, security and confidentiality, standards, sustainability, transparency, fitness for purpose and cost-efficiency have to be checked. The validation process should make visible a person's knowledge, skills and competences and results must be transferable from one setting to another. Taking part of the validation process benefits very personally because person's self-confidence, self-esteem, skills and motivation will progress. (CEDEFOP 2009, 41, 50-51.)

In the validation process, as also Ecclestone (2006) views, an individual is able to identify his/her own strengths and weaknesses in skills and competencies for further learning needs, support career development, identify long term goals and further education. The validation process also provides feedback on progress and barriers of

learning. Ecclestone (2006) sees that confirmation of competences can also be used in a wider perspective such as employees when, for example, searching for a place for work. (Ecclestone 2006, 14.)

Validation practitioners, according to CEDEFOP (2009, 66), are divided internationally into five groups: those who offer information, those who offer advice and guidance at orientation stage, those who carry out assessments, external process observers, assessment centre managers and a wide range of stakeholders. Ecclestone (2006, 15) continues the list with employers, parents and learners themselves. Each validation process is unique and therefore interaction between every section is needed.

Methods that are used in validation by CEDEFOP (2009), at a local and at national level, can be divided into three validation stages. **The orientation stage** covers all aspects of producing and sharing information, interaction with other learners, advisers and counsellors and all other crucial parts of the validation procedure. Proper guidance and counselling must be secured. This stage can take several months and is preparing a person for assessment. The second stage, **the assessment of individual learning**, covers the assessment process from understanding requirements, standards, and identification of learning as well as searching for evidence and organizing it for and during assessment. All identified learning must be properly sampled, documented well, organized and be ready for assessment. At the end of the second stage is **the validation**. Quality assurance from previous stages is needed and the whole validation procedure must be checked. Effectiveness, fairness and efficiency must be secured by auditing the process. Auditing is a post assessment done by an external and independent review of orientation and assessment. (CEDEFOP 2009, 55-56.)

3.3 Assessment methods in validation

Learning in a non-formal or informal way is not seen as equally good to learning in a formal way. The reason for this, according to CEDEFOP (2009), might be the assessment methods that are used or applied differently. The tools for assessing learning in both ways are quite similar, but some adaptations and combinations of

different tools might occur. In formal situations, assessment is meant for a large group of students and therefore, they are difficult to use individually or for a smaller group. Some learning outcomes may also require different tools to capture specific learning aspects. For assessing learning gained individually, outcomes may require using more than one tool, for example a combination of written tests, presentation of the case and practical challenges. (CEDEFOP 2009, 58.)

Each assessment tools' validity, reliability, fairness, cognitive range and fitness for purpose must be checked according to criteria. Ecclestone (2006) mentions that reliability is the most easily gained when using standardised tests, but they can be too narrow and not indicate a true reflection of the learner's capacity. Authenticity is related very closely to validity because it indicates real-life context for viewing future situations and tasks rather than artificial conditions and made-up situations. (Ecclestone 2006, 35-36.)

As CEDEFOP brings out (2009), the assessment methods can be classified as debate, declarative methods, interviews, observation and portfolio. Debate offers the candidate an opportunity to demonstrate depth of his knowledge as well as his communicative and social skills. Declarative methods are based on individuals' own identification and recording of their competencies as self-assessment. The ability to use critical reflection is important and therefore this method is used together with more independent methods. Self-assessment must be verified by a third party. Interviewing can check and review the breadth and depth of the learning. Observation can collect and assemble evidence of competence while working and performing everyday tasks at work. A portfolio might include documents such as paintings, performance appraisals, references from current and past employers, supervisors and colleagues, and photographs of completed work. By using various different methods, one can produce a set of documents or work samples to show individual skills and competences in different way, creatively. Other forms of the assessment methods could be formal presentation, a simulation performance, role play, traditional tests, essays and examinations. (CEDEFOP 2009, 59-60, 63.)

In Finland, the NWA and Bovallius Vocational Training College have created a national tool for validation and recognition of non-formal and informal learning for using in a workshop environment. OSSU are sector-specific and based on national vocational qualifications criteria, preparatory training (professional start-up), and the training and rehabilitative core curriculum in Finland. There are 19 professional sectors and 74 different professions “opened” by using OSSU. This means that the learning environment, the workshop, is mapped and curriculum components are linked with practical work. (Bovallius ammattiopisto 2015.)

In the workshop, OSSU can be used in many ways: analysing the learning environment, identifying functions that are generating knowledge (facilities, equipment, machinery), preparation for the planning, monitoring and evaluation (guidance and support), documenting accumulated knowledge into the certificate, skills surveys, designing education and employment paths and defining required skills needed in the labour market. (Bovallius ammattiopisto 2015.)

3.4 Validation of non-formal and informal learning in different countries

The 2014 inventory reflects the European guidelines on validation. The Inventory has been made in cooperation with the European Commission. The 2014 Inventory includes 36 reports from 33 European countries. Some samples have been taken from countries concerning the validation of non-formal and informal learning. Table 4 illustrates some of the tools for validation that are used in different countries. In Finland, the identification stage includes declarative methods, interview, observation, portfolio, simulation, test and examinations. The documentation stage uses a portfolio, simulation, test and examination. In assessment, declarative methods, observation, presentation, simulation, test and examination have been used. An on-line-test is used only in Austria as well as a certification workshop. None of these countries have an assessment-centre.

Table 4. Methods used in the validation process in some EU countries

Methods used in the validation process	Identification				Documentation				Assesment			
	AT	FI	SE	CH	AT	FI	SE	CH	AT	FI	SE	CH
Debate	x		x				x				x	
Declarative methods	x	x	x	x			x	x		x	x	
Interview	x	x	x	x			x				x	x
Observation	x	x	x				x			x	x	x
Portfolio method	x	x	x	x	x	x	x	x			x	x
Presentation			x				x	x	x	x	x	
Simulation and evidence extracted from work		x	x		x	x	x	x	x	x	x	x
Tests and examinations		x				x			x	x		
On-line test									x			
Assessment-centre												
Certification workshop									x			

AT = Austria, FI = Finland, SE = Sweden, CH = Switzerland

According to Luomi-Messerer (2014), Austria has no commonly shared definitions or unified legal framework to regulate the validation and recognition of non-formal and informal learning. Between the Netherlands and the EU, there is an important difference when defining formal, informal and non-formal learning because of the Dutch learning culture. (Luomi-Messerer 2014, 4-5.) Duvekot (2014) has pointed out that according to Lenssen (2011), the Netherlands has a strong focus on nationally accredited diplomas or certificates which traditionally have had dominance over the learning taking place in various sectors or organisations. (Duvekot 2014, 5.)

The Swedish National Agency for Higher Vocational Education in Sweden has developed criteria and guidelines for validation and quality assurance as well as documentation of the validation process (Heikkilä 2014, 3). Validation procedures in Switzerland have evolved slowly in past years. Validation practices are more common and accepted in the French speaking region of Switzerland. (Salini 2014, 3.)

The validation system is based on a clear legal framework in France. Validation has taken shape in the framework of continuous vocational training and labour market policies. Validation builds upon the individual right to the validation of non-formal and informal learning and also in identification and recognition of prior learning and

professional experience. The purpose of validation is to give the opportunity also to those who have no qualification but have professional experience and skills to get a first level of qualification, and more generally to improve the level of qualification of all the users. (Duchemin 2014, 3.)

In Finland, the validation is already quite a well-known concept except in the workshop environment. The Finnish legislation and policies are well developed and detailed. Despite this, there is no single law regarding the validation of non-formal and informal learning. Each field of education defines validation separately. The core message of the Finnish legislation is that the validation of non-formal and informal learning is a subjective right for every person and individual competencies should be validated regardless of when and where they have been acquired. (Karttunen 2014, 4.)

In Finland, the validation and recognition of non-formal and informal learning procedure in workshops has been developed as national workshop cooperation only since 2008. The main partners in development of the validation process have been NWA and Bovallius Vocational Training College among other workshops in Finland. There are only a few available studies carried out at a higher level. Instead, manuals, instructions, summaries, notes, bachelor level studies and power points from the validation of non-formal and informal learning are readily available.

The history of the validation and recognition process in Finland is based on three projects funded by The European Social Fund: Project Opequal (2005 – 2007) with a target to develop approaches to education transitions, prevention of social exclusion and improvement of learning by doing or other alternative methods for the identification of acquired skills (Hietalahti 2007, 19). The continuum of Opequal was Monet polut ammattiin [Many paths to the profession] (2008 – 2010) which includes the mapping and application of a curriculum-based activity. The aim was to get these applications and practices inside workshop activities. The other objective was an application model for national use in order to raise the profile of the workshops. (Bovallius ammattiopisto 2014.) Vaikuttavuutta työpajayhteistyöhön [The effectivity

to workshop cooperation] (2008 – 2011) project aimed to develop alternative learning paths for those young people for whom the traditional vocational education has been difficult. Cooperation between educational institutions and NGOs were intensified. The project tried to make comparability between knowledge and skills gained from learning by doing and from traditional vocational education. (Description of the European Social Fund (ESF) funded project.)

After these projects, the validation and recognition system in workshop environments has developed and been promoted further. Silta- Coaching Association, together with the Tampere Region Centre of Vocational College, operated the Avartajat –project (2012-2013) [Expanders-project] in cooperation with the Pirkanmaa vocational school. The Avartajat-project has developed a model where learning in a workshop environment can be recognized and validated as a part of vocational undergraduate education. (Schellhammer-Tuominen 2013, 8-12). The Paikko-project (2012 – 2013) was funded by the European Social Fund. During The Paikko-project, a model to identify skills was developed in cooperation between organizations that are producing workshop services in Jyväskylä, Laukaa, Muurame and Äänekoski. Paikko, a registered trademark, is a toolkit for validating the workshop environment based on the OSSU- curriculum-based design tool for producing and accumulating knowledge. (Uusitalo, Karjalainen & Lähde 2013, 4.)

Juntunen (2012) has made his master's thesis for Organisations and Youth Work Community Educator Degree for Centre for Economic Development, Transport and the Environment in Lapland. In his master's thesis, Learning in Workshop environment (2012), Juntunen studied the advantages of the validation of non-formal and informal learning and development to workshop environment based on a Freire's (2005) theoretical framework Critical pedagogy and non-formal and informal perspectives from the clients' point of view. Juntunen himself has been working on the issue of validation of non-formal and informal learning in workshop environments through his work as an Executive Director in Tornio Työvoimalla Foundation and as a member of the NWA Board of Directors. He points out that a workshop is not good a learning environment for everybody and it is not to be seen

as a primary option to get a degree. Juntunen sees workshops as facilitating life management skills. (Juntunen 2012, 5.)

His research was carried out as qualitative research and the data consists of five workshop customer interviews. Two out of the five have graduated or have received their degrees during their time in the workshop. Three have the qualification still going on. Each interview lasted 30-45 minutes and were recorded and transcribed. Workshop training has been seen as an alternative when formal learning has not been successful. Based on the interviews, the procedure with workshop started when teacher or student welfare staffs has made a note for a number of absences. Public employment and business services alternatives were discussed only after when it has been seen that more support and training have not led to the desired outcome. Also previous periods in workshops might have shown something more needs to be done. Based on interviews, final conclusions after the workshop period were more realistic and preparation for the future had started in some sense. All interviewed persons were asking about improvement of attitudes, behaviour, and bureaucracy, as well as information passing between different authorities. (Juntunen 2012, 22-48.)

Juntunen (2012) describes that in Finland, validation and recognition of non- formal and informal learning in a workshop environment has three steps. The first is **insight** where the curriculums for the most common occupations are available for all. If there is a curriculum, then there is also some training because the curricula are based on professional competence. **Identification** is the second step. Work itself and details about work and curriculum competency requirements are examined and compared. Identification can be done based on case, curriculum or work. Case-based identification means that work in workshops is done in accordance with the student personal study plan. Based on curriculum means the whole workshop environment is examined and compared to the curriculum even though there are no students yet in the workshop. Identification as based on work means a work is examined and correspondences for it are searched for from the curricula. Finally there is **recognition** where the task and curriculum correlation has been identified and then

recognized. This means that a person, who carried out a task, has gained knowledge and skills in accordance to curriculum and the demands of working life. (Juntunen 2012, 10.)

Juntunen (2012, 10) also points out the necessity of co-operation between workshops and education because recognition can be made only by an authorized body, which has the administration rights.

4 METHODOLOGY

4.1 Research objectives and questions

Nylander (2009, 29) points out that participation in various situations might cause anxiety and this is one reason why an ASD-person needs guidance and support to ease activities and performance. Therefore research question formulated as:

What kinds of methods are used to support an ASD person's participation in vocational training, in work or work related settings?

4.2 Research Method

This master's thesis used the integrative literature review research method.

Flinkman & Salanterä (2007) quoted Cooper (1989) as pointing out that a purpose of an integrated literature review is to combine previous research. It is a method for making a general summary of many individual studies that have researched similar or identical questions. This method was selected based on the knowledge that there is very little research about the topic of the Thesis. Therefore, it was decided to discover more researches, results, and new knowledge from different countries about the validation process in a workshop environment. (Flinkman & Salanterä 2007, 84-85.)

Torraco (2011) has brought out integrative literature review as a distinctive form of research. It generates new knowledge about a topic by reviewing, critiquing and synthesizing the literature of a topic in an integrated way. In this way, new perspectives and frameworks can be formulated. There are usually two kinds of general topics when using integrative literature reviews; topics that are already mature or emerging new ones. (Torraco 2011, 356.)

As Whittemore and Knafl (2005) have said, accordingly Broome (1993), integrative literature is the most extensive form of various scientific reviews and summarizes past empirical and theoretical literature as a broadest research method. An integrative review allows inclusion of experimental and non-experimental research in order to understand a phenomenon deeper. An integrative review may be used in a wide range of purposes; for defining concepts, reviewing theories and evidence and for analysing methodological issues of particular topics. (Whittemore and Knafl 2005, 546-548.)

According Sackett et al. (1996) and Shojania et al. (2007), Johansson (2007, 4) points out that integrative literature review is evidence-based research data with a specific meaning and purpose, and includes a very accurate selecting, analysing and synthesizing process. Although integrative literature review can be done in many ways, the author is expected to follow approved instructions on how research has been done and has progressed, as well as how literature was found, analysed, synthesized and reported. In general, research should be written in a way that is repeatable by other researchers. Research could be considered to be reliable if answers remain the same regardless of the researcher. (Metsämuuronen 2006, 31-32; Torraco 2011, 360-361.) The integrative literature review process requires planning and description, because it is advancing in stages from planning to report. Critical evaluation of a study may be impossible if search, selection and handling of a process as a whole are not accurately described. (Metsämuuronen 2006, 31-32.)

Whittemore and Knafl (2005) highlight Cooper (1998) by describing the progress of the work in stages; problem formulation, theoretical background, data search and evaluation, data analysis and report. This master's thesis as an integrative literature review began with the defining of the subject area. This was done by deciding the task, name and the research method. An inclusion and exclusion criterion was not built for selecting the most representative and reliable studies because it was decided to take all studies in. Personal resources must be acknowledged in order to limit the search stage: from where all data will be searched, how it will be done and for how long the information search can take. (Whittemore and Knafl 2005, 548.)

The main source for primary studies in this thesis was databases from the internet. An article reviewing stage from the article source list, searching for data manually and grey literature searching was decided to leave out. The search terms as well as data inclusion and exclusion criteria were built up in the data formulation stage. These three things must be clear when doing an integrative literature review. The data collection was done after the decision of which database gave the best match. The collected data were read by title and abstract level before reading the whole articles. According to predefined inclusion and exclusion criteria the data selection was made. The data analysis stage was made after data evaluation. The presentation stage included writing the report. (Metsämuuronen 2006, 31-32.)

Table 5. Stages of the Thesis

The planning of the Thesis
<ul style="list-style-type: none"> • The task, name, method • Resources, timing
Making the research plan
<ul style="list-style-type: none"> • Gathering literature, getting familiar with the issue
Data collection
<ul style="list-style-type: none"> • Formation of the search terms • Formation of inclusion and exclusion criteria • Database selection
The Search from database
<ul style="list-style-type: none"> • Quality Assurance
Writing the report

4.3 Data search and results

In addition to a computerized search, as Whittemore and Knafl (2005, 548) points out according to Conn et al. (2003), it is good to also have other approaches for searching data such as initial exploration, manual searching from journals, networking and also research registries. The search was made using only electronic search from the internet. This was the author's decision because of the time and financial resources and also because the work was made alone. The computerized databases used in this master's thesis were from Database Platform EBSCOhost; ERIC, Academic Search Elite, Cinahl with Full text, Business Source Elite and Teacher Reference Center.

Table 6. Used database

Academic Search Elite	provides widely academic subjects with full-text journals magazines, abstracted and indexed journals and other valuable resources
Business Source Elite	full text publications for business, management, marketing and economics journals. Publication covers also topics such as accounting, banking, finance and international business
Cinahl with Full Text	as comprehensive research database provides for over 700 nursing and allied health indexed including a higher number of records, additional journals and records dating
ERIC	The Education Resource Information Center provides free access to education full-text literature and
Teacher Reference Center	database provides topics such as Assessment, Elementary -, Higher – and Continuing Education, Current Pedagogical Research, Best Practices, School Administration, Teacher Education, Curriculum Development, Language, Literacy Standards, Science and Mathematics

The search phrase was formulated in three sections. The terminology around the subject Autism Spectrum Disorder was used in the first section. When the DSM-4 was used, Asperger Syndrome was diagnosed as itself, therefore also Asperger Syndrome was added. Using Boolean Operator AND, OR, NOT these two subjects were connected using command word OR. People with ASD are usually also having special needs for special education and these words were added to the search phrase. The thesis is about cooperation between NGOs as a learning environment and special schools as well as special needs in validation or identification of non-formal or informal learning. In the first part, the search phrase was formulated *asd OR*

Asperger Syndrome AND special education AND special needs AND cooperation AND validation OR identification AND NGO OR third sector AND nonformal OR informal learning.

The query was built in a way that excluded issues about child, families and teachers. The subject is not about technology, engineering, computers or IT and therefore these terms were used as an excluder with the Boolean Operator word NOT. The thesis is about adults and vocational school so high school and higher education were also excluded. Therefore the second part of the search phrase was formulated as *NOT child OR parents OR teacher OR technology OR computer OR engineering OR high school OR higher education OR IT.*

The third part of the query, using Boolean Operators' main word NOT, excludes subjects concerning substance abuse, drugs, medicine, diagnostics, therapy, sexuality and the intelligence quotient, IQ. The third part of the search phrase formulated as: *NOT substance abuse OR drugs OR disease OR medicine OR diagnostics OR therapy OR sexuality OR IQ.*

Limitations were built according to each database's own opportunities; full text, time 2000-2014 and scholarly journals. See Table 7.

Table 7. The search

Search Query. Search date in each 28.3.2015				
asd OR Asperger Syndrome AND special education AND special needs AND cooperation AND validation OR identification AND NGO OR third sector AND nonformal OR informal learning	NOT	child OR parents OR teacher OR technology OR computer OR engineering OR high school OR higher education OR IT	NOT	substance abuse OR drugs OR disease OR medicine OR diagnostics OR therapy OR sexuality OR IQ
Database	Search Result	Limits	Results after limits	Outcome
Academic Search Elite	1503	Full text Scholarly (Peer Reviewed) Journals 2000 - 2015	424 301 271	271
Business Source Elite	543	Full text Scholarly (Peer Reviewed) Journals 2000 – 2014	136 34 26	26
Cinahl with Full Text	385	Full text 2000-2015	168 167	167
ERIC	590	Full text Peer Reviewed 2000 - 2014	161 65 61	61
Teacher Reference Center	242	Full text Peer Reviewed 2000-2014	135 76 52	52
	3263			577

After the search all n=577 titles were written in an Excel table by hand and placed in alphabetical order. This way all duplicates and all unsuitable such items as editorial, book, not English/ Finnish were removed (138) manually. After removal of inappropriate and excess material, 439 findings were read through by title. At this level, an inclusion and exclusion criterion is seen in Table 8.

Table 8. Inclusion and exclusion criteria in title level

Inclusion criteria in title level; some of these words have to be in title	Exclusion criteria in title level
ASD, Asperger, Autism, education, informal or non-formal learning, validation or identification, lifelong learning, adult, school or work	In title is none of the inclusion words

After title reading, according to the inclusion and exclusion criteria, n=277 studies were left and at this point n=162 records were left out. An inclusion and exclusion criterion formulated for abstracts is seen in table 9.

Table 9. Inclusion and exclusion criteria in abstract level

Inclusion criteria in abstract	Exclusion criteria in abstract level
the case is about vocational or undergraduate studies, work, employment	the case is something else except work, school or employment higher education

After reading studies at the abstract level, 214 were left out as not suitable items for the master's thesis, which leaves 63 studies for the thesis. All these 63 studies were read through. If any research method could not be found, the research was left out. At this point the research was also double checked to make sure they were about ASD or Asperger Syndrome and connected to school, work or employment and were somewhat handling also / or the issue of non-formal or informal learning. Of the full text articles, 206 were left out. The master's thesis integrative literature review consists of final data n=8. Figure 5 shows the whole search procedure.

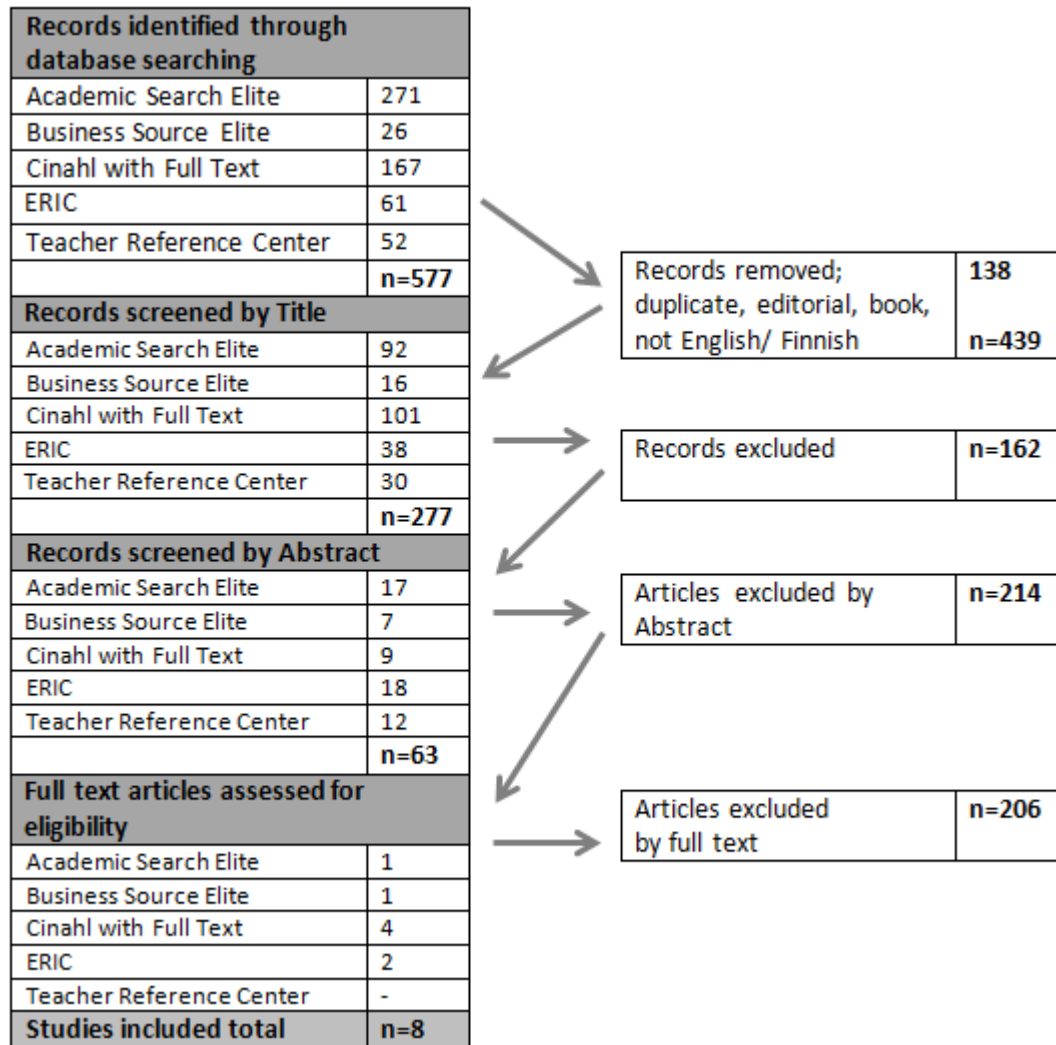


Figure 5. The search procedure

According to the inclusion and exclusion criteria, the studies (n=8) that were seen to be valid for the thesis are (see Appendix 5): Social Participation among Young Adults with an Autism Spectrum Disorder by Orsmond, Shattuck, Cooper, Sterzing and Anderson (2013), Person-Centered Planning for Transition-Aged Youth with Autism Spectrum Disorder by Hagner, Kutrz, May and Cloutier (2014), Social Skills Training for Young Adults with High-Functioning Autism Spectrum Disorder by Gantman, Kapp, Orenski and Laugeson (2012), How do organizational and task factors influence informal learning in the workplace? by Jeon and Kim (2012), Employment supports for young adults with autism spectrum disorder by Ham, McDonough, Molinelli, Schall and Wehman (2014), Skill Maintenance and Frequency Building; Archival Data

from Individuals with Autism Spectrum Disorders by Weiss, Fabrizio and Bamond (2008), Formal and informal learning opportunities in government organizations: Experiences of public sector employees from six Asian nations by Mokhtar (2010) and Meeting the vocational support needs of individuals with Asperger Syndrome and other autism spectrum disabilities by Muller, Schuler, Burton and Yates (2003).

4.4 Quality Assessment

These studies have been evaluated using the Quality assessment evaluation criteria adapted from the study *A systematic review of mentoring nursing students in clinical placements* (Jokelainen, Turunen, Tossavainen, Jamokeeah & Coco 2011, 2859.) The table (see Appendix 4) includes scoring from two to zero (2-0) so that in each part number 2 = the best, 1 = adequate and 0 = something essential is missing or is too hard to find from the research. The evaluation has been made by reading and evaluating the studies by the means of research phenomena, purpose and aim, questions, method, sample, data collection and results.

Table 10. The Quality Assessment

	Author of the research	Quality Assessment score								Total
		I	II	III	IV	V	VI	VII	VIII	
1	Hagner, D. , Kurtz, A., May, J. & Cloutier, H.	2	2	2	2	2	2	2	1	15
2	Gantman, A., Kapp, S.K. Orenski, K. & Laugeson, E.A.	2	2	2	2	2	2	2	2	16
3	Orsmond, G.I., Shattuck, P.T., Cooper, B.P., Sterzing, P.R. & Anderson, K.A.	2	1	1	2	1	2	2	2	13
4	Ham, W., McDonough, J., Molinelli, A., Schall, C. & Wehman, P.	1	2	1	2	2	2	2	2	14
5	Muller, E., Schuler, A., Burton, B.A. & Yates, G.B.	1	1	1	2	2	2	2	2	13
6	Mokhtar, I.A.	2	2	2	2	2	2	1	1	14
7	Weiss, M.J., Fabrizio, M. & Bamond, M.	1	1	1	0	2	1	1	1	8
8	Jeon, K.S. & Kim, K-N.	1	1	2	1	2	1	2	2	12

The selected studies were measured and the total scoring points have been decided on and decoded by the author. A high score was decided to be 12-16 out of a total 16 points, medium score 6-11 points and low score 0-5 points. A low score means the research is not valid enough for this master's thesis. The studies were read through again and scored. The quality assessment results show that seven out of eight studies were estimated to have a high score and one medium score. All studies are seen to be valid to the master's thesis.

Table 11. The Quality scoring

Definition	Scores	Amount of Research
High score	12 - 16	7
Medium score	6 - 11	1
Low score	0 - 5	-

Seven out of eight studies received a high score. The research named as *Person-Centered Planning for Transition-Aged Youth with Autism Spectrum Disorders* by Hagner, Kurtz, May & Cloutier (2014) got 15 / 18 points. This research uses mixed method (n=47) design consisting of a qualitative analysis of narrative data with an embedded descriptive quantitative analysis. The purpose of the study was to provide a descriptive summary and qualitative understanding of participation in person-centered planning for young adults with ASD.

Social Skills Training for Young Adults with High-Functioning Autism Spectrum Disorders by Gantman, Kapp, Orenski & Laugeson (2012) received the highest points 16 / 18. The research method used is a randomized controlled pilot study (n=17). This study was for testing the effectiveness of an evidence-based caregiver-assisted social skills intervention PEERS for Young Adults with high functioning adult with ASD. The purpose of the study was to adapt, develop further and test the effectiveness of this manualized evidence-based adolescent social skills training program.

Orsmond, Shattuck, Cooper, Sterzing & Anderson in the cohort study *Social Participation Among Young Adults with Autism Spectrum Disorder* (2013) got 13 / 18 points (n=620). The aim of the study was to provide one of the first descriptions of the extent of social participation or isolation among ASD young adults. The results can be used for planning adult services to meet the specific needs of this transition-aged population.

A case study (n=2) from Ham, McDonough, Molinelli, Schall & Wehman (2014), *Employment supports for young adults with autism spectrum disorder* got 14 / 18 points. The purpose of this study was to describe briefly the *Project SEARCH and ASD Supports* and demonstrated two cases where it was used.

Meeting the vocational support needs of individuals with Asperger Syndrome and other autism spectrum disabilities is the study made by Muller, Schuler, Burton & Yates (2003). This pilot study (n=18) got 13 / 18 points. The purpose of the study was to seek consumer perspectives on strategies for improving vocational placement and job retention services for ASD persons that have Asperger Syndrome and other autism spectrum disabilities.

Mokhtar (2010) has written the study *Formal and informal learning opportunities in government organizations: Experiences of public sector employees from six Asian nations*. This exploratory study got 14 / 18 points. This study seeks (n=18) to find out more about lifelong learning and professional development opportunities and also to determine the existence and extent of informal learning opportunities that are provided in government organizations in Asia.

The study with a low score, 12 / 18 points, secondary data (n=1899) by Jeon & Kim (2012) *How do organizational and task factor influence informal learning in the workplace?* examined the relationships between organizational factors and task factors and their effectiveness on informal learning.

Weiss, Fabrizio & Bamond (2008) with their study *Skill Maintenance and Frequency Building: Archival Data from Individuals With Autism Spectrum Disorders* got the very lowest points, 8 / 18. Persons with ASD often have difficulties maintaining learned skills and acquired skills may often disappear. Using frequency-building procedures may mitigate the retention problems observed in this population. Participants in this research were n=38.

4.5 Level of evidence

When assessing method's level of evidence, attention is drawn generally to three things: evidence, effectiveness and usability of the research. In an assessment this means reviewing the research method and method implementation. Table 12 Level of Evidence in this master's thesis was made using a site *Rating System for the Hierarchy of Evidence* (University Wisconsin Ebling Library.)

Table 12. The Hierarchy of Evidence

	Level	Evidence
Stronger	I	Systematic review of Relevant Randomized Controlled trial (RCT) or evidence-based clinical practice guidelines based on systematic reviews of RCT
	II	Well-designed RCT
	III	Well-designed controlled trials without randomization, quasi-experimental
	IV	Well-designed case and cohort studies
	V	Systematic reviews of descriptive and qualitative studies
Weaker	VI	Single descriptive or qualitative study
	VII	Opinion of authorities, reports

This master's thesis includes eight (n=8) studies gathered according to inclusion and exclusion criteria. In all eight selected studies, eight different research methods were used. These were Mixed Method, Randomized Controlled Pilot Study, Cohort Study, Case Study, Pilot Study, Exploratory Study, Archival Data and Secondary Data.

The strongest research at evidence-Level I is Randomized Controlled Study (RCT) and the weakest evidence is seen when the case is about an opinion or report. In this master's thesis, none of the research was at the strongest level I but as a Randomized Controlled Pilot Study, the strongest method in the thesis was evaluated to the evidence level II: *Social Skills Training for Young Adults with High-Functioning Autism Spectrum Disorders* by Gantman, Kapp, Orenski & Laugeson (2012). The weakest one, archival data by Weiss, Fabrizio & Bamond (2008) *Skill Maintenance and Frequency Building: Archival Data from Individuals with Autism Spectrum Disorders* was at level of evidence VII.

Table 13. The Level of Evidence

	Author of the research	Research method	Level of Evidence
1	Hagner, D. , Kurtz, A., May, J. & Cloutier, H.	Mixed Method	III
2	Gantman, A., Kapp, S.K. Orenski, K. & Laugeson, E.A.	Randomized Controlled Pilot Study	II
3	Orsmond, G.I., Shattuck, P.T., Cooper, B.P., Sterzing, P.R. & Anderson, K.A.	Cohort Study	IV
4	Ham, W., McDonough, J., Molinelli, A., Schall, C. & Wehman, P.	Case Study	VI
5	Muller, E., Schuler, A., Burton, B.A. & Yates, G.B.	Pilot Study	VI
6	Mokhtar, I.A.	Exploratory Study	VI
7	Weiss, M.J., Fabrizio, M. & Bamond, M.	Archival Data	VII
8	Jeon, K.S. & Kim, K-N.	Secondary Data	V

When drawing all studies (n=8) together as a means of the Quality Assessment Score and Level of Evidence, all the results can be seen in the table 14 .

Table 14. Table of Quality and Evidence

	Author of the research	Quality Assessment score / Level of Evidence
1	Hagner, D. , Kurtz, A., May, J. & Cloutier, H.	15 / III
2	Gantman, A., Kapp, S.K. Orenski, K. & Laugeson, E.A.	16 / II
3	Orsmond, G.I., Shattuck, P.T., Cooper, B.P., Sterzing, P.R. & Anderson, K.A.	13 / IV
4	Ham, W., McDonough, J., Molinelli, A., Schall, C. & Wehman, P.	14 / VI
5	Muller, E., Schuler, A., Burton, B.A. & Yates, G.B.	13 / VI
6	Mokhtar, I.A.	14 / VI
7	Weiss, M.J., Fabrizio, M. & Bamond, M.	8 / VII
8	Jeon, K.S. & Kim, K-N.	12 / V

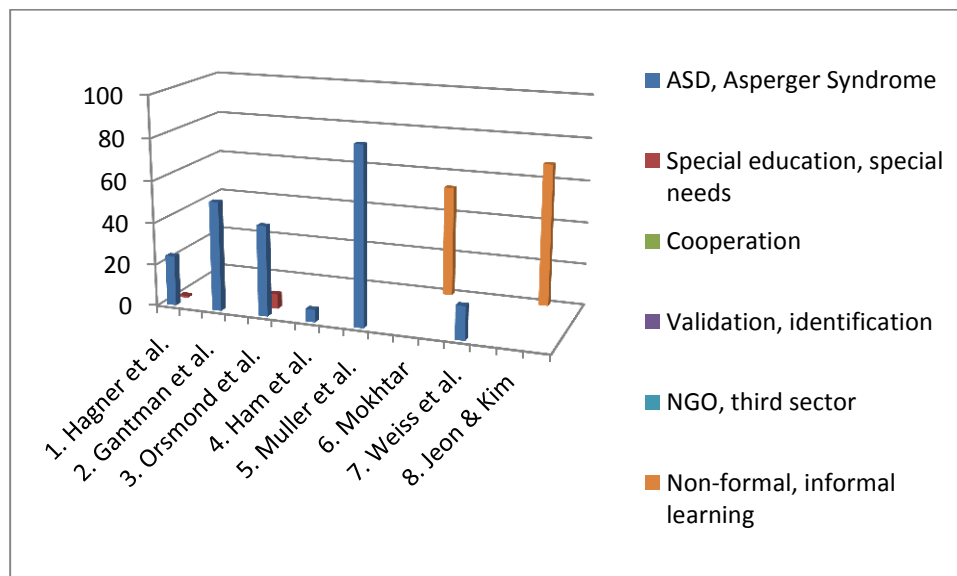
4.6 Data Analysis

Based on Miles and Huberman (1994), Sandelowski (1995) and Patton (2002) as Whittemore & Knafl (2005, 551) points out there are many different elements for doing data analysis such as noting patterns and themes, clustering, counting, making comparisons, noting relations between variability and finding intervening factors. The studies found for this thesis dealt with the analysis of qualitative content as quantitative text analysis. In short, quantitative analysis of the text means counted words; how many times specified words included in the research. The other way to count uses column millimeters. (Eskola & Suoranta 2008, 169.)

Out of the chosen study (n=8), five handle generally ASD issues, one deals with Asperger Syndrome and other autism spectrum disabilities, one was about the organizational and task factors in informal learning and the last one handles formal and informal opportunities in government organizations. Moreover, studies about validation of non-formal and informal learning in any environment were missing from the data. To make sure that this was the case, the main words were counted.

The main words in this thesis could be found from the search query. The first part of the search phrase was *asd OR Asperger Syndrome AND special education AND special needs AND cooperation AND validation OR identification AND NGO OR third sector AND nonformal OR informal learning*. The studies were read through and all previous words (not the Boolean Operator command words) have been counted from all studies. The word *ASD or Asperger Syndrome* were found all together 225 times in six studies. The words *special education or special needs* appeared in two different studies: one was repeating these words seven times and the other one once when picturing the eligible research participants in both studies. The words *cooperation, validation, identification, NGO or third sector* were missing from all of the studies. *Non-formal learning* was found three times in the same study that was using 65 times the word *informal learning*. The other study was repeating the word *informal learning* 53 times. Informal learning and ASD or Asperger Syndrome were not dealt at all in found studies.

Table 15. Quantitative analysis, counting



5 RESULTS

In life, one can participate in many situations, for example, hobbies, leisure time, studies, work, or just having a friendship with somebody. In order to participate there must be some kind of social skills and an ability to understand how to behave in certain situations, i.e. social and emotional issues, gestures and bodily expressions (Attwood 2013, 285-291.) The research question was formulated knowing, based on research, a background of a person with ASD and difficulties in participation. Participation in situations might cause anxiety and this is one reason why, according Nylander (2009, 29), a person with ASD needs guidance and support to ease activities and performance in various situations. Therefore the research question was formulated as:

What kinds of methods are used to support an ASD person's participation in vocational training, in work or work related settings?

Two studies out of eight (n=8) were not talking about ASD but about organizational factors and informal learning. One study was about Asperger Syndrome and five studies were reflecting ASD in many ways. This section of results describes only the discovered methods. These are discussed more in the discussion part of the thesis. Methods used with an ASD person were Person-Centered Planning, Evidence-based caregiver-assisted social skills intervention PEERS and Behavior and Work Performance Assessment.

The Skill Maintenance and Frequency Building procedure for easing retention problems with ASD was also introduced. This is not a method but occurs on a daily basis as timed practices and set goals marked in each student's own charted performance data. (Weiss et al. 2008, 30.)

Person-Centered Planning is a process that allows a person with some disability to participate more actively in his/her own transition planning. Participation might be

difficult due to anxiety, difficulties with social interaction and communication. Strategies for facilitation participation include individualized preparation for meetings, informal activities to build up relations between the facilitator and youth, flexible meeting designs, distance attendance and support for alternative ways to communicate. Person-Centered Planning includes an assessment process that is not too formal. It is seen that more active participation in own affairs is associated with more positive vocational rehabilitation outcomes. Rehabilitation counsellors, a part of a supportive social network, are involved in transition phases of young adults. Counsellor in Person-Centered Planning is a valuable link for helping clarify aspirations, develop plans and search for routes to adequate services for life ahead together with the client. (Hagner et al. 2014, 4-10.)

The PEERS for Young Adults Program is evidence-based, caregiver-assisted social skills intervention for high-functioning young adults with ASD. The program consists of 14 weekly meetings and last 90 minutes each. These sessions ought to provide instructions and rehearsal of various skills to build more close relationships. The program consists of didactic lessons: conversational skills, electronic forms of communication, developing friendship networks and finding sources of friends, appropriate use of humor, peer entry and exit strategies, organizing get-togethers, handling teasing and poor feedback, dating and the etiquette in it, handling peer pressure, avoiding abuse and resolving arguments with friends. There are validated and normed measures to assess psychosocial functioning of young adults with ASD. (Gantman et. all 2012, 1094-1103.)

Behavior and Work Performance Assessment includes support consultation from the support facilitator, an intervention plan and implementation and supervisor and coworker training concerning the plan. The team consists of a positive behavior support facilitator, supervisor, coworkers, work coach and the family. Assessment measures (functional behavior assessment) and collected data by observation are part of the assessment. After assessment, a person will get an individual plan for needed facilitating. It might be, for example, self-monitoring, visual schedule,

reminder alarms, work modification and self-monitoring with behavioral rehearsal. (Ham et. all 2014, 117-124.)

6 DISCUSSION

6.1 Main results

The aim of the master's thesis was to discover and rank studies about validation of non-formal and informal learning with ASD in NGOs. The validation of non-formal and informal learning in NGOs is a fairly new thing, at least in Finland. Workshops are seen to be good learning environments where one can learn by doing actual work in different settings in a non-formal or informal way. In the chosen studies, non-formal learning opportunities in the workplace were described as to be fixed courses for professional development, for example, computer literacy, creative thinking, and management of the workplace, a variety of situations at work in which each offers something new to be learnt. Informal learning opportunities were seen as discussions with coworkers, different job postings and job rotation, learning on the job from coworkers and learning from those who are specialized and experts. (Mokhtar 2010, 396-407.) There are two types of informal learning seen in the research by Jeon & Kim (2012); learning through interaction and learning by doing. The effectiveness of both learning types increased when workers recognize that obtained knowledge and skills from a current task were also useful to other companies and not only in the current task of the current company. Also learning by doing tend to be more motivating for improving knowledge and skills when facing new and challenging tasks and situations instead of routine and repeated tasks. (Jeon & Kim 2012, 220-221.)

Workshops, at least bigger ones, are comparable to a real work environment and real working situations (Työpajatieto 2014; Hietalahti 2013, 29.) The expected results could be seen worth for improving the knowledge about the whole validation process in workshop environment when working with ASD. Cooperation between

vocational schools and workshops is quite rare and the results of this thesis are intended to help build up the relationships with new international knowledge.

In the chosen studies there are many people who work with ASD people. In the PEERS for Young Adults Program, the leader of the work was licenced clinical psychologist and a post-doctoral psychology fellow. The research assistant was a graduate or undergraduate psychology student. (Gantman et al. 2012, 1096.) In Person-Centered Planning there was an educated facilitator who, for example, helped the group to progress in the program, ensured everyone's opportunities to contribute, and recorded the group works. Facilitator training consisted of a three-credit graduate course at the University; Methods, Models and Tools for Person-Centered Planning. (Hagner et al. 2014, 6.) In the Project SEARCH with ASD Supports, the worker was a behaviour/autism specialist and the program also consisted of intensive staff training. Knowledgeable job coaches were training employees in a ways how to communicate with an ASD person (Ham et al. 2014, 118-124.)

From the author's point of view, NGOs employees' professional background varies a lot. Usually they are social welfare and health care professionals such as a practical nurse without higher education degrees. This is because of the money; the higher education the higher salary. In general, NGOs are non-profit organizations, so they cannot afford high salaries. For example, occupational therapists (OT) are very rare in Finnish NGOs. Another reason for that might be because most of OT graduates like to work with children, not with adults. Depending on the available services in NGOs, there might be purchased services such as psychology. If so, there must be at least one room or office legally checked that meets health care regulations in a NGO. For purchased services, a referral is needed as well as a commitment of payment. In order to use different working methods in a NGO, there must be education for the use, such as short graduate course. Good orientation is usually the easiest and cheapest.

The methods from the studies seem to be good to help in participating and taking part in various situations. Person-Centered Planning is a valuable tool because it

takes many things into consideration for people with ASD, for example, a flexible meeting design and supportive means of communication. (Hagner et al. 2014, 4.) It is also known that people today need many various skills when working. Almost all general work skills described according to Ruohotie (2000, 40) are difficult with ASD. How to manage life management skills, communication skills, people and task management, innovation and change when the described personality already has difficulties in social situations as well as in learning and maintaining various needed skills. As described in the Weiss, Fabrizio and Bamond (2008, 28) study, unique learning characteristics require special adaptations. A person with ASD prefers routines and is often lacking good adaptation skills, which could make life challenging.

Based on author's own experiences, meetings with an ASD person are good to have every week and one hour is too short a time for a meeting. It has also been seen that working in groups causes anxiety for some and then learning is very difficult. Personal meetings are very effective or a combination of these two is even better in some cases. The PEERS for Young Adults Program consists of 14 weekly group meetings. Each meeting lasts one and a half hours (Gantman et. all 2012, 1094-1103). This caregiver assisted manualized social skills intervention increases the cooperative social behavior with peers and family members while also encouraging of independence in social functioning. Also, self-control grows stronger which could lead to more acceptable behavior in social situations and social approval by others.

In the Behavior and Work Performance Assessment, the worker is a positive behavior support facilitator (PBSF) who obtained assessment measures and data through observation and other sources. The PBSF role was also to assist coworkers when developing personalized supports for a person with ASD to increase success and decrease challenges at work. A behavior and work productivity plan were made including self-monitoring as to follow instructions and a schedule. Self-monitoring with behavioral rehearsal was also done. This method includes the use of some more creative methods such as a visual schedule with a color coordinated calendar and the use of different reminder alarms, assistive technology, picture scheduling and job

modification. Positive feedback is something that could not be forgotten. (Ham et al. 2014, 118-124.)

In Weiss et al. (2008, 29) Frequency-Building Procedures could occur on a daily basis as timed practices. Goals need to be set for the improvement of skills on a daily basis. After goals are set together with the participant and worker, timed practice begins. Participants complete a maximum of ten timed practices per day on a given skill to be practice. There are individual charted performance data where skills are monitored.

Results concerning the validation and recognition of non-formal and informal learning in a workshop environment did not come as a surprise to the author. As mentioned earlier, the author works with adults with ASD and other neuropsychiatric special features. The work in the Valtone –Project started in 2013 by charting the field and workers who worked with neuropsychiatric adults in Finland. The focus was to find out how many organizations, companies, associations, projects, NGOs or private sector institutions worked with this client group and how many have the adequate knowledge about the issue. The result was disappointing. Over the years in Finland, there have been many projects for children under 16 years with neuropsychiatric features. Gantman et al. (2012) quoting Tantam (2003) point out that the most challenging times for those with ASD is in adolescence and young adulthood. This is seen due to greater saliency and complexity of peer relationships, identity exploration, and lack of knowledge and appropriate services. (Gantman et al. 2012, 1094.) Only one entity in all of Finland was working with adults at that time in Tampere. The author has had many discussions, lessons and informational meetings with authorities, doctors, teachers, nurses, specialists, families and clients during the Valtone-Project. The doctors and specialists know all the medical facts and diagnosis. A person might get diagnosis for example ASD, but after that, life is not getting any easier. There is lack of sufficient services and service providers for this client group in Finland.

It was more than obvious already back in 2013 that more information is needed. The Valtone-project has visited several places talking about future work and how all could cooperate together in a means to find out good solutions for the client group and how to get adequate assistance and support also from society. ASD persons are many times get misunderstood by others. This is how the author sees the whole client group – misunderstood, underestimated and lacking the needed knowledge by society. The world is changing all the time around humans so attitudes must change also. We must learn to also see people with ASD or with other neuropsychiatric symptoms as worth something, not as a burden or as difficult persons. Learning and knowing - it all starts from interest and getting the source of sufficient and right information. As Gantman, Kapp, Orenski & Laugeson (2012, 1101) quote White et al. (2007), this population is highly underserved and understudied.

ASD is not a mental retardation but, in many cases ASD itself brings difficulties in life especially in social affairs. Persons with ASD are socially isolated as Orsmond et al. (2013, 2715) point out in their research results: young adults with ASD were more likely to never see friends, never get called by friends or never be invited to events. This is as Attwood (2013, 285-291) also has pointed out. Despite managing well in studies, poor social skills and difficulties in social situations may complicate an ASD person's performance in social interactions. Challenged areas are seen in basic skills such as understanding social cues and entering and engaging in two-sided conversations. All of these are weakening the quality of friendships. A lack of adequate social skills predict also a weaker ability to form romantic relationships as Gantman et al. (2012, 1095) point out via Stokes et al. (2007). Having at least one person who can be named as a close friend strengthens mental health and gives strength to face stressful events of daily life.

No research dealt with cooperation between vocational education and NGOs. The project SEARCH with ASD Supports included the application of applied behavior analytic strategies in the internship environment. A person with ASD had an opportunity to learn work skills in local business settings and got systematic instruction on the business site. At the same time, the student got support from a

behavior specialist and intensive staff training. Also there was an emphasis on teaching a person with ASD to use these techniques through self-management. (Ham et. al 2014, 117-124.) When speaking about education, Orsmond et al. (2013, 2712), have pointed out that local schools determine student's eligibility for a school. These decisions are not always necessarily in accordance with a standardized clinical assessment or diagnostic guidelines. NGOs are communities where everybody supports each other when needed. Everybody should have opportunities and all authorities must support and do their best to help. In this way NGOs are more gentle learning environments, especially concerning life management skills and learning by doing.

The author could not stop thinking how life is surrounded by rules and regulations. When all efforts are coming from outside as instructions, rules and regulations, is this supporting independence in such a way to promote self-learning, learning by doing and learning by own mistakes? Learning should not be seen as obeying and doing what is expected. This is the more formal way and it is not working with everybody. It would be better to find a person's own interest, strength and motivation to learn. This way a person might do work in a way that is best for him and according to his own skills and abilities. We need to give time and space for people who are somehow different than us. We can do many things in many ways and despite the bends and twists, the results might be same. If so, should it be seen as doing it the wrong way?

6.2 Reliability

As Eskola & Suoranta (2008) say, an integrative literature review requires as detailed research as any other scientific work. An integrative review could be comparable to qualitative research, at least as a means of the researcher's open subjectivity. It is important to admit that the researcher is a key tool for the research. The reliability of the research could be improved by recording the exact description of the progress in various stages throughout the research. (Eskola & Suoranta 2008, 210.)

This master's thesis progressed from one stage to another as planned. The limitations of the subject were a person with ASD and NGOs. This study, as a

secondary research, aimed to find high quality original studies, but a criterion for research quality was not prepared. The decision for this was based on the assumption that research-based information about the validation of non-formal and informal learning done in NGOs will not be available. All approved studies differed from each other by methodological basis and approaches because all-quality studies were accepted. It was decided that the data gathering consists only of a database search from the internet. Reference search were not done at all, as well as manual search in all means were left out. This is based on resources; time, money, personal strength when having full-time work and all family affairs. It was also decided to use only free sources, without the need to log in, order or buy any material for the work. The fact that this thesis was done only in foreign language creates a bigger possibility for research bias, mistakes, misunderstandings and wrong conclusions. All these could be seen as weakening the reliability of the thesis.

The contents responded to the research tasks only to a limited extent. A small study sample ($n = 8$) undermine the reliability of the thesis. The reasons for the small sample might be because of too narrow inclusion or exclusion criteria, wrongly formulated search phrase, wrong research question or wrong approach to the issue. Also the fact that the search was made only from five databases has significance. Using wider databases, together with a manual search, might have led to different results. Despite the small sample, four out of eight studies dealt with some methods of working with a person with ASD. This could be seen as a good result and brings out new information for use in NGOs.

Despite all the reasons for a weakening reliability, this integrative literature review has attempted to describe as accurately as possible so that it could be repeated. In order to do so, the language has to be taken into consideration. The author's native language is not English. When doing research in a foreign language, there is a huge possibility for misunderstandings and wrong conclusions. The meanings of words might differ also from country to country.

6.3 Conclusions and recommendations

Writing this master thesis has been a challenge with a fairly new issue of a thesis. The biggest problem has been the lack of international research and reliable Finnish research and therefore, the lack of knowledge. As the work progressed, a few relevant sources were found.

Gantman, Kapp, Orenski & Laugeson (2012, 1101) refer White et al. (2007) by pointing out that this group of people is a highly underserved and understudied population. Adults with ASD and other neuropsychiatric symptoms like ADHD or Tourette Syndrome are lacking adequate support and service in society at least in Finland and therefore there is no available reliable data. Nothing changes without knowledge, knowledge is power. There is another never finished master's thesis which was also about the validation and recognition of non-formal and informal learning in NGOs. The author got twice as weak results even when using a different database, search phrase and research questions. This demonstrates the lack of research in this area. There is a need for research about the validation of non-formal and informal learning in different learning environments such as NGOs, alone or connected to, for example, ASD. There is also room for the use of EQF connecting the needed future research.

It is essential to see and acknowledge what these people can do and what they are capable of. There must be more research related to education and employment with the target group of people with neuropsychiatric symptoms. It is essential to have research from a positive point of view, from a solution-focused perspective, about a person's capabilities, skills and knowledge. The labour market is for educated people. All hands are needed in the labour market and it is essential to also take into consideration the ways to get a profession in NGOs. These organizations are growing in effectiveness, efficiency and quality as a workforce and as a learning environment when schooling in a formal way has been difficult. Validation is said to be a way to get a diploma, therefore there must be more research in order to really be so. There must be more research about cooperation between vocational education and NGOs.

New knowledge breaks the barriers of the not-knowing status. Knowledge opens the doors for people with neuropsychiatric symptoms to education, work and to be full members of the society. We have to see them and acknowledge them; they are not only a symptom or a statistic - they are flesh and blood, they have soul and heart, they cry when hurt, they laugh when happy - they are people just like you and me.

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8 APPENDICES

Appendix 1. Autism Spectrum Disorder, F84.0

Diagnostic Criteria is direct quote, summarized in a table, taken from the side Autism Speaks 2015.

Note: *Individuals with a well-established DSM-IV diagnosis of autistic disorder, Asperger's disorder, or pervasive developmental disorder not otherwise specified should be given the diagnosis of autism spectrum disorder. Individuals, who have marked deficits in social communication, but whose symptoms do not otherwise meet criteria for autism spectrum disorder should be evaluated for social (pragmatic) communication disorder.*

A. *Persistent deficits in social communication and social interaction across multiple contexts, as manifested by the following, currently or by history:*

1	<i>Deficits in social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.</i>
2	<i>Deficits in nonverbal communicative behaviours used for social interaction, ranging, for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures; to a total lack of facial expressions and nonverbal communication.</i>
3	<i>Deficits in developing, maintaining, and understanding relationships, ranging, for example, from difficulties adjusting behaviour to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.</i>

B. *Restricted, repetitive patterns of behaviour, interests, or activities, as manifested by at least two of the following, currently or by history:*

1	<i>Stereotyped or repetitive motor movements, use of objects, or speech (e.g., simple motor stereotypies, lining up toys or flipping objects, echolalia, idiosyncratic phrases).</i>
2	<i>Insistence on sameness, inflexible adherence to routines, or ritualized patterns or verbal nonverbal behaviour (e.g., extreme distress at small changes, difficulties with transitions, rigid thinking patterns, greeting rituals, need to take same route or eat food every day).</i>
3	<i>Highly restricted, fixated interests that are abnormal in intensity or focus (e.g., strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interest).</i>
4	<i>Hyper- or hypo reactivity to sensory input or unusual interests in sensory aspects of the environment (e.g., apparent indifference to pain/temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination with lights or movement).</i>

C. Symptoms must be present in the early developmental period (but may not become fully manifest until social demands exceed limited capacities, or may be masked by learned strategies in later life).

D. Symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning.

E. These disturbances are not better explained by intellectual disability (intellectual developmental disorder) or global developmental delay. Intellectual disability and autism spectrum disorder frequently co-occur; to make comorbid diagnoses of autism spectrum disorder and intellectual disability, social communication should be below that expected for general developmental level.

Appendix 2. Severity levels for autism spectrum disorder

This page is a direct quote, summarized in a table, from the side Autism Speaks 2015.

Severity level	Social communication	Restricted, repetitive behaviours
<p>Level 3</p> <p>"Requiring very substantial support"</p>	<p><i>Severe deficits in verbal and nonverbal social communication skills cause severe impairments in functioning, very limited initiation of social interactions, and minimal response to social overtures from others. For example, a person with few words of intelligible speech who rarely initiates interaction and, when he or she does, makes unusual approaches to meet needs only and responds to only very direct social approaches</i></p>	<p><i>Inflexibility of behaviour, extreme difficulty coping with change, or other restricted/repetitive behaviours markedly interferes with functioning in all spheres. Great distress/difficulty changing focus or action.</i></p>
<p>Level 2</p> <p>"Requiring substantial support"</p>	<p><i>Marked deficits in verbal and nonverbal social communication skills; social impairments apparent even with supports in place; limited initiation of social interactions; and reduced or abnormal responses to social overtures from others. For example, a person who speaks simple sentences, whose interaction is limited to narrow special interests, and how has markedly odd nonverbal communication.</i></p>	<p><i>Inflexibility of behaviour, difficulties coping with change or other restricted/repetitive behaviours appear frequently enough to be obvious to the casual observer and interfere with functioning in a variety of contexts. Distress and/or difficulty changing focus or action.</i></p>
<p>Level 1</p> <p>"Requiring support"</p>	<p><i>Without supports in place, deficits in social communication cause noticeable impairments. Difficulty initiating social interactions, and clear examples of atypical or unsuccessful response to social overtures of others. May appear to have decreased interest in social interactions. For example, a person who is able to speak in full sentences and engages in communication but whose to- and-from conversation with others fails, and whose attempts to make friends are odd and typically unsuccessful</i></p>	<p><i>Inflexibility of behaviour causes significant interference with functioning in one or more contexts. Difficulty switching between activities. Problems of organization and planning hamper independence</i></p>

Appendix 3. Descriptors defining levels in the European Qualifications Framework (EQF)

The learning outcomes relevant to each EQF Level	Knowledge described as <i>theoretical and/or factual</i>	Skills described as <i>cognitive</i> (involving the use of logical, intuitive and creative thinking) and <i>practical</i> (involving manual dexterity and the use of methods, materials, tools and instruments)	Competence described in terms of <i>responsibility and autonomy</i>
Level 1	Basic general knowledge	Basic skills required to carry out simple tasks	Work or study under direct supervision in a structured context
Level 2	Basic factual knowledge of a field of work or study	Basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools	Work or study under supervision with some autonomy
Level 3	Knowledge of facts, principles, processes and general concepts, in a field of work or study	A range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information	Take responsibility for completion of tasks in work or study Adapt own behaviour to circumstances in solving problems
Level 4	Factual and theoretical knowledge in broad contexts within a field of work or study	A range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study	Exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change Supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities
Level 5 *	Comprehensive, specialised, factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge	A comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems	Exercise management and supervision in contexts of work or study activities where there is unpredictable change Review and develop performance of self and others
Level 6 **	Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles	Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	Manage complex technical or professional activities or projects, taking responsibility for decision making in unpredictable work or study contexts Take responsibility for managing professional development of individuals and groups

Level 7 ***	Highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research Critical awareness of knowledge issues in a field and at the interface between different fields	Specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields	Manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches Take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams
Level 8 ****	Knowledge at the most advanced frontier of a field of work or study and at the interface between fields	The most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice	Demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research

Compatibility with the Framework for Qualifications of the European Higher Education Area

The Framework for Qualifications of the European Higher Education Area provides descriptors for cycles. Each cycle descriptor offers a generic statement of typical expectations of achievements and abilities associated with qualifications that represent the end of that cycle.

*	The descriptor for the higher education short cycle (within or linked to the first cycle), developed by the Joint Quality Initiative as part of the Bologna process, corresponds to the learning outcomes for EQF level 5.
**	The descriptor for the first cycle in the Framework for Qualifications of the European Higher Education Area agreed by the ministers responsible for higher education at their meeting in Bergen in May 2005 in the framework of the Bologna process corresponds to the learning outcomes for EQF level 6.
***	The descriptor for the second cycle in the Framework for Qualifications of the European Higher Education Area agreed by the ministers responsible for higher education at their meeting in Bergen in May 2005 in the framework of the Bologna process corresponds to the learning outcomes for EQF level 7
****	The descriptor for the third cycle in the Framework for Qualifications of the European Higher Education Area agreed by the ministers responsible for higher education at their meeting in Bergen in May 2005 in the framework of the Bologna process corresponds to the learning outcomes for EQF level 8.

https://ec.europa.eu/ploteus/sites/eac-eqf/files/leaflet_en.pdf

Appendix 4. The Quality Assessment Evaluation Criteria

Evaluation sections	Evaluation criteria; levels of value and points
I The phenomenon	2 The phenomenon is clearly defined 1 The phenomenon is hard to find 0 There is lack of description of the phenomenon
II Research Purpose and Aim	2 Research Purpose and Aim are well described 1 Research purpose and Aim are described but not clearly 0 There is hardly any purpose or aim description or it is lacking
III Research questions	2 Aim and Research questions are well described 1 Aim and Research questions are described but not clearly 0 Aim and Research questions are unclear or lacking
IV Method and Design of the Research	2 Described clearly and easy to find 1 Applicable but description is unclear 0 Not recognizable design and method
V Sample	2 Sample is described clearly and easy to find 1 Sample is hard to find, description unclear 0 Sample is nowhere to be found
VI Material and Data collection	2 Material and data collection is described in detail 1 Material and data collection is described briefly 0 No description of material and data collection
VII Data analysis	2 Data analysis is clearly described 1 Data analysis is unclear 0 Data analysis is lacking
VIII Results	2 Results are described clearly, tables clear and descriptive 1 Results are difficult to find, tables are not very informative 0 Results are not mentioned, no tables

Appendix 5. Accepted Studies

Author(s), year of publication, published	Title	Research methods and Sample	Main results
<p>Hagner, D. , Kurtz, A., May, J. & Cloutier, H.</p> <p>2014</p> <p>Journal of Rehabilitatio n, 2014, Volume 80, No. 1, 4-1</p>	<p>Person-Centered Planning for Transition-Aged Youth with Autism Spectrum Disorders.</p>	<p>A mixed method design consisting of a qualitative analysis of narrative data with an embedded descriptive quantitative analysis.</p> <p>The Adaptive Behavior Assessment Scale II (ABAS-II) was used to assess level of functional behaviour of participants.</p> <p>n= 47</p>	<p>The result shows that person-centered planning can be implemented for transition-aged ASD youth. Person-centered planning can be seen as a tool for enhancing participation in transition planning.</p>

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Author(s), year of publication, published	Title	Research methods and Sample	Main results
<p>Gantman, A., Kapp, S.K. Orenski, K. & Laugeson, E.A.</p> <p>2012</p> <p>J Autism Dev Disord (2012) 42:1094–1103</p>	<p>Social Skills Training for Young Adults with High-Functioning Autism Spectrum Disorders: A Randomized Controlled Pilot Study.</p>	<p>A Randomized Controlled Pilot Study</p> <p>n=17 male = 12 female =5</p> <p>Measures: The AQ, KBIT-2, Vineland-II, SRS, SSRS, SELSA, EQ, QSQ, SSI, TYASSK.</p> <p>The results have got using each measure own mean demographic and baseline variables and scores. Also MANOVA and non-parametric Mann-Whitney U test of significances were used to assess change.</p>	<p>Results shows that young adults feel significantly less loneliness and social skills knowledge has improved. Caregivers reported significant improvements in young adults’ overall social skills, social responsiveness, empathy, and frequency of get-togethers. Results support the effectiveness of caregiver-assisted, manualized intervention for young adults with ASD.</p> <p>All findings support the effectiveness of used evidence-based intervention PEERS as promoting the development of relationships and improving social and psychosocial functioning of ASD young adults.</p>

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Author(s), year of publication, published	Title	Research methods and Sample	Main results
<p>Orsmond, G.I., Shattuck, P.T., Cooper, B.P., Sterzing, P.R. & Anderson, K.A.</p> <p>2013</p> <p>J Autism Dev Disord (2013) 43:2710–2719</p>	<p>Social Participation Among Young Adults with Autism Spectrum Disorder</p>	<p>Cohort Study The Data is from the National Longitudinal Transition Study-2 (NLTS2), USA.</p> <p>Data collected during 2001-2009, in five sections.</p> <p>This paper is from the section 5, 2009.</p> <p>Compared social experiences of young adults with ASD, ID (intellectual disability), ED (emotional disturbances) and LD (learning disabilities)</p> <p>n=620 with ASD</p> <p>four comparison groups and 20 members each (ID, ED, LD)</p>	<p>Compared to other groups young adults with ASD were more likely to never see friends (38,6%), never get called by friends (47,2%), never invited to activities (48,1%).</p> <p>The rate of social isolation in ASD group (28,1%) ranged 3-14 times higher than other groups.</p> <p>Findings call for continued efforts to develop and evaluate interventions, supports, and community programs for enabling young ASD adults to participate in social activities with peers and in the community.</p>

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Author(s), year of publication, published	Title	Research methods and Sample	Main results
<p>Ham, W., McDonough, J., Molinelli, A., Schall, C. & Wehman, P.</p> <p>2014</p> <p>Journal of Vocational Rehabilitation 40 (2014) 117-124</p>	<p>Employment supports for young adults with autism spectrum disorder: Two case studies</p>	<p>Case study</p> <p>n=2, Participants of the Project Search and ASD Supports</p> <p>Used methods: Intensive job coaching includes services of a Positive Behaviour Support Facilitator (PBSF).</p> <p>Behaviour intervention and work productivity plan Case 1: self- monitoring plan, visual schedule, reminder alarms Case 2: staff training and providing a single point of contact for daily instruction in tasks and review schedule, job modification, self- monitoring with behavioural rehearsal.</p>	<p>The results support values of a combination of designing work tasks with the meet of person's personality and professional goals for independency and productivity at work. The result also shows increasing successful communication between the employer and employee.</p> <p>Both of n=2 were supported by professional and knowledgeable job coaches who were able to train their employees in a way it is best for n=2. It is showed that these kinds of supports when used frequently increase the success of the employees with the ASD in employment.</p>

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Author(s), year of publication, published	Title	Research methods and Sample	Main results
<p>Muller, E., Schuler, A., Burton, B.A. & Yates, G.B.</p> <p>2003</p> <p>Journal of Vocational Rehabilitation 18 (2003) 163-175</p>	<p>Meeting the vocational support needs of individuals with Asperger Syndrome and other autism spectrum disabilities.</p>	<p>Pilot study n=18</p> <p>Semi-structured individual interviews.</p> <p>Analysis took place in two phases: consensus-based development of a preliminary coding structure and QSR NUD *IST 4.0 software program for the organizing and coding the qualitative data</p>	<p>ASD persons require a little different vocational support than those with other types of developmental disability and/or more generalized mental retardation. Participants emphasized vocational supports that address their individual difficulties with social interaction. Also the work that is a good match related to strengths and weaknesses is seen important. ASD person's work coach should be multi- talent; helps to navigate, be available, assists, understands, handles, monitor, explains, provide social skills training and ask appropriate questions and conversation with workplace in accordance of the variable needs with ASD person and boss and co- workers.</p>

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Author(s), year of publication, published	Title	Research methods and Sample	Main results
<p>Mokhtar, I.A. 2010 Australian Journal of Adult Learning Volume 50, Number 2, July 2010</p>	<p>Formal and informal learning opportunities in government organizations: Experiences of public sector employees from six Asian nations.</p>	<p>Exploratory study n=18 Semi-structured interviews, seven questions. Each interview were recorded and transcribed. Also field notes were taken during interviews. Similar responses or themes were identified and coded.</p>	<p>Lifelong learning and professional development opportunities through formal learning are usually quite expensive and available only for selected person in Asian government organizations. It might also be that formally acquired skills cannot be applied to the work or be shared with co-workers effectively. There is a need for cheaper informal learning opportunities that are more voluntary and self-directed allowing more interaction and exchange of ideas. Employees need to have specific skills and abilities and good communication and networking skills to help exploit informal learning opportunities. Asian government organizations must be able to provide opportunities for informal learning such as allocated time and common spaces for learning that allows spontaneous informal learning.</p>

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Author(s), year of publication, published	Title	Research methods and Sample	Main results
Weiss, M.J., Fabrizio, M. & Bamond, M. 2008 Journal of Precision Teaching and Celeration, Volume 24, 2008, pages 28-37	Skill Maintenance and Frequency Building: Archival Data from Individuals With Autism Spectrum Disorders	Archival Data which describes clinical outcomes rather than the results of a rigorous research project n=38 who participated in Behaviour Analytic program at DDDC (the Douglass Developmental Disabilities Center)	The results of this study should be interpreted with caution. The reported data is the first published data detailed the retention of skills taught to higher frequencies and lower latencies also as durations for the ASD people. Findings also points out the question whether loss of skills is unchanging aspect with vulnerable group on the autism spectrum disorders or could it be improved effectively and efficiently by using highly effective teaching procedures.

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Author(s), year of publication, published	Title	Research methods and Sample	Main results
<p>Jeon, K.S. & Kim, K-N. 2012 Human Resource Development International, Vol. 15, No. 2, April 2012, 209-226</p>	<p>How do organizational and task factor influence informal learning in the workplace?</p>	<p>Secondary data derived from the Human Capital Corporate Panel (HCCP) data 2007 Target population was selected using KIS Corporate Data (2005) from the Korea Information system and was selected based on industry, size and type of enterprise. n=1899 Hierarchical multi-regression analysis</p>	<p>Workers in Korea seem to prefer group activities and group consciousness; trust and openness within organization have a greater impact on informal learning. Less routines and repeated work as task characteristics has a positive relationship with the effectiveness of informal learning. Effectiveness of informal learning through interactions with peers was impacted significantly by open communication among employees. Workers are motivated to improve knowledge and skills through learning by doing when faces with new and challenging tasks and situations.</p>