Vänskä Astrid

Supporting the social and learning needs of introverted students in primary school

Bachelor's thesis

FACULTY OF EDUCATION AND PSYCHOLOGY

Intercultural teacher education

2023

This thesis aims to find methods of supporting introverted students in their learning and social needs through reviewing founding and current literature. The objectives of this literature review include understanding the individual style with which introverted students learn and work the most efficiently, so that educators are better equipped to support their learning. Temperament influences a person's reactions to their environment around them and materializes in interactions with the environment and other people. Temperament traits are not inherently good or bad, but their value is in how well they fit with the surrounding environment, a concept referred to as goodness of fit.

In the context of education, temperament outlines the distinct way in which a child responds to stimulants in the school environment. It influences every aspect of school life, including academic performance and social interactions and relations. Temperament cannot be ignored in the context of education, as it shapes how students learn, process information, interact with their classmates and react to new learning. It is imperative that educators understand the implications of temperament in their instructional choices as well as their perceptions of and attitudes towards their students.

Culture shapes the way in which temperament traits are perceived, and in western culture the outgoing, talkative and charismatic extrovert is seen as the ideal personality for success in society. Schools reflect these societal values and introverted students are placed at a disadvantage in achieving this success as a result of their innate temperament. Introversion is characterized by a quiet, reflective and reserved demeanor and the movement of energy towards the inner world. Biologically, introversion is characterized by a high level of internal stimulation which results in a need to limit external stimulants to balance their level of cortical arousal. The qualities attributed to introversion are often misinterpreted and cast in a negative light.

Educators can support introverted learners by providing opportunities for independent and small group learning, ensuring that there is sufficient time for reflection and creating a safe, non-judgmental space for learning. Teachers should acknowledge introverts' need for alone time and understand that engagement and active participation can look different for different learners. Educators should ensure that their assessment of student achievement is not coloured by their perceptions of temperament or what is a "good student". The best way to support introverted students is not to change their temperament but to give them the tools to overcome the challenges that may accompany it.

Keywords: Introversion, temperament, goodness of fit, classroom, social needs, learning needs, student

1 Introduction

In recent decades, the culture of the western world has evolved, bringing with it new values and norms to which the general population should conform. Alongside this evolution, research about personality and temperament has also increased. In combining these phenomena, researchers have brought awareness to the conflict between these new cultural ideals and the temperaments which do not naturally fit them (Keltikangas-Järvinen, 2015). Where western society appreciates the talkative, social, lively and open-minded extrovert, the reserved, quiet, introvert is cast into the shade (Keltikangas-Järvinen, 2019). These expectations extend to the mini-societies of schools and classrooms, visible in the curriculum objectives and an increased focus on group-oriented work, collaboration and (verbally) active participation, all learning methods supportive of those students with traits of an extroverted temperament (Opetushallitus, 2016). The result is that introverted children, placed in a classroom environment where they are expected to participate actively in class discussions, take part in group work and demonstrate their learning through oral presentations are not sufficiently taken into consideration. The compatibility of a child's temperament and their environment is necessary for the healthy growth and development of their personality (Keltikangas-Järvinen, 2015). Considering that children spend a substantial amount of their life in school, it is of the utmost importance that educators in schools ensure that a child's temperament is not problematized nor made into an obstacle to their learning (Helgoe & Karppelin, 2012). Making sure that introverted students can demonstrate their best learning by designing lessons which support their preferred and optimal learning methods and supporting them in their learning is essential.

This bachelor's thesis will define and discuss the introverted temperament and its implications to a child's wellbeing and success in school as an effort to outline methods by which educators can better support introverted students in their learning. The thesis will be in the format of a literature review, examining research about temperament and its various dimensions as well as the relationship between the introverted temperament and the school and classroom as an environment. One of the main researchers of temperament used in this thesis is Liisa Keltikangas-Järvinen, a renowned and influential Finnish psychologist and researcher of personality psychology. The works of Keltikangas-Järvinen used in this thesis focus largely on temperament research and its connections to school life, as well as how to best support children in their personality development. Keltikangas-Järvinen (2015) defines temperament as a collection of traits visible at birth, which outlines the distinctive, personal *style* with which a

person reacts to their environment. One of the main distinctive findings about temperament is that it is biologically based and remains relatively constant throughout a person's lifetime. The biological basis is justified by Hans Eysenck's theory of cortical arousal, referring to the balance of internal and external stimulation which differs between introverts and extroverts (Keltikangas-Järvinen, 2019). As a result of this physiological connection, introverts often display a quiet, reflective, deliberate character which may seem like they are not actively involved in the outside world, or that they do not enjoy the company of other people (Keltikangas-Järvinen, 2019). In reality though, an introvert is just more comfortable keeping to themselves, a mechanism which allows them to maintain their inner balance of stimulation (Keltikangas-Järvinen, 2019). In this thesis, I will deconstruct the introvert temperament according to the works of multiple researchers and theorists and ultimately go on to describe the relationship between an introverted temperament and the school as an environment so as to provide insight into strategies for better supporting introverted students.

The research questions are:

1. How is the introverted temperament described in literature?

2. How are the academic and social needs of introverted learners described in literature?

3. What can educators do to meet the academic and social needs of introverted learners in the classroom?

My own experiences as an introverted child continuously reinforced the idea that society and school are not designed for a person like me. To others, me being alone always meant that something was wrong or that I was upset. When asked to share my answers in class on the spot, I struggled to express my thoughts coherently, giving the impression that I did not understand the question. Comments such as "she is so quiet", "you should speak up" and poor grades on collaboration as a result of my reserved temperament were common. Still, I always succeeded in school academically, and was given good feedback for being attentive, respectful and well behaved. After reflecting on the dichotomy of these experiences, I felt that there is indeed a widespread misunderstanding of children like me in a world where self-expression, advocacy and social behaviour are considered the "norm". I hope that with this thesis, I could clear up misconceptions related to the introverted temperament in an effort to help educators better understand their introverted students and provide them with the necessary support for learning.

2 Temperament

In order to understand the concept of introversion, it is necessary to understand what temperament is. In this chapter, I will examine how different theorists define temperament and describe introversion based on past research and theories. I will discuss the place of introverts in an extroverted western society and define misconceptions surrounding the social behaviour of introverts.

2.1 Defining temperament

Temperament is the natural, innate style in which a person reacts to the world around them (Keltikangas-Järvinen, 2015). It is the *how* of a person's personality: *how* they react to new situations, *how* they approach others or *how* they respond to challenges (Keogh, 2003). This natural way of reacting is the result of a collection of tendencies which are visible already at birth and stay relatively constant throughout a person's lifetime (Keltikangas-Järvinen, 2019). Temperament has been known to constitute the biological basis for personality due to its consistency between changing environments and over the course of time as well as its hereditary nature (Keogh, 2003). Keltikangas-Järvinen (2015) maintains that temperament is what makes us individually different, and Keogh (2003) adds that temperament explains our uniqueness as individuals.

Various researchers throughout time have defined temperament in different ways and with emphasis on different traits, albeit maintaining consensus on the core ideas of temperament (Keogh, 2003). Dividing people into categories by temperament is not by any means a new concept in psychological study. Already in ancient Greek times, people were categorized according to different traits of temperament (Dunderfelt, 2012). Keogh (2003) elaborates on the numerous descriptions of temperament by various theorists. Temperament has been defined as the "characteristic way that the individual experiences and responds to the internal and external environment" by Carey in Keogh (2003, p. 15). Temperament could also be defined as a child's most natural style of responding to their environment, as suggested by Kurcinka (Keogh, 2003).

The idea that temperament is biologically based was studied by Thomas and Chess in their longitudinal study of temperament in children (Goldsmith et al., 1987; Keogh, 2003). According to this study, children exhibit certain behaviours from birth and continue to display

similar characteristics throughout their life. Thomas and Chess identified three main types of temperaments in this study: easy, difficult and slow-to-warm-up. Children with an *easy* temperament adapt to change easily, respond well to new people and environments, and can be described as "friendly, social and outgoing" (Keogh, 2003, p. 21). These children express emotions less intensely, conform to the expectations of others easily, and have predictable eating and sleeping patterns (Keltikangas-Järvinen, 2015). A child with a *difficult* temperament has intense reactions, does not adapt well to change or react well to newness, and can be described as unpredictable and easily frustrated (Keogh, 2003). A child with this temperament has irregular biological patterns, including sleep and eating patterns and it is difficult for caregivers to predict their needs (Keltikangas-Järvinen, 2015). Children with a *slow-to-warm-up* temperament are slow to adapt to change, respond slightly negatively to new people and environments and prefer to stay away from the action, to stand back and watch from the sidelines (Keogh, 2003). These children have relatively regular biological patterns, but unlike the difficult temperament, their reactions to newness are not intense although often negative (Keltikangas-Järvinen, 2015). None of these temperaments are inherently good or bad and do not inherently lead to good or bad behaviour at home or at school (Keltikangas-Järvinen, 2015). Thomas and Chess stress that the relationship between the environment and temperament is key in determining how a child learns to behave in relation to their temperament (Goldsmith et al., 1987; Keltikangas-Järvinen, 2015; Keogh, 2003).

Temperament, although biologically based, is shaped by the environment based on how well the environment and the temperament fit together. This has been called "goodness of fit" by Thomas and Chess (Goldsmith et al., 1987; Keltikangas-Järvinen, 2015). The relationship between temperament and the environment is reciprocal (Keogh, 2003). A child is born with a certain temperament, which causes them to act and react to the environment in a certain way. This in turn prompts the parents or guardians to respond to the child's behaviour in some way. A parent responds to a quiet, introspective child in a different way than to a spontaneous, risk-taking child, and therefore even siblings of the same family receive a different upbringing, which either reinforces their temperament or contradicts it, the latter essentially asking the child to "change" their temperament to fit the environment (Keltikangas-Järvinen, 2015). Most research on the goodness of fit between temperament and environment is based on the home environment, however, this idea is equally relevant in the school context (Goldsmith et al., 1987; Keogh, 2003).

Keltikangas-Järvinen (2015) clarifies that the interactions between temperament and environment ultimately shape a child's personality. Temperament is the biological base upon which personality develops as a result of various environmental factors (Keltikangas-Järvinen, 2015). Personality includes not only temperament, but also values, attitudes, needs, goals, skills, abilities and self-regulation methods. The development of personality is based primarily on a child's upbringing and the environment in which they grow up, which dictates the types of experiences they have (Keltikangas-Järvinen, 2015). In addition, as a child matures, their temperament, and the way that it is displayed in their behaviour changes. Personality forms based on how well or how poorly the environment has understood and supported a child's temperament (Keltikangas-Järvinen, 2015). A child with a slow-to-warm-up temperament needs adults around them to support and encourage them, giving them time to "warm up" in new situations, instead of becoming frustrated with them. The latter will cause the child to feel like a burden or that there is something wrong with them (Keltikangas-Järvinen, 2019).

Although theorists have identified general categories which people can mostly be divided into, individual cases always differ from each other (Keltikangas-Järvinen, 2015). Generally speaking, temperament and its various traits always form a continuum. Some children may be considered to have a difficult temperament but display a lower level of activity and a higher level of negative emotion. Other children in the same category will display a higher level of activity but respond mildly to change. Keltikangas-Järvinen (2015) insists that every dimension of temperament has individual variance, whether it be activity, sensitivity, sociability or introversion. These individual differences are the reason for the significance of truly learning to understand a child's temperament to then make informed decisions on how to best support their individual personality development (Keltikangas-Järvinen, 2015).

2.2 The introverted temperament

The dimension of temperament which will be studied in this thesis is introversion. Just as with any temperament trait, there is individual variance in the amount of introversion that a person has (Keltikangas-Järvinen, 2015). More commonly, introversion has been described as the lack of extroversion, which can be considered its opposite (Keltikangas-Järvinen, 2019). In defining introversion, many generalizations about the behaviour and demeanor of this temperament are made, and it is important to remember that not every description applies to every person that is considered an introverted person. Keltikangas-Järvinen (2019) points out that it is in fact

unjustified to call any one person an introvert or an extrovert, because in reality there is no such thing. The term *introvert* is simply used to describe a cluster of traits which often appear together (Keltikangas-Järvinen, 2019).

The concepts of introversion and extroversion have been a subject of psychological study for around a century, beginning with Carl Jung's ideas of psychological types (Sharp, 1987). In a review of Jungian typology, Sharp (1987) defines Jung's theory of introversion and extroversion as the movement of psychic energy. Introversion he describes as the movement of energy to the inner world, and extroversion as the movement of energy to the outer world. This movement in introversion is visible as a hesitant and reflective character. Jung elicits that introverts prefer to keep to themselves and feel overwhelmed in a large group of people: "his own company is the best" (Sharp, 1987, p. 66). Extroversion, conversely, is seen as an outgoing and accommodating nature which adapts quickly to changes in the environment (Sharp, 1987). Extroverts are often viewed as adventurous, lively, open and friendly (Sharp, 1987). In Jung's theory, introverts are more concerned with the subject, which is his inner reality, and extroverts are more concerned with the object, that is the external, outer reality which includes other people and the world around him (Jung, 2016).

Later observations based on Jung's basic ideas have indicated that the outside world drains introverts' psychic energy, requiring them to take time to recover in solitude (Condon & Ruth-Sahd, 2013). According to Eve-Cahoon (2003) introverts are characterized by needing plenty of time and space for reflection and peaceful pondering. In a group of people, introverts may become easily overstimulated, and prefer to spend their time in smaller groups with just a few others, where they can have deep and meaningful conversations (Eve-Cahoon, 2003). Introverts do not enjoy bringing attention to themselves, whereas extroverts are often seen as the center of attention in a group of people (Cain, 2013). Helgoe and Karppelin (2012) add that the motivation for interaction for introverts and extroverts is different: extroverts interact most readily with other people for social reasons, while introverts interact with ideas, for example by reading or through deep discussions with one or two people. Keltikangas-Järvinen (2019) describes introverts as people who do not enjoy excessive noise, or spending time in large groups of people, prefer to spend their time alone and doing activities requiring minimal interaction and who others may talk of as being quiet, reserved or withdrawing. Introverts often avoid taking risks and like to have a predictable and routine-based schedule. Extroverts she

defines as people who seek out others' company, are talkative, sociable, adventurous and risk-takers (Keltikangas-Järvinen, 2019).

Hans Eysenck's theory of extroversion, described in detail by Keltikangas-Järvinen (2019) suggests that temperament can be divided into two main spectra with the highly genetic temperament traits, extroversion and neuroticism (or emotional stability). These spectra form two axes and four quadrants, each with a set of character traits which can be used to describe a person's temperament. The four quadrants formed are 1) emotionally stable extrovert, 2) emotionally unstable extrovert, 3) emotionally stable introvert and 4) emotionally unstable introvert (Keltikangas-Järvinen, 2019). The relationship between neuroticism and extroversion is key. A person's level of neuroticism determines the way in which introversion or extroversion is displayed, and the resulting temperaments are drastically different from each other (Keltikangas-Järvinen, 2019). By making this distinction, Eysenck clarifies a key misunderstanding of the introvert temperament. Keltikangas-Järvinen (2019) asserts that where the introvert temperament has certain characteristic qualities, they are often confused with the qualities of a neurotic, or emotionally unstable temperament such as shyness, social anxiety or nervousness. Of course, an introvert can be emotionally unstable or neurotic, and thus have characteristics of both the introvert and neurotic temperament types. However, an introvert can also be emotionally stable, which results in a calm, emotionally controlled and balanced demeanor in comparison to being anxious and easily worried (Keltikangas-Järvinen, 2019).

Eysenck's idea of a single arousal system has been contested by Gray and Cloninger's theory of BIS and BAS systems (Trofimova & Robbins, 2016). Keltinkangas-Järvinen (2019) summarizes the theory of Gray and Cloninger, suggesting that temperament is dictated by the respective strengths of the BIS (Behavioural Inhibition System) and BAS (Behavioural Activation System) in each individual. A person with a stronger BIS system is prone to avoiding punishment (over seeking reward) and is often characterized by qualities such as sensitive, contemplative and anxious. Conversely, a person with a stronger BAS system seeks reward (over avoiding punishment) and can be described as adventure-seeking, impulsive and risk-taking. Keltinkangas-Järvinen (2019) connects the ideas of Gray and Cloninger to Eysenck's theory of extroversion, insinuating that the extroversion dimension corresponds to the Behavioural Activation System, while the neuroticism dimension corresponds to the Behavioural Inhibition System. The BIS system is also related to introversion in the sense that introverts often avoid taking risks and seek the feeling of safety (Keltikangas-Järvinen, 2019).

2.3 Introverts in an extroverted western society

Introverts are often misunderstood in the light of the expectations of the western world (Helgoe & Karppelin, 2012). What Susan Cain (2013) calls the *Extrovert Ideal* is a phenomenon of favouring the outgoing, sociable, quick-thinking extrovert present in western society. People who are gregarious, talkative and charismatic give others a good impression of themselves and take up the space and attention in a room (Cain, 2013). According to Condon & Ruth-Sahd (2013), this society values traits of extroversion, which often results in introverts pretending to be more extroverted. Zelenski, Santoro and Whelan (2012) claim through their study of the benefits of counterdispositional behaviour that introverts experience greater positive affect and happiness when they pretend to be extroverted, further promoting the idea that extroversion is positive and introversion negative. Keltikangas-Järvinen (2019) remarks that in the world of work, applicant assessment and recruitment situations all favour an extroverted temperament. This includes interviews, group work and surveys, all situations where on-the-spot thinking and an outgoing demeanor are an advantage (Keltikangas-Järvinen, 2019). Introverts in such situations will try to act more extroverted so that their temperament does not become an obstacle to their success (Cain 2013; Condon & Ruth-Sahd, 2013; Keltikangas-Järvinen, 2019). In general, the discourse on introversion is quite negative, and Keltikangas-Järvinen (2019) and Helgoe and Karppelin (2012) assert that in western society, extroversion is considered normal, and introversion abnormal.

Keltikangas-Järvinen (2015) emphasizes that cultural perceptions decide which temperament traits are valued and seen as positive and which are viewed as negative. Introversion and shyness have received a negative connotation in public discussion, as something that need to be healed or treated (Keltikangas-Järvinen, 2019). Helgoe and Karppelin (2012) iterate that introversion is viewed as a problem requiring treatment in children. These views differ across cultures, and some cultures such as that of Japan, appreciate introversion and value personal space (Helgoe & Karppelin, 2012). The view that a culture has permeates into the education system, where children are brought up to be successful in the society in which they live. It influences teachers' expectations of what a "good student" is. Keltikangas-Järvinen (2010a) speaks of the prevailing idea that a sociable person is a "good person". This, however, reflects the lack of common understanding of sociability and temperament in general. To reiterate, no temperament is inherently good or bad, but instead the culture defines what is valued and thus considered "good" or "bad" (Keltikangas-Järvinen, 2015).

2.4 Social skills and sociability as a temperament trait

The social behaviour of introverts is often misunderstood (Helgoe & Karppelin, 2012). Sociability, as Keltikangas-Järvinen (2010a) extensively explains, is in fact a whole other temperament trait which describes the reward that a person gets from social interaction, and the amount that a person seeks to be liked by others. A child with high sociability may approach others more readily in seeking the social reward that they get from the interaction. Such behaviour is effective in gaining the recognition of adults, who praise the child for being approachable and for interacting with them. Introverts, just as extroverts can be sociable, and enjoy social interaction. However, their reserved and slow-to-warm-up temperament results in a challenge to beginning the interaction (Keltikangas-Järvinen, 2010a). A child with low sociability will often be more hesitant to approach others and respond to interaction, which evokes a negative response from adults who do not take the time to wait for the child to overcome their reservation (Keltikangas-Järvinen, 2010a). The openness of an extroverted temperament is mistaken for sociability. Extroversion is not the same as sociability, which is enjoying social interaction. Introverts may keep their inner world to themselves but can still enjoy social interaction and the company of others all the same, just in smaller doses. Keltikangas-Järvinen (2010a) insists that this misunderstanding has resulted in the general perception that extroversion is positive and introversion negative.

Introversion is also often related to lack of social skills, which is equated with sociability in public discussion. The key distinction between the two is that sociability is an inherent temperament trait, and social skills can be learned (Keltikangas-Järvinen, 2010a). Social skills can be defined as the ability to manage in different social situations. An introvert, with the correct support and opportunities for interaction can learn social skills. As a result of their sensitivity to others, introverts may even develop better social skills than their extroverted peers (Keltikangas-Järvinen, 2010a).

3   The introverted child at school

In this chapter I will describe the ways in which an introverted student's learning style, peer relations and the learning environment influence their wellbeing and success at school. A child's introverted temperament impacts the ways in which they experience school and its various interactions with classmates, teachers and the school and classroom environment which in turn affects their success and wellbeing in school (Keltikangas-Järvinen & Mullola, 2014; Keogh, 2003).

3.1 Temperament and school as an environment

Children spend a significant amount of their lifetime in school, which makes the school and classroom environment an especially important contributor to a child's personality development (Keogh, 2003). At home, a child has certain expectations and demands to respond to which either fit, or do not fit their natural temperament (Keltikangas-Järvinen, 2015). Similarly at school children need to respond to many social and personal demands, the success of which is largely impacted by their temperament (Keogh, 2003). The classroom is a complex social environment, along with its various distractions, interruptions and constant changes in activities (Keogh, 2003). For some students, the rapid changes and high-stimulation environment is exactly what they need to maintain interest, and they respond to the changes positively, taking on new challenges with excitement (Keogh, 2003). For others, this environment is overstimulating and overwhelming, and the constant changes require the children to spend their energy on adjusting to the new activity rather than the actual learning (Keltikangas-Järvinen & Mullola, 2014). Medaille and Usinger (2020) describe that in a loud, highly stimulating classroom, quiet students can focus, but it just takes more of their mental energy which takes away from their learning. An introverted student does not get the time to think and reflect that they need, and the constant external stimulation drains their energy (Condon & Ruth-Sahd, 2013). Helgoe & Karppelin (2012) remark that early childhood education settings are centered around group activities and play with other children, which is not supportive of introverts' need for less external stimulation.

Not only is the physical environment of school influential in terms of children's temperament, but also the temperaments of the teachers (Keltikangas-Järvinen & Mullola, 2014). A teacher's temperament influences how they perceive their students' temperaments, and how well they get

along with their students (Keltikangas-Järvinen & Mullola, 2014). Keogh (2003) emphasizes that a teacher's temperament changes the whole classroom environment and mood, as well as teachers' choices for how lessons are arranged and executed. Teachers are in charge of choosing how the learning space in a classroom is arranged, designating groups for group work and seating arrangements which either fit or do not fit with a child's temperament (Keogh, 2003). The interactions between the students' and teachers' temperaments, and the students' temperaments and the classroom environment are instrumental in the students' learning success.

Three main temperament traits have been found by Martin and his associates to be related to learning, which are activity, distractibility and persistence (Keogh, 2003). The combination of the three they refer to as *task orientation*. A child with high activity struggles with sitting still, completes tasks quickly, learns best by doing and is energetic (Keltikangas-Järvinen & Mullola, 2014; Keogh, 2003). The behaviour related to high activity is often associated with extroversion (Keltikangas-Järvinen, 2019). A child with low activity responds slowly, prefers quiet time and has low energy levels (Keogh, 2003). These traits can also be attributed to introversion (Keltikangas-Järvinen, 2019). Having either a very high or very low level of activity can be harmful to a student's learning (Keogh, 2003).

Distractibility can be defined as the ease with which a child is distracted from their task by external stimulants (Keogh, 2003). Distractions may be caused by noise, excessive materials around the classroom, or even one's own thoughts (Keltikangas-Järvinen & Mullola, 2014). A child with high distractibility will interrupt their activity when distracted while a child with low distractibility will not notice the distraction at all (Keltikangas-Järvinen & Mullola, 2014). High distractibility is correlated with good observation skills, and children with this trait are highly sensitive to their surroundings (Keltikangas-Järvinen & Mullola, 2014). This trait, as Keltikangas-Järvinen and Mullola (2014) suggest, is viewed negatively in the school environment, because it decreases a child's concentration and prevents them from completing their tasks efficiently. However, the increased observation skills that accompany high distractibility are useful for example in the home (Keltikangas-Järvinen & Mullola, 2014). Introversion is related to high distractibility in the sense that introverts are sensitive to external stimuli and therefore require an environment with as little distractions as possible for optimal learning (Keltikangas-Järvinen, 2019). Introverts and extroverts, according to Eysenck's theory of cortical arousal, require different environments for optimal learning (Keltikangas-Järvinen,

2019). A study by Cassidy and MacDonald (2007) on the impact of background music on introverts' and extroverts' performance demonstrated that introverts' performance was impacted more negatively by background music than that of extroverts. Indeed, the levels of distractibility vary between introverted students, and it cannot be generalized that every introverted child is highly distractible, even when the traits of both can be connected to the other (Keltikangas-Järvinen, 2019).

The third temperament trait influencing task orientation is persistence, which refers to a child's ability and willingness to remain working on a task regardless of challenges (Keogh, 2003). Children with high persistence will not give up easily and have a hard time putting a task down until it is done to their satisfaction (Keltikangas-Järvinen & Mullola, 2014). Having too high persistence can be connected with perfectionism which hinders a student from being able to move on to other tasks (Keltikangas-Järvinen & Mullola, 2014). Children with low persistence stop working when a task becomes too challenging and struggle to finish projects (Keogh, 2003). Persistence in general is valued in the school environment, however, when it impacts a child's ability to move on, it is no longer beneficial to their learning (Keltikangas-Järvinen & Mullola, 2014). The three aspects of temperament discussed here are good examples of the idea that temperament gains significance when it is placed into a certain environment, that is, the environment dictates whether a temperament trait is of help or hindrance, a concept which Keltikangas-Järvinen and Mullola (2014) emphasize.

3.2 An introverted student's preferred learning methods

Temperament influences which learning and working methods are the most natural and preferrable for students, thus which methods are required for positive learning experiences (Keltikangas-Järvinen & Mullola, 2014). Keltikangas-Järvinen and Mullola (2014) insinuate that for some students, learning independently is the most natural and for others group work is preferred. Some children enjoy learning hands-on and by doing, while others prefer to watch and follow from the outside. These preferences are largely influenced by the temperament traits of activity and inhibition (Keltikangas-Järvinen & Mullola, 2014). An introverted child's reservation can be related to the trait of inhibition, which Kagan describes as a sensitivity to external stimuli that causes a stress reaction in a child (Keltikangas-Järvinen, 2015). An inhibited child displays many of the same traits that are attributed to introversion: they are usually quiet, require time in responding to new situations and new people, and avoid taking

risks (Keltikangas-Järvinen, 2015). Once again, it is important to remember that all the traits associated with introversion are not applicable to every introverted child (Keltikangas-Järvinen, 2019). An introverted student who is inhibited prefers to work on their own, and in a space where they have plenty of time to reflect on their learning (Condon & Ruth-Sahd, 2013). As discussed previously, introversion is usually associated with low levels of the temperament trait of activity. An extroverted student with high activity prefers to work in a group, enjoys the fast-paced environment of a classroom and learns by doing. Conversely, an introverted student with low activity feels more comfortable with independent work and following a teacher-led lesson (Condon & Ruth-Sahd, 2013).

Condon and Ruth-Sahd (2013) refer to the working methods preferred by introverts from the perspective of information processing, group work, oral presentations, writing and problem solving. Introverts, as a result of their relation to the subject instead of the object as Jung (2016) implies, take in and process information best inwardly: they prefer to listen and reflect in an *active* process instead of discussing with others (Condon & Ruth-Sahd, 2013). While group work provides opportunities for sharing ideas and collaboration, introverts often prefer to take the role of listening to speaking. This is due to their tendency to store information in their long-term memory, where they can make connections with previous knowledge (Condon & Ruth-Sahd, 2013). Consequently, introverts need more time to think about their ideas and develop them, and as a result do not get the chance to share them before the conversation has moved on (Helgoe & Karppelin, 2012).

Speaking in class and giving oral presentations for introverts is uncomfortable without sufficient time to prepare their responses (Condon & Ruth-Sahd, 2013). Keltikangas-Järvinen (2019) points out that achievement-measuring situations are often performance situations, in which introverted and shy children are at a disadvantage. The Finnish National Core Curriculum for Basic Education suggests an objective that students should "learn to express themselves in different ways and present and perform publicly in various situations" (Opetushallitus, 2016, p. 40). Condon and Ruth-Sahd (2013) add that teachers often equate not raising one's hand in class and low social participation with lower achievement. Introverted students, who just need more time to think about their contribution are misunderstood when teachers do not take the time to wait and listen for their answers (Condon & Ruth-Sahd, 2013).

3.3 Social relations at school

A large part of the school day consists of interacting socially with peers and teachers, and social relations in school have great significance to the child's development and wellbeing at school (Ahtola, 2016). Both teacher-student relations and peer relations are significant. Hartup (1989) describes that both vertical and horizontal relationships are important to a child's development socially, where vertical relationships refer to child-adult relations with a power difference and horizontal to peer relations that are more equal. As discussed previously, the goodness of fit between the environment and a child's temperament largely dictates children's experiences of social interactions (Keltikangas-Järvinen, 2015). Part of this "environment" includes the fit between the temperaments of different students. Students are constantly interacting with their peers inside and outside of the classroom, and the social dynamic between students is the basis for building friendships and a healthy self-image (Keltikangas-Järvinen, 2010a). Rubin, Bukowski and Laursen (2009) explain that a child's status among their peers, the quality of their friendships and the quality of children's behaviours when interacting with their peers and friends are influenced by their temperament and personality. These interactions and especially the quality of relationships influence the child's self-esteem and risk of loneliness (Rubin et al., 2009). Keltikangas-Järvinen (2010a) adds that a child's temperament influences their popularity at school and that the feedback of peers and friends has a large impact on a child's sense of self and self-image. The social status with peers for children has consequences for their development as well. Being left out is a serious threat to their healthy development (Keltikangas-Järvinen, 2010a). It is thus important to recognize that every child, regardless of temperament, needs supportive social relationships, a large portion of which manifest in the school environment.

Social relations are important for developing social skills and learning how to interact with others according to social expectations (Hartup, 1989; Rubin et al., 2006). According to Hartup (1989), early vertical social relations with the parent provide a base for learning social skills, which are later developed in horizontal peer relations. Ahtola (2016) adds that safe relationships, which are necessary for healthy development, begin in the home as parent-child relations, however, also go on to include teacher-student relationships which may become equally important. A feeling of safety is a prerequisite for learning (Ahtola, 2016). This can be achieved by developing trusting relationships between student and teacher, where the student feels appreciated, welcomed and accepted. However, the differences in temperament between

student and teacher may cause an obstacle to this (Keltikangas-Järvinen & Mullola, 2014). Teachers respond to and interact with students of different temperaments differently, as described by Keltikangas-Järvinen and Mullola (2014): teachers interact more with students whom they describe as positive, or students whom they *like*. These students receive higher quality interactions from the teacher, and the teacher is more likely to want to interact with them (Keltikangas-Järvinen, 2014). A very sociable teacher favours students that are also sociable, open, talkative and approaching, as Keltikangas-Järvinen and Mullola (2014) suggest, and conversely, they find it difficult to understand quieter, more withdrawn students. This impacts the way in which the student perceives the student-teacher relationship as well as their feeling of safety and support from the teacher. It is necessary that teachers recognize their own temperament so that it does not influence their interactions with students who perhaps need their attention and support the most (Keltikangas-Järvinen, 2014).

Horizontal peer relations at school are equally, if not more important than vertical relationships with the teacher (Hartup, 1989). However, different temperaments in children result in different social needs and capabilities. Shy and withdrawn students have different needs for social interaction than outgoing talkative students, even though the need for friendships is common to all students (Keltikangas-Järvinen, 2010a; Rubin et al., 2006). Not having any friends can lead to increased social timidity and poor development of social skills (Rubin et al., 2006). Extroverted children, who tend to be more outgoing and approaching rather than withdrawing and who are also sociable will take the initiative to make new friends, and thus have more positive social interactions (Keltikangas-Järvinen, 2010a). This results in an increased desire to approach and make social contact with others. According to Duffy and Chartrand (2015) extroverts are naturally more adept at establishing relationships than introverts. Keltikangas-Järvinen (2010a) indicates that reserved children are usually less popular, and thus receive fewer positive experiences from friendship. Consequently, withdrawn children will not be encouraged to try make new friendships, causing a cycle to form (Keltikangas-Järvinen, 2010a). Rubin et al. (2006) in their study of friendships among shy and withdrawn students found that these children are often left on the outside of the "social scene". Children that are shy and withdrawn may choose to remove themselves from social interaction situations because it makes them uncomfortable and they prefer to spend time alone (Rubin et al., 2006).

Keltikangas-Järvinen (2010a) describes three different types of students in the social scene of school: popular children, children who are actively left out and children who are left unnoticed.

Popular children are characterized by positivity, cheeriness and physical attractiveness. Other children are drawn to these individuals who openly and willingly share their thoughts with others and who perform well in various interactive situations. These individuals are oftentimes collaborators and leaders in a group of children (Keltikangas-Järvinen, 2010a). Children that are actively left out or excluded often display traits that are related to sociability, however in an excessive amount. These children are very active, talkative and approaching. Those children that are left unnoticed, however, are often shy and sensitive and prefer to withdraw from others and spend time alone (Keltikangas-Järvinen, 2010a). All these different "types" of children interact throughout the school day, and each exchange includes the interaction of two temperaments, which either fit or do not fit together, ultimately leading to the development of friendships and peer relationships of varying depth and closeness (Keltikangas-Järvinen, 2015).

In the aforementioned study by Rubin et al. (2006) on friendships among shy and withdrawn children, it was found that these children are just as likely to develop best friend dyadic relationships as non-withdrawn children. These close and deep friendships are more preferable to shy and withdrawn children in comparison to being part of a large group of peers, which may feel uncomfortable for them. Keltikangas-Järvinen (2015) elicits that every interaction situation for children involves various risks, especially with new, unknown children. For shy, withdrawn and introverted children, avoiding risks is part of their innate temperament, and thus they may avoid these situations to protect themselves from the risks involved (Keltikangas-Järvinen, 2015; Keltikangas-Järvinen, 2019). Rubin et al. (2006) suggest that sociable behaviours are instrumental in establishing best friend relationships. It is good to remember that although sociability may seem to be a trait more concerned with extroversion, introverts can also be sociable and seek the reward that they get from social interaction (Keltikangas-Järvinen, 2010a). Introverts will seek out friendships and social interactions and they also need social relationships for their development, just as any other child (Rubin et al., 2006). It has been demonstrated that shy and withdrawn children form best friendships more readily with other shy and withdrawn children, in which the "fit" between temperaments is evident (Rubin et al., 2006; Keltikangas-Järvinen, 2015).

The withdrawing nature of introverted children may put them at a disadvantage socially among their peers, as demonstrated by Rubin et al. (2009). Children who engage in reticent play, that is they do not actively participate in play but are still present, are viewed by peers as

more likeable than children who engage in solitary play (Rubin et al., 2009). According to this study, peers described spending time alone as being negative. Introversion, and the need for alone time that often accompanies this temperament is problematized and viewed as requiring treatment (Helgoe & Karppelin, 2012). Social interaction, although important, in large amounts is overwhelming for introverts. Afterwards it is necessary to spend some time in solitude to recharge (Helgoe & Karppelin, 2012). It is evident that there needs to be a mindset shift in regard to the norms of social behaviour – solitude for some may be equally important to social interaction.

4 Supporting the introverted student at school

In this chapter, I will discuss the strategies that educators can use to better support the learning and social needs of introverted students. Most importantly, educators must recognize that temperament as an innate part of every child is not something that education should aim to change. The goal of education as Keltikangas-Järvinen and Mullola (2014) explain, is to change behaviour, and give children the tools they need to overcome challenges posed by their temperaments.

4.1 Teacher awareness of the significance of temperament

The first step to better supporting introverted students in the classroom is recognizing the significance of temperament in every aspect of school life (Keogh, 2003). Not only is it important for the teacher to be aware of the differences in temperament of their students, but also of their own temperament and the implications that it has for their instructional choices (Keogh, 2003; Keltikangas-Järvinen & Mullola, 2014). Teachers often choose teaching methods that align with their own learning needs; however, it is crucial that teachers become aware of the fact that not every student learns best in the way that they learn best (Keltikangas-Järvinen & Mullola, 2014). Keogh (2003) introduces the idea of *teachability*, which refers *not* to whether a student is capable of being taught, but to the teacher's perception of whether a student responds to their expectations of how to learn. This is largely related to temperament, which teachers assess as appropriate or inappropriate in terms of their own expectations (Keogh, 2003). The significance of goodness of fit is clear here – some temperaments fit the teacher's expectations and others do not. If a teacher is unaware of the implications that their own temperament has on these perceptions and expectations, some students will always remain to them as "unteachable" (Keogh, 2003; Keltikangas-Järvinen & Mullola, 2014).

In addition to being aware of their own temperament, teachers should understand that every student comes to school with a unique temperament as well, and getting to know the nuances of each student's style of working is necessary for better supporting them in their learning (Keltikangas-Järvinen & Mullola, 2014). Understanding a child's temperament as Keltikangas-Järvinen and Mullola (2014) suggest, is critical, because it allows an educator to identify their strengths and weaknesses so that they do not interfere with the child's learning. Goldsmith et al. (1987) conclude that ignoring temperament can lead to inaccurate evaluations of a child's difficulties whether at home or at school.

Educators must consider that the differences in their students' temperaments also influence their own choices for teaching and behaviour management (Keogh, 2003). As discussed previously, a child's temperament influences the way that a parent or educator approaches and responds to them, which consequently influences the child's behaviour (Keltikangas-Järvinen, 2015; Keogh, 2003). As Goldsmith et al. (1987) emphasize, "The effect of a particular environmental influence will be influenced by the child's temperament. At the same time, the child's temperament will affect the judgments, attitudes, and behavior of the significant individuals in her environment" (p. 510). It is crucial, therefore, for teachers to know that they can impact the way in which their students respond to them, just as the students impact their responses. This awareness, along with understanding the significance of temperament in these interactions will allow the teacher to reflect on their own practice and choose methods of instruction that support the goal of education, that is not changing temperament but changing behaviour (Keltikangas-Järvinen & Mullola, 2014).

4.2 Supporting introverted students' learning needs

Common classroom practices are often unsupportive of the introverted temperament, because of the social nature of the school environment and the teachers' understanding of active participation (Medaille & Usinger, 2020). The classroom environment is one of the main factors relevant to temperament that a teacher can influence (Keogh, 2003). Different learning environments are more suitable to some students than others, as Keltikangas-Järvinen (2015) maintains. The learning environment also influences student participation in the way that some feel more comfortable, others less comfortable participating depending on the characteristics of the learning environment they are in (Caspi, Chajut, Saporta & Beyth-Marom, 2006). According to Eysenck's theory of arousal, introverted students require a more peaceful, less externally stimulating environment for optimal learning and achievement, while extroverts need a more stimulating environment (Keltikangas-Järvinen, 2015; Schmeck & Lockhart, 1983).

In their study of quiet college students, Medaille and Usinger (2020) outline three types of environments related to school life which influence student performance: physical, pedagogical and psychosocial environments. The physical environment includes the physical arrangement of the classroom, the class size and student composition. The pedagogical environment comprises the teacher's instructional choices, teacher characteristics and behaviours. The psychosocial environment includes the way in which the students and teacher interact, the

students' experiences of social support as well as the emphasis on either learning and growth or ego and competition (Medaille & Usinger, 2020). Each of these environments elicit certain responses from students which are important for educators to consider.

The physical environment for quiet and introverted students should limit external stimulants, so that maximum concentration can be achieved (Keltikangas-Järvinen & Mullola, 2014). The sensitivity to stimulation that accompanies introversion causes these students to feel overwhelmed and distracted by excessive posters or decorations in the classroom as Keltikangas-Järvinen and Mullola (2014) imply. The teacher is in charge of choosing the arrangement of desks, which also impacts the optimal learning of introverted children (Keogh, 2003). Medaille and Usinger (2020) found that quiet students prefer to sit in places where they will not be called upon as readily by the teacher, which could be the sides of the classroom. They also found that quiet students chose to sit at the front of the classroom where they are less distracted by other classmates (Medaille & Usinger, 2020). In a review of the impact of enhancing social support in classrooms, Farooqi (2021) concludes that shy or introverted students feel discomfort when seated in a sociopetal seating arrangement – an arrangement that promotes social interaction such as a u-shape or desk groups. Arranging seats in pairs is much more sensitive to introverted and shy students (Farooqi, 2021). This idea of enhancing social interaction in the classroom, although effective in achieving its goal – to promote social interaction – is not ideal for every student, especially those that are more reserved (Farooqi, 2021). These are choices which a teacher makes within their practice which are not indifferent (Keogh, 2003). They have significance and should be considered also from the perspective of those students who do not benefit from them.

The pedagogical environment involves implications for each students' temperament as well (Medaille & Usinger, 2020). Teaching methods and lesson execution are strategies which the teacher chooses, and often based on their own strengths and preferences (Keogh, 2003; Keltikangas-Järvinen & Mullola, 2014). However, it would be important to consider the impact that such choices have on students who do not have the same strengths and preferences. Introverted and shy students prefer activities where they can listen, reflect and connect new and previous learning (Condon & Ruth-Sahd, 2013; Medaille & Usinger, 2020). Teacher-led learning where students can listen and reflect, as well as other reflection activities where sufficient time for thinking is provided are strategies that allow introverted students to demonstrate their best learning (Condon & Ruth-Sahd, 2013). When class discussions are

organized in a way that does not allow time to think, introverted students do not get the chance to participate as they debate on whether to raise their hand, even if they are confident of the correct answers (Ahtola, 2016). Medaille and Usinger (2019) suggest that "instructors should embrace the notion that critical and complex thinking takes time and slow down the pace at which they ask questions" (p. 134).

In the case of group work, introverted students will often prefer to listen and watch from the side, rather than being actively involved in the "doing" (Keltikangas-Järvinen & Mullola, 2014). Working in smaller groups is preferred over large groups, and having the choice to work independently is supportive of introverted students' learning needs (Medaille & Usinger, 2019). Ahtola (2016) proposes a method of group work called colour grouping, in which students are grouped with the same peers over an extended period of time, where they can get to know each other, learn to overcome social challenges and learn cooperation skills in a safe environment. For introverted children, this would alleviate some of the social pressure and help them overcome the social inhibition that may prevent them from sharing their ideas (Keltikangas-Järvinen, 2015). Farooqi (2021) discusses the possible negative impacts of group work, being that it often leads to conformity where the loudest students get their say and others simply follow along. Nussbaum (2002) explains that in small-group argumentative discussions extroverts often made conflicting and contradicting contributions, while introverts contributed constructive arguments, often agreeing with the other group members. The current prevailing mindset that teamwork and collaborative projects are most effective in brainstorming and ideation is what Cain (2013) calls *The New Groupthink*. This phenomenon is visible in the continuous emphasis of group work in the objectives for learning and core content of the Finnish National Core Curriculum (Opetushallitus, 2016). Not only is group work unsupportive of introverts' learning needs, but it also limits creativity (Cain, 2013). Farooqi (2021) remarks that creativity thrives in isolation; the highest quality ideas are generated in solitude, whereas group work may produce many, less useful ideas. Mauroner and Promerit (2021) suggests hybrid brainstorming as a solution to this issue, which involves multiple phases of individual ideation and group brainstorming and was found to be more effective in producing both higher quality and greater quantity of ideas. There are benefits to group work in terms of developing social and cooperation skills, however the problems that it poses to quiet or introverted individuals who think and learn best on their own should be considered in the choice of working methods made by teachers (Farooqi, 2021).

The psychosocial environment for introverted and quiet students involves creating a space which feels safe and supportive, so that students can direct their energy to actual learning rather than defending themselves (Medaille & Usinger, 2020). Quiet students may not express their thoughts for various reasons, including fear of judgement, wanting to avoid attracting attention and fear of social alienation (Medaille & Usinger, 2020). Ahtola (2016) reminds of the importance of safety as a prerequisite for learning, which materializes in the psychosocial environment. Teachers should work to create an environment that is supportive, non-judgemental and encouraging so that students feel comfortable to share their ideas and participate openly (Farooqi, 2021). Condon and Ruth-Sahd (2013) emphasize the importance of being *gentle* when approaching introverted and shy students, rather than aggressive and dismissive which will only further discourage these individuals from participating and threatens their feeling of safety in the classroom. Although the class is comprised of numerous different temperaments which may limit the amount of control that a teacher has on the overall psychosocial environment, it is necessary to encourage an atmosphere of respect and support (Medaille & Usinger, 2020). Teachers can support shy and introverted students by being sensitive to their unique learning needs and ensuring that they are not problematizing the students' temperament nor making it seem as though their reservation and quietness is something negative (Keltikangas-Jarvinen, 2010b). Teachers should give positive feedback for behaviour that is challenging for shy or introverted students, such as sharing answers out loud, to encourage them to repeat the behaviour and increase their feelings of confidence (Keltikangas-Järvinen, 2010b).

4.3 Supporting introverted students' social needs

Every child needs stable, comforting and supportive relationships with others which is the basis for fulfilling their social needs (Ahtola, 2016). Students differ in the amount and ways in which they need social interaction. The ways in which students of different temperaments behave in social situations also differ (Keltikangas-Järvinen, 2015). Teachers can support introverted students' social needs by creating safe opportunities for interaction as well as promoting deeper friendships, but also to allow space for recharging in solitude (Condon & Ruth-Sahd, 2013). It has been found that introverts prefer to spend time with a few close friends rather than in a large group (Keltikangas-Järvinen, 2019). The depth of relationships is much more important to extroverts than having many friends – quality over quantity, or as Jung (2016) implies, "Intensity is his aim, not extensity" (p. 354). It is thus crucial that teachers foster the

development of these deep relationships for their introverted students, and instead of thinking of the benefits of social interaction, consider introverts' need for a feeling of comfort, familiarity and safety which they find in these friendships. Ahtola (2016) warns, however, that school is responsible for giving students the tools they need to be functioning members of society, and thus it is important to encourage introverted children to interact also with different classmates which will inevitably be required of them in the "real world".

Allowing introverted students the necessary time and space to recharge their social batteries is important to their wellbeing and satisfaction at school (Condon & Ruth-Sahd, 2013). The classroom environment being full of external stimulants can be overwhelming for students, and constant social interactions may cause them to become overstimulated (Farooqi, 2021; Keogh, 2003). Recognizing that these children enjoy being alone, and removing the negative connotation associated with voluntarily choosing solitude over social interaction is crucial to supporting introverted students socially (Helgoe & Karppelin, 2012). The silence of a classroom when other students are outside or getting to play alone after expending all their energy on the social life in the classroom are where introverted students feel their energy recharging. It does not mean that there is something wrong with these children, or that they are being antisocial as Helgoe and Karppelin (2012) insist. It is important for teachers to avoid victimizing their introverted and shy students by calling them out as quiet or assuming that they are upset when they want to be alone (Keltikangas-Järvinen, 2019). These children simply have different social needs. Although introverted children may feel like they need to be more extroverted to fit in with the expectations of the social classroom environment, Zelenski et al. (2012) suggest that it may only bring momentary satisfaction and later will lead to further draining of energy and a need to recover. Teachers can also allocate quiet time and ensure that independent tasks are a regular part of the schedule to allow these children to recharge socially (Condon & Ruth-Sahd, 2013).

It has been found that introversion is commonly viewed as "abnormal" and extroversion as the "normal" way of being (Helgoe & Karppelin, 2012). Letting go of misconceptions related to introversion can help educators to better understand their introverted students (Helgoe & Karppelin, 2012). Teachers should know that being alone is not a *lack* of something, but a space for creativity, daydreaming, pondering, reflecting, reading and imagining among a multitude of solitary activities with endless possibilities, as Helgoe and Karppelin (2012) depict. This

understanding is the basis for seeing the real value of solitude and the strengths of introversion as a *different* way of interacting with the external world (Cain, 2013).

4.4 Assessment of introverted students

When assessing student performance, it is often in fact a child's temperament that is assessed (Keltikangas-Järvinen & Mullola, 2014). Ahola (2016) suggests that in the current education system, students are to be assessed more holistically which further increases the influence of temperament in assessment. It is understandable that assessment cannot be completely objective when a teacher knows their students well, and consequently it would be crucial for teachers to consciously separate temperament from cognitive ability in their evaluations (Keltikangas-Järvinen & Mullola, 2014). According to Keltikangas-Järvinen (2012) teachers regarded students' personality as more significant to achievement at school than what they are like as learners. This finding was in association with the observation that teachers described students who were most likely to succeed at school based on their temperament traits rather than cognitive ability or competence (Keltikangas-Järvinen, 2012). Keltikangas-Järvinen (2010b) insists that schools only have the right to assess objectives that can be taught according to the curriculum, which does not include temperament. Ahtola (2016) goes on to argue that it is absolutely necessary for educators to differentiate between a child's learning and competences and their individual style of working. In other words, teachers should not assess the *how* of a child's competences in school, *how* they complete their tasks, *how* they participate in class discussions and so forth, but instead they should evaluate the *what; what* does a student know about a topic, *what* does the student respond to their question and so on (Ahtola, 2016). The assessments of students should be based on the *outcome* of learning, not the way in which the outcome was achieved (Ahtola, 2016).

One of the main concerns in assessing introverted and quiet students is around the topic of classroom engagement. The common expectation for active participation and engagement is that students contribute verbally to discussions, raise their hands and share their thoughts with the class (Medaille & Usinger, 2019). Active class participation is directly related to temperament and is commonly assessed as part of a student's grade (Ahtola, 2016). Due to the reality that it is impossible to evaluate every student individually during the lesson, it is the (verbally) actively participating students that are noticed, and that the teacher can realistically evaluate (Ahtola, 2016). Those that participate in other ways than verbally expressing their

ideas fail to meet the expectations for active participation and thus are evaluated accordingly (Medaille & Usinger, 2019). According to Medaille and Usinger (2019), "teachers often associate student participation with talk and, conversely, may discount quiet students' less vocal ways of participating" (p. 132). Caspi et al. (2006) further explains that academic achievement is influenced by students' ability to respond to the instructor and initiate participation.

Introverted and withdrawn students are evaluated unfairly based on the expectations for active participation, because it is their temperament which is ultimately being evaluated instead of their comprehension or competence (Keltikangas-Järvinen, 2010b). Students that react immediately, share their answers readily and contribute openly to class discussions fulfill the requirements for active class participation, regardless of whether they answer correctly (Keltikangas-Järvinen, 2010b). Conversely, students that are more shy and inhibited will be more apprehensive in sharing their ideas as they formulate their thoughts, pondering for an extended period of time (Keltikangas-Järvinen, 2010b). It is not a lack of knowledge which prevents them from participating, but a lack of courage which accompanies their inborn, natural temperament (Keltikangas-Järvinen, 2019). It has been found that extroversion is positively correlated with class participation (Caspi et al., 2006). The consequences for introverts in this lie in the perceptions of teachers and the resulting impact on their evaluation. One study showed that teachers perceived quiet and shy students as less intelligent than their more talkative peers (Medaille & Usinger, 2019). Linguistic proficiency is also misunderstood in children, simply because extroverted children demonstrate better proficiency verbally whereas introverted children fail to express this proficiency sufficiently (Keltikangas-Järvinen, 2019). Even the fact that extroverts are more adept at giving a good impression of themselves in comparison to introverts puts them at an advantage in evaluation situations (Keltikangas-Järvinen, 2019). Consequently, it is necessary that teachers identify the biases that accompany their perception of active participation.

Introverted children express their engagement and participation in ways that contradict the notion of "active participation" (Medaille & Usinger, 2019, 2020). Engagement can also mean active listening, note-taking, observing, writing out thoughts or active inner dialogue as opposed to verbal expression (Medaille & Usinger, 2020). These students are not uninvolved nor disengaged, they simply participate in different ways than talkative students (Medaille & Usinger, 2020). In contrast, a child with high activity will raise their hand and verbally share their answers, showing their interest in the lesson and making themselves known to the teacher

and the class (Ahtola, 2016). Introverted and quiet students may have several different motivations for refraining from participating actively in class, which can include the social pressure of having a good answer or the fear of responding incorrectly (Medaille & Usinger, 2020). Educators should acknowledge various methods of lesson engagement in order to better support students who struggle to verbally express their comprehension and knowledge (Medaille & Usinger, 2020). Allowing opportunities to demonstrate engagement through listening, reflecting, writing or small-group work would allow teachers to evaluate student participation more equally, taking also the quiet, introverted and withdrawn students into consideration (Medaille & Usinger, 2020). Providing ample time for thought and preparation before class discussions could also enhance the participation of more reserved students, as it alleviates the stress that accompanies the ambiguity and fast pace of these discussions (Condon & Ruth-Sahd, 2013).

Although temperament does not influence cognitive skills, it does influence the working methods that a child chooses (Keltikangas-Järvinen, 2010b). It is important that teachers do not assess their students based on these working methods so as not to evaluate the child's temperament but their competence and knowledge (Keltikangas-Järvinen & Mullola, 2014). Supporting students in finding suitable working methods that enhance their learning is central to ensuring that temperament traits do not indirectly influence student achievement (Keltikangas-Järvinen, 2010b).

5 Discussion

In this literature review, I discussed the connection between temperament and environment from the standpoint of introversion and the school and classroom as an environment. Central to this relationship is the concept of goodness of fit, coined by Thomas and Chess, which explains that temperament and environment influence each other, resulting in either the reinforcement or weakening of temperament traits. Throughout the literature included in this thesis, the idea that temperament is permanent and largely unchanging over the course of one's life is maintained. Temperament thus is not something one can simply ignore; it permeates the experiences and interactions of every person in a unique and individual way. Introversion, as one type of temperament and collection of innate traits is thus significant to consider, especially in this age of self-expression and self-promotion. For introverted children growing up in a society which demands putting oneself "out there" to achieve success, the importance of support from a young age at home and at school is not indifferent. In this thesis, I attempted to gather suggestions and ideas for how to better support introverted students socially and academically, so that their temperament is not a disadvantage to their learning and wellbeing at school.

The introverted temperament is described in literature as a quiet, reserved and hesitant nature. Introverts are known to enjoy spending time alone and avoiding large groups of people. The literature discussed introversion and extroversion in relation to Jung's theory of the movement of psychic energy which in introverts is directed towards the inner world. Introverts' energy is easily drained by excessive social interaction or other external stimuli. Eysenck's ideas about cortical arousal distinguishes an important aspect of the introverted temperament. Introverts, according to this theory, have a high level of internal stimulation and therefore cannot handle excessive external stimulants before they become overwhelmed. The various other temperament traits related to introversion discussed in literature include sensitivity, approach and withdrawal, sociability, activity, distractibility and persistence. Ultimately, it is necessary to acknowledge that not every person that is considered introverted has all the qualities that are attributed to it in literature. The basis of temperament, in fact, is constructed on the concept of *individual* differences. Temperament traits appear on a continuum, and each person displays these traits at various intensities. Although we can develop theories and frameworks for better understanding a collection of traits that often appear together (such as introversion) it is ultimately more significant to consider each person individually, taking into account their unique qualities.

Introversion has implications for children at school as was discovered in the literature for this thesis. The often chaotic, fast-paced and highly social environment of school is overwhelming and overstimulating for introverts who value silence and structure. Introverted students have learning needs that differ from the active, outgoing, talkative extroverts for which a stimulant-rich classroom is the ideal learning environment. Introverted students learn best by listening, reflecting and observing, working independently or with a small group or in pairs. It would be good for educators to be critical of the push for increased cooperation and group learning, which may hinder the quality of learning of introverted learning. Introverted students need time to think and reflect before they share their ideas, which the fast pace of activities in the classroom often fails to support. Introverts also need social connections and interaction at school. Building deep, close horizontal friendships and stable, nurturing vertical relationships are especially important to their social development and feelings of safety and comfort at school.

Based on the literature about the introverted temperament and its implications in the school environment, in chapter four I gathered some suggestions for how teachers can better support the social and learning needs of their introverted students. At the core of these suggestions is the idea that teachers should understand the significance of temperament in their own lives and the lives of their students as well as the choices that they as educators make each day in the classroom. In order to support their introverted students, teachers must reflect on their conceptions of a "good student" and clarify misconceptions related to introversion in order to see its true benefits. Giving introverted students the chance to demonstrate their engagement in class in a way that is fruitful to their learning instead of intimidating is an important starting point to better supporting them. Respecting introverts' need to withdraw and regain their energy in solitude is also necessary for their optimal learning.

Although many practical suggestions were provided along with the push for increased reflection and awareness of teachers around the theme of temperament, it is important to recognize that catering to every student's individual needs with choice of learning and teaching methods is not feasible. Of course, introverts' learning and social needs can be supported by giving them the choice to work in ways that are most comfortable to them, which was evident in the suggestions exhibited in the literature. However, an even better way to support introverted students in the long term is to guide them in finding ways to overcome the challenges that their temperament poses to them. This does not mean leaving them to fend for themselves and immersing them in "extroverted" ways of learning. It also does not mean expecting them to change their

temperament to be extroverted and outgoing. It means finding ways that they can cope in the "extroverted" world around them and identifying strategies that will help them master the situations that make them uncomfortable. It also means believing in them instead of shaming them for their quietness and showing them that their temperament is not a hindrance, but a source of power and strength.

Susan Cain talks about *the power of introverts in a world that can't stop talking*. It is this that educators should aim to uncover with their introverted students. I believe that there is much we can learn from introverted ways of being and behaving. In a society where a "hustle culture" is present and people seem to be constantly rushed and hurried, perhaps one should learn to sit a moment in silence, reflect and ponder. One should embrace the importance of listening instead of speaking, of observing instead of commentating. Perhaps instead of teamwork and collaboration, we should see the true value in independent innovation and creative thought. We should encourage the development of deep, meaningful relationships over fleeting connections and networking. Ultimately, we should recognize that the world needs all kinds of people, introverts and extroverts, leaders and followers, innovators and presenters, speakers and listeners.

5.1 Shortcomings of the study

One of the major challenges in writing this study was finding current research on the topic of introversion in the context of school. The concepts of introversion and temperament are quite old and original sources perhaps reflect ideas that are not as prevalent today. The ambiguity of temperament as a result of its individual nature also makes it difficult to define introversion concretely. One can only make generalizations about what most introverts may experience in relation to their temperament. Perhaps labelling and pointing out individuals into categories such as introversion and extroversion may also distort the perception of reality of individual uniqueness.

5.2 Future research

There is inevitably a need for future research in the area of introversion and its relationship to school. Much of the research used in this thesis was concerned with temperament and school, but less so with introversion specifically. Moreover, it would be important to conduct a more context specific study on the impacts of introversion in education, considering that cultural

understandings of temperament determine its value. Specifically, researching introversion in Finnish schools would be important since Finland, although part of the western society, is known for being an "introverted" nation. In addition, research which explores the lived experiences of introverted students in schools would be necessary to better understanding the significance of supporting introverts in the classroom in ways that are sensitive to their needs.

References

Ahtola, A. (2016). *Psyykkinen Hyvinvointi Ja Oppiminen*. PS-kustannus.

Cain, S. (2013). *Quiet: The power of introverts in a world that can't stop talking*. London: Penguin Books.

Caspi, A., Chajut, E., Saporta, K., & Beyth-Marom, R. (2006). The influence of personality on social participation in Learning Environments. *Learning and Individual Differences*, *16*(2), 129–144. doi:10.1016/j.lindif.2005.07.003

Condon, M., & Ruth-Sahd, L. (2013). Responding to introverted and shy students: Best practice guidelines for educators and advisors. *Open Journal of Nursing*, *03*(07), 503–515. https://doi.org/10.4236/ojn.2013.37069

Duffy, K. A., & Chartrand, T. L. (2015). The extravert advantage. *Psychological Science*, *26*(11), 1795–1802. doi:10.1177/0956797615600890

Dunderfelt, T. (2012). *Tunnista temperamentit: Väriä elämään ja itsetuntemukseen*. PS-kustannus.

Eve-Cahoon, H. (2003). Editorial: Understanding the introvert preference. *Journal of Nursing Education, 42*(5), 191-3. Retrieved from https://www.proquest.com/scholarly-journals/editorial-understanding-introvert-preference/docview/203905743/se-2

Farooqi, S. (2021). Social support in the classroom: being sensitive to introversion and shyness. *International Journal of Education and Psychology in the Community*, *11*(1 & 2), 109–119.

Goldsmith, H. H., Buss, A. H., Plomin, R., Rothbart, M. K., Thomas, A., Chess, S., … McCall, R. B. (1987). Roundtable: What is temperament? Four approaches. *Child Development*, *58*(2), 505. doi:10.2307/1130527

Hartup, W. W. (1989). Social relationships and their developmental significance. *American Psychologist*, *44*(2), 120–126. doi:10.1037/0003-066x.44.2.120

Helgoe, L., & Karppelin, M. (2012). *Introversion voima: Miksi sisäinen maailmasi on suurin rikkautesi* (1. p.). Ajatushattu.

Jung, C. G. (2016). *Psychological types*. London: Routledge.

Keltikangas-Järvinen, L. (2010a). *Sosiaalisuus ja Sosiaaliset taidot*. WSOY.

Keltikangas-Järvinen, L. (2010b). *Temperamentti ja koulumenestys*. WSOY.

Keltikangas-Järvinen, L. (2012). *Temperamentti, stressi ja elämänhallinta*. WSOY.

Keltikangas-Järvinen, L. (2015). *Temperamentti - Ihmisen yksilöllisyys*. WSOY.

Keltikangas-Järvinen, L. (2019). *Ujot Ja Introvertit*. WSOY.

Keltikangas-Järvinen, L., & Mullola, S. (2014). *Maailman paras koulu?* WSOY.

Keogh, B. K. (2003). *Temperament in the classroom: Understanding individual differences*. Paul H. Brookes Publishing.

Mauroner, O., & Promerit, M. (2021). Idea generation and brainstorming under the aspect of the new groupthink – the differences between extraverts and introverts. *Journal of Organizational Psychology*, *21*(4), 41–62. doi:10.33423/jop.v21i4.4543

Medaille, A., & Usinger, J. (2019). Engaging quiet students in the college classroom. *College Teaching*, *67*(2), 130–137. doi:0.1080/87567555.2019.1579701

Medaille, A. & Usinger, J. (2020). Quiet Students' Experiences with the Physical, Pedagogical, and Psychosocial Aspects of the Classroom Environment. Educational Research: Theory and Practice, 31(2), 41-55

Nussbaum, E. M. (2002). How introverts versus extroverts approach small-group argumentative discussions. *The Elementary School Journal*, *102*(3), 183–197. doi:10.1086/499699

Opetushallitus. (2016). *National core curriculum for basic education 2014*. Finnish National Board of Education.

Rubin, K. H., Bukowski, W. M., & Laursen, B. (2009). *Handbook of peer interactions, relationships, and groups*. Guilford Press.

Rubin, K. H., Wojslawowicz, J. C., Rose-Krasnor, L., Booth-LaForce, C., & Burgess, K. B. (2006). The best friendships of shy/withdrawn children: Prevalence, stability, and Relationship Quality. *Journal of Abnormal Child Psychology*, *34*(2), 139–153. doi:10.1007/s10802-005-9017-4

Sharp, D. (1987). Introduction to Jungian Typology. In 2087847164 1444002329 D. Sharp (Author), *Personality types: Jung's model of typology* (pp. 11-36). Toronto, Canada: Inner City Books.

Schmeck, R. R., & Lockhart, D. (1983). Introverts and extroverts require different learning environments. *Educational Leadership*, 54–55.

Trofimova, I., & Robbins, T. W. (2016). Temperament and arousal systems: A new synthesis of differential psychology and functional neurochemistry. *Neuroscience & Biobehavioral Reviews*, *64*, 382–402. doi:10.1016/j.neubiorev.2016.03.008

Zelenski, J. M., Santoro, M. S., & Whelan, D. C. (2012). Would introverts be better off if they acted more like extraverts? exploring emotional and cognitive consequences of counterdispositional behavior. *Emotion*, *12*(2), 290–303. doi:10.1037/a0025169