

Evaluating Steiner's Understanding of Temperament using the EAS Survey

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Abstract

Over the last hundred years, Steiner education has become established in countries around the world. One of the key concepts of this enduring pedagogy is that of the temperaments, though it has been criticised for being outmoded and unsupported by empirical research. This study will assess and evaluate potential correlations between Steiner teachers' understanding of the temperaments and the results gained from using Buss' and Plomin's *Emotionality, Activity and Sociability/Shyness* (EAS) survey. Data will be collected by surveying parents and teachers, as well as holding teacher interviews. This data will allow potential similarities and differences to be identified highlighting the degree to which Steiner's century-old pedagogical ideas can be supported by a standard analytical tool.

Attestation of authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extend has been submitted for the award of any other degree or diploma or a university or other institution of higher learning.

Name: _____

Signature: _____

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“For out of a rightly understood wisdom will a rightly understood goodness and virtue be born in the human heart. Let us strive after a real understanding of world evolution, let us seek after wisdom – and we shall find without fail that the child of wisdom will be love.”

(Steiner, 1979, *The World of the Senses and the World of the Spirit*, p. 88)

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Chapter 1: Introduction

Rudolf Steiner took the ancient idea of the four temperaments and placed them within a pedagogical framework. This research explores the possible link between Rudolf Steiner's use of the classical four temperaments (*sanguine, choleric, phlegmatic* and *melancholic*) and the EAS (*Emotionality, Activity, Sociability/Shyness*) Survey developed by Buss and Plomin (1984). Steiner Waldorf teachers use their intuition and professional training to determine the dominant temperament of individual children (Carlgren, 2008). In recent years there has been critique from different professional fields in regards to the validity of the way teachers use the temperaments within the classroom (Ullrich, 1986, as cited in Rittelmeyer, 2010). The EAS Survey is a standard analytical tool that enables the researcher to look at the four temperaments from a different viewpoint.

The following chapter establishes the research context by defining its rationale through the lens of a personal and professional perspective. After outlining the aim of the research and the research question, the chapter will give a brief discussion of the paradigm framework, methodology and the data collection tools used in this research. This chapter will be concluded with an outline of the structure of the thesis.

The research context

The context of this research is set in New Zealand Steiner Schools. However, this research could be taken out of that context and be applied to any other Steiner Waldorf school across the world.

One of the most important tasks of a Steiner Waldorf teacher here in Aotearoa and around the world is to understand each individual child through the temperaments and work with the temperaments rather than against them (Steiner, 1919). The four classical temperaments date back to the Ancient Greece and are still relevant today unlike other Greek theories (Grant, 1999). However, this statement has been the

centre of debate for educational professionals who believe that education in the 21st century cannot rely on concepts from centuries ago.

The research rationale

Every Steiner Waldorf teacher would agree that the temperaments, and the way they are being applied within the school setting, are a beautiful and rich concept, which help to understand children and their behaviour. According to Morrell and Carroll (2010), teachers often believe they do the right thing based on a pure feeling. Educational research can add the data and evidence needed to either prove or disprove the pure feeling (Morrell & Carroll, 2010).

Steiner Waldorf Education has a very long history, with Rudolf Steiner setting up the first school in 1919 (Carlgren, 2008). Since then the educational movement has become more and more popular and Steiner's educational ideas have spread across the globe. To me there is no doubt in the pedagogical value of these schools because they would not have gained such an international popularity otherwise. However, times have changed since the early 20th century and research in education has become an important factor that needs to be considered. There has been no research conducted on Rudolf Steiner's theory of the temperaments. Educators take opposing positions, either believing that the temperaments are an effective theory to teach and understand young children, or by articulating that it is an obsolete theory that has no relevance in today's education (Ullrich, 1986, as cited in Rittelmeyer, 2010).

Opponents claim the classical theory of the four temperaments to be an ancient concept, which is obsolete and non-scientific (Rittelmeyer, 2010). Therefore the pedagogy of Steiner Waldorf Education is often viewed as inadequate, as the temperaments form an essential part of that pedagogy (Rittelmeyer, 2010). However, modern personality studies, as well as medical studies have not contradicted the concept of the ancient four humours and temperaments (Rolfe, 2002).

Opponents have found it hard to believe that all matter is made from a combination of the four cosmic elements—air, fire, water and earth. However, it seems more

logical when these are translated into “three contemporary forms of matter—solid, liquid, and gas—plus energy” (Hall, Lindzey & Campbell, 1998, p. 367).

Individuality is a highly regarded factor of society and many people do not like to be categorised. However, in the end we are human beings and not that different from each other. Steiner Waldorf schools need to focus more on educational research within their own field to hold their position in alternative education, but also to prove that what is being done is done for a reason.

The rationale for this research has stemmed from two factors. Firstly, I pursue a personal interest by doing this research, as I have been working with the temperaments in my own classroom over the past two years. But the temperaments have also been of great service to me outside of my profession, when interacting with family, friends and strangers.

Secondly, as a professional practitioner in the field of education, I believe in the importance of research to confirm or disprove theories and hypotheses. It is crucial to find evidence in the lived experience of other practitioners to test Rudolf Steiner’s suggestion made over 100 years ago.

Research aim and question

In this research project I aim to apply Rittelmeyer’s methodology to determine if there is a relationship between Rudolf Steiner’s understanding of the temperaments and results gathered using the EAS Survey developed by Buss and Plomin (1984).

The research question is:

- To what degree can Buss’ and Plomin’s *Emotionality, Activity* and *Sociability/Shyness* survey be used to evaluate Steiner’s pedagogical ideas of temperaments in school-aged children?

There is a supplementary question to the above:

- How are teachers working with the temperaments in their professional classroom practice?

The aim of the supplementary research question is to gather information on how knowledge of the temperaments is applied within the pedagogical classroom setting and to investigate if there is a degree of uniformity in how teachers apply their understanding of the temperaments. The intention is not that it become the focus of the research but rather to add qualitative data to this study.

Children's temperament studies are usually conducted by collecting data from the primary caregivers, often the mother (Karp, Serbin, Stack & Schwartzman, 2004). However, there are limitations to the data collection through the primary caregiver, as parents often project their personality and social perceptions onto the data (Karp et al., 2004). For instance, maternal depression has been shown to have a significant influence on a mother's perception of her child (Karp et al., 2004). Therefore, in this research I will focus on children of lower primary school age (classes 1-3), and will gather two sets of data. Firstly, parents will be asked to fill out the EAS Survey, in which they assess their children with regards to *emotionality*, *activity* and *sociability/shyness*.

At the same time, the second element of the data collection process will involve the teachers of the same children. These teachers will be interviewed so information can be collected about how they assessed these children in the light of their understanding of the temperaments from an anthroposophical point of view.

Participants will remain the same but two different types of data gathering processes will be used. This mixed method approach will have the strength of offering both quantitative data, as well as qualitative data (O'Toole & Beckett, 2013).

Chapter Two

The literature review presents an overview of the already existing literature of the topic from different viewpoints, such as the history of the temperaments and their use in Steiner Waldorf education.

Chapter Three

This chapter outlines a detailed account of the methodological approach that was best suited to my research, while justifying and critiquing the research in the

pragmatist paradigm. It then explains why I chose a mixed method approach and how the data was collected and which data analysis techniques were used. Validity and reliability factors will be explored in a separate section and to conclude this chapter, ethical considerations will be made.

Chapter Four

This chapter presents the finding of each of the eight subjects of this study by presenting the qualitative as well quantitative data. The themes that emerged through the coding process will be outlined and supported by teachers' comments.

Chapter Five

Chapter five will critically analyse the quantitative and qualitative data. The three emergent themes will be discussed in relation to the literature.

Chapter Six

To conclude this study, chapter six outlines the overall findings with strengths and limitations to the research. Recommendations as well as further research suggestions will be given in regards to the four temperaments.

Chapter 2: Literature review

The purpose of this literature review is to give an overview of the four temperaments from historical, psychological and educational perspectives. This is presented through the following themes relevant to this specific topic: (1) word origin and language; (2) history of the temperaments; (3) Waldorf education; and (4) Rittelmeyer's and Buss' and Plomin's research. To conclude this chapter, the relevance of the research question will be discussed in relation to the literature.

Word Origin and Language

Defining what a temperament is and how or whether it can be distinguished from personality and character is an on-going debate (Clark & Watson, 1999).

Wilkinson (1973) explains that "temperament has nothing to do with character or morals but is in itself a basic quality, - a substance as it were, though not material" (p. 1). In contrast, Gutas (2012) explains that there is a direct link between temperament and character. The temperaments are the qualities and habits of the character, which depend on the human body's physical constitution (Gutas, 2012). Greenbaum (2005) goes a step further by exploring the threefold relationship of temperament, personality and character. According to her a temperament is not the same as personality, although it can be reflected in someone's personality (Greenbaum, 2005). Both internal and external factors influence the personality of a person, whereas temperament is innate (Greenbaum, 2005). Character and temperament have similarities, as they both refer to the qualities that distinguish one person from another, however, character also refers to the moral composition of a person (Greenbaum, 2005).

It is evident that there is confusion surrounding the definition of what a temperament is. In order to gain a better understanding, it is beneficial to trace the terminology back in time. The word temperament is of Latin origin *temperamentum* and translates to 'combine and blend in proper proportion' (Stelmack & Stalikas,

1991). The names for the four temperaments *choleric*, *sanguine*, *melancholic* and *phlegmatic* derived from the words used by the ancient Greeks to describe the bodily humours (Gieseler Greenbaum, 2005). The temperament theory is believed to have originated from ancient Egypt or Mesopotamia (Fountoulakis, Rozsa, Siamouli, Moutou, Pantoula & Cloninger, 2015). Evidence shows that the school of Cos developed the temperament theory known today (Fountoulakis et al., 2015). However, the temperaments were not only of interest to Greek physicians, as the Greco-Roman physician Vindician, who worked with the theory centuries before Galen, further developed it (Rettew, 2013).

The Oxford Dictionary (2017) states that temperament refers to “a person’s or animal’s nature, especially as it permanently affects their behaviour”. Someone’s nature is inherent and describes a person at his or her core. According to the Oxford Dictionary (2017) there is also a direct link between temperament and behaviour, as the character and the inherent features of a person will always affect how he or she reacts in certain situations.

The word *choleric* is explained in two ways: first it is used to describe someone who is “bad-tempered or irritable”, and second as a term that stems from medieval medicine, meaning that a person is “having choler as a predominant bodily humour” (Oxford Dictionary, 2017). In this case the word *choleric* relates to the medical temperament theory, as well as the behavioural aspects of that theory.

The Oxford Dictionary (2017) similarly gives two meanings for the word *sanguine*. One is used to describe someone who is “optimistic or positive, especially in an apparently bad or difficult situation”. Again, the second meaning of the word traces back to the medieval science and medicine background, stating that the *sanguine* temperament is “having the constitution associated with the predominance of blood among the bodily humours, supposedly marked by a ruddy complexion and an optimistic disposition” (Oxford Dictionary, 2017). It is important to notice the use of the word ‘supposedly’ in the definition. It questions the link between physical evidence and behavioural observation.

Melancholic is defined as “feeling or expressing pensive sadness” (Oxford Dictionary, 2017). However, it can also refer to a person “suffering from or denoting a severe form of depression” (Oxford Dictionary, 2017).

The word *phlegmatic* is defined as a person “having an unemotional and stolidly calm disposition” (Oxford Dictionary, 2017). No link is made to any physical or physiological meaning of the word. However, according to the ancient Greco-Roman physicians the *phlegmatic* constitution is a result of an excess of phlegm in the human body (Grant, 1999).

It is interesting how the definition of the word changes to a positive one when the *sanguine* temperament is discussed. Both words *choleric* and *melancholic* were explained with a negative connotation. The *sanguine* temperament is explained in a way that sets it apart from the others.

The concept of the four temperaments is still evident in our language today, for example, when we refer to someone as having ‘good temper’ (Greenbaum, 2005). By ‘good temper’ one refers to a person who has acquired a state of equilibrium within his or her temperaments (Greenbaum, 2005).

When focussing on each individual temperament, one finds links to the *choleric* and *melancholic* temperament in the English language. Someone might refer to another person as being *choleric* or describes a certain atmosphere as *melancholic*. This is not surprising considering how old the temperament theory is, dating back to the ancient Greek. The Oxford Dictionary explains the term *sanguine* in detail but it has disappeared from common language. Little is said about the term *phlegmatic*.

History of the Temperaments

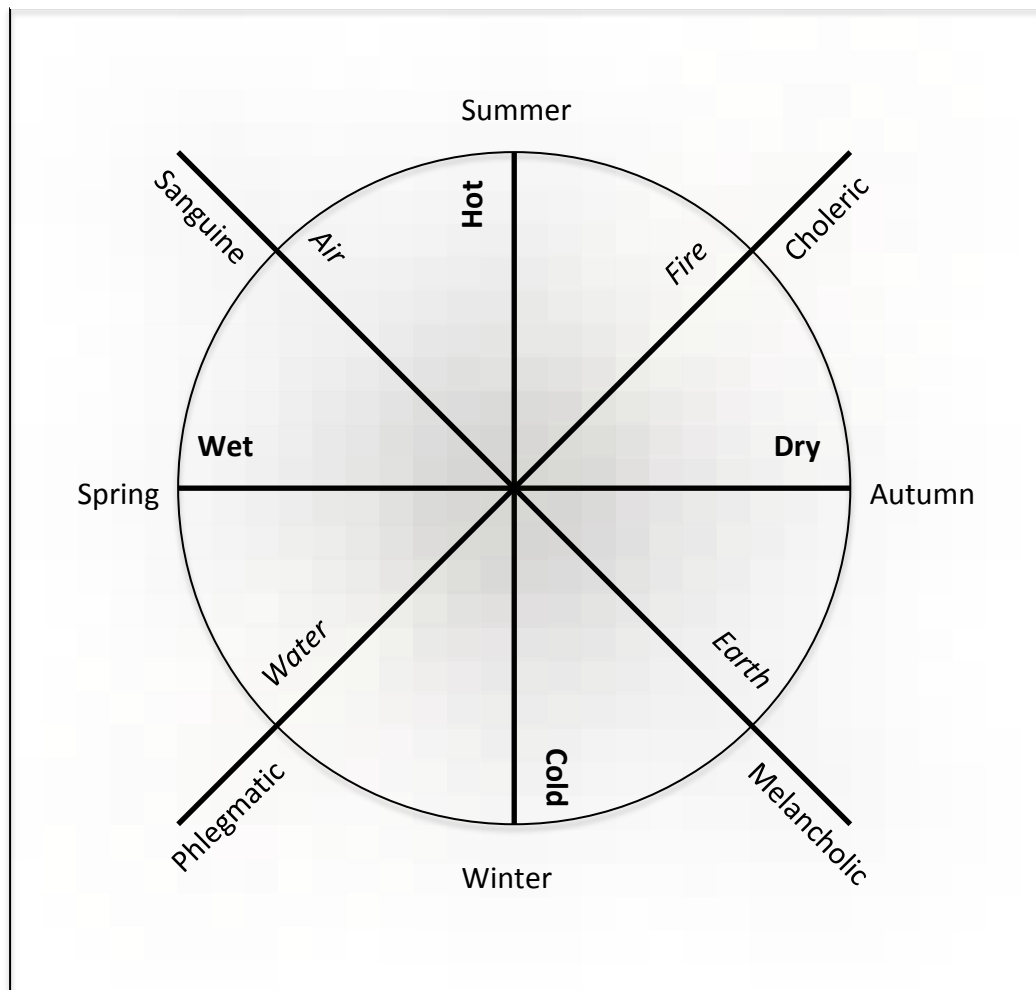
Ancient Greek Philosophy

When looking at the history of temperament of ancient Greece, an important figure who stands out is Pythagoras. He did not specifically mention the temperaments in his writing; however, his ideas of combining opposites in a balanced mixture had a significant influence on later temperament theories (Greenbaum, 2005). The

temperament theory developed over centuries because a multitude of philosophers used previous ideas and added their own theories to already existing knowledge. Polybus, a member of the school of Cos, formulated some of the foundational ideas in his book 'On the Nature of Man', which was further elaborated by Galen in his book called 'De temperamentis' (Fountoulakis et al., 2015). The development of our understanding of the temperaments can be set against a timeline in history.

Since the concept of the four temperaments goes back to Greek philosophy, they also have a strong link to nature (Greenbaum, 2005). Greek philosophers and physicists used the four elements (and therefore the four temperaments) as building blocks to understand the world (Greenbaum, 2005). Hippocrates and Galen worked with the elements and therefore the temperaments in depth believing that through them one can preserve and restore health and understand the human being (Hippocrates, 1846). Each of the four elements can be connected to a mixture of hotness, coldness, wetness and dryness (Greenbaum, 2005). Air (*sanguine*) is created by combining hot and wet, a mixture of hot and dry (*choleric*) makes fire, dry and cold relate to earth (*melancholic*) and cold and wet create water (*phlegmatic*) (Greenbaum, 2005). When the qualities of hot, cold, wet and dry are distributed on a circle, then each element forms the midpoint between two of these qualities (Greenbaum, 2005).

Figure 1 Temperament, seasons and elements (author)



Empedocles, who gained recognition during the middle of the 5th century BCE, was the first to discuss the elements in detail, even though he never mentioned the word element itself, but referred to them as the 'roots' of all things (Greenbaum, 2005). Great philosophers, who shaped the world of thought after him, such as Plato, Aristotle and Hippocrates, were all influenced by his writings (Greenbaum, 2005). Empedocles believed the 'roots' to be equal in strength and that they could not be further divided (Greenbaum, 2005), which relates to the Greek thought that the elements are the building blocks of the natural world.

Empedocles used the temperaments as a means to understand components of the cosmos (Greenbaum, 2005). It is not surprising that many other Greek philosophers, such as Manilius and Ptolemy, used the temperaments for their studies and

formulations of theories, as astrology had a strong influence on Greek culture and philosophy (Greenbaum, 2005).

Hippocrates was the first to develop a temperament theory around 400 B.C.E. (Greenbaum, 2005). He considered Empedocles' idea of the world being formed from the four elements and developed it into a theory that included the application of the elements to the human body (Greenbaum, 2005). He did so by correlating aspects of the macrocosm (world) to aspects of the microcosm (body) (Greenbaum, 2005).

Hippocrates' theory was influenced by the Pythagoreans' numerical system, where the number four is of significant importance (Stelmack & Stalikas, 1991). The number four represents the solids and the universe, as well as the elements of fire, air, earth and water (Stelmack & Stalikas, 1991). Additionally, the seasons are represented in the number four just as the cosmic entities (sky, sun, earth and sea) (Stelmack & Stalikas, 1991).

Hippocrates was the first to connect the four elements with the bodily humours: *yellow bile* and fire, *blood* and air, *black bile* and earth, and *phlegm* and water. He extended his theory by connecting the humours with the four seasons: *yellow bile* represents summer, *black bile* correlates to autumn, *phlegm* and winter are connected, and *blood* and spring form a unity (Greenbaum, 2005). This clearly shows the interconnectedness of the four humours and how each person is influenced by them according to the time of the year.

According to Greek medicine sicknesses were caused by a surplus or shortage of the humours (Stelmack & Stalikas, 1991). Indigestible foods were believed to be the cause for an imbalanced humour (Stelmack & Stalikas, 1991).

Hippocrates made few comments on the relation of the humours and the human soul but did not develop this idea any further (Greenbaum, 2005). He clearly planted the seed for this idea, which was picked up by other Greek philosophers and physicists at a later time (Greenbaum, 2005).

Hippocrates' study of the four humours is still evident in our everyday language, such as in the word 'humorous', because the humours and therefore the temperaments are the prototypes of human beings (Rolfe, 2002).

Plato was the first to refer to fire, air, earth and water as the 'elements' (Plato, 1929, as cited in Greenbaum, 2005). His studies formed the foundation for his student Aristotle, who created a whole system based on the elements (Greenbaum, 2005). Aristotle showed a great interest in Empedocles' writings and used his theory of the 'roots' as a basis for his study (Greenbaum, 2005). He explained that each element is formed of two of the qualities, being hot, cold, dry and wet (Greenbaum, 2005). Since hot and cold form an opposite and so does wet and dry, these pairs cannot be assigned to one element together (Greenbaum, 2005). He continues by looking for opposites within the elements, showing that fire and water are contrary, as fire is hot and dry and water is cold and wet (Greenbaum, 2005). The same relationship can be observed with air and earth, as air is considered as hot and wet and earth as cold and dry (Greenbaum, 2005). Since the elements are not static, Aristotle explored to what extent they are interchangeable in the second volume of *'On Coming-to-be and Passing-away'*. He came to the conclusion that they are subject to change, but in order to do so they must have one of the qualities in common (Greenbaum, 2005). The opposing elements can move towards each other, however, it is a much longer and harder process (Greenbaum, 2005).

The Stoics viewed the theory of elements in a slightly different way believing that each element is assigned to only one quality: fire is hot, air is cold, water is wet, and earth is dry (Greenbaum, 2005). The difference in viewpoint adds to our understanding of temperament, as Sambursky (1987) explains that fire and air are considered to be 'active' elements and water and earth 'passive' elements (as cited in Greenbaum, 2005). *Choleric* (fire) and *sanguine* (air) are extrovert temperaments, whereas *melancholic* (earth) and *phlegmatic* (water) are introverted temperaments (Childs, 2009).

During the 2nd century CE Galen took great interest in Hippocrates' humour theory, as well as the element theory developed by Hippocrates and Aristotle (Greenbaum, 2005). The medieval temperament theory that is still often referred to nowadays was largely influenced by Galen's work (Greenbaum, 2005). Galen first discussed the temperaments in his work called '*De temperamentis*', which surprisingly has never been translated into English (Greenbaum, 2005). Galen was the first to apply the qualities to the bodily humours, stating that the qualities do not occur in a 'pure' state, especially not in the human body (Greenbaum, 2005). He observed that a mixture of them could be seen in nature and the body (Greenbaum, 2005). Furthermore, Galen added a psychological dimension to Hippocrates' theory (Merenda, 1987). Hippocrates was more concerned with the medical and pathological aspects of his humour theory and how an imbalance of humour can cause diseases, whereas Galen looked closely at the influence the humours have on the temperaments and how this can be observed within the individual's behaviour (Merenda, 1987).

Galen believed that a human's emotional and behavioural make-up is directly connected to the four humours (The Four Temperaments of Personality, 2012). Imbalances in someone's personality, which can be seen through negative character traits can be cured through balancing the humours, which are usually in surplus (The Four Temperaments of Personality, 2012).

If one of the four humours is overly developed, then its corresponding temperament is dominant (The Four Temperaments of Personality, 2012). Therefore a *sanguine* person with too much blood can become selfish, the *phlegmatic* temperament caused by too much phlegm will show signs of being slow and lazy, too much yellow bile can cause a *choleric* to be too fiery and aggressive, and lastly a *melancholic* person with an excess of black bile tends to be suffering from sadness and fear (The Four Temperaments of Personality, 2012).

The Islamic Golden Age

Avicenna is known as the founder of modern medicine (Saffari & Pakpour, 2012). He created his work throughout the Islam's Golden Age (Saffari & Pakpour, 2012). Parvin (2006) states that Avicenna started writing the '*Canon of Medicine*' around

1011 CE (as cited in Saffari & Pakpour, 2012). He is often described to be as influential as Hippocrates and Galen (Rafiabadi, 2005, as cited in Saffari & Pakpour, 2012).

During the 12th century, Avicenna's books were translated into Latin and were used in medical education till the 17th century (Shoja, Tubbs, Loukas, Khalili, Alakbarli & Cohen-Gadol, 2009, as cited in Saffari & Pakpour, 2012). According to Avicenna "signs of health showed equability of temperament" (Saffari & Pakpour, 2012, p. 786). Equable temperament meant to Avicenna "quantities of opposite qualities combine in equal degrees of potency such that the temperament becomes a quality, which is exactly their mean" (Saffari & Pakpour, 2012, p. 786).

Avicenna followed Galen's idea that the temperaments are affected by the four humours of blood, phlegm, black bile and yellow bile (Gutas, 2012). A surplus of one of the humours in a body causes a dominant temperament, which is shown through an imbalance in character (Gutas, 2012). Someone with an excellent character is the result of the balance of temperaments, which in turn means a balance of humours (Gutas, 2012).

Avicenna (1973) assessed a body by focussing on the equilibration between heat and cold, dryness and moistness, softness and hardness, the colour of whiteness and redness, bulkiness and leanness of stature, deepness of blood vessels and straightness and curliness of hair (as cited in Saffari & Pakpour, 2012). He believed that a healthy human being would not incline to one or the other, but be balanced in all aspects (Avicenna, 1973, as cited in Saffari & Pakpour, 2012).

Avicenna believed that a person's temperament could be changed, through physical and behavioural factors (Gutas, 2012). A person's diet will influence the humours and therefore affect temperament and behaviour (Gutas, 2012). The *melancholic* temperament is considered as cold and dry, which means that a *melancholic* person will benefit from drinking warm liquids as a counterbalance (Gutas, 2012).

Medication could also influence the temperaments, however, by medication Avicenna refers to such things as wine, which was believed to moderate the temperaments (Gutas, 2012). Avicenna believed that a change in character could be

generated through the duties and exercises suggested by religious law, such as virtuous conduct, prayer, fasting and pilgrimages (Gutas, 2012).

European Philosophy

Temperament research was widely spread throughout Europe during the 20th century (Clark & Watson, 1999). A sharp contrast to the research conducted in the United States during that time, which showed little interest in the relationship between temperament and biological constitution (Clark & Watson, 1999).

The German philosopher Kant made Galen's writings more available by translating them during the 18th century (Merenda, 1987). He believed the temperaments to be an indicator of the spiritual life of man (Kant, 1833).

Kant used two contrasts to categorise the temperaments, which he regarded as independent from each other (Kant, 1833). The polarising factors he used are *feeling* and *activity* (Kant, 1833). *Melancholic* and *sanguine* form an opposite attributing weak feelings to the *melancholic* and strong feelings to the *sanguine* temperament (Kant, 1833). Kant believed the *phlegmatic* temperament to show traits of weak or low activity, whereas a *choleric* person shows high levels of activity (Kant, 1833).

During the early 20th century the Dutch researchers Heymans and Wiersma (1906) analysed data that had been gathered by doctors through questionnaires (as cited in Rothbart, 2012). The factor analyses they used highlighted three factors, which were *activity*, *emotionality* and *primary vs. secondary functions* (Rothbart, 2012).

At the same time research was conducted in Britain resulting in similar results to the research done by Heymans and Wiersma (Rothbart, 2012). The factor analyses presented four major factors: *emotionality*, *activity*, *self-qualities* and *intellect* (Rothbart, 2012).

Willhelm Wundt (1903; cited in Hall et al., 1998) used Kant's theory but he believed that the four temperaments are not independent. He generated a dimensional theory showing that the temperaments are positioned on a scale of *changeability* and *strength of emotions* (Hall et al., 1998).

Further adaptations were made in 1928 by Marston, who added certain types of emotional behaviour, such as *dominance*, *inducement*, *submission* and *compliance* (Merenda, 1987).

Marston's student Walter V. Clarke expanded this theory by relating emotional behaviour to the four traditional temperaments (Merenda, 1987). Cruise, Blitchington and Fitcher (1980) referred back to Hippocrates in their study, which focussed on the original four humours: blood, black bile, yellow bile, and phlegm (Merenda, 1987).

In 1964 when Eysenck categorised people into extraversion and neuroticism (Stelmack & Stalikas, 1991), he identified three factors in his factor analytical study, which he then corresponded to the classical four temperaments (Stelmack & Stalikas, 1991). He connected stable introversion with the *phlegmatic* temperament, unstable introversion with *melancholic* individuals, stable extraversion with the *sanguine* temperament and the *choleric* temperament was reflected through unstable extraversion (Stelmack & Stalikas, 1991). According to Farley (2000), Hans Eysenck was the most cited psychologist worldwide just before the millennium change (as cited in Schultz & Schultz, 2005). Eysenck's work was necessary for the understanding of how inheritance influences personality (Schultz & Schultz, 2005). He was also one of the only modern personality researchers who discovered correspondences between the temperaments and the human soul-life (Carlgren, 2008). Through his extensive research Eysenck developed three dimensions, which according to him describe personality (Schultz & Schultz, 2005). These dimensions are *extraversion* versus *introversion*, *neuroticism* versus *emotional stability*, and *psychoticism* versus *impulse control* (Schultz & Schultz, 2005). Extraverted people are open toward the world and are sociable beings that enjoy the company of others, whereas introverts are the exact opposite (Schultz & Schultz, 2005). It is easy to distinguish between extraverted and introverted people. However, Eysenck was interested how these types of people differ from each other from a biological and genetic viewpoint (Schultz & Schultz, 2005). He concluded, that they have different cortical arousal levels, as well as having varying pain thresholds (Schultz & Schultz, 2005).

The neuroticism dimension refers to individuals' emotional stability. People with high neuroticism levels tend to be anxious, depressed and irrational (Schultz & Schultz, 2005). Eysenck was convinced that neuroticism is an inherited trait rather than a quality acquired through experience (Schultz & Schultz, 2005). Differences in brain activity were observed in people with differing neuroticism levels (Schultz & Schultz, 2005).

Psychotic behaviour reflects people's aggressiveness and anti-sociality; such people are frequently egocentric (Schultz & Schultz, 2005). A significant number of these individuals may have issues with drugs and alcohol and are male (Schultz & Schultz, 2005). This indicates a clear biological relation and Eysenck believed that male hormones affect psychoticism levels (Schultz & Schultz, 2005). The psychoticism dimension did not stand the test of the scientific world and was considered as heterogeneous (Schultz & Schultz, 2005).

Eysenck's dimensions of personality form a close relationship with the four classical temperaments. He was aware that extraversion and introversion were concepts explored by many philosophers since the time of the ancient Greek (Schultz & Schultz, 2005). What Eysenck called personality dimension – and other philosophers and psychologists have used a different term for it – is invaluable for the temperament theory that is used to this day. Eysenck and Eysenck (1985) noted that the ideas of the four classical temperaments have had a direct influence on our modern understanding of personality, even though it seems absurd to many (cited in Hall et al., 1998).

Eysenck believed that an individual's behaviour is determined by the position on the three dimensions, as well as the circumstances one is exposed to (Hall et al., 1998). Buss and Plomin believed that every person has varying degrees of *emotionality*, *activity* and *sociability* traits, which in turn determines someone's personality (Buss & Plomin, 1984). Since Buss' and Plomin's findings have great significance to this research, the details of their theory will be discussed on pages 27-30.

Buss and Plomin conducted extensive research with identical and fraternal twins, which showed that the temperamental make-up of an individual is primarily inherited (Schultz & Schultz, 2005). Their theory found support through other

independent research, which came to the same conclusion (Schultz & Schultz, 2005). According to Plomin et al. (1988) an individual's temperament remains unchanged throughout the life span, which is another indicator that the temperament is what we are equipped with at birth and that environmental experiences and social interactions have little impact on someone's temperament (as cited in Schultz & Schultz, 2005).

The temperament theory reached the eastern world even before western minds occupied themselves with the concept. In 1500 BCE the Hindu Rig Vedas developed a four-factor model in order to gain a better understanding of the human mind and behaviour (Rothbart, 2012). The four factors included in this model were *gunas*, *rajas*, *tamas* and *sattwa* (Rothbart, 2012). This is clear evidence that similar theories to the classic four temperaments were developed even before Hippocrates (Rothbart, 2012).

The Chinese concept of *chi* also portrays a strong resemblance to the temperaments, as *chi* is believed to have a strong influence on a person's emotions and behaviour (Rothbart, 2012).

There is clear evidence throughout time that the traditional temperaments have stood the test of time and have been used as a foundation for many other studies. Even though the temperaments have formed the basis for many medical studies led by Hippocrates, Galen, and Avicenna, as well as influenced Chinese and Ayurvedic medicine, they are barely known in the 21st century (Hakim, G.M., n.d., as cited in Rolfe, 2002).

However, modern personality studies, as well as medical studies have not contradicted the concept of the ancient four humours and temperaments (Rolfe, 2002).

Waldorf Education

The Philosophy

Rudolf Steiner described the temperaments as the “underlying colouring of the human personality” (Steiner, 2008, p.2). Almost everyone is made of all four temperaments, but usually one of them dominates the others (Wilkinson, 1973). Steiner (1919) distinguished between four different bodies, which form the human being. These are the physical body, the etheric body, the astral body and the ego or the ‘I’ (Steiner, 1919). Ideally all four bodies should be in harmony with each other (Steiner, 1919).

However, when a child enters the physical world, some of the bodies are not mature yet, which causes an imbalance (Steiner, 1919). The physical body forms a unity with the mineral world and, clearly, is born when the child enters the physical world (Steiner, 2008). The term being born refers to a body coming to life within the child and having an impact on the individual’s behaviour. Around the age of seven the etheric body is freed, forming a close relationship with the world of plants (Steiner, 2008). This body is also referred to as the ‘body of formative-forces’ or ‘life-body’, as it fosters physical growth within the child (Childs, 1991). The etheric body enables the body to heal after suffering an injury (Childs, 1991). The third body—the astral body—is freed around the age of fourteen and it allows the young teenager to become aware of themselves and their actions (Steiner, 2008). The ability to notice sensations such as pleasure and pain becomes heightened through the astral body and connects every human being with the animal kingdom (Child, 1991). What sets humans apart from any other living organisms on earth is the fourth body, the ego or ‘I’ (Steiner, 2008). The ego enables individualisation and the ability to refer to oneself as an ‘I’ (Childs, 1991).

Education must aim to bring completeness into a child’s life by strengthening each of the bodies and balancing the four temperaments in every child (Steiner, 1919).

Each of the temperaments forms a unique relationship with one the four bodies (Steiner, 1919). If a child has a strong sense of self/ego, then the child is of *melancholic* temperament (Steiner, 1919). If the astral body dominates the child, then a *choleric* temperament can be observed (Steiner, 1919). The etheric body is

closely related to the *sanguine* temperament and a child with a dominant physical body will be of *phlegmatic* temperament (Steiner, 1919).

As discussed earlier, it is very difficult to find a universal definition of the word temperament, as different people believe the temperaments to have different traits and characteristics. The following quote by Rudolf Steiner might shed some light on this issue.

There is indeed an intermediary between what is thus brought over from earlier lives on Earth and what is provided by heredity. This intermediary has the more universal qualities provided by family, nation and race, but is at the same time capable of individualisation. That which stands midway between the line of heredity and the individuality is expressed in the word ‘temperament’. (Steiner, 1944, as cited in Childs, 1995, p. 1)

The above definition helps to understand why the temperaments are considered to be a fundamental tool for Steiner Waldorf teachers. It is not only about this lifetime, but about what every student brings with them from earlier lives.

Identifying the Temperaments

Steiner believed that one of the most important tasks of a teacher is to develop a sound knowledge of the temperaments and to apply this knowledge within the classroom (Carlgren, 2008).

Waldorf teachers use different techniques to determine a child’s temperament, such as observing the child interacting with peers, talking to parents, telling stories to a group of children and analysing their reaction to certain passages. However, there are also physical signs that according to Steiner are clear indicators of a child’s temperament, such as gait, figure, temperature of the hands and skin tone (Steiner, 2008).

Steiner gave a list of indicators that can help teachers to identify the temperaments. However, since every human is a mixture of all four temperaments, these should only be used as indications.

Archetypally, *Cholerics* can be said to have a thickset build, whereas children with the *phlegmatic* temperament are usually quite round (Carlgren, 2008). *Sanguines* can be tall and lanky and the *melancholic* temperament can be seen in a thin figure

(Carlgren, 2008). Steiner gave indications of external features that can be observed to help determine a child's temperament (Steiner, 2008). The *choleric* temperament shows itself through sharp angular facial features with dark eyes and a strong gait, where every step is taken in a deliberate way (Steiner, 2008). *Sanguine* children often have an expressive and changeable face with blue eyes, a delicate bone structure with lean muscles and a light and springy gait (Steiner, 2008). The *melancholic* temperament possibly shows itself through a hanging head with dull eyes and a firm gait in a leaden way (Steiner, 2008). The *phlegmatic* temperament can be represented in a static and impassive physiognomy and a loose-jointed gait (Steiner, 2008). *Phlegmatic* children often act in a manner where they seem to be uninvolved (Steiner, 2008).

Of course these indications are not always 100 per cent correct, individuals are unique and cannot be categorised in such a manner. However, these characteristics can help and guide the determination of a temperament (Steiner, 2008). There are much more subtle indicators that can guide teachers towards determining a child's temperament. The following paragraphs will aim to generate an image, which was Steiner's intention when he first spoke about the temperaments in one of his lectures:

By filling ourselves with practical wisdom such as this, we learn to solve that basic riddle of life, the other person. It is solved not by postulating abstract ideas and concepts, but by means of pictures. Instead of arbitrarily theorising, we should seek an immediate understanding of every individual human being. We can do this, however, only by knowing what lies in the depths of the soul. (Steiner, 2008, p. 24)

The archetypal *choleric* firmly plants his or her feet on the ground, but at the same time he is always ready to move (Wilkinson, 1973). The gestures of a *choleric* are short, energetic and purposeful (Wilkinson, 1973). Being a ruler comes natural to the *choleric* (Wilkinson, 1973). They are purposeful with their plans, wanting to put them into action within seconds (Wilkinson, 1973). Expression of their strong will through blustering are typical *choleric* traits (Steiner, 1919). *Cholerics* often overload

themselves by doing too many things at the same time, without having a proper sense of order (Wilkinson, 1973). *Choleric* children's paintings often reflect dramatic situations (Wilkinson, 1973). They love to use bright reds in their creations (Carlgren, 2008).

For the *sanguine* the sun is always shining (Wilkinson, 1973). He or she tends to have a bouncy walk, often tip toeing (Wilkinson, 1973). *Sanguine* children sit and lie in seemingly awkward position, which they find very comfortable (Wilkinson, 1973). They find everything new interesting but have difficulty sticking to anything (Wilkinson, 1973). A clear indicator to determine the *sanguine* temperament is to look at a child's attention span (Steiner, 1919). Children of *sanguine* temperament tend to lose interest very quickly (Steiner, 1919) and it is difficult to identify a *sanguine's* habit, as they have no habits (Wilkinson, 1973). *Sanguines* pay much attention to detail in their paintings, making them lively and using bright colours (Wilkinson, 1973). Yellow is their colour of choice (Carlgren, 2008).

Children who seem inwardly occupied by pondering many times throughout the day are of *melancholic* temperament (Steiner, 1919). The *melancholic* often uses gestures that have a downward tendency, almost indicating resignation (Wilkinson, 1973). *Melancholics* live inside their heads thinking about what they saw and heard over and over again (Wilkinson, 1973). If one wins the sympathy of a *melancholic*, he or she will enjoy a great deal of help to a degree of self-sacrificing (Wilkinson, 1973). *Melancholic* children pay attention to details in their drawings and paintings, an exercise they can easily get lost in (Wilkinson, 1973).

A child, who seems inwardly unoccupied, without showing any interest in external events either, is of *phlegmatic* temperament (Steiner, 1919). They use a lot of time when gesturing, doing everything quite slowly, but really explaining the point (Wilkinson, 1973). *Phlegmatics* use their words wisely, speaking in a way that seems monotonous to some people (Wilkinson, 1973). However, *phlegmatics* are great at clearly expressing what they need to say (Wilkinson, 1973). Giving a quick spontaneous answer is not an easy thing to do, as *phlegmatics* need to think about what they say (Wilkinson, 1973). The *phlegmatic* flourishes in routine and order (Wilkinson, 1973). *Phlegmatics'* drawings look bland to some degree (Wilkinson,

1973). Even though the colours will blend well together, the painting will almost look unfinished to other people's eyes (Wilkinson, 1973). Green is their colour of choice and will be dominating their paintings (Carlgren, 2008).

Figure 2 How to recognise the temperaments

(The archetypal features in the following chart should only be used as an indication, as they cannot all be found in any one child)

	Choleric	Sanguine	Phlegmatic	Melancholic
Physical Appearance	Short, stocky, bullnecked, upright	Slender, elegant, well-balanced	Big, fleshy, rotund	Large, bony, heavy-limbed with bowed head
Walk	Firm, digging heels in ground	Light, tripping on the toes	Rolling, ambling (steamroller)	Slow with drooping, sliding gait
Eyes	Energetic, active	Dancing, lively	Sleepy, often half-closed	Tragic, mournful
Gestures	Short, abrupt	Graceful, lively	Slow, deliberate	Drooping
Manner of Speaking	Sharp, emphatic, deliberate to the point	Eloquent, with flowery language	Ponderous, logical, clear	Hesitating, halting, not completing sentences
Relationships	Friendly, as long as recognised leader	Friendly to all, fickle, changeable	Friendly, but reserved, impassive	Poor, has sympathy only with fellow sufferers
Habits	Must jolly everyone else along	Is flexible, has no fixed habits	Likes routine, has set habits	Likes solitary occupations
Food	Enjoys spicy food, well-prepared	Nibbles, likes nicely prepared things	Eats good square meals of anything	Is finicky, likes sweet things
Dress	Likes something individual and outstanding	Likes anything new, anything colourful	Has a conservative taste	Chooses drab clothes, is difficult to please
Powers of Observation	Observes what is of interest but forgets	Notifies everything and forgets everything	Observes and remembers exactly when sufficiently awake	Observes little but remembers it
Memory	Poor	Like a sieve	Good concerning the world	Good concerning self
Interests	The world, self and the future	The immediate present	The present without getting involved	Self and the past

Attitudes	Commanding, aggressive, eventually understanding	Kind, understanding, sympathetic	Discerning, objective	Egotistical, vindictive, self-sacrificing in cases of suffering
Disposition	Boasting, enthusiastic, generous, intolerant, impatient, gambling	Changeable, superficial, unreliable, kind, impatient, friendly	Faithful, stable, methodical, lethargic, self-contented, trustworthy, motherly	Self-absorbed, easily depressed, fearful, moody, tyrannical, helpful, artistic
Paintings and Drawings (Children's)	Volcanoes, precipices with self overcoming obstacles, strong colours	Lots of bright colours, movement and detail	Bland, uninteresting, unfinished in appearance	Strong, harmonious colours, attempts too much detail

(Wilkinson, 1977, pp. 38-39)

Teaching in a Waldorf classroom

Steiner (1919) regarded the temperaments as an instrument to individualise the process of teaching a large class of children. To have a sound knowledge of the four temperaments in an anthroposophical sense is the most important task of a teacher (Steiner, 1919). Keeping this knowledge in mind, the teacher should try to identify a child's temperament by observing the individual's habits and outer appearance (Steiner, 1919).

The treatment of the temperaments is "to exhaust what is there by nature" (Wilkinson, 1973, p. 13). Once the teacher has identified every child's temperament, the children will be sat in groups accordingly (Steiner, 1919). All children of *sanguine* temperament in one group, *melancholics* in the other and so on (Steiner, 1919). The teacher can then address each group in a different way according to their temperament, so that the groups will complement each other (Steiner, 1919). This specific process will help children to focus and to learn from one another (Steiner, 1919). Furthermore, it offers children the opportunity to overcome the weaknesses of their specific temperament by seeing their own temperament reflected within other children (Carlgren, 2008).

Waldorf teachers are encouraged to work out of their intuition. However, Steiner gave indications on how to educate children for each dominant temperament.

The *choleric* child needs to be given many activities by the teacher to use his or her temperament in a physical sense where the child can 'conquer the world' (Wilkinson, 1973). *Cholerics* enjoy competition and rivalry, and like a good challenge (Wilkinson, 1973). Saying that something is impossible to do are the words that drive *cholerics* (Wilkinson, 1973). For the *choleric* child the teacher must be a hero who knows everything (Wilkinson, 1973). If a *choleric* child has broken the rules, punishment must follow after a good time has passed (Wilkinson, 1973). He or she needs the time to calm down first and become reasonable again before any misbehaving can be discussed (Wilkinson, 1973).

The teacher must develop a strong personal connection with the *sanguine* students, as that is one thing that *sanguines* are interested in – personalities (Wilkinson, 1973). This connection can awaken an interest in what the teacher is interested in and the *sanguine* will start to do things out of love for another person (Wilkinson, 1973). Doubting his or her ability to carry out a task will cause anxiousness (Wilkinson, 1973). What are the magic words to the *choleric* can have a detrimental effect on the *sanguine*.

When teaching a *melancholic* child the teacher must be sympathetic but firm at the same time (Wilkinson, 1973). Hearing stories with sad fortunes will be soul food for their temperament (Wilkinson, 1973). One should not try to jolly a *melancholic*, as they are happy being sad and they should be allowed to (Wilkinson, 1973). The *melancholic's* attention must be directed towards his or her own actions and how they can affect other people and cause possible suffering (Wilkinson, 1973). The teacher should not be afraid to share his or her own suffering (to some degree) with *melancholic* children, as it will deepen their relationship (Wilkinson, 1973).

A *phlegmatic* child needs to have plenty of friends, so that his or her interest can be awakened through the interests of his or her friends (Wilkinson, 1973). Children of this temperament do not struggle with authority and will obey (Wilkinson, 1973). Therefore, the teacher must tell the *phlegmatic* child what to do to give him or her direction (Wilkinson, 1973).

There are important indications given not only on how to work with the individual child, but also how to educate a whole class that is a mix of the temperaments (Wilkinson, 1977). The philosophy in a Waldorf classroom is 'like cures like' (Wilkinson, 1977). *Phlegmatic* children will be grouped together, so that they will get bored with each other and start to wake up (Wilkinson, 1977). *Melancholic* children will eventually develop a sense of empathy for each other's hardship (Wilkinson, 1977).

When telling a story to the whole class the teacher must be aware of his or her tempo, voice and change of mood, in order to appeal to every child's temperament (Wilkinson, 1977). *Cholerics* love boisterous activity and excitement, whereas the *melancholic* child will react to sadness in the teacher's voice (Wilkinson, 1977). *Sanguines* like to listen to a quick sequence of changing events told in a lively voice, whereas *phlegmatic* children love a story that is told slowly, so that they can absorb every detail (Wilkinson, 1977).

Effects of mistreatment of the temperaments

Having a sound knowledge of the temperaments is one important aspect of being a Steiner Waldorf teacher. But a teacher must also be able to overcome his or her dominant temperament, in order to address all children of different temperaments within the classroom, but also to prevent individuals from developing diseases later in life (Gloeckler, 2012).¹

Baerbel Walbaum worked with social medicine specialist Dieter Walbaum to study the relationship between education and diseases that occur during adulthood. Other studies conducted by Biederman et al. (2001) as well as by Hirshfeld-Becker et al. (2007) have also shown a link between the temperaments and health problems (as cited in Bould, Joinson, Sterne & Araya, 2012). Rudolf Steiner pointed out to teachers that education can and must have a healing effect on children (Gloeckler, 2012).

¹ Rudolf Steiner Stated that Children who struggle to find a strong connection to their physical bodies in childhood (which he called 'incarnating') could experience difficulties relinquishing a connection with their bodies as an adult (excarinating) (Gloeckler, 2012).

However, education can also have a negative effect on an individual's health, which usually does not appear until adulthood (Gloeckler, 2012).

In their research, Walbaum and Walbaum related cardiovascular diseases to the exposure of an aggressive *choleric* teaching style (Gloeckler, 2012). Teachers who are unable to overcome their dominant *phlegmatic* temperament may cause intense nervousness in children (Gloeckler, 2012). Issues of low stamina in adults are related to the exposure of a *sanguine* teaching style during childhood (Gloeckler, 2012).

A *melancholic* teacher who is unable to see the world in a light-hearted way may cause digestive and metabolic problems, which will show decades after the child had been taught (Gloeckler, 2012).

Rittelmeyer's & Buss' and Plomin's Research

The EAS-System was developed by Arnold H. Buss and Robert Plomin (Buss & Plomin, 1984) and presents an empirical model of temperament research (as cited in Rittelmeyer, 2010). The first model of Buss' and Plomin's (1975) temperament survey included four temperament factors: emotionality, activity, sociability and impulsivity (Spence, Owens & Goodyer, 2013). Impulsivity was removed from the list, as it did not tend to appear as a temperament trait in very young children (Spence et al., 2013). Shyness was added to Buss' and Plomin's (1984) model at a later stage, as it was found to be inhibited behaviour towards unknown people (Spence et al., 2013). It was crucial to add shyness to Buss' and Plomin's (1984) EAS Temperament Survey, as shyness is accounted for children developing fears and anxiety disorders (Biederman et al., 1990, as cited in Boer & Westenberg, 1994). Shyness and sociability are often considered to be of the same temperament dimension (Boer & Westenberg, 1994). Sociability refers to an individual preferring the company of others, whereas shyness refers to the tendency to escape from social situations, especially if that means that the individual has to interact with a stranger (Boer & Westenberg, 1994). Fearfulness separates shyness and sociability, as a shy child tends to be fearful as well, which is not the case in children with high sociability results (Boer & Westenberg, 1994).

Buss and Plomin (1984) stated that every person has varying degrees of emotionality, activity and sociability traits, which in turn determine someone's personality. Buss and Plomin (1984) conducted extensive research with identical and fraternal twins, which showed that the temperamental make-up of an individual is primarily inherited. Their theory found support through other independent research, which came to the same conclusion (Schultz & Schultz, 2005). According to Plomin et al. (1988) an individual's temperament stays the same throughout the life span, which is another indicator that the temperament is what we are equipped with at birth and that environmental experiences and social interactions have little impact on someone's temperament (as cited in Schultz & Schultz, 2005). In fact, observing social interaction and how an individual reacts to certain situations can help to identify a person's temperament.

Emotionality refers to distress and how easily an individual becomes upset (Holder & Klassen, 2010). Activity defines the types of activities an individual chooses, ranging from high-energy to low-energy activities (Holder & Klassen, 2010). Sociability is a factor that identifies to which degree individuals choose to be alone or interact with others (Holder & Klassen, 2010).

Christian Rittelmeyer (2010) showed in his journal article that the classical use of the temperaments within the Steiner-Waldorf context could be set against the empirical research on psychological temperament to show their compatibility. Rittelmeyer (2010) did not seek to prove the validity of the temperaments; he was more interested in showing the connection between Rudolf Steiner's use of the temperaments and that of other empirical temperament research, such as the EAS Temperament Survey by Buss and Plomin (1984). There is no extensive research that has been conducted on the temperaments as in a classical sense (Rittelmeyer, 2010). In response to some harsh critique relating to the classical four temperaments, Rittelmeyer (2010) claimed that the temperaments are compatible with the empirical EAS System by Buss and Plomin (1984). In comparison to the classical four temperaments, the EAS-System uses only three factors: emotionality, activity and sociability (Rittelmeyer, 2010). Rittelmeyer (2010) used the factors *activity* and *sociability* to create an orthogonal coordinate system resulting in four factors, which

are *high activity*, *low activity*, *high sociability* and *low sociability*. He then matched each of the four temperaments with two from the developed coordinate system:

- *Choleric*: high activity and low sociability
- *Sanguine*: high activity and high sociability
- *Melancholic*: low activity and low sociability
- *Phlegmatic*: low activity and high sociability

He then used the last factor *emotionality* to create a three dimensional coordinate system, which showed that *choleric*s and *melancholic*s are highly emotional whereas *sanguines* and *phlegmatics* tend to be less emotional (Rittelmeyer, 2010).

Rittelmeyer (2010) used typical temperament attributes to formulate questions that individuals can answer through Likert scales. He portrayed the gathered data in a grid to see if the two different answers were in some relationship to one another (Rittelmeyer, 2010). If no relationship between two attributes was found then he assumed that they represented two different temperaments (Rittelmeyer, 2010). It is also likely that two attributes will show a correlation once that data has been analysed (Rittelmeyer, 2010). If a close correlation between two factors is shown then it is likely they belong to the same temperament (Rittelmeyer, 2010). However, this type of questioning presents a problem, as it will be very difficult to ask primary aged children to rate their own temperament on Likert scales. This type of information can be only gathered through parents and teachers.

The importance of the correspondence that Rittelmeyer found between the classical temperaments and an empirical temperament system becomes evident when considering how much Waldorf teachers' pedagogical techniques are influenced by the temperaments.

According to Nigg (2006) temperaments are best identified early in life, as they can present a stable factor in a person's life (as cited in Bould et al., 2012). It is important to note that there is a significant disparity in philosophers' and theorists' beliefs regarding the stability of temperaments. Steiner (1919) states that temperaments are subject to change and that the teacher can actively work towards balancing the temperaments. Whereas other theorists, such as Buss and Plomin (1984) and Nigg

(2006) describe temperament to remain unchanged throughout a person's life span. I personally believe that human beings have the ability to adapt and therefore someone's temperament changes according to their developmental phase, as well as life situation.

Temperaments do not have any effect on an individual's cognitive ability; however, they have meaning to explain differences within individuals (Rutter, 1987, as cited in Bould et al., 2012). A child's temperament forms a strong correlation to behavioural issues (Karp et al., 2004).

The next step that must be taken is to test the degree to which the classical four temperaments used in Waldorf education and the EAS Survey indicate similarities with temperament when applied.

Conclusion

The literature review has highlighted the significance of the temperaments throughout history and explained why Steiner Waldorf education incorporates the four classical temperaments into its teaching philosophy. An individual's temperamental make-up remains steady throughout the life span, which implies the importance of determining temperaments at an early age, to work with the strengths of each temperament. However, it has also been made clear that teachers cannot always follow a pure feeling but must find out the reasons behind the activities that are being done in every Steiner Waldorf classroom every day. In answering the research question, the aim of this study is to explore to what degree the classical four temperaments correlate with the EAS Survey. Conducting research to explore this correlation presents the following research question:

- To what degree can Buss' and Plomin's *Emotionality, Activity* and *Sociability/Shyness* survey be used to evaluate Steiner's pedagogical ideas of temperaments in school-aged children?

The literature review outlined different pedagogical strategies and signs in appearance and behaviour that teachers can use in the classroom setting to work with the temperaments. As mentioned above, these should only be used as indications to honour and value each child's individuality.

In addition to answering the research question, this study also explores the different ways teachers use and work with the temperaments.

- How are teachers working with the temperaments in their professional classroom practice?

This literature review has provided an overview of the temperaments throughout history, starting with the ancient Greeks by looking at Hippocrates and Galen and continuing to explore the influence this classical theory had on philosophy in Europe, especially during the 17th and 18th century.

The second part of the literature review provided an in depth explanation of the temperaments from an anthroposophical point of view and how teachers can incorporate this theory into their professional practice.

Chapter 3: Methodology

Methodological Approach

Epistemology and Ontology

Epistemology refers to the acquisition of knowledge and ontology refers to how reality is perceived by a person (Educational Research, 2015). Epistemology and ontology are closely related. Epistemology is the way of knowing and ontology the way of seeing.

My personal epistemological position is closely related to Rudolf Steiner's ontological viewpoints. Steiner gave indications to the teachers of the first Waldorf School in Germany, which are still being widely referred to throughout the Waldorf community today. One of these indications was that teachers must aspire to develop a sound knowledge of the temperaments (Carlgren, 2008). Rudolf Steiner believed in the validity of the four classical temperaments and made them a focal point of his educational philosophy.

The theory of the classical four temperaments has helped me to understand myself, family, friends, colleagues and especially my students. It is a tool to understand and analyse human behaviour, which is an essential task for a teacher. Knowing why a child reacts and behaves in certain situations is crucial to successful behaviour management within the classroom.

Moreover, the theory of temperaments does not only offer understanding of the human being from a physical and psychological dimension, but goes much deeper than that. The aim of education is to heal humanity (Carlgren, 2008) and the balancing of the temperaments within our students is a way to achieve this goal.

As a Steiner Waldorf teacher myself I have confidence in the value of the classical temperaments and I work with this knowledge on a daily basis. However, in recent years there has been harsh critique towards Waldorf Education and especially towards the use of a concept that dates back to the ancient Greeks.

I am aware that in order to generate accurate evidence and 'find the truth' I must take a neutral and unbiased position (Newby, 2010). To achieve this I have chosen to

use two different data gathering processes, the first being quantitative to generate unbiased data and the second being qualitative to gain a deep insight into teachers' lived experiences.

I strongly believe that Steiner Waldorf education needs to become the centre point of more educational research to hold its position as an alternative form of education. If the outcome is that some of the practices used by Waldorf teachers be disproven, then it is time for the Waldorf community to adapt more recent practices, suited to the 21st century.

From an epistemological point of view, both researcher and participants are needed to co-construct reality (Creswell, 2013). This research depended on Steiner Waldorf teachers to share their knowledge and practices within the classroom, as well as on parents and their perception of their own child. Responses to the questionnaires delivered data about the same subject from two different points of view (teacher and parents), whereas the interviews offered an opportunity to gain an insight and understanding of how Steiner Waldorf teachers identify the temperaments and what practices are used within the classroom to educate children according to their dominant temperament.

Paradigms

A paradigm is the philosophical framework that explains the theories and methodologies used by the researcher (O'Toole & Beckett, 2013). It is crucial that a paradigm fits the research, as the study relies on the world-view chosen by the researcher (O'Toole & Beckett, 2013). I believe that the pragmatist paradigm is the most suitable paradigm for this research, as for me the most important aspect of this study is to fully answer the research question. Pragmatism is more concerned with the outcome and the consequences of a study, rather than the antecedent conditions (Creswell, 2013).

Pragmatism has recently gained popularity, as it offers a path that operates between the quantitative and qualitative approach (Newby, 2014). Pragmatism is described as problem solving within the research field, meaning that an answer needs to be found for a specific problem (Newby, 2010).

Pragmatism can take many different forms, as it is a worldview that arises out of the research question and the actions taken to answer the question to its fullest extent (Creswell, 2014). A researcher who decides to use pragmatism as the overarching paradigm is able to draw on different approaches (Rossman & Wilson, 1985, as cited in Creswell, 2014).

According to Creswell and Clark (2011), it is better to choose one paradigm that fits the research, rather than mixing different paradigms to suit the research.

Pragmatism is not narrowed down to one philosophy or reality (Creswell, 2013), which gives the researcher freedom to deeply explore the questions asked. That means that the methods, techniques and procedures that best fit the purpose of the study can be chosen (Creswell, 2013). It encourages the researcher to use multiple methods and sources of data collection (Creswell, 2013).

From an ontological viewpoint pragmatists consider reality to be singular, as well as multiple (Creswell & Clark, 2011). The human – and therefore the researcher and participants – are considered as truth-makers (Cherryholmes, 1992, as cited in Garrison, 1994). The one theory that sets the foundation for this research is Rudolf Steiner's indications given on the four classical temperaments, which forms a single reality (Creswell & Clark, 2011). At the same time, I believe in the importance of testing theories against different parameters, which suggest that a phenomenon is looked at from a multiple reality perspective (Creswell & Clark, 2011).

I have chosen pragmatism as the 'umbrella' paradigm for this research, as I believe that it fits the research question well. The world is not an absolute unity to the pragmatist, which is why he or she does not subscribe to only one way of doing things (Creswell, 2014). Usually educational research falls under the positivist paradigm, due to the fact that many early educational researchers came from a psychology background, which meant that a scientific approach to research was used (Marshall, 1987). Therefore, pragmatism is not seen as the most suitable paradigm in educational research (Marshall, 1987). However, it has stood the test of time to this day (Marshall, 1987). It has been used as a paradigm for educational research especially in New Zealand, due to the very pragmatic outlook on life many

New Zealanders have (Marshall, 1987). New Zealander's are often regarded as people who take action rather than being contemplative thinkers, which fits very well into the pragmatist paradigm (Marshall, 1987).

The most obvious difference between positivism and pragmatism is the question of the paramount concern of each paradigm (Marshall, 1987). The philosophy of positivism dictates the questions, principles and criteria that are being discussed, whereas the pragmatist's point of view is to focus on educational practice and problems, and in turn to use philosophy to improve practice (Marshall, 1987). The pragmatist paradigm is much more applicable to 21st century education, as it gives the researcher the option to really focus on the problem, rather than being occupied with how to fit the research question into a certain paradigm. Marshall describes the way to a pragmatic approach to educational philosophy as follows:

Philosophy of education should impinge upon practice and that it is therefore to be evaluated in relation to practice, not just as a contingent after-thought, but as an essential element, then we open the way to a pragmatic approach to philosophy of education. (Marshall, 1987, p. 53)

Research Design

Mixed Method Research

When using mixed method as a research approach it can lead to some tension in regards to choosing the right paradigm (Newby, 2014). Though there are merits for choosing either qualitative or quantitative approaches, my approach uses both in the one study, in order to understand social phenomena in the most effective way (Creswell, 2013). According to Creswell (2008), qualitative and quantitative approaches cannot be viewed as separate, but as two forms that differ from each other lying on the same continuum (as cited in O'Toole & Beckett, 2013).

Choosing a fitting paradigm (in this study the pragmatist paradigm is used) is particularly difficult for a mixed method approach, as quantitative and qualitative methods approach research from polar positions, and the mixed method approach is

situated between the two (Newby, 2014). It combines two ways of viewing the world that struggle to co-exist alongside each other (Newby, 2010). This view, in between two opposing views, is referred to as pragmatism (Newby, 2014). Quantitative research embraces a viewpoint of the existence of one single reality, whereas qualitative research simulates a multitude of realities (Newby, 2014). Quantitative research aims to answer the research question through data that can be measured (O'Toole & Beckett, 2013). Qualitative research collects, interprets and judges that data that cannot be measured (O'Toole & Beckett, 2013). It creates tension when the two try co-existing alongside each other, but it is not impossible. Finding a fitting paradigm that allows the two to co-exist and finding a link between the qualitative and quantitative can be challenging. However, using two separate data gathering tools offers a better understanding of the participants and their views.

I have chosen to use a mixed method approach to answer my research question, as I believe that both – quantitative and qualitative research – have valuable tools that can help to develop a better understanding of the teaching profession.

Through this research I hope to enlighten my personal practice, as well as contribute to the Waldorf community as a whole. I hope that the findings of this study will have an impact on the practice of Waldorf teachers in Aotearoa New Zealand.

Taking the epistemology, ontology and paradigm for this research into consideration, a mixed method approach offers the best set of tools to fully answer the research question.

Research Methods

When a mixed method approach is used, it is necessary to give a rationale, why quantitative and qualitative data are being mixed together (Creswell, 2014). Using open-ended and closed-ended data and mixing the two together enhances the researcher's understanding of the topic that is being researched. Each form of data collection has strengths and limitations (Creswell, 2014). Questionnaires only gather numeric data, which gives little insight into participants' experiences, whereas interviews offer a tool to understand participants' lived experience (O'Toole &

Beckett, 2013). However, the interview data needs to be interpreted by the researcher, which can cause validity issues (O'Toole & Beckett, 2013).

I hope to combine multiple forms of data collection to utilise the strength of each and overcome their limitations.

This research uses a convergent parallel mixed method design, where both quantitative and qualitative data is collected and analysed separately and then compared to see if the findings can be confirmed or disproven with each other (Creswell, 2014).

To gather quantitative data, Buss' and Plomin's EAS Survey was used. This is a questionnaire, which includes 20 questions to be answered by parents and teachers. Questionnaires are easy to set up and manage and the data can be easily analysed (O'Toole & Beckett, 2013). This makes the process especially straight forward for the parents, as the questionnaire will be sent to their homes.

I considered the advantages and disadvantages of highly structured and highly unstructured interviews. Fully structured interviews are used to gather statistical information from a large number of participants (O'Toole & Beckett, 2013).

Unstructured interviews often produce information that can lie outside the research framework (O'Toole & Beckett, 2013). For this research semi-structured interviews are most appropriate, as it provides a space for unexpected insight, while offering a common framework, which produces common data (O'Toole & Beckett, 2013).

Finding out the teacher's view on the individual child's temperament is not the only aim I have. I also want to gather information about how the teacher identifies a temperament, and how he or she uses the theory of the four classical temperaments within the classroom setting. Interviews present a way to bring together the multiple views participants hold (Kvale, 1996).

Data Collection

Interviews as an instrument for data collection

Interviews allow the researcher to draw out the participants' views and opinions (Creswell, 2014). They provide qualitative data, which underpins the quantitative

data that was gathered through different tools (Creswell & Clark, 2011). The purpose of the interview is to understand the daily-lived experience of the participants (Brinkmann & Kvale, 2015).

It is crucial for my research to understand if the quantitative data matches the teachers' temperament judgements for my research. However, the interviews provide a more detailed form of data gathering to understand how the teachers work with the temperaments.

Some epistemological considerations need to be made before conducting interviews. There are two contrasting styles of interviewing – the process of knowledge collection and the process of knowledge construction (Brinkmann & Kvale, 2015). Each pathway may possibly produce different data. However, both ways of qualitative data gathering present a more extensive pathway to answering the research question (Creswell & Clark, 2011). In my interview I decided to find a way between the two to gather a holistic picture, as well as to work with the pragmatist paradigm, which allows the researcher to use tools that best answer the research question (Marshall, 1987). The first five questions seek to collect knowledge, whereas the last two questions focus on knowledge construction (see Appendix K).

The open-ended questions in the semi-structured interviews emerged from the literature review. I prepared the questions in advance to ensure all themes were covered. Through trialling the interview with an experienced Waldorf colleague I was able to gather feedback on the questions, trial my recording technology and practice questioning strategies. I started the interviews by asking the participants about their role at school to build a relationship by showing interest in their lives, as well as breaking the ice, giving participants the time to feel at ease and settle in. Human interaction affects the interviewee and therefore the data that will be gathered (Brinkmann & Kvale, 2015).

The data from the interviews was collected between the 29th of November and the 15th of December 2017. The date, time and location of the interviews were set in collaboration with the participants. All interviews were held at a quiet location at the participants' schools.

During the interviews I took notes for each question, in order to relieve the transcription process for myself. I located the notes between the participant and myself on the table to ensure transparency.

When I transcribed the interview I realised how extensive the gap between oral and written language can be (Brinkmann & Kvale, 2015). Oral, and written language, operate under different sets of rules (Kvale, 1996). Taking out the face-to-face value of a conversation can also take away meaning from what was said (Brinkmann & Kvale, 2015). I tried to transcribe the interviews promptly to have the advantage of vividly remembering the experience. Throughout the transcription process I understood the importance of eliminating my personal judgement. My aim was to produce a coherent transcribed piece of writing by only recording what was made clear and distinct by the participant (Kvale, 1996).

Advantages and disadvantages of interviews

According to Birch, Miller, Mauthner and Jessop (2002) ethical issues arise in the interview process because the participants' lives are being researched (as cited in Brinkmann & Kvale, 2015).

Conducting interviews automatically creates an asymmetrical power relation (Brinkmann & Kvale, 2015). It is important to aim for a power balance when working with colleagues. However, this is impossible to achieve in an interview setting. An interview is not an everyday casual conversation but a professional scientific conversation (Brinkmann & Kvale, 2015). The researcher or interviewer has the competence to define the interview situation, topic, and questions, as well as the authority to decide which answers need to be followed up (Brinkmann & Kvale, 2015). Many participants will be aware of the power imbalance that occurs in an interview situation and therefore withholding information could be a possible outcome (Brinkmann & Kvale, 2015). Instead of trying the impossible and eliminating the power imbalances that can occur in an interview, it is more beneficial to understand and reflect on the way knowledge is created in an interview setting (Brinkmann & Kvale, 2015).

There are certainly a number of ethical issues that can arise in an interview process. One is that an interview can turn into a manipulative dialogue (Brinkmann & Kvale, 2015). Often the interviewer has a hidden agenda trying to gather information that the interviewee is not aware of (Brinkmann & Kvale, 2015). There is always the possibility that the questions asked in an interview are persuasive questions (Creswell, 2013). In that case the researcher has to ask him or herself if the aim of the research is to collect knowledge or to socially construct it.

Another concern is that the interviewer has control over interpreting the statements made by the participant (Brinkmann & Kvale, 2015). This can cause discomfort for the interviewee, as the interviewer might not correctly interpret the meaning of each answer given.

However, interviews can give the researcher a sound understanding of how participants see and construct the world, and how they interpret their own experiences (Merriam & Tisdell, 2016). Rather than looking at hard facts such as numbers, the data gathered through an interview can inform research on a deep and meaningful level.

Interviews are a suitable tool if the researcher wants to understand and “investigate the quality and complexity of human behaviour” (O’Toole & Beckett, 2013, p. 9).

Using an interview as one data gathering process was important for me, as I believe that it is crucial to understand how the classical four temperaments affect teaching and how a teacher sees the child in the light of the temperaments.

Questionnaires as an instrument for data collection

The second tool used in this research is the EAS Survey developed by Arnold H. Buss and Robert Plomin (1984). The reason for the selection of this specific questionnaire is due to the connection made by Christian Rittelmeyer (2010) in his journal article *‘Die Temperamente in der Waldorfpädagogik’* (The Temperaments in Waldorf Pedagogy). Rittelmeyer (2010) revealed links between the four classical temperaments and Buss and Plomin’s three factors, which are emotionality, activity and sociability/shyness.

Teachers and parents were given two slightly varying questionnaires that asked them to rank their child/student on a Likert scale. 20 questions were asked with the aim to investigate the child's level of emotionality, activity, sociability and shyness. The 20 items were rated on a scale of 1 to 5, 1 referring to 'not characteristic or typical of child' and 5 to 'very characteristic or typical of child'.

The validity of the questionnaire has been tested in multiple other studies.

Bould, Joinson, Sterne and Araya (2012) assessed 7429 parental ratings of the EAS survey through the Avon Longitudinal Study of Parents and Children. Data was collected at children's age of 3, 5 and 6 (Bould et al., 2012). The four-factor survey was tested and concluded as a stable measurement of temperaments (Bould et al., 2012).

Boer and Westenberg (1994) analysed 402 Dutch parents of children aged 4 to 13. Again, the four factors of emotionality, activity, sociability and shyness were tested concluding that the EAS Survey is a stable instrument of measurement (Boer & Westenberg, 1994). However, indications are given to separate sociability and shyness in a more distinct manner as a way forward (Boer & Westenberg, 1994). Unfortunately no tested evidence can be found to justify the use of the EAS teacher ratings. However, Buss and Plomin (1984) explain the correlation between the parental and the teacher questionnaire. Minor adjustments were made to the teacher questionnaire as the home environment differs from that at school (Buss & Plomin, 1984). Questionnaires for teachers were used by the Colorado Adoption Project to assess first and second graders (Plomin & DeFries, 1983, as cited in Buss & Plomin, 1984).

A questionnaire is an effective tool, as it gathers quantitative or numeric data, which represents the opinions and views of a group of the population (Creswell, 2014).

Parents were involved in the data gathering process, as I believe they are a valuable source of knowledge. To gain a more holistic and accurate understanding of the children's levels of emotionality, activity and sociability, Buss and Plomin (1984) also developed a teacher questionnaire. When combined the gathered data represents the teacher's and parent's view on the same individual.

I decided to send out parent questionnaires via post, as it is the most effective way to reach parents, while making it easy and comfortable for them. This raised the likelihood of participation, which would have been lower if parents had to agree to a time to meet in person. The disadvantages of posting questionnaires will be outlined in the next section.

It was important to develop a sense of trust and motivation within the parents for them to agree to participate which I achieved through a thorough explanation of the aim of this research so that participants feel satisfied to have helped (O'Toole & Beckett, 2013).

Questionnaires were sent to the teachers via email before the interview, in order for them to complete the questionnaires before the meeting in person.

Advantages and disadvantages of questionnaires

The advantage of questionnaires is that quantitative data can be gathered from a large amount of participants (O'Toole & Beckett, 2013). They offer an objective way of data gathering which is difficult to achieve through interviews as the degree of objectivity influences the data gathered in an interview (Gibons & Hawkins, 2004). The statements derived from questionnaires are evidence-based which gives them validity (O'Toole & Beckett, 2013). The reason why questionnaires are one of the most popular ways of data collection is their effectiveness (Patten, 2014). The gathered data is usually simple to tabulate which makes the analysis process easy (Patten, 2014). It also offers an economical way to gather data, as the costs are minimal (Patten, 2014).

Parental ratings especially offer a holistic insight into a child's temperament, as parents know their children well (Buss & Plomin, 1984). However, parent questionnaires can be biased, as parents present their children according to their own conceptions (O'Toole & Beckett, 2013).

Questionnaires are not designed to provide the researcher with in depth knowledge of a certain topic; its task merely focuses on giving a snapshot (Patten, 2014).

The difficulty with posted questionnaires is that the research cannot influence the location and ambience when the questionnaire is filled in by the participant (O'Toole

& Beckett, 2013). The response rate of potential participants can be low due to the lack of a personal link between researcher and participant (Patten, 2014).

Another drawback is that participants often answer based on social desirability, giving answers they believe that the researcher wants to get (Patten, 2014).

For the above reasons I decided to choose a mixed method approach using quantitative as well as qualitative data collection tools, to benefit from the advantages of both.

Participants

The successful answering of the research question does not only rely on the right choice of methodology for the study or even the instruments used, but also on the fitness of the chosen sampling strategy (Cohen, Manion & Morrison, 2011).

For this study I have chosen two different types of sampling strategies, one appropriate for the teachers participating and the other for participating parents.

I used maximum variation sampling to allow for diverse individuals who were chosen based on a specific set of characteristics (Creswell, 2013). I first contacted principals of the chosen schools (which will be discussed later on) to obtain permission to access teachers for my research. In a letter to the principals (see Appendix G) I explained the aim of my research and asked them to forward the information to teachers, as well as the Teacher Information Form (see Appendix E) to their class 1 and 2 teachers. Part of the criteria was that the teachers must have a sound knowledge of the temperaments, which I expected every Steiner Waldorf trained teacher to have.

Once contact with the teachers had been established I used snowball sampling. Creswell (2013) describes snowball or chain sampling as the following: The researcher “identifies cases of interest from people who know people who know what cases are information-rich” (p. 158). Teachers first decided on 1 to 3 children (depending on their level of willingness to participate), whom they had identified with a dominant temperament. They then forwarded a letter to the parents (see Appendix H) alongside the Parent Information Form (see Appendix D).

After that parents who were willing to participate could get into contact with me directly.

The Steiner Waldorf community in Aotearoa New Zealand is relatively small which limited the chosen sample. I included three schools from across the country in this study, of which two are state-integrated and one private school. The schools' decile ranged between 7 and 9. Initially I wanted to work with class 1 and 2 teachers, as the temperaments are most dominant between the ages of 6 and 8. However, to increase the sample size I also included teachers of class 3.

Data Analysis

The aim of the following section is to clarify and justify the procedures I undertook during and after the data collection process.

Achieving distance was the first and foremost factor I had to consider when I started the data collection process (O'Toole & Beckett, 2013). I had to put my passion for Steiner Waldorf education and the four temperaments aside to become an objective researcher, as much as that is possible. However, collecting and interpreting data are inevitably connected which suggests that my subjective views have had an impact on the data (Cohen et al., 2011).

The data analysis process started during the first interview, as through the field notes I began to link the data to different ideas and literature from the field, and the first themes started to emerge (O'Toole & Beckett, 2013).

The data analysis for the questionnaires was strictly post-collection, as I had no access to the data until the questionnaires were sent back to me (O'Toole & Beckett, 2013).

Ensuring validity and trustworthiness were the two most important factors that influenced the approach I used to analyse the data. While using themes to present the analysed data, the research question was used as a guiding framework throughout the process. It was crucial for me to let time pass between the initial interviews and the coding, so that I could emotionally distance myself from the data as much as possible (O'Toole & Beckett, 2013). The following section will outline how the themes emerged through coding the eight semi-structured interviews.

Coding semi-structured interviews

The coding of the semi-structured interviews was much more difficult than sorting through the quantitative data (O'Toole & Beckett, 2013). The lens through which I viewed the collected data from the interviews was rather wide, as I did not only want to find out which temperaments the students express and why the teacher thought so but also to find out more about the temperament approach each teacher uses in their classroom and how broad their knowledge of the temperaments was. The literature review and my own professional experience of working with the temperaments gave me a good understanding of the themes to look for. However, often different vocabulary is used by participants, which can make the process confusing (O'Toole & Beckett, 2013).

Organising the collected data was the first step in the process of coding the interviews. I transcribed the interviews myself using a voice memo programme on my phone, which made the process very fast, easy and uncomplicated. On the left side of the word documents I used a 4 cm margin for notes. I transferred the field notes onto the word document, as they are important to help to initially explore the data (Creswell, 2013). These memos were in the form of short phrases, ideas and hunches that occurred to me (Cresswell, 2013). I used 2.0-line spacing in order to number each line for easy retrieval and as a personal guide for myself (O'Toole & Beckett, 2013).

The first themes emerged when I was working with and sorting through the data. However, at that stage there were too many themes, which I had to narrow down in the actual coding process. The literature suggested reading through the interviews multiple times to generate a sense of the whole interview before breaking it into its different sections (Creswell, 2013).

I coloured each interview differently so that it was easy to distinguish between the different participants. As I am a visual learner I decided to sort through the data by manually cutting each code from the interviews and attaching them to a big board that was sectioned according to the different codes. It significantly helped with reducing the themes as it helped me to visualise how much data was gathered for each theme putting more importance on some.

Coding lies at the centre of qualitative data analysis (Creswell, 2013). All texts are separated into categories of information, which allows the researcher to combine the information from the different participants into one holistic form of data presentation through the use of codes (Creswell, 2013).

Analysis of questionnaires

The aim of the questionnaires was not to compare the children's behaviour with each other but to find out more about each individual child in regards to their level of emotionality, activity, sociability and shyness. The questionnaire comprises 20 questions and factors (emotionality, activity, sociability and shyness) measured through 5 items.

The following explains which items relate to which factor measured.

Parental ratings:

- Items 2, 6, 11, 15 and 19 measure emotionality
- Items 4, 7 (r), 9, 13 and 17 (r) measure activity
- Items 3, 5, 10, 16 (r) and 18 measure sociability
- Items 1, 8 (r), 12 (r), 14 and 20 (r) measure shyness

Items 7, 8, 12, 16, 17 and 20 are reversed by setting 5 = 1, 4 = 2, 3 = 3, 2 = 4 and 1 = 5.

Teacher ratings:

- Items 3, 5, 10, 16 and 19 measure emotionality
- Items 4, 6 (r), 8, 13 and 17 (r) measure activity
- Items 2, 9, 11, 15 (r) and 18 (r) measure sociability
- Items 1, 7 (r), 12 (r), 14 and 20 (r) measure shyness

Items 6, 7, 12, 15, 17, 18 and 20 are reversed by setting 5 = 1, 4 = 2, 3 = 3, 2 = 4 and 1 = 5.

Both – parental ratings and teacher ratings – are compared to see to what degree the teacher's temperament judgement fits with the quantitative data.

Validity, reliability and trustworthiness

There are multiple strategies a researcher can apply to guarantee validity. The researcher must clarify any bias from the beginning, so that the reader fully understands the position of the researcher (Creswell, 2013). To minimise any bias I trialled the interview with a colleague to see whether the interviewee understood the questions easily. The trial interview gave me a sound understanding of how important it is to speak less and listen more, while positively acknowledging all answers given by the participant. It was important to minimise power relationships through maintaining a culture of trust, transparency and confidentiality (O'Toole & Beckett, 2013). I offered every interviewee to send a copy of the transcript before analysing the data. The data was only discussed with my supervisor and the audio file from the interviews was only used for the transcription process. Throughout the data analysis process I avoided looking for data that confirmed my own preconceptions. Coding is a way of triangulating information (Creswell, 2013). Through this process I was able to work towards guaranteeing validity, as the themes emerged from different sources of data (Creswell, 2013).

Recent literature refers to four key factors that influence the reliability of a study or research project, these are: *plausibility*, *credibility*, *resonance* and *transferability* (O'Toole & Beckett, 2013).

The argument formed by the researcher must be *plausible*, meaning that it does not contradict with other existing data (O'Toole & Beckett, 2013). *Credibility* is a rather loose term referring to the ability for people to believe in the findings, who had no involvement in the research (O'Toole & Beckett, 2013). The gathered data must *resonate* with other data, which exceeds the research project (O'Toole & Beckett, 2013). *Transferability* refers to the degree to which the findings can be transferred to different contexts and settings (O'Toole & Beckett, 2013). Giving rich descriptions will enable the reader to decide on the transferability of the research (Creswell, 2013). The more detail the reader is given, the easier it is to decide if the study can be transferred to another setting with similar characteristics (Creswell, 2013). The

aim of this research was not to generate generalizable statements but to gain a deeper insight into the position of the four temperaments within Steiner Waldorf education.

In order to establish a sense of trust I made sure that all teachers knew who I was before meeting in person. Every participant received a Participant Information Form where I explained the purpose of the research.

Before every interview I explained that there was no right or wrong answer.

Interviews were not conducted to judge participants but to gain a deeper insight into their professional practice. Ethics clearance was granted by the Auckland University of Technology Ethics Committee (AUTEC) which gave participants confidence that the data was confidential, not altered or used for any other purpose but to inform this research.

Ethical considerations

Gaining ethical approval helps the researcher to think about the study and the ethical considerations that need to be taken for every step of the way. Ethical issues are due to arise especially during the interviewing process. During the planning and designing of the study, researchers need to consider any ethical issues that may arise and plan how to address these issues (Creswell, 2013).

The following chapter will discuss any ethical issues I came across and my attempts to eliminate these.

Going through the ethics process is extremely important in any research, as it clarifies the rights of others (O'Toole & Beckett, 2013). I offered every interviewee a copy of the interview transcript before I started analysing the data to ensure that participants felt comfortable with what they said (O'Toole & Beckett, 2013). Power imbalances can easily arise during the interview process due to hierarchical relationships (Creswell, 2013). Establishing trust and avoiding leading questions will help to reduce certain power imbalances (Creswell, 2013).

Since the aim of my research was to assess children's temperaments, there was always a large likelihood that parents would decline to participate because they do

not want their children to be a part of the study. The Participant Information Form and the Consent Form were designed to give parents and teachers a holistic idea about the research aim and their involvement. However, it is crucial to only provide general information rather than specific information (Creswell, 2013).

Throughout the data collection and analysis process, the most concerning issue was to keep participants' information confidential. Anonymity could not be granted to the participants, which made it crucial to offer confidentiality and help participants understand how I would achieve that.

Summary

The chapter above has validated the methodological approaches used, the research design and the data collection techniques I used to examine the degree of correlation of Rudolf Steiner's four classical temperaments and the EAS Survey by Buss and Plomin (1984). The following chapter will present the results relevant to each of the eight subjects of the study and will provide a holistic overview of how teachers use the temperaments within their classroom.

Chapter 4: Presentation of findings

Chapter four presents and examines the results of this research. Teachers' understanding of the temperaments and how they are being used in their professional practice was assessed in eight semi-structured interviews. To begin the chapter an overview of the research participants will be given. The results of this study are organised according to the individual children's temperaments, which was assessed by their class teachers. To protect subjects' privacy the gender was changed randomly. Towards the end of the chapter, the themes that emerged from questions six and seven will be discussed. All teachers were given the opportunity to make additional comments in question eight. Answers given by teachers who commented on already discussed sub-themes were added to the data. A summary will be provided to conclude the chapter.

Research Participants

Maximum variation sampling was the most appropriate sampling strategy to choose teachers to participate in this study, as it was crucial for teachers to have a sound knowledge of the temperaments as well as having identified the temperaments of individual children in their class already. Four teachers participated, two males and two females, with experience in the profession ranging from 7 to 15 years. In retrospect it would have been valuable to hear the voice of a teacher who is new to the profession but has studied the temperaments throughout his or her degree. To select the subjects of the study I collaborated with the teachers and together we chose children where a dominant temperament could be observed. Snowball sampling was the most appropriate way to find suitable subjects for the study.

Findings

The first six questions of the teacher's interview were designed to assess the individual child's temperament and how the temperament is reflected in his or her behaviour and physical characteristics. In the following section each child's temperament will be described by quoting teachers' answers. The factor analysis of both teacher and parental questionnaires will be provided as well and further discussed in chapter five.

Child A

Child A was assessed with a dominant *choleric* temperament by the class teachers. He had been in the class for three years. At the time of this interview the child was 9 years-old.

Question Two asked the teacher if there is a strong temperament that can be observed in the child?

Teacher: *Yes, I would say for him that it is more of a variation you know, the other temperaments come up too. But yes, he is quite strong too.*

Question Three: Which temperament can you see strongly working within the child and why do you think so?

Teacher: *Choleric.*
Fiery, argumentative, bossy. The other side of that is you know taking charge of situations. Knowing what to do. Emotional. Getting upset when things don't go a certain way. Not seeing other people's points of view. And speaking without thinking. Being very quick with the words. And then having to clean up the mess later.

Question Four: What are some of the typical characteristics of the temperament we are looking at?

Teacher: *He is very impressionable. And very much wants to be... he is very insecure about friendships. Which I think comes from the fact that he can easily upset people. Self control is very low.*

Question Five: Please explain some physical characteristics.

Teacher: *He has got quite chiselled features. A lot of the physical stuff in him is melancholic. He is very, very thin. Yeah he would be your classic melancholic/choleric where he gets very upset and is quite down on himself a lot. So I think his physical characteristics are more leaning towards melancholic. But quite strong, athletic. Chiselled cheekbones. Very bright eyes. A sort of powerful gait, you know the hand on the hip kind of gesture.*

Table 1 EAS Survey Teacher and Parental Ratings Child A

	Emotionality	Activity	Sociability	Shyness
Teacher	3.4	4.4	3.2	2.2
Parental	3.6	5	3	1.6

Child B

Child B was assessed with a dominant *choleric* temperament by the class teachers. She had been in the class for one year. At the time of this interview the child was 8 years-old.

Question Two asked the teacher if there is a strong temperament that can be observed in the child?

Teacher: Yes.

Question Three: Which temperament can you see strongly working within the child and why do you think so?

Teacher: *Well she is both, sanguine and choleric. But I think she is more choleric than sanguine. However, her sanguine is also very high. Very impulsive. Shoves everybody out of the line. If she wants to have a drink she just goes for it. And sometimes she comes into the classroom (teacher makes a fast noise), it doesn't matter that there are people already, standing in the line, walking quietly and gently through the door. She will just run. And it is very difficult to confront her with things that she did not do well at the moment that it happened. Because it never ends up well if you did that. She runs, she does silly things that she later regrets ("I'm sorry miss but I just ran out of the classroom"). And also to her friends, she would do things like, she will get impatient or upset or feel that they have hurt her feelings. And she will just go off (fast noise again). And then regret it later.*

Question Four: What are some of the typical characteristics of the temperament we are looking at?

Teacher: *What I've already mentioned and she is always the leader of games and of things.*

Question Five: Please explain some physical characteristics.

Teacher: *So she has a short neck and also she is very... Although she is one of the oldest in class she is one of the shortest. She is not all that stocky but she is compact.*

Table 2 EAS Survey Teacher and Parental Ratings Child B

	Emotionality	Activity	Sociability	Shyness
Teacher	1.8	4	4.8	1
Parental	2.6	4.8	3.4	1.6

Child C

Child C was assessed with a dominant *sanguine* temperament by the class teachers. He had been in the class for one year. At the time of this interview the child was 7 years-old.

Question Two asked the teacher if there is a strong temperament that can be observed in the child?

Teacher: Yes.

Question Three: Which temperament can you see strongly working within the child and why do you think so?

Teacher: *I reckon he is quite sanguine.*
A number of things. One of the big ones, his biggest thing is a lack of focus and concentration, he is constantly distracted by everything and everyone going on. You know something is happening outside he is looking out the window. Very curious, he is a good natured kid, really good natured, lovely boy but always distracted. He is very social, a real talker, he can't stop talking. Finds it very hard to get work finished because of this slight lack of focus there. You see on the sheet that I gave you before, he's a very active boy, lots of different activities going on and he is always interested in other things that other kids are

doing. He is just a real typical sanguine. His moods are generally fairly normal and good. He is a happy kid most of the time. But then things go wrong he will get gloomy and sad but he bounces back so fast as opposed to other students, who will stick in their sadness for a lot longer. They will wallow in their sadness. Whereas he will be miserable as and then suddenly you turn around and he is happy and running off again.

Question Four: What are some of the typical characteristics of the temperament we are looking at?

Teacher: *Kind of what I have been describing with him so far. Mood swings can happen but they change very quickly back and forth. He won't stay in one place. If things make him really pleased, he will be really pleased and joyful. If things make him sad, he will be sad but he will quickly move out of that. This lack of sort of concentration. He is very playful as well. There is some classic story about some people going into town you know they're the four temperaments. They find this log. The log blocking the road. And the sanguine is the one who jumps up and plays on it. Well that's him. He is playing on this log. He is generally sort of kind of bright, happy and very quickly changing interests. Changing from one thing to another. That best describes the sanguine temperament.*

Question Five: Please explain some physical characteristics.

Teacher: *He smiles a lot. Bright, cheerful. You know always smiling. He sort of has got light sandy hair. But I don't know if that is a sanguine feature or not. It might be. He is fairly... He is more on the thinner side. Average sort of weight. But he is not a strong robust type. Not rounded like your phlegmatic might be.*

Table 3 EAS Survey Teacher and Parental Ratings Child C

	Emotionality	Activity	Sociability	Shyness
Teacher	3	5	4.2	2
Parental	3.4	5	5	1

Child D

Child D was assessed with a dominant *sanguine* temperament by the class teachers. She had been in the class for one year. At the time of this interview the child was 7 years-old.

Question Two asked the teacher if there is a strong temperament that can be observed in the child?

Teacher: *Strong temperament... Yes!*

Question Three: Which temperament can you see strongly working within the child and why do you think so?

Teacher: *It's sanguine. She has others as well, which are very close. The way she steps it is not a thump thump thump. It's a bit light, the step. And also with her dealings with me and socially. She is very sociable and up there and wants to be friends and wants to be involved.*

Chatty, can make up all sorts of stories. She gets interested in anything , anything, anything. I should say she wants to play running games and all that sort of things. Because of her interest to do and engage with all sorts of things. But then from experience, she also probably has experience that she always slips and so she now stops herself from running as much as she used to. But you can still see that she loves to do it. But then she remembers that she actually can't.

Question Four: What are some of the typical characteristics of the temperament we are looking at?

Teacher: *She is really chatty. Although she can do things she is very easily distracted.*

Question Five: Please explain some physical characteristics.

Teacher: *So she has curly hair, blonde. She is almost very wide eyes and blue. Although she is not all that tall but she looks very well proportioned. There's just the look of harmony in her, in her proportions, in her being, in her body.*

Table 4 EAS Survey Teacher and Parental Ratings Child D

	Emotionality	Activity	Sociability	Shyness
Teacher	1.6	4.4	5	1.2
Parental	1.8	4	4.4	2

Child E

Child E was assessed with a dominant *melancholic* temperament by the class teachers. He had been in the class for two years. At the time of this interview the child was 8 years-old.

Question Two asked the teacher if there is a strong temperament that can be observed in the child?

Teacher: *Definitely.*

Question Three: Which temperament can you see strongly working within the child and why do you think so?

Teacher: *Definitely quite strongly melancholic.*
He's very shy. Tends to get upset quite easily. So doesn't take criticism and corrections well. He tends to find it really hard, you know he doesn't push himself forward. You know he's in the class with very big loud children, he'll be the one at the back waiting to be noticed.
A really nice child, very very kind. Does take criticism really badly. And even when it's not supposed to be criticism. That's how it would be

taken. So just a correction or maybe seeing it from another point of view.

Question Four: What are some of the typical characteristics of the temperament we are looking at?

Teacher: *Usually you know everything is terrible. The slightest cut needs a surgeon to look at it you know that kind of thing.*
Quite particular about his work. But then also the flipside of being melancholic is they have great capacity for empathy and for looking after others.

Question Five: Please explain some physical characteristics.

Teacher: *Fairly slim. He's got red hair, brown eyes. Not as pale as most red heads. Is a little bit of a darker skin tone. Quite particular. He's like a natural pianist when he moves his fingers. And with his hand work as well, very careful and particular.*

Table 5 EAS Survey Teacher and Parental Ratings Child E

	Emotionality	Activity	Sociability	Shyness
Teacher	3.2	2.6	3	3.8
Parental	4.4	2.4	2.8	3.4

Child F

Child F was assessed with a dominant *melancholic* temperament by the class teachers. She had been in the class for one year. At the time of this interview the child was 7 years-old.

Question Two asked the teacher if there is a strong temperament that can be observed in the child?

Teacher: *Well I think she is an interesting girl actually because what she presents isn't what always is going on.*

Question Three: Which temperament can you see strongly working within the child and why do you think so?

Teacher: *I think she is a... I've put her down as a melancholic but she also has got quite a bit of choleric in her as well. But it is masked quite a lot. She's a very stoic girl so she doesn't fuss and cry over things but she might be really struggling inside. She is that sort of personality type. She is a very capable self-taught reader before she started school kind of thing. She's quite smart. Maths is sort of more average but her language side is very strong. She is someone who... one of these types who is her own worst enemy. She's very self-critical about things and got very high personal standards. She's quite musical she plays the violin as well. And so when things go wrong you know it really gets her. This is when you can find her sitting under her desk you know having a little sulk under there. Not that it happens a lot but when it does happen she will really express it that way. She's not loud, she is quiet about it but it's all inside.*

I also see a bright happy child who has really nice days as well most of the time. She's a very caring person. Really caring actually. She's very in her head. Quite a lot in her head, very intellectual, high capabilities and potential sitting in there. She's more in her head than I would like her to be which is why I think she ends up in these melancholic moments.

Question Four: What are some of the typical characteristics of the temperament we are looking at?

Teacher: *Like I said she has got quite high expectations with things and if things don't go the way she wants them to or expects them to then she'll get a frown on her face and a gloomy look and a bit of a thunderous look. Yeah she looks like thunder. But she generally calms down, she's not a rager. She's not a crier and she's not a rager but you can see it in her.*

That's why I said she's got this very stoic outside wall which she sort of hides a lot of these feelings behind but you can see them working away at her. She bottles those emotions up quite a bit and hides her true feelings from the general public.

Question Five: Please explain some physical characteristics.

Teacher: *I haven't really thought about it from that angle. Well she does look a bit choleric, red hair! You know all kids have the sort of... They're not just strongly one. And when I say she is more of a... tends towards the melancholic. I think on the whole she is quite a balanced person but if I have to choose something that's where my feelings gravitate towards. So how that manifests physically...*

Yes, she can have quite a stomp. She's a heavy footed person and when she's sort of feeling the weight of these issues you can hear it in her feet. That's probably the most common one there. And also she slows down when she is in a melancholic mood. Well she might go under her desk. She really sort of slows down, she doesn't want to move and she just gets in a bit of a grump and that's it "I don't want to do anything more until I sort it out inside" which she will eventually do. For a little while.

Table 6 EAS Survey Teacher and Parental Ratings Child F

	Emotionality	Activity	Sociability	Shyness
Teacher	3	2.6	3.4	3
Parental	3.2	2.2	2.6	2.2

Child G

Child G was assessed with a dominant *phlegmatic* temperament by the class teachers. He had been in the class for three years. At the time of this interview the child was 9 years-old.

Question Two asked the teacher if there is a strong temperament that can be observed in the child?

Teacher: *Fairly strong, yes.*

Question Three: Which temperament can you see strongly working within the child and why do you think so?

Teacher: *Phlegmatic.*

He's laid back, he does things slowly, he doesn't get upset particularly or easily. He tends to be lazy. He likes to do his own thing, so he takes a while to get down to work. He's not particularly energetic. You know all those things.

Question Four: What are some of the typical characteristics of the temperament we are looking at?

Teacher: *Just like I said really. Those things that I've noticed.*

He is fairly uncomplicated. That is a good word I guess to describe him. He is young and open. So he's not trying to be in the cool crowd. But the coolness comes through insecurities I think. As it usually does.

Question Five: Please explain some physical characteristics.

Teacher: *Heavier, more slow to move, rounder.*

Table 7 EAS Survey Teacher and Parental Ratings Child G

	Emotionality	Activity	Sociability	Shyness
Teacher	2.4	3	3.6	2.6
Parental	3	3.2	3.2	3.6

Child H

Child H was assessed with a dominant *phlegmatic* temperament by the class teachers. She had been in the class for two years. At the time of this interview the child was 8 years-old.

Question Two asked the teacher if there is a strong temperament that can be observed in the child?

Teacher: *I think so, yeah.*

Question Three: Which temperament can you see strongly working within the child and why do you think so?

Teacher: *Phlegmatic, because she does tend to get on a path and wants to stay on it. She can also be choleric and melancholic. So she tends to get upset easily, that's the melancholic side. And she can get annoyed with her friends if things don't go her way. I think everyone's got a bit of everything. And I think with her although she is usually an even keel, occasionally she gets thrown off. It either comes in two ways, whether her getting upset and crying or getting really, really angry. So she can also withdraw and sit in a corner until I go and find out what is going on and if she is okay. She can be a little bit sanguine as well. She is quite an interesting little girl actually. She's one of the ones who is just like 'sure whatever'. She seems to be extreme in most of them. She's a funny little girl.*

I mean she's just a real sweetheart. She really is. She's one of these nice kids where you just think oh. She's cool.

She's very childlike. Very young. So she would still, in the middle of this year, when she's upset she would come and get on my lap. Very kind but being young and being the youngest in her family she can be that kind of everything should go my way. And it can be hard for her when things don't, you need to explain 'you know that's how it is'.

Question Four: What are some of the typical characteristics of the temperament we are looking at?

Teacher: *With the phlegmatic definitely the staying on the path. Really being focused in that "I'm going to do this for however long it takes". She's*

very good at sticking with something and not giving up. She needs to be redirected because she can take too long. She's one of the ones I need to keep an eye on. Keep saying "we are finishing soon" so that's not a shock when I say "right we are finishing up now".

Question Five: Please explain some physical characteristics.

Teacher: *I don't know how phlegmatic she is by looking at her. She's one of the smallest in the class but she's one of the youngest. She is very fair and has almost white hair. Blue eyes. Still very childlike. You know the fingers are still a little bit pudgy and quite round in the face as well. As I said earlier when I did her report she is more likely to be upside down on her chair than sitting up.*

Table 8 EAS Survey Teacher and Parental Ratings Child H

	Emotionality	Activity	Sociability	Shyness
Teacher	2.8	4.8	4.8	1.6
Parental	4.4	4.6	4	2

Themes

Question six of the interview asked teachers to describe how they determine a child's temperament.

All four teachers explain that observation is the main tool they use to determine the temperaments (sub theme 1). Therefore a sound knowledge of the temperaments must exist for teachers to base their observations on.

Teacher 1: *It goes back to those earlier questions you've asked like what does it look like. So that's what I see.*

Question seven asked teachers to explain how and to what degree they work with the temperaments in their classroom.

Two further sub themes emerged from the interviews.

Sub theme 2: Seating children according to their temperament in order to balance their behaviour.

Three out of the four teachers interviewed mentioned seating children according to their temperament as a strategy that can be used in a Steiner Waldorf classroom.

Teacher 1: *I have tried in the past, in those 15 years, at various points to kind of do that because I've heard of putting the temperaments together with others and that.*

Teacher 3: *In groupings. I sometimes put the temperaments together to neutralise them.*

Teacher 4: *You know one of the big things are seating the temperaments in a certain way.*

However, two out of the three teachers further explained the problems that emerge from this strategy.

Teacher 1: *To be honest I never got great results out of that. And I don't know whether that's a reflection of me, the kids, the times we live in or what it is. I generally tend to seat children primarily for a few reasons. If children have needs like eyesight or concentration or focus issues I'll put them at the front because it is helping them more.*

Teacher 4: *I actually find it really difficult to do that because of the learning needs of the class. You know I have to have certain kids at the front because they have an auditory processing issue. I have to have certain kids in certain places because of behaviour. You know when I've tried it it's actually been more difficult to do it that way because of other outside issues that we are dealing with.*

Sub theme 3: Using story telling to address all four temperaments.

Three out of four teachers explained that story telling is a way to address children through their temperaments.

Teacher 2: *When I tell a story if there is a brave moment, a moment that requires courage I look at the choleric people. And if it is exciting and things with details that the sanguine would like, I sort of look at the sanguine people. And if it really is a sad thing and tragic, and then he lost whatever it was that was precious, or somebody got sick, I look at the melancholic. And food for the phlegmatic, the feast was so yummy, crunchy apples and the smell of the chicken that was fried. People would say but I don't eat chicken.*

Teacher 3: *I guess when I tell a story I like to remember that there are four temperaments and try to address all of those. Yes that is a good time to use different approaches.*

Summary

The sub themes emerged through coding the comments made by the four teachers in the interviews. The results of that analysis as well as that of the questionnaires has been presented in Chapter four. Teachers' quotes were used as supporting evidence for the themes. The significance of the themes and the link between the qualitative and quantitative data will be discussed in Chapter five.

Chapter 5: Discussion of findings

Chapter five will discuss the findings presented in chapter four in relation to the literature. The literature review outlined the extensive history of the temperaments. However, in this chapter the focus will be on the temperaments from an anthroposophical viewpoint, as well as the relationship between Buss' and Plomin's (1984) EAS Survey with the classical four temperaments.

Each temperament (*choleric*, *sanguine*, *melancholic* and *phlegmatic*) will be looked at separately by examining the relationship between qualitative and quantitative data. The second part of this chapter will discuss the three themes that emerged in chapter four in relation to the literature review.

Waldorf Temperaments and the EAS Survey

As outlined in the literature review, Rittelmeyer (2010) examined the compatibility of the Steiner Waldorf temperaments and Buss' and Plomin's (1984) EAS Survey by creating a three dimensional coordinate system, which allows one to connect the three factors from the EAS Survey with the four temperaments. Once this connection is made the relationship presents as follows:

- *Choleric*: high emotionality, high activity, low sociability, high shyness
- *Sanguine*: low emotionality, high activity, high sociability, low shyness
- *Melancholic*: high emotionality, low activity, low sociability, high shyness
- *Phlegmatic*: low emotionality, low activity, high sociability, low shyness

The factor shyness was later added to the survey by Buss and Plomin (1984) and was not included in Rittelmeyer's conclusion. However, shyness was added as the opposite of sociability and therefore it can be easily incorporated into Rittelmeyer's analysis.

Choleric

According to Rittelmeyer's (2010) analysis, an individual with a dominant *choleric* temperament portrays high levels of emotionality, activity and shyness and a low level of sociability.

Child A's results of the EAS survey from teacher and parent showed great similarities with the smallest discrepancy being 0.2 and the largest being 0.6, which generated an average of 0.4.

There is a bigger gap for Child B's results with the highest discrepancy of 1.4 and the lowest being 0.6. The average is 0.9. This is the highest average out of all questionnaires.

The analysis of the quantitative data has shown that neither Child A nor Child B portrays particularly high levels of *emotionality* (Child A: 3.4 and 3.6; Child B: 1.8 and 2.6). It is possible that the teacher of Child A filled in the questionnaire wrongly. The teacher described Child A as being "*emotional, getting upset*". However, the *emotionality descriptors selected only score 3.4. If the child showed clear signs of a choleric temperament then the emotionality factors would typically be scored higher.* Activity levels are high for both children as predicted by Rittelmeyer.

Child A and Child B show extremely low levels of *shyness* as opposed to the predicted low levels of *sociability*, which are in fact average to high.

The EAS questionnaires have not produced the data predicted by Rittelmeyer. The only factor that produced the expected results is *activity*. This is not surprising, as I have observed children with a dominant *choleric* temperament to be highly *sociable* due to their natural capacity of being leaders. Being highly *sociable* indicates low levels of *shyness*.

When comparing the quantitative and qualitative data it becomes evident that it can often be difficult to identify a child with one dominant temperament, as described by Child A's teacher:

Teacher 3: *I'd say for him that it is more of a variation you know, the other temperaments come up too. But yes he is quite strong too.*

This is especially reflected in his physical appearance.

Teacher 3: *A lot of the physical stuff in him is melancholic. He is very very thin. Yeah he'd be your classic melancholic/choleric where he gets very upset and is quite down on himself a lot. So I think the physical characteristics are more leaning towards melancholic. But quite strong, athletic. Chiselled cheekbones. Very bright eyes. A sort of powerful gait, you know the hand on the hip kind of gesture.*

The teacher describes Child A to show signs of the *melancholic* temperament in his physical appearance, but describes the child having “*very bright eyes*” and “*a powerful gait*”. Therefore it is possible that the qualitative data is flawed which results in a lack of alignment with the EAS Survey. Another possibility is that the teacher of Child A did not correctly assess the child as having a dominant temperament and that in fact the child shows a mixture of temperaments.

From Rittelmeyer’s (2010) perspective, Child B shows perfect scores for the sanguine temperament, with low *emotionality* (1.8, 2.6), high *activity* (4, 4.8), high *sociability* (4.8, 3.4) and low *shyness*. Her teacher explains that the sanguine is also very evident in this child.

Teacher 2: *Well she is both, sanguine and choleric. But I think she is more choleric than sanguine. However, her sanguine is also very high.*

As with the results for Child A, there is a lack of consistency between the quantitative and qualitative data for Child B. The teacher mentions clear physical signs of the *choleric* temperament. However, this is not reflected in the quantitative data, where Child B only scores 1.8 for emotionality.

The discrepancies in emotionality levels for both *choleric* children could stem from a bias of the EAS questionnaire. Questions number 3 (cries easily) and number 10 (often fusses and cries) specifically assess the *melancholic* temperament. Questions number 16 (gets upset easily) and number 19 (reacts intensely when upset) relate to both *melancholic* and *choleric*. It would have been advisable to address this imbalance by slightly altering the questions to allow greater clarity.

Sanguine

The *sanguine* temperament displays high levels of *activity* and *sociability* and low levels of *emotionality* and *shyness* (Rittelmeyer, 2010). *Sanguine* individuals are often referred to as very social individuals who are considered emotionally stable (Childs, 2009). There is certainly a close link between Rittelmeyer and Child's description of the sanguine temperament.

Both, Child C's and Child D's results from the parent and teacher questionnaires showed numerous similarities with average discrepancies of 0.55 and 0.5.

Child C shows very distinctive results throughout the questionnaire, except for average *emotionality* levels, which were expected to be low. However, he portrays high *activity* (5, 5), high *sociability* (4.2, 5) and a low *shyness* level (2, 1).

Child D's results are as expected, matching Rittelmeyer's prediction perfectly. She shows extremely low levels of *emotionality* and *shyness* (1.6, 1.8; 1.2, 2), and extremely high levels of *activity* and *sociability* (4.4, 4; 5, 4.4).

Melancholic

To describe the *melancholic* temperament in a very stereotypical way, one could say that *melancholic* individuals can suffer from depression and are rather quiet people, who contemplate and think a lot (Childs, 2009). As with the sanguine temperament there is a strong connection between Childs' description and Rittelmeyer's (2010) perspective who categorised the melancholic temperament as having high *emotionality* and *shyness* levels, and low *activity* and *sociability* levels.

The parent and teacher questionnaires showed a lot of similarities again with an average discrepancy of 0.5 for Child E and 0.55 for Child F.

The questionnaire for Child E produced a lot of average data which made it difficult to match with Rittelmeyer's predictions, as the data has to show either high or low levels of the four factors assessed. However, some matches can be observed when looking at the parent and teacher interview separately.

The parent questionnaire indicates a high level of *emotionality* (4.4) and a rather low level of *activity* (2.4). The data gathered from the teacher questionnaire indicates a high level of *shyness* (3.8).

The teacher scored Child E with 3.2 for *emotionality* which align poorly with the qualitative data, where the teacher described the child as “*getting upset quite easily*” and that “*everything is terrible*” in the child’s eye. According to the qualitative data the teacher should have given Child E higher *emotionality* scores, especially due to the bias of the EAS questionnaire which shows an imbalance of assessment, favouring the *melancholic* temperament.

A similar situation can be observed with the data gathered for Child F. Six out of the eight scores are ranging in the average zone. The parent rated Child F with low *activity* (2.2). However, that is the only match that occurs. Child F’s teacher described her as being dominantly *melancholic* with a tendency towards the *choleric*.

Teacher 1: *I've put her down as a melancholic but she also has got quite a bit of choleric in her as well. But it is masked quite a lot.*

As with Child E, the teacher of Child F described her as having obvious *melancholic* characteristics, which is not represented in the quantitative data (*emotionality*: 3).

As well as data analysis for the *choleric* temperament, the questionnaires for the *melancholic* children have not presented a good enough match to say that the EAS Survey is a means to measure the Steiner temperaments.

Phlegmatic

Rittelmeyer (2010) outlines that the phlegmatic temperament is represented as having low levels of *emotionality*, low levels of *activity*, high levels of *sociability* and low levels of *shyness*. From an anthroposophical viewpoint, the typical *phlegmatic* individual is described as being emotionally stable and having the need to be physically comfortable (Childs, 2009). Phlegmatic individuals like to be social with their close friends (Childs, 2009), which is reflected in Rittelmeyer’s prognosis of high *sociability* levels. However, from experience I know that *phlegmatic* individuals prefer to keep a distance from strangers.

The parent and teacher interviews showed similarities with a discrepancy score of 0.55 for Child G and 0.75 for Child H, which is the second highest discrepancy score. The quantitative data gathered for Child G showed some matches. However, it also portrayed many average scores, which presented a difficulty when comparing it with Rittelmeyer's predictions.

The teacher questionnaire resulted in Child G having a low level of *emotionality* (2.4) and a high level of *sociability* (3.6). All other scores were average and could not be matched to any high or low levels.

Teacher and parent questionnaire showed a big difference for the *emotionality* factor of Child H with a teacher score of 2.8 and a parent score of 4.4. *Activity* levels were rated as high (4.8, 4.6) as opposed to predicted low levels. Both teacher and parent rated the child to be highly *social* (4.8, 4) and not very *shy* (1.6, 2).

The teacher described Child H as having a dominant phlegmatic temperament with a strong tendency towards the choleric and melancholic, which can be observed in his behaviour and reactions to certain situations.

Teacher 4: *She can also be choleric and melancholic. So she tends to get upset easily, that's the melancholic side. And she can get annoyed with her friends if things don't go her way. I think everyone's got a bit of everything. And I think with her although she is usually on an even keel, occasionally she gets thrown off. It either comes in two ways, whether her getting upset and crying or getting really really angry. So she can also withdraw and sit in a corner until I go and find out what is going on and if she is okay.*

However, the quantitative data has presented perfect matches with Rittelmeyer's predictions for the *sanguine* temperament. It is also important to note, that Wilkinson (1973) explains that children of the *sanguine* temperament tend to sit and lie in awkward positions. This matches the description of Child H given by her teacher.

Teacher 4: *She is more likely to be upside down on her chair than sitting up.*

The sanguine in every child

The lifetime of a human being can be split into four phases according to the temperaments (Rittelmeyer, 2010). All children portray a great deal of the *sanguine* temperament, as childhood is coloured by that temperament (Rittelmeyer, 2010). Children like to run around, be loud and explore the world. During the teenage years an individual develops a *choleric* tendency, adulthood is related to the *melancholic* temperament and old age is reflected in the *phlegmatic* temperament (Rittelmeyer, 2010). Each of these phases that a person goes through can completely cover the dominant temperament that is usually working within (Rittelmeyer, 2010).

Four – including the two children assessed as *sanguine* – out of the eight children that were subject to this study portrayed clear levels of the *sanguine* temperament. Child B, who was assessed in the teacher interview as being *choleric*, showed perfect *sanguine* scores. Child H's result portrayed some resonance with the *phlegmatic* temperament, but the overall score suggests that there is a dominant *sanguine* temperament.

The question is how much the actual temperament is reflected within these children and how much they are just children, who are more carefree (*emotionality*), like to run around (*activity*) and love spending time with their friends (*sociability*).

Using observation as a tool to determine a child's temperament

Three out of the four teachers interviewed described observation as being the most effective tool when determining children's temperament. This shows their effectiveness as Steiner Waldorf teachers, as Steiner (1919) suggested that the temperaments of each child in the class should be merely identified by observation. He further points out the teacher's most important task is to be able to recognise the temperaments of his or her students (Steiner, 1919).

Observation can come in different forms throughout the day, such as observing the children in the classroom setting, when playing outside with friends, when getting

into a fight with peers or when talking to other teachers. Every interaction the child has with others is an opportunity that offers a deeper insight into who the child is.

Observation can also come in the form of observing the students during an art lesson and later assessing the paintings. *Choleric* children will use a lot of red, *sanguine* children a lot of yellow, *melancholic* children a lot of blue and the *phlegmatic* child will use a blurred mixture of colour (Carlgren, 2008). One teacher described using this colour code as a great way of identifying the temperaments.

Teacher 4: *You know it as soon as you say to them what's your favourite colour. And her's is green. She's obsessed with green. And if we find a picture that has lots of green in it and there is no name. 99% chance it's hers.*

However, as explained in the previous section, there are only rare cases of 'pure' temperaments. It is important that teachers use different tools and strategies to know and understand their students. And one of these strategies is to follow one's intuition (Steiner, 1919).

Seating children according to their temperaments

Steiner (1919) suggested that grouping all *choleric* children together, all *sanguine* together, and so on, is a way to balance their behaviour.

The philosophy in a Waldorf classroom is 'like cures like' (Wilkinson, 1977).

The teacher can then address each group in a different way according to their temperament and to their needs (Steiner, 1919).

Choleric children enjoy competition and rivalry, and like a good challenge (Wilkinson, 1973). Saying that something is impossible to do are the words that drive *choleric*s (Wilkinson, 1973).

Sanguine children must be able to develop a strong personal connection with their teacher so that they start doing things out of love for the teacher (Wilkinson, 1973). Hearing stories with sad fortunes will be soul food for the *melancholic* temperament (Wilkinson, 1973). The teacher should not try to jolly a *melancholic*, as they are happy being sad and they should be allowed to (Wilkinson, 1973).

Phlegmatic children do not struggle with authority and will obey (Wilkinson, 1973). Therefore, the teacher must tell the *phlegmatic* child what to do to give him or her direction (Wilkinson, 1973).

This specific process will help children focus and learn from one another (Steiner, 1919). Furthermore, it offers children the opportunity to overcome the weaknesses of their specific temperament by seeing their own temperament reflected within other children (Carlgren, 2008).

Seating all *choleric* children and all *sanguine* children together will eventually have a calming effect on the children, as they find an outlet for their liveliness, which will cause the groups to calm down once this is over and done with (Carlgren, 2008). The opposite will happen to the phlegmatic group, as they will get so bored with one another that they start to become more lively (Carlgren, 2008).

Three teachers have tried seating the class according to the temperaments as a way to work with the temperaments. However, all three agree that it is too difficult due to other needs of individual children. Children with hearing or sight impairments have to sit right in front of the black board regardless of their temperament.

Approximately 10.3% of New Zealanders suffer from hearing impairment (Kelly-Campbell & Lessoway, 2015). 8% of the hearing-impaired population are children under the age of 14 (Kelly-Campbell & Lessoway, 2015).

The teachers' approaches show that there is an awareness of the importance of inclusion. Steiner gave suggestions to teachers almost 100 years ago, a time where inclusion had not been made a priority in education yet (McKenna, Cacciattolo & Vicars, 2013).

Teachers today have to meet the needs of all individuals in their class and therefore seating children according to their temperaments might not be the best approach anymore.

Using story telling to address all four temperaments

The final theme that emerged from the coding process is that story telling is a way to address children's temperament.

When telling a story to the whole class the teacher must be aware of his or her tempo, voice and change of mood, in order to appeal to every child's temperament (Wilkinson, 1977). The archetypal *choleric*s love boisterous activity and excitement, whereas the *melancholic* child will react to sadness in the teacher's voice (Wilkinson, 1977). Typical *sanguines* like to listen to a quick sequence of changing events told in a lively voice, whereas *phlegmatic* children love a story that is told slowly, so that they can absorb every detail (Wilkinson, 1977).

A *phlegmatic* child for example is very receptive to the Brothers Grimm story of 'Mother Holle', as the young individual will understand human nature through the picture of the two girls, one being rewarded for her hard work with gold and the other being punished for her laziness with black tar (Carlgren, 2008).

Articulation is most important when telling a story (Steiner, 1919). The teacher's voice must reflect empathy to impress the *melancholic* children (Steiner, 1919). Steiner (1919) advised teachers to use a lot of pauses when telling a story to *sanguine* children, so that they have to refocus every time their minds wander off.

Teacher 2 gave a detailed account on how to use a story to capture every individual in the classroom:

When I tell a story if there is a brave moment, a moment that requires courage I look at the choleric people. And if it is exciting and things with details that the sanguine would like, I sort of look at the sanguine people. And if it really is a sad thing and tragic, and then he lost whatever it was that was precious, or somebody got sick, I look at the melancholic. And food for the phlegmatic, the feast was so yummy, crunchy apples and the smell of the chicken that was fried.

Stories from the Old Testament or fairy tales enable children to understand human nature through a pictorial account (Carlgren, 2008). It teaches children through pictures rather than rationality.

Summary

Chapter five has critically examined the relationship between quantitative and qualitative data, as well as discussing the three themes in relation to the current literature. These three themes have contributed to the understanding of how teachers work with the temperaments in their professional practice and how they have adjusted the indications given by Steiner to fit teaching in the 21st century. Chapter six will conclude this investigation, evaluate the strengths and weaknesses of this study and give recommendations for further research.

Chapter 6: Conclusion

To conclude this study, chapter six summarises the findings of the investigation. The strengths and limitations will be outlined, as well as giving recommendations on how to apply the findings to professional Steiner Waldorf practice. Further research suggestions will be provided in regards to how the temperaments can be understood through quantitative tools.

Overview of the research

The aim of this research was to critically investigate if the EAS Survey developed by Buss and Plomin (1984) is a suitable tool to measure temperaments from an anthroposophical point of view. The research was situated within a pragmatist paradigm and used a mixed method approach to answer the research questions. Semi-structured interviews with four Steiner Waldorf teachers were carried out to gather the qualitative data. The same teachers and parents of the eight children subject to this study answered the EAS questionnaire, which produced the quantitative data. The following section will outline the conclusion for the two research questions that formed the foundation for this research.

Conclusions

To what degree can Buss' and Plomin's *Emotionality, Activity* and *Sociability/Shyness* survey be used to evaluate Steiner's pedagogical ideas of temperaments in school-aged children?

The data produced in this research suggests that there is some correlation between the EAS model and the temperaments identified by the teachers. However, there is not enough evidence that confirms that the EAS Survey is a reliable tool to evaluate Steiner's understanding of temperaments.

The literature, as well as the teacher interviews, outlines that children cannot be classified as one distinctive temperament, as human nature is too manifold to be summarised in a questionnaire consisting of 20 questions. This is an important fact

to consider, as the aim of this study was to assess the dominant temperament of each child. However, the qualitative data has provided a better understanding of the complexities of human nature and the way teachers use the temperaments to educate and understand the children in their classroom.

The quantitative data concluded that 50% of these children are of dominant *sanguine* temperament, which was not surprising considering that childhood is coloured by the *sanguine* temperament.

The data gathered through the teacher interviews open a way to better understand each child, as well as how and why teachers work with the temperaments. This research has clearly shown that the quantitative data has weaknesses. The qualitative data should not be disregarded.

How are teachers working with the temperaments in their professional classroom practice?

The qualitative data gathered highlights the importance of the temperaments, as all teachers work with them to some degree. However, it also shows that teachers do not necessarily take Steiner's indications for granted, but that they have adapted their teaching practices to the needs of the children in their classroom.

This development suggests that Steiner Waldorf education will have its place in the future, as teachers are not stagnant in their practices, but able to adapt according to the time we live in.

As a teacher myself, the undertaking of this study has taught me that the world is not black and white. I used to look for strongly noticeable signs of temperament in the children I teach but I have learned that less strong temperament indicators can point towards a more 'balanced' child. Since the aim of a Steiner Waldorf teacher is to bring the temperaments into balance, this has given me a new perspective in the way I look at my own students.

I decided to focus on the temperaments in this study because I believed that there must be a way to prove that they are a valuable and manifold way to understand

the human being. Even though the EAS model is not the tool that can prove that, I have become more fascinated by the riddle presented by the growing human being (Steiner, 2008).

Through the interviews I was able to meet four impressive, inspiring and dedicated colleagues, who use the temperaments in a way that fits themselves and their children without dogmatically following the indications given by Steiner. They show that Steiner Waldorf Education is able to evolve in ways which fit the contemporary child and contemporary situation.

Recommendation

The research findings have indicated that all four participating teachers had a sound knowledge of the four temperaments and how they were suggested to be used in the classroom by Steiner. However, the qualitative comments made by the teachers were not always reflected in the quantitative data. As a Steiner Waldorf teacher myself, I recommend that teachers who are new to the profession should receive professional development in the area of temperaments. Steiner pointed out that understanding children through their temperaments is the most important task of the teacher (Steiner, 1919). The qualitative data has shown in how many ways these teachers work with the temperaments to bring balance into children's lives.

Recommendations for further research

This study has given a small contribution to the understanding of modern temperament research. A bigger sample size would offer a broader understanding. It would be interesting to investigate if there are temperamental differences between children living in urban and rural areas. It is very likely that children growing up in rural areas would portray a more balanced temperamental make-up (Carlgren, 2008). Since Steiner Waldorf Education is a global movement there are no limitations to working with different schools from around the world.

Since the EAS Survey did not prove in this study to be a reliable tool with which to measure Steiner's temperaments, there is the possibility of looking at other

empirical questionnaires or adjusting the EAS Survey to eliminate perceived bias towards a certain temperament. Exploring Eysenck's research is a possible way forward, as there are similarities in the opposition of *choleric-phlegmatic* and *sanguine-melancholic* (Carlgren, 2008).

To gain a more comprehensive understanding of how the temperaments are reflected in children, further research could include classroom observations. Including a questionnaire that focuses on physical characteristics could present a way forward.

Strengths and limitations of this study

A strength of this research was the mixed method approach that I used. It provided in depth information about teachers' classroom practices. The quantitative data underpinned this study with a set of numeric information, which was analysed in relation to the qualitative data.

The biggest strength of this research was the teachers' expertise. They all had a sound knowledge of the temperaments and openly shared their classroom practices. The conclusions drawn from that information will add to the understanding of what it means to be a Steiner Waldorf teacher and especially what it looks like in the classroom.

A weakness of this study was the small number of teachers interviewed. This is due to the small number of Steiner Waldorf teachers in New Zealand. The biggest concern is the possible bias of quantitative data, which could perhaps have been eliminated by editing the questionnaire. The parental ratings showed an inclination to avoid extreme responses, which is referred to as central tendency bias (O'Toole & Beckett, 2013). There is also the possibility of social desirability bias, which means that parents want to portray their children in a favourable light (O'Toole & Beckett, 2013).

Final conclusion

This research has outlined the significance of the classical four temperaments. Some opponents might say that there are more recent behaviour models to assess children. The way the temperaments are used in Steiner Waldorf schools are much more than a way to merely assess children. They are used in a manner that brings joy and excitement into children's education.

The four temperaments are no theory. The teacher can experience anew every day how they come to expression in the child. In many cases it is the temperament that is the key for the understanding and treatment of a child's most striking characteristics.

(Carlgren, 1993, p. 89)

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Appendices

Appendix A: Ethics approval letter



AUTECSecretariat

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19 September 2017

Neil Boland
Faculty of Culture and Society

Dear Neil

Re Ethics Application: **17/318 Evaluating Steiner's Understanding of Temperaments Using the EAS Survey**

Thank you for providing evidence as requested, which satisfies the points raised by the Auckland University of Technology Ethics Committee (AUTC).

Your ethics application has been approved for three years until 19 September 2020.

Standard Conditions of Approval

1. A progress report is due annually on the anniversary of the approval date, using form E A2, which is available online through <http://www.aut.ac.nz/researchethics>.
2. A final report is due at the expiration of the approval period, or, upon completion of project, using form E A3, which is available online through <http://www.aut.ac.nz/researchethics>.
3. Any amendments to the project must be approved by AUTC prior to being implemented. Amendments can be requested using the E A2 form: <http://www.aut.ac.nz/researchethics>.
4. Any serious or unexpected adverse events must be reported to AUTC Secretariat as a matter of priority.
5. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTC Secretariat as a matter of priority.

Please quote the application number and title on all future correspondence related to this project.

AUTC grants ethical approval only. If you require management approval for access for your research from another institution or organisation then you are responsible for obtaining it. You are reminded that it is your responsibility to ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard.

For any enquiries, please contact ethics@aut.ac.nz


Yours sincerely,




Kate O'Connor
Executive Manager
Auckland University of Technology Ethics Committee

Cc: lenam@michaelpark.school.nz

Appendix B: Consent form parents





Consent Form

Project Title: **A Temperament Study**

Project Supervisor: **Neil Boland**

Researcher: **Lena Mueller**

☐ I have read and understood the information provided about this research project in the information sheet dated 15/08/2017.

☐ I have had an opportunity to ask questions and to have them answered.

☐ I understand that I may withdraw myself or any information that I have provided for this project at any time prior to completion of data collection, without being disadvantaged in any way.

☐ If I withdraw, I understand that all relevant information will be destroyed.

☐ I agree to take part in this research.

☐ I understand that my child will neither be advantaged nor disadvantaged by my participation.

☐ I understand that my child will neither be advantaged nor disadvantaged by the research responses provided by me or the teacher.

☐ I wish to receive a copy of the report from the research (please tick one): Yes ☐ No ☐

Participant's Signature:

Participant's Name:

Participant's Contact Details (if appropriate):


Date: ..

Approved by the Auckland University of Technology Ethics Committee on 19th September 2017. AUTEC Reference number 17/318.

Note: The Participant should retain a copy of this form.

Appendix C: Consent form teachers

1



AUT
TE WĀNANGA ARONUI
O TĀMAKI MAKAU RAU

Consent Form

☐ Project Title: **A Temperament Study**
 Project Supervisor: **Neil Boland**
 Researcher: **Lena Mueller**

☐ I have read and understood the information provided about this research project in the information sheet dated 15/08/2017.
☐ I have had an opportunity to ask questions and to have them answered.
☐ I understand that notes will be taken during the interviews and that they will also be audio-taped and transcribed.
☐ I understand that I may withdraw myself or any information that I have provided for this project at any time prior to completion of data collection, without being disadvantaged in any way.
☐ If I withdraw, I understand that all relevant information including tapes and transcripts, or parts thereof, will be destroyed.
☐ I agree to take part in this research.
☐ I wish to receive a copy of the report from the research (please tick one): Yes ☐ No ☐

☐
☐
☐

Participant's Signature:

☐
 Participant's Name:
 Participant's Contact Details (if appropriate):

Date: ..

Approved by the Auckland University of Technology Ethics Committee on 19th September 2017. AUTEC Reference number 17/318.

Note: The Participant should retain a copy of this form.

Appendix D: Participant information sheet parents



Participant Information Sheet

For parents participating in this research.

Date Information Sheet Produced:

15 August 2017

Project Title

A Temperament Study

An Invitation

Kia Ora,

My name is Lena Mueller and I am currently working towards completion of my Master of Education degree at Auckland University of Technology. Through my degree I have discovered a passion for Rudolf Steiner's educational philosophy, which is why I am focussing on the temperaments for my research. I am working at Michael Park School in Auckland teaching German to the middle and high school.

I would like to invite you to participate in this research by completing a questionnaire. Twenty questions need to be answered with the aim to gain a better understanding of your child's temperamental make up.

Participation in this research project is voluntary and you can withdraw from the project anytime prior to the completion of data collection (date).

If you decide to participate I will send all the necessary forms (including the questionnaire) to your address with a prepaid envelop for you to send back.

Your child will neither be advantaged nor disadvantaged by your participation or by the research responses provided by either yourself or the teacher.

What is the purpose of this research?

The purpose of this research is to show the use of the four temperaments is still valid today. There has been a lot of harsh critique towards Waldorf Education and especially the temperaments asking teachers to move away from an ancient concept. However, it must be tested first to see if the temperaments have place in Steiner Schools or not.

The AS (Emotionality, Activity, Sociability) Survey by Buss and Plomin is an excellent tool, which can be directly related to the four temperaments – choleric, sanguine, melancholic and phlegmatic. I am hoping to see whether or not there is a link between the data collected through this survey and the teacher's judgement regarding the children's temperament.

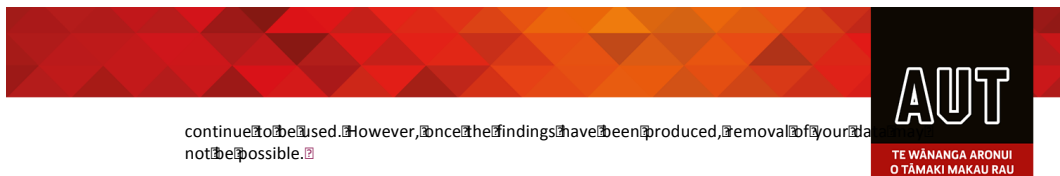
How was I identified and why am I being invited to participate in this research?

I have chosen to invite you, because your child shows some very strong temperamental characteristics. In order for this research project to be successful, I need to find children with strong temperament to show which role the temperaments play in Steiner Education today.

How do I agree to participate in this research?

If you decide to participate in this research, please send me an email and I will forward you the consent form for you to sign.

Your participation in this research is voluntary (it is your choice) and whether or not you choose to participate will neither advantage nor disadvantage you. You are able to withdraw from the study at any time. If you choose to withdraw from the study, then you will be offered the choice between having any data that is identifiable as belonging to you removed or allowing it to



continue to be used. However, once the findings have been produced, removal of your data will not be possible.

☐

What will happen in this research?

I would like you to fill out a questionnaire that seeks to collect information about your child's emotionality, activity and sociability.

Buss and Plomin have developed two TAS questionnaires, one for teachers and the other for legal guardians. The results of the two questionnaires will determine where your child sits on the TAS scale. This information can be directly related to the four temperaments.

In addition to the questionnaire your child's class teacher will also participate in an interview, which aims to seek clarification about your child's temperament, as well as the teacher's professional practice.

What are the discomforts and risks?

For ethical reasons I would like to give teachers the option to request a copy of your completed questionnaire. You will also have the opportunity to view the teacher's interview.

What are the benefits?

I am personally benefiting from this research, as it will help me to complete my Master of Education degree. However, I strongly believe that this research will also benefit the Steiner Community as a whole. It is important that more research focuses on Steiner Education, so that this alternative schooling form is able to stand the test of time.

How will my privacy be protected?

In the final thesis your child's name, gender and school will be changed. Due to the small Waldorf community here in New Zealand I cannot grant full confidentiality. However, I will do my best to protect your privacy.

What are the costs of participating in this research?

There are no costs involved. However, you will be required to spend 15-20 minutes on the questionnaire.

What opportunity do I have to consider this invitation?

It would be great if you could get back to me within the next 2 weeks.

Will I receive feedback on the results of this research?

You will receive a summary of the research.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Neil Boland, neil.boland@aut.ac.nz, 09 21 9999 ext 7341.

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTC, Kate O'Connor, kethics@aut.ac.nz, 09 21 9999 ext 6038.

Whom do I contact for further information about this research?

Please keep this information sheet and a copy of the Consent Form for your future reference. You are also able to contact the research team as follows:

Researcher Contact Details:

Lena Mueller
lenam@michaelpark.school.nz

Project Supervisor Contact Details:

Neil Boland
neil.boland@aut.ac.nz
 09 21 9999 ext 7341

☐

Approved by the Auckland University of Technology Ethics Committee on 9th September 2017, AUTC Reference number 17/318.

☐

Appendix E: Participant information sheet teachers



Participant Information Sheet

☐

For teachers participating in this research.

Date Information Sheet Produced:

15 August 2017

Project Title:

A Temperament Study

An Invitation

Kia Ora,

My name is Lena Mueller and I am currently working towards completion of my Master of Education degree at Auckland University of Technology. Through my degree I have discovered a passion for Rudolf Steiner's educational philosophy, which is why I am focussing on the temperaments for my research. I am working at Michael Park School in Auckland teaching German to the middle and high school.

I would like to invite you to participate in this research by completing a questionnaire. Twenty questions need to be answered with the aim to gain a better understanding of the child's temperamental make up. I would also like to conduct an interview with you, which will take around 30-40 minutes. The aim of the interview is to gather information about the application of the temperaments within the classroom setting.

Participation in this research project is voluntary and you can withdraw from the project anytime prior to the completion of data collection (22nd of October 2017).

What is the purpose of this research?

The purpose of this research is to show how the use of the four temperaments is still valid today. There has been a lot of harsh critique towards Waldorf Education and especially the temperaments asking teachers to move away from an ancient concept. However, it must be tested first to see if the temperaments have a place in Steiner schools or not.

The AS (Emotionality, Activity, Sociability) Survey by Buss and Plomin is an excellent tool, which can be directly related to the four temperaments – choleric, sanguine, melancholic and phlegmatic. I am hoping to see whether or not there is a link between the data collected through this survey and the teacher's judgement regarding the children's temperament.

How was I identified and why am I being invited to participate in this research?

I have chosen to invite you to participate in this project because your principal advised me to do so and I believe that your knowledge of the temperaments can add depth and value to the data collection process. Furthermore there might be one or two children in your class that show clear temperamental traits, which I would like to ask you a few questions about.

How do I agree to participate in this research?

If you decide to participate in this research, please send me an email and I will forward you the consent form for you to sign.

Your participation in this research is voluntary (it is your choice) and whether or not you choose to participate will neither advantage nor disadvantage you. You are able to withdraw from the study at any time. If you choose to withdraw from the study, then you will be offered the choice between having any data that is identifiable as belonging to you removed or allowing it to continue to be used. However, once the findings have been produced, removal of your data may not be possible.

■

What will happen in this research?

You will have to answer a few interview questions in regards to the temperaments. I would also like you to fill out a questionnaire that includes 20 questions about the child in your class that is at focus for this research project.

It is most likely that you have already identified your students' temperament. If you are happy to discuss the temperament of one or two children in your class, then I would like you to send an invitation to the parents of the identified children. If the parents agree to take part in this study, then they will complete a similar questionnaire. The two questionnaires will identify where the child sits on the EAS scale.

The interview will be held at your school. I am happy for you to choose a suitable space where you feel comfortable for us to have an undisturbed conversation. I will set a date with you preferably during the first 3-4 weeks of term. The interview will take 30-40 minutes. You will be asked in-depth questions about the child's temperament, as well as your application of the temperaments within the classroom. This will be voice recorded and you will receive a transcript of the interview.

What are the discomforts and risks?

For ethical reasons I would like to give parents the option to request a copy of your completed questionnaire. You will also have the opportunity to view the parent's interview.

What are the benefits?

I am personally benefiting from this research, as it will help me to complete my Master of Education degree. However, I strongly believe that this research will also benefit the Steiner Community as a whole. It is important that more research focuses on Steiner education, so that this alternative schooling form is able to stand the test of time.

How will my privacy be protected?

In the final thesis your name and place of work will be changed. Due to the small Waldorf community here in New Zealand I cannot grant full confidentiality. However, I will do my best to protect your privacy.

What are the costs of participating in this research?

There are no costs involved. However, you will be required to spend 15-20 minutes on the questionnaire and around 30 minutes for the interview.

What opportunity do I have to consider this invitation?

It would be great if you could get back to me within the next 2 weeks.

Will I receive feedback on the results of this research?

You will receive a summary of the research.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Neil Boland, neil.boland@aut.ac.nz, 09 21 9999 ext 7341.

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTC, Kate O'Connor, ethics@aut.ac.nz, 09 21 9999 ext 6038.

Whom do I contact for further information about this research?

Please keep this information sheet and a copy of the Consent Form for your future reference. You are also able to contact the research team as follows:

Researcher Contact Details:

Lena Mueller

lenam@michaelpark.school.nz

■

Project Supervisor Contact Details:

Neil Boland

neil.boland@aut.ac.nz

09 21 9999 ext 7341

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Approved by the Auckland University of Technology Ethics Committee on 9th September 2017, AUTC Reference number

17/318

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Appendix F: Permission for researcher form



Permission for researchers to access school staff/ community

Project Title: **A Temperament Study**

Project Supervisor: **Neil Boland**

Researcher: **Lena Mueller**

☐ I have read and understood the information provided about this research project in the Information Sheet dated 5 August 2017.

☐ I give permission for the researcher to undertake research within

☐ I give permission for the researcher to access the staff/ students/ employees of

Principal's _____ CEO's _____ signature:

Principal's/CEO's Name: _____

Principal's/CEO's Contact Details (if appropriate):

Date: _____

Approved by the Auckland University of Technology Ethics Committee on _____ type the date on which the final approval was granted. AUTEC Reference Number _____ type the AUTEC reference number.

Note: The head of the organisation should retain a copy of this form.

Appendix G: Principal letter

Kia Ora,

My name is Lena Mueller and I am currently working towards completion of my Master of Education degree at Auckland University of Technology. Through my degree I have discovered a passion for Rudolf Steiner's educational philosophy, which is why I am focussing on the temperaments for my research. I am working at Michael Park School in Auckland teaching German to the middle and high school.

I would like to invite Class 1 and 2 teachers to participate in this research by completing a questionnaire. Twenty questions need to be answered with the aim to gain a better understanding of one or two children's temperament and make up from their class. I would also like to conduct an interview with them, which will take around 30–40 minutes. The aim of the interview is to gather information about the application of the temperaments within the classroom setting.

The purpose of this research is to investigate the use of the four temperaments is still valid today. There has been a critique of Waldorf education and especially the temperaments which asks teachers to move away from this traditional concept. I wish to research if the temperaments are still relevant within Steiner schools.

I would be grateful if you could forward this message to your Class 1 and 2 class teachers. If they are interested in becoming a participant in this study, they should contact me at the following email address: Lenam@michaelpark.school.nz

Thank you for taking the time to read this letter.

Warm regards,

Lena Mueller

Appendix H: Parent letter

Kia Ora,

☐

My name is Lena Mueller and I am currently working towards completion of my Master of Education degree at Auckland University of Technology. Through my degree I have discovered a passion for Rudolf Steiner's educational philosophy, which is why I am focussing on the temperaments for my research. I am working at Michael Park School in Auckland teaching German to the middle and high school.

After careful collaboration with your child's class teacher, we believe that gathering information about your child's temperament will help with gaining a better understanding of the classical four temperaments used in Steiner Waldorf Schools.

The purpose of this research is to investigate if the use of the four temperaments is still valid today. There has been a critique of Waldorf education and especially the temperaments which asks teachers to move away from this traditional concept. I wish to research if the temperaments are still relevant within Steiner schools.

I would like to invite you to participate in this research by completing a questionnaire. Twenty questions need to be answered with the aim to gain a better understanding of your child's temperament.

Your child's teacher will complete a similar questionnaire about your child and I will send you a copy if you wish.

☐

If you are interested in becoming a participant in this study, then please contact me at the following email address: Lenam@michaelpark.school.nz

☐

Thank you for taking the time to read this letter!

☐

Warm Regards,

☐

Lena Mueller

Appendix I: EAS Questionnaire parental ratings

Name of Child: _____ Age of Child: _____ Class Child is attending: _____

The EAS Temperament Survey for Children: Parental Ratings

Items are rated on a scale of 1 (not characteristic of typical child) to 5 (very characteristic of typical child). Please make a cross where appropriate.

	1	2	3	4	5
1. Child tends to be shy.					
2. Child cries easily.					
3. Child likes to be with people.					
4. Child is always on the go.					
5. Child prefers playing with others rather than alone.					
6. Child tends to be somewhat emotional.					
7. When child moves about, he usually moves slowly.					
8. Child makes friends easily.					
9. Child is off and running soon as he wakes up in the morning.					
10. Child finds people more stimulating than anything else.					
11. Child often fusses and cries.					
12. Child is very sociable.					
13. Child is very energetic.					
14. Child takes a long time to warm up to strangers.					
15. Child gets upset easily.					
16. Child is something of a loner.					
17. Child prefers quiet, inactive games to more active ones.					
18. When alone, child feels isolated.					
19. Child reacts intensely when upset.					
20. Child is very friendly with strangers.					

Appendix J: EAS Questionnaire teacher ratings

Name of Child: _____ Age of Child: _____ Class Child is attending: _____

The EAS Temperament Survey for Children: Teacher Ratings

Items are rated on a scale of 1 (not characteristic of typical child) to 5 (very characteristic of typical child). Please make a cross where appropriate.

	1	2	3	4	5
1. Child tends to be shy.					
2. When with other children, this child seems to be having a good time.					
3. Child cries easily.					
4. At recess, child is always on the go.					
5. Child tends to be somewhat emotional.					
6. When child moves about, s/he usually moves slowly.					
7. Child makes friends easily.					
8. Child is full of vigor when s/he arrives in the classroom in the morning.					
9. Child likes to be with people.					
10. Child often fusses or cries.					
11. Child likes to play with neighbors.					
12. Child is very sociable.					
13. Child is very energetic.					
14. Child takes a long time to warm up to strangers.					
15. Child prefers to do things alone.					
16. Child gets upset easily.					
17. Child prefers quiet, inactive games to more active ones.					
18. Child tends to be a loner.					
19. Child reacts intensely when upset.					
20. Child is very friendly with strangers.					

Appendix K: Interview question

Teacher Interview

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1. How long has the child been in your class?

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2. Would you say there is a strong temperament that can be observed in the child?

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3. Which temperament can you see strongly working within the child and why do you think so?

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4. What are some of the typical characteristics of the temperament we are looking at?

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5. Please explain some physical characteristics.

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6. How did you determine the child's temperament?

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7. How and to what extent do you work with the temperaments in your classroom?

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8. Would you like to add anything?

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