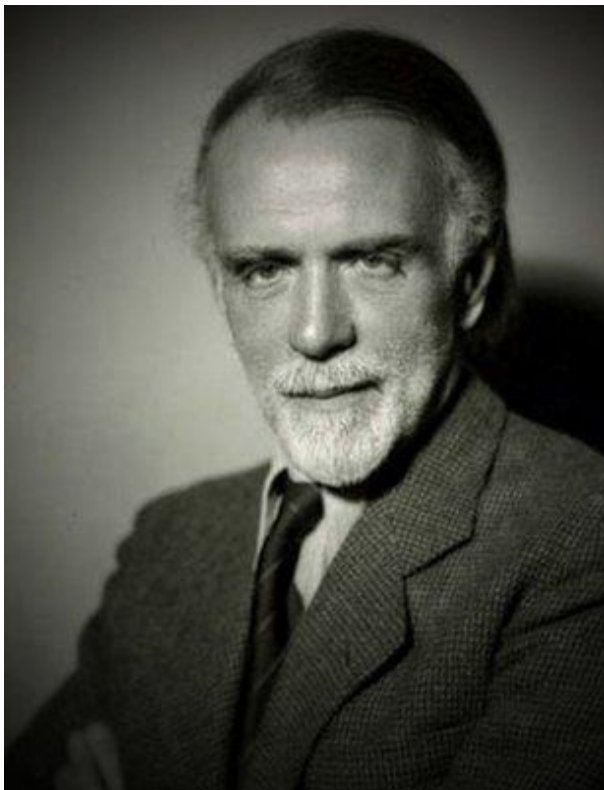


Waldorf music education meets Kodály music methodology

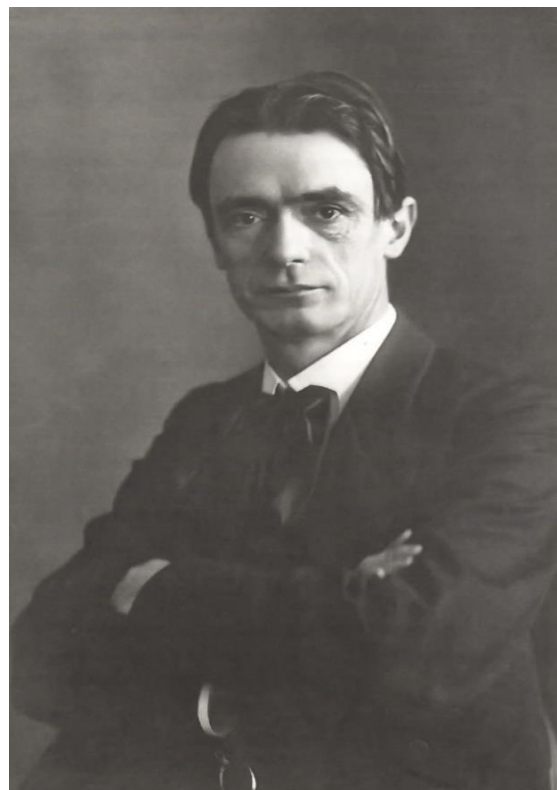
Research exposition

Royal Conservatoire The Hague



Zoltán Kodály (1882-1976)

Source: (The Phoenix Collective, 2023)



Rudolf Steiner (1961-1925)

Source: (Wikipedia, 2023)

Raoul Boesten, 3000494
21 February 2023
Research supervisor: Suzanne Konings

Inhoud

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Preface

I'd like to thank some people who helped me to make this research possible.

First of all I would like to thank some important key figures in Waldorf music education who shared their thoughts and experiences on Waldorf music education: Marcel van Os, Reyer Ploeg, Matthijs Overmars, Sietske Asselbergs and Teun de Leeuw.

I would also like to thank Aziza Mayo for her knowledge on Biesta's work and for helping me redefining "ownership in music".

And lastly I would like to thank Marissa Herder for helping me formulate my thoughts and findings in proper English, Maarten Zwakman for helping me with the quotation of my sources, Suzanne Konings, my research supervisor, for her support and helpful feedback and Nicolet Goedhart for bringing me coffee and tea to keep on going.

Raoul Boesten, February 2023

“Music is a moral law. It gives a soul to the Universe, wings to the mind, flight to the imagination, a charm to sadness, gaiety and life to everything. It is the essence of order, and leads to all that is good and just and beautiful.”

— Plato

1. Introduction; context, setting and chances

1.1. My personal story as a music teacher at different Waldorf schools

Zoltán Kodály: “(...)in the curriculum of the music primary schools (...) there are six music classes scheduled weekly. In other words, they sing every day. And, based on our experience, this has a wonderfully stimulating effect. So, in these schools, children achieve better results in other subjects as well.” (Kodály, 1958)

25 years ago I read an article about music education in Hungary using the Kodály method. I was enthusiastic about the idea that one hour of music training per day was normal and proved to be a contribution to a good musical education. Furthermore, it had a significant positive effect on other subjects like maths, language skills and social development. My first encounter with the Kodály method!

During my study at the Vrijeschool Pabo, music began to play a bigger role in my life, and I experienced that I wanted to give music education a bigger place in my work. I also wanted to further explore the contribution music could make to the musical development of children in relation to their personal development as human beings. My graduation thesis at the end of de Vrijeschool Pabo revolved around the question “how can the musical elements melody, harmony, rhythm and measure contribute to a harmonic balance between the threefold of thinking, feeling and willing” (see chapter 2, paragraph 2.3).

I started to work as a teacher at Waldorf schools and also taught choir and music lessons. I knew I liked to work with older children (age 12 till 16) so I applied for a job at the secondary Waldorf school in Rotterdam. To be able to give music lessons properly I obtained a second bachelor degree as “docent muziek”. The last six years of my professional work I’ve taught music to students at Hogeschool Leiden and I give training sessions in music education for Waldorf schools in the Netherlands.

The way I think about music education and what it can mean for the development of children has evolved over time and the master degree in Kodály helped me to get a step further in my professional skills, repertoire knowledge and perspectives.

1.2. Why this research?

In general, I experience a lack of training in music education in students I teach at Hogeschool Leiden (the ages range from 25 to 65 with very diverse backgrounds). Their skill in singing, coordinating rhythm physically and the ability to read music is not very strong. Some students have a lot of experience in music, whereas others have very little experience and therefore feel insecure about their music abilities. My assumption is that this is related to the devaluation of music education in schools for the last decades.

In regard to the training I give to teachers at Waldorf Schools I experience uncertainty when it comes to giving music lessons that are optimally constructed for children of different ages. Although singing and music making is quite normal in Waldorf schools, teachers feel less secure in singing and in developing efficient music lessons.

In my work as a choir conductor I often work with singers who attended Waldorf schools. They are familiar with singing, but generally have little or no experience in reading music and very little knowledge of music theory.

In this research I would like to discover what the Kodály method could offer to Waldorf music education, while paying specific attention to the aspect of giving children ownership of the music. This research will consist of a theoretical and a more practical side:

Theoretical:

1. I will define the concept of ownership in music as how I use it in my exposition and which elements of music education can contribute to this ownership
2. I will explore the outlines for music education in Waldorf schools and what the current state of these outlines is at primary Waldorf schools in the Netherlands.
3. I will look for similarities and differences between the Waldorf music curriculum and Kodály methodology. I will look at the usefulness and aim of the thoughts, song material, and play forms of the Kodály methodology and the possible contribution for music education in Waldorf schools.

Practical:

4. I will develop a module for students of the Vrijeschool Pabo with little musical experience. In this module I will add elements of the Kodály methodology. The module will focus on basic activities in music, such as singing, music and movement and starting to read music.

1.3. Research questions and methodology

My main question in this research is:

Which aspects of Kodály music methodology can give children at Waldorf primary schools in the Netherlands more ownership in music?

Sub questions are:

<i>What is ownership in music and how can this be addressed in music education for children in the age of 7 till 12 years old?</i>	<i>Chapter 2</i>
<i>What are the musical educational thoughts and principles in music education at Waldorf schools in The Netherlands?</i>	<i>Chapter 3</i>
<i>What are the strengths and weaknesses of music education at Waldorf primary schools in The Netherlands?</i>	<i>Chapter 4</i>
<i>Which aspects of Kodály methodology can be added to the Waldorf music curriculum, especially concerning ownership and in what way?</i>	<i>Chapter 5</i>
<i>Which aspects of Kodály music methodology can be added to develop a module for students with little musical experience at the Vrije School Pabo?</i>	<i>Chapter 6</i>

In chapter 7 I will give a conclusion and summary of this research in which I will answer to my research question.

Methodology

For all the mentioned questions I have studied the available literature on these topics. The writings of Astrid Schoots, Rudolf Steiner, Bernard Lievegoed, Marcel van Os, Reyer Ploeg and others and several articles on music education at Waldorf schools and articles and books I found on teaching the Kodály method helped me to collect information for my research.

Furthermore, I have conducted several interviews with key figures in music education at Waldorf schools to illustrate what the current state of music education on Waldorf primary schools is. I've also interviewed Aziza Mayo, the former lector of "Waarde(n) van Vrijeschoolonderwijs".

The basis of the module for students at the Vrijeschool Pabo was an assignment supervised by Daniel Salbert.

2. How do children gain ownership in music in primary school?

2.1. Introduction

In this chapter I would like to collect information and discuss theories that describe an educational environment for child centred learning.

A popular term in recent publications about education is ownership. (Berg, 2017) I will explore the meaning of this term, specifically in relation to my research question. I will try to answer the question of how children gain ownership in music.

- First of all, in paragraph 2.2 I will present a selection of educational theories of the last decades on how children learn. These models show us a development from teacher centred education to child centred education.
- Secondly I will explain what ownership in education is about. In this section I will indicate what my understanding is of the term ownership.
- Lastly I will outline some teaching strategies that can help to create music lessons in which children can be more active as a co-creator of the musical process.

2.2. Thoughts about education during the last decades

2.2.1. Introduction

Over the last decades, views on how children learn has changed and developed significantly. For a long time, education revolved around a way of learning in which the teacher is the one who knows, owns and transfers knowledge and skills to a child. More recent developments in education show a way of teaching in which children are at the centre of the learning process. This kind of education is more about exploring, play and discovery.

Learning in this view is considered an activity done by children, not by the teacher.

In this paragraph I will explain some of the main educational models and thinkers. As the backbone for this paragraph I used a chapter written by Adri de Vugt in the book: "Muziek leren" with the title: "Leren". (Vugt, 2005)

2.2.2. Behaviourism and Cognitivism

The way we teach children has been dominated, especially throughout the 20th century, by the theories of behaviourism and cognitivism according to De Vugt. Both theories contain valuable concepts with interesting ideas, but they are also limited. The ideas largely rely on the assumption that society is ordered, predictable and makeable and that knowledge is objective and stable.

Behaviourism is based on the theory of conditioning. Behaviour is rewarded and by its reward grounded in the system of the child. Gaining knowledge is seen as a linear process and the child is seen as makeable and predictable. The learning process is not important, the result is the main goal. When it comes to skills, behaviourism has its advantages, especially for teaching automatism and motoric skills. Behaviourism can be of great use in creating a healthy class environment as well. Especially in secondary school, children need to know what the rules are and how to behave to have a structured social climate in the classroom.

In cognitive learning theory, the process of gaining knowledge is at the forefront. Learning is seen as processing information, somewhat similar to a computer. If new knowledge is linked to already existing knowledge, a thinking process starts. Activating previous knowledge is very important in this process to get the thinking process in action. In this theory, the role of emotion is somewhat neglected.

2.2.3. Constructivism

According to De Vugt constructivism is based on the idea that learners use their previous knowledge and connect this to the new knowledge they gain. This learning process is individual and leads to a unique personal form of knowledge through experience and social discourse. Piaget laid the foundations for this theory of learning and John Dewey developed it further.

Self-regulation is an important skill to gain ownership over the way you want to learn something. You have to know how to plan your learning process. Orientation, planning, process keeping, checking, adjusting, reflecting and evaluating are important skills in this process.

Self-regulation for children is difficult. Maybe they are too young to do this by themselves. Teachers should not only tell their children what to learn but also how to learn it, so children can learn and condition learning strategies.

The best way to learn in the constructive approach to learning is actively through social interaction. The construction of knowledge is not to be done on your own, but in relation to a social group. Cooperative learning and the opportunity to approach knowledge from different angles gives children the chance to discover knowledge by themselves.

Constructivism is very popular at the moment. Some reasons for this popularity:

- Old teaching methods are outdated: children have too much passive knowledge.
- As teachers it is difficult to transfer knowledge. The pupil has to construct his own relation to knowledge.
- Active involvement of the pupil causes better understanding and memory of knowledge. The social dimension can stimulate the learning process.

There are also some disadvantages. While the reward is greater, constructive learning takes more time. In constructive learning the learning process is not aimed at the outcome, but at the process.

Therefore the outcome is not obvious. Knowledge and skills that will be learned during the process are somehow unpredictable.

2.2.4. Situated learning

De Vugt furthermore explains that people gain new knowledge and skills most successfully if they are strongly connected to experiences that are undertaken in specific contexts, also known as 'situated cognition'. Situated cognition emphasises the link between knowledge and context. That means the pupil gains new knowledge or learns a new skill in a certain context, and after that it can abstract the knowledge from this context, so it can be implemented in a new context. The knowledge is now freely available and transferrable to new situations.

To provide rich contexts for learning, the learning process should be "lived practices" that take place in "communities of practice". The best environment is the outside world with its social and variable opportunities to discover knowledge and skills. This is called social constructivism.

In music education this means pupils should actively work with materials which are meaningful for them. There should be an open space for exploration and discovery. The learning process should have a connection to real contexts, such as projects with a specific goal or working together with real musicians.

2.2.5. Self-efficacy

To achieve a successful learning process, according to De Vugt it is important that the student develops a sense of self efficacy. This means students have a good judgement of their capacities and have a certain trust in these capacities before starting a new learning process. If a student develops a positive self-perception in the learning process, it can be of great influence on the performance and achievements of the student. For example, expectations in advance of a task can determine the way that task will be fulfilled. These expectations are based on previous experiences. Feedback based on empowering the strengths and knowing the weaknesses, so you can cope with it, is of great importance in developing self-knowledge. Parents and teachers can play an important role in this process by stressing and confirming the qualities of the student.

2.2.6. Summary

In general, we can divide learning in two mainstream directions:

The first way of learning is aimed at mastering the subject that is taught. The main skills to develop are related to reproduction: memorising, understanding and integrating. The teacher provides structure and gives direction in the learning process. Cognitivism, behaviourism and teacher-centred learning are at the core of this learning process. Students are mostly inactive and responsive in the learning process.

The second way of learning gives students a more active role. They construct their own understanding of the subject and can transfer this knowledge in new contexts. For this learning process, the teacher has to give the student a clear framework and plays a more coaching role in processes with cooperative learning. Social constructivism and situated learning have greatly influenced this way of learning. Reflective models help to develop a positive self-perception which contributes to a better way of learning and a growing sense of self-efficacy.

2.3. Defining ownership in music

2.3.1. The purpose of education according to Gert Biesta

What is the purpose of education? Educational psychologist Gert Biesta helps us to a wider view of education by focusing on the question of purpose, putting the “why” of education before the “how”. He suggests three broad domains of educational purpose which are represented in the Venn Diagram below (Murriss):



Source: (Murriss)

According to Biesta the domain of qualification provides an important justification for schooling. Biesta: “Many would probably agree that one of the key functions of education has to do with the transmission — or, in less directive terms, the making available of — knowledge and skills.” But even the simplest provision of knowledge and skills already provides a certain way of (re)presenting the world and presenting what is considered to be of value. By teaching knowledge and skills there is also the (re)presentation of cultures, traditions and practises, either explicitly but also often implicitly and this field belongs to the domain of socialisation (Biesta, 2020).

The purpose of the domain of socialisation is to acquire and internalize certain norms and values, behaviour and habits which are important in society. By doing so children can adjust to the society in which they are living. Part of this process is that children get to know who they are, get to feel what they can and want to do and sense space to develop their own identity. Part of the socialisation process is to develop personal skills like self-awareness, self-regulation and motivation so they can discover who they are and learn how to cope with what they think, feel and want. On the other hand

they learn how to show empathy and develop the ability to listen so they can understand and can cope with others (Mayo, Lectorale rede Autonomie in verbondenheid, 2015).

Subjectification is about gaining a certain amount of autonomy in thinking, feeling and acting in relation to the already existing structures. This autonomy develops itself by a growing consciousness of our uniqueness as man. Our uniqueness appears for instance if we have to give our personal answer to situations or questions which we are opposed to (Mayo, Lectorale rede Autonomie in verbondenheid, 2015).

According to Biesta subjectification has to do with a sense of freedom. Not freedom in the way that you feel free to do whatever you want, but according to Biesta; “freedom integrally connected to our existence as subject. This is never an existence just with and for ourselves, but always an existence in and with the world.(...) It is about how I exist as the subject of my own life, not as the object of what other people want from me” (Biesta, 2020).

2.3.2. Socialisation, qualification and subjectification in Waldorf education

For eight years Aziza Mayo was “lector waarde(n) van Vrijeschoolonderwijs” and currently she is scientific director of Nivoz (Nederlands Instituut voor Onderwijs en Opvoedingszaken). She intensively studied the work of Gert Biesta and the literature of Waldorf education. In an interview I conducted with her, we were discussing how Biesta’s work can be recognised in Waldorf teaching and how the term “agency” can give a better understanding of developing ownership in music.

According to Mayo in Waldorf education the learning process starts with socialisation. Something new occurs to you with an invitation to join and experience this new thing. You open up and want to explore and understand it. It becomes a new part of you.

By doing so one enters the domain of qualification. In qualification one’s develops new instruments. Not only to move along but also to have the ability to move at own impulse. This process is about inserting into customs, traditions, the already existing knowledge and conventions.

Subjectification is about longing to be in the world in an adult way (with autonomy and awareness of self-direction and self-affirmation), in which the movement towards being able to create is essential. This is only possible with a certain degree of freedom and having a set of instruments to express yourself at your disposal, to shape, to create and the ability to receive creations of others. You can only do that as an independent person (Mayo, 2023).

2.3.3. Ownership and agency in music

Ownership

Various researchers have written about ownership in learning. According to Berg, researchers Hintze, Burke and Beyerlein say: ownership of learning is the degree to which the learner takes responsibility for their learning process. Conley and French see engagement and motivation as a starting point of ownership of one’s own learning. These two contribute to a certain goal orientation and self-direction of students, which in turn enhance the sense of self-efficacy and increase self-confidence (Berg, 2017).

In my research question I also use the word ownership. Ownership in the way it is used in educational literature is not what I understand in ownership as written in my research question. For

me ownership in music is more about the ability to be present, act, understand and have skills in the field of music. And the ability to add one's own voice to the musical whole. Socialisation, qualification and subjectification play an important role in regard to achieving ownership in music. Important aspects to develop a certain degree of ownership in music and ability to take part in social musical processes for me are:

- awareness in hearing,
- the ability to analyse and understand elements of music,
- body integration of melody, rhythm and beat,
- literacy,
- Improvisation.

Musical activities that can contribute to the above mentioned aspects are:

- Singing in unison.
- Singing in polyphony.
- Incorporate heartbeat and rhythm.
- Performing polyphonic skills.
- Being able to read and write music.
- Feeling free and equipped to play several instruments.
- Listening to others and knowing how to join in a musical process or a given framework of improvisation.
- Understanding by heart and mind of musical elements such as form, timbre, harmony etc.
- Giving words to what you understand and feel in music. (Which means a development of hearing into music is a very important skill to develop in education.)

Agency

According to Mayo agency is about having an insight into how to use your instruments (knowledge, skills, experiences) in the process. That requires that you can detach yourself from traditions and "the way it always goes", the self-evident flow. And that you can participate in the process from your own strength. A condition for this is that you relate to yourself and that you relate to the outside world (Mayo, 2023).

Relating to yourself asks for awareness of yourself, self-orientation, knowing what you can and can't and a feeling of secureness. Relating to the outside world is about the ability to observe and understand the outside world, seeing and sensing what the question is the world is asking you as a subject.

According to Berg the researcher Mercer states that agency can be defined as an individual's willingness and ability to act and is one of the fundamental characteristics of human behavior. One's agency is determined by one's self-concept, beliefs, motivation and self-regulation (Berg, 2017).

In order to feel agency "presence" is required. Presence is a contraction of the terms present and sensing. Being present and feeling. Open to what is to come (PM Senge, 2005). That is a kind of keynote for what being a subject in the world is (Mayo, 2023).

This presence is one of the main goals for me in music education. In music education it can be practised in a lot of ways. It helps to develop agency in what you can and want to contribute to the process. This presence and sense of agency contributes greatly to the development of autonomy; an autonomy in connection to the world.

When I use the term ownership furthermore in this research I refer to ownership as described in this paragraph.

To me and for this research ownership in music is about the ability to be present, act, understand and have skills in the field of music.

2.3.4. Summary

Biesta developed a threefold way to view educational settings;

- Qualification (gaining knowledge, skills, dispositions etc.)
- Socialisation (being part of society, culture and tradition)
- Subjectification (becoming more autonomous in thinking, feeling and acting so you can connect to cultures, traditions and existing forms out of free will and with a conscious choice

In Waldorf education the learning process starts with socialisation which leads to qualification. Subjectification is about the longing to be in the world in an adult way, in which the movement towards being able to create is essential.

To me and for this research ownership in music is about the ability to be present, act, understand and have skills in the field of music.

Important aspects to develop ownership in music and the ability to take part in social musical processes are:

- awareness in hearing,
- the ability to analyse and understand elements of music,
- body integration of melody, rhythm and beat,
- literacy,
- Improvisation.

2.4. Child driven music lessons

2.4.1. Introduction

In this paragraph I will explain which possibilities I see to develop more ownership for pupils in music education.

During the first years of my time as a teacher, a coach visited one of my lessons and observed that I tend to act like a sun before the class. She explained that if a teacher acts like a sun, the children are forced to act as a moon. Acting like a sun is associated with radiance, enthusiasm, inspiration, activeness and liveliness. Acting as a moon is more reflective, listening, passive and with attention to the sun. She explained that when you teach more like a moon, children can become like a sun. They get active, enthusiastic and feel the possibility to share their ideas, thoughts and impulses. For me, this is a very inspiring image that greatly influenced my way of teaching.

I started to experiment in my teaching; some parts of my lessons I inspire, share and show my enthusiasm for a certain topic like a sun. Then I switch to a more moon-like role and I give the pupils the possibility to shine. I facilitate, instruct, coach, keep time and so on.

In my career as a teacher and trainer of students I observed a lot of music lessons, especially at Waldorf schools. In these lessons, almost every time I saw the teacher acting like the sun and the children acting like the moon. In the interviews I conducted, all interviewees confessed that their teachings were more teacher centred than child centred, so they were the sun and the children were the moon (Ploeg, De Leeuw, Os, Asselbergs, Overmars, 2022).

In this paragraph I will present some models with which I challenge myself and my students to create music lessons where pupils are co-creators of the outcome of the lessons. In other words, to create music lessons where pupils can shine, and the teacher is the facilitator of a creative, playful, musical process.

In my experience children gain ownership of music and develop agency if they are challenged to become an active co-creator of the music lesson. Besides that, the offered activities in the music lesson should aim for an experience based, embodied and transferrable understanding of what music is and how it works, also in regard to literacy.

2.4.2. Four learning styles: visual-auditive-reading-kinaesthetic

According to Narayanan researchers Fleming and Mills suggested in their paper, published in 1992 four categories that seemed to identify most students' learning behaviour. "VARK is an acronym that stands for Visual, Auditory, Reading (includes writing), and Kinaesthetic sensory modalities that humans employ for learning and processing information. If instructors want to accentuate student performance in a particular topic, or a chosen field of expertise, they have to provide multiple outlets for experimentation and learning exploration." (Narayanan, 2012).

During my studies I encountered this theory as well but in a slightly different form: teaching in a visual, auditive, cognitive and kinaesthetic way. I think this difference is more suitable for music education; the VARK theory is more suitable for methods to study or to gain new knowledge. Reading is a good way to study new theories for students. For music education I think the cognitive approach (talking, studying, thinking) is more suitable in comparison to reading.

In my work as a teacher, I found it beneficial to work with the four areas of teaching. And I believe music offers a beautiful opportunity to teach it through four roads: visually, orally, cognitively and by movement. Fleming describes in his work that students tend to favour one of the four learning styles. So, by teaching music in a variable way and trying to facilitate all four fields of learning in our lesson we take care of all four learning styles.

Music is an art form which you can perceive by hearing, so our ears are important senses in regard to music. Hearing music and reflecting on what we hear is an important part of the music lesson. Also training the hearing, developing the field of audiation and in puberty taking care of the ear-larynx coordination are some examples to work on in the auditive field. And, according to Steiner, hearing music directs us almost instantaneously to our feelings and emotions (Steiner, 1986).

The second field of teaching music is the visual part. You can make music visual by mapping music, making drawings of the texts and graphic notation of music. By looking at a score, a drawing, something that is written on the blackboard and also hand signs like the Kodály hand signs direct our attention to our eyes. This information invokes our analytic and synthetic thinking. We try to understand what we see or read, and try to combine it with what we hear for example. So, this area is mostly concerned with the field of our knowledge and thinking.

The cognitive approach is more about talking, studying and thinking of music and musical subjects. Music theory, literacy, knowledge of instruments and the study of music history is also a cognitive approach to this subject.

The last field is the kinaesthetic field of our teaching. Music is a result of movement. When you hear something, you can always say that something is in motion. Without movement, there is no music. So, movement and kinaesthetic exercises should play a big part in teaching music. In chapter 5 I will go deeper into the importance and meaning of embodied learning. Since moving and thinking about the movement is difficult, you have to stop most of your thinking to automatize and master certain procedures of movement, for example a series of movements in dance. According to Lievegoed the kinaesthetic field is mostly linked to the unconscious field (Lievegoed, 1993). In anthroposophical terms this is called the field of the will (see chapter 3).

2.4.3. Key objectives for primary school in regard of music education

In 1983 Rinze van der Lei en Nico Smit introduced the KVB-model. The starting point in this model are the musical aspects Klank (Sound), Vorm (Form) and Betekenis (Meaning) (vakliteratuur muziek, 2023).



Source: (vakliteratuur muziek, 2023)

This model provides the music teacher with 5 key aspects to teach music:

- Music making
- Listening to music
- Thinking and talking about music
- Reading and notating music
- Music and movement

And I would like to add two more:

- Improvisation
- Composition

These key aspects inspire teachers to develop music lessons with a broad set of activities. It also offers possibilities to develop working methods in which the children can be active in a specific field of these key aspects to teach music.

For example:

- When listening and talking about music, children learn to analyse and give meaning to what they have heard by expressing themselves in words.
- Improvising and composing are aspects which allow children to (co-) create music. Within a framework they can shape and make up a new melody, rhythm or even a complete song.
- The ability to write and read music is an individual skill. The way to approach this skill can be classroom based, but it has to become a personal skill. And when this ability is there, it provides a lot of possibilities to create new music or reproduce already existing music.
- Music making can be directed by a teacher, but the teacher can also give direction to children in conducting tempo, dynamics, group forms etc.

In my opinion the 7 key aspects to teaching music give a template to develop a rich and diverse music lesson in which children can be both sun and moon.

2.4.4. Summary of paragraph 2.4

In order to make children active and help them to become (co-) creators of the music lesson, teachers can make use of the seven key aspects of teaching music. These seven keys offer perspectives on how to activate the child not only as a performer of music, but as a co constructor. Children learn in a fourfold way; by hearing, seeing, moving and by cognition. If the teacher uses these four ways, the lesson will have more diversity in working methods, learning objectives and skill development. A music lesson where play, open space and co-creation is organised can give children more ownership in music making.

2.5. Summary of chapter 2

Over the last decades education developed from teacher centred education to child centred education. Cooperative activities and contextual learning give more autonomy and participation to students in the learning process.

The threefold approach to education of Biesta provides a model in which ownership and agency in music education becomes more clear. Through socialisation children become familiar with musical traditions and develop knowledge and skills (qualification). The process of subjectification is about attributing their unique contribution to the musical process.

For this research I redefined ownership in music as:

Ownership in music is about the ability to be present, act, understand and have skills in the field of music.

Important aspects to develop a certain degree of ownership in music and ability to take part in social musical processes are:

- awareness in hearing,
- the ability to analyse and understand elements of music,
- body integration of melody, rhythm and beat,
- literacy,
- Improvisation.

To help children to become (co-) creators of the music lesson the seven key aspects of teaching music (making, moving, speaking, listening, composing, improvising, notating) and the fourfold way of learning (hearing, seeing, moving, understanding) can help to develop music lessons in which children can develop more ownership in music making.

3. Principal thoughts about education at Waldorf schools and on music education at Waldorf schools

3.1. Introduction

Waldorf education is based on the anthroposophical ideas and philosophies of Rudolf Steiner. The educational style is holistic, intended to develop pupils' intellectual, artistic and practical skills. This chapter examines what this means for music education at Waldorf schools.

The philosophy on the human being and the developmental stages of the child are discussed, as seen through the lens of anthroposophy. Secondly, this chapter discusses some principal thoughts on music education at Waldorf schools in the Netherlands.

3.2. View of man in anthroposophy

Rudolf Steiner's anthroposophy focused on the essence of human beings. He thereby found a number of principles on which he later based his theory about the developmental stages of the child. According to Lievegoed who describes the main principles of this anthroposophical view of man in his book "Ontwikkelingsfasen van het kind", two starting points are:

- Man is a being who participates in two worlds: a physical world and a divine-spiritual world
- A child is born with a body formed by heredity and with an individual individuality of spiritual origin

This figure shows how, according to anthroposophy, the essence of human beings comes about. Before birth man is an entity in the spiritual divine world. This spiritual entity (the I) merges into a body. The soul of man subsequently receives impulses from two areas: from the physical area through all kinds of sensory impressions and desires, and from the ego through the spiritual world. These two areas meet in the central area, the soul. Thus, there is a threefold image of man: body, soul and spirit (I).

Linked to body, soul and mind you can find the three-way division in the spiritual-psyhic part of man: thinking, feeling and wanting. These three inner forces work inseparably.



Source: (Lievegoed, 1993)

1. Thinking: the most conscious, because thinking can be stopped at any time. A function in which observations are incorporated into human consciousness and this information is linked to previous observations.
2. Feeling: the core of the soul, a mediator between thinking and wanting. It is semi-conscious, more in a dream state. Feeling can open up the outside world, but it can also close. In the feeling we have two main directions, antipathy and sympathy.
3. Wanting: the function in which the inner world emerges; you can see it as reaching out to the future. In the field of wanting we are unconscious. It's the area of our desires, motives, instincts and passions. It is also the area where we can meet the future (Lievegoed B. , 1993)

"First of all, work in such a way that it does justice to the physiology of the child, then work in such a way that the child has to adapt to the musical art."
(Steiner, 1984)

3.3. The developmental phases of children

Anthroposophy describes three phases in the child's development, described by Prof. dr. B. Lievegoed in his book "Ontwikkelingsfasen van het kind". The first phase is from 0-7 years, the second from 7-14 years and the third from 14-21 years old. For this research I limit myself to a description of the first and second phase.

The first phase: from birth to teeth change (0 to 7 years)

According to Lievegoed the child has, after birth only two activities: sleeping and drinking. The child acquires language and its first actions by imitation. That characterises the young child: the emphasis is on imitating its environment. While playing, the body is developed as an instrument to explore the world. From the first to the third year of life the child learns three abilities that are perhaps the most important in human life: walking, speech and thinking. An important transition moment will come around the third year of life. The child develops an "I-consciousness", it understands that it can withdraw from its environment and learns to say "no". Around that age you come across the phenomenon where the child wants to say no to everything, also known as the "stubbornness period". The child becomes aware of its "I" by using "no" inappropriately. In addition, the aspect of fantasy in play with toys or other children is revealed, the outside world is shaped according to inner need.

Very important in this period is the repetition, the endless repetition of the same thing over and over again and again. It's about the pleasure of doing, not so much the result. Rhythm is important for development during this period. Rhythmic repetition of games, songs and stories. This rhythmic repetition will not tire the child easily, just like the rhythmic processes in humans, breathing and heartbeat, never tire.

The child's play changes by the time a new development phase begins, when the child is almost ready to go to primary school. Where previously playing was purely about playing, by the sixth year of life an objective clearly emerges. An impulse from the will. The child's attitude to the outside world and to his own actions changes. Where a toddler did not know reverence because I and the world are one, a child who is ready to go to school sees that there are things that other people (teachers, parents) have mastered but the child has not yet. The schoolchild develops reverence and learns to understand authority.

In this first phase the physiological development is the educational field for the teacher to work with. The teacher provides clearly structured days and repetitive rituals during the year by celebrating the seasons and the festivities that belong to the cycle of the year. Daily routine gives clarity and safety to the children. Repetition is like food for their development.

The second phase: from the teeth change to puberty (7 to 14 years)

According to Lievegoed the period before the seventh year is mainly used for physiological processes. The physiological development is partially complete with the beginning of the teeth change. With this physiological marking point a child is ready to go to school. Before that, the developmental forces were still working on the growth and construction of the organism.

In this second phase the child wants to explore the world. It wants to learn what older people already mastered: reading, writing, maths. The first phase was about the development of the body; this second phase is about the development of the soul. The child learns best through images, stories and learning processes in which subjects are presented so that children can really experience, feel, analyse and think about it. In this phase children learn best by doing, feeling and thinking: learning by hand, heart and mind.

Around the ninth/tenth year of life, a change in emotional life begins. Similar to the third year of life (the stubbornness period), but much more intense. The child becomes grouchy, often gets bored and everything and everyone is viewed with a critical eye. There is also a certain loneliness and fear of darkness or being alone. It is the phase where the warm casing of protection appears to be lost. Reverence is very important again: the child who felt in deep awe of a person in its youth will later find the opportunity to feel awe for truth.

In this period children face the world more objectively. The inner life is stronger.

At the twelfth year of life the child enters prepuberty. The start of a total separation between personality and world. The process in the soul expresses itself physically, this is particularly visible in the skeleton that develops. Limbs become long, movements angular and clumsy, not harmonic. In boys, the urge for aggressiveness becomes greater and this can manifest itself in fighting, screaming and misconduct. They feel their strength and want to show it. The girl is more inwardly focused and shuts herself off from the outside world. Happy, cheeky and giggly behaviour is the result, as are secrets with girlfriends and daydreams. With both sexes it is a time of lethargy and sometimes depression (Lievegoed, 1993).

3.4. Anthroposophical view on how music relates to man

Although Rudolf Steiner himself was not a musician, he nevertheless gave a number of lectures on music, which are brought together in the book "Rudolf Steiner on music". (Steiner, Rudolf Steiner over muziek, 1986) In the second lecture he expresses his thoughts on the relationship between the musical elements harmony, melody and rhythm and man.

According to Steiner the musical element harmony takes hold directly of human feeling. Feeling can be located in the middle of human being. On the one hand it passes into thinking and on the other hand it passes into willing. Steiner puts it like this:

"The peculiar thing about the musical element is that neither must it penetrate completely into thinking, (...) nor should it sink down completely into the sphere of willing. (...) The musical experiences must take place within the realm situated between thinking and willing."

Harmony has a tendency to stream; melody occurs and this element directs us towards the thinking area. Harmony can also tend downward toward willing and this is accomplished through the rhythm. Steiner: *"Melody thus carries harmony upward; rhythm carries harmony in the direction of willing."*

Furthermore Steiner connects melody to the area of breathing and rhythm to the circulation of the blood. *"One thus can say that while the melody is carried from the heart to the head on the stream of the breath (...) the rhythm is carried on the waves of the blood circulation from the heart to the limbs, and in the limbs it is arrested as willing"* (Steiner, Rudolf Steiner over muziek, 1986).

Steiner thus connects melody with thought, harmony with feeling and rhythm with will, but emphasises that the musical element must not penetrate completely into thinking, nor should it sink down completely into the sphere of willing.

And why is this important for music education at Waldorf schools?

In the article "Over muziekonderwijs op vrije scholen", Van Os writes: "Music education wants to contribute to the balanced development of the child. (...) Within Waldorf education, balance refers to the qualities of thinking, feeling and wanting or in other words to head, heart and hands" (Os, 2003).

Van Os explains furthermore the relation between music and the three qualities of thinking, feeling and wanting:

- Music is an art of feeling, of experiencing, of moods. That is her core. In experiencing music, the child learns to know and handle the nuances of the feeling life.
- Everything that has to do with structure, with the melodic, with form, fits in with the thought life. This side (therefore) contributes to the development of clear thinking.
- The (inner) movement, the practice, the repetition works more on the action side of the human being (Os, 2003).

So according to Van Os music education can give a powerful contribution to a balanced development of children (Os, 2003).

“Music education is not a goal, but a way to contribute to the development of the child” (Os, 2022).

“It is not about the music, but about the development of the children and how you can contribute to this with the music” (Overmars, 2022).

Music education at Waldorf schools follows the developmental phases of the children as described in paragraph 2.4. Music education is not a goal but an art form in which the teacher can contribute to the development of the child. The Waldorf music curriculum (described in paragraph 2.6) follows this development.

"Music is part of people's lives. Children have the right to music. Therefore, music should be part of every child's education. Because music helps them become themselves" (Ploeg, 2022).

3.5. Music education at Waldorf primary school in The Netherlands

3.5.1. Introduction

In this paragraph I would like to highlight some important pedagogical principles of music education at Waldorf schools. In order to arrive at these principles, I have studied the music curriculum at Waldorf schools (paragraph 2.5.2) and conducted interviews with five main representatives of music education at Waldorf schools. (See annex 2 for the questionnaire and annex 3 for summaries of these interviews, approved by the interviewees.

I interviewed Marcel van Os, who was a music teacher for 10 years at a Waldorf primary school in Zutphen and has been working as a music education teacher at the Vrijeschool Pabo in Leiden for the past 27 years.

I interviewed Reyer Ploeg, who was a music teacher at a Waldorf primary school in Haarlem for 10 years and has been working as a music education teacher at Opleiding Docent Muziek in Leiden for the past 27 years.

I interviewed Sietske Asselbergs who worked for many years as a music teacher at a Waldorf primary school in Den Haag. At the moment she is retired.

I interviewed Matthijs Overmars, who has worked for 34 years (and still works) as a music teacher at multiple Waldorf primary schools in Zeist en Driebergen and who has developed www.vrijeschoolliederen.nl, a website with songs and background information for music education at Waldorf schools. Matthijs is also chairman of a platform consisting of music teachers for music education at Waldorf schools.

I interviewed Teun de Leeuw, who studied at Opleiding Docent Muziek in Leiden and has been teaching music for 9 years at Waldorf schools. Since 2019 he has worked as a music teacher at three different Waldorf schools, in Amsterdam, Apeldoorn and Zutphen.

3.5.2. Waldorf music curriculum in a nutshell.

“The curriculum of music education at Waldorf schools doesn’t exist” (Os, 2022).
“Waldorf music curriculum is not about what has to be done but about what can be done” (Overmars, 2022).

At the start of the first Waldorf School in 1919 Steiner gave several lectures about education. He also addressed music education in these lectures. His directions for all subjects were collected by Karl Stockmeyer in his book *“Rudolf Steiners Lehrplan für die Waldorfschulen”*. (Stockmeyer, 1976) Over time the curriculum changed a bit, teachers developed new insights and new material. Waldorf education can be found all over the world and every country adds its own accents to the curriculum. Even within one country, not two Waldorf schools are the same as it is not a fixed system. Teachers and teams can develop their own way of teaching. In regard to the curriculum, Ploeg argues that music education should be developed in a context-specific form. *“What are the qualities and wishes within the school and how can art education be shaped? That may therefore differ from school to school” (Ploeg, 2022).*

On the other hand the directions, given by Steiner, evolved into a music curriculum and at www.vrijeschoolliederen.nl a useful overview of this curriculum is given. I’ve made some small adjustments to this overview and added some topics from my own experience and my teachings at Hogeschool Leiden.

Children in the age of 4-7:

According to Schoots children till the age of seven learn by imitation. Songs, rhythmic play and sensory play forms in which children experience musical sounds and phenomena are a daily routine in kindergarten. Singing is a way of talking to children. Children are still living in an imaginative world and by using stories, images and songs the teacher nurtures this imaginative world.

The mood of the fifth

Steiner wrote and spoke about music in unfailingly cosmic terms. In *“Rudolf Steiner over muziek”* he characterised the inner qualities of different intervals from the prime/tonic to the octave and beyond. He locates the experience of some intervals as *“within”* the human being and others *“outside”*: the larger intervals are more *“cosmic”* (outside the human being) and smaller ones more *“earthly”* (within the human being). The significance of the fifth is that it lies between the two (Steiner, 1986).

According to Schoots, Julius Knierim (1919-1999), a German music scientist, developed *“the mood of the fifth”*, following the directions of Rudolf Steiner. This mood of the fifth is a form of a pentatonic scale with the tones DE GAB DE. This tone-set is composed out of a series of fifths: G-D, D-A, A-E, E-B. The songs written in this scale try to bring balance between a more inward feeling and a more outgoing feeling. The tonic is avoided, the melody is fluid and the feeling of measure and functional harmony is avoided. According to Schoots these songs relate strongly to the developmental stage of children in age 3-6 (Schoots, 2023).

Waldorf music curriculum in a nutshell

I will now present a summary of the Waldorf music curriculum in the form it is presented at vrijeschoollieder.nl. In most Waldorf schools this guideline is generally followed, with some adaptations depending on the capabilities and pedagogical/musical insights of the teachers at the school.

Class 1 (age 6/7)

- Repertoire: simple pentatonic songs or songs in the mood of the fifth. Besides that (tonal) traditional child songs. Dutch and also world music. Fairy-tale like songs. Avoiding of tonic feeling, more in a free melodic feel and with an open ending
- Teaching form is a combination of doing and listening: listening games, internalisation of sounds, inner singing, with eyes shut listening to the direction of sounds or to what another child is singing or saying
- Songs with movement; melody, rhythm and movement are one. Different songs can be combined in a story
- A lot of repetitions of songs, songs with verses, slight changes and singing after each other in solo and tutti
- Instrumental use of (pentatonic) flute and lyre. These lessons have an ordered ritual way with a vast entrance and ending
- Wonder, respect and enthusiasm are keywords. No consciousness on musical aspects like breath and posture. Giving the right example and working in a play form will lead to the right technique
- Sparing use of percussion instruments or sound bars; avoid the feeling of measure in the songs
- No long musical lessons, more musical activities in between

Class 2 (age 7/8)

- Repertoire: pentatonic songs with more tonic feel in it (major/minor pentatonic), songs about animals and saints (these stories are told in class 2), songs with humour and challenge, articulation, wonder and respect. Traditional songs and songs linked to the annual festivals
- Games with language, articulation and rhyme, nonsense songs, rhythmic speaking and text improvisation. Try to connect with the alertness of the children
- A lot of games with listening activities; use the cleverness of the children's velocity of mind: clapping known songs, imaging known songs, songs with difficult movements. More awareness of pitch and a clear melody line; for example, copying the tone of a tuning fork or flute
- Adding simple percussion instruments to songs, sound bars, little drums. Games with measure and rhythm
- Instrumental education: flute, lyre. More tones, diversity between solo and tutti. More independent in making music. Inviting initiative of the children

Class 3 (age 8/9)

- Repertoire: songs in modi (for example: Dutch folk songs), songs with a tonic, songs about crafts and the farm (subject of class 3), songs with many verses, songs from the bible and about nature, Hebrew songs and songs from foreign countries, simple canons
- Till this age children experience music as a gift. Until this age music was a gift for children they could enjoy, from this age music is practised as an art. Often at this age, children want to choose their own instrument and start with individual music lessons
- Awareness grows for musical elements, direction on the black board, a beginning for melodic and rhythmic notation based on images like birds on a wire
- *The class for singing in unison*
- Broadening of the instruments for accompaniment: ostinatos, small rhythmic motives for parts of song texts, bourdon and use of sound bars
- Instrumental education: diatonic flute and lyre. All songs that are played are also sung. Or in groups sung and played
- Improvisation forms: call and response with flute, rhythmic echo games, rondo improvisations, improvisations in free time windows

Class 4 (age 9/10)

- First homophonic canons. Playing with group formations, so children can hear each other well. First experience of singing in harmony. Experience of “I” in the group
- Experience of an inner and outer world by experiencing minor and major
- Real tonic music to help the children ground themselves
- More inner experience of music: practising hearing, memory and inner hearing, practising the audiation of melodies, rhythms and harmonies in silence. Experience of rests and the quality of rests
- Practise with rhythm components, learning how to notate rhythms in 4/4. More objective approach to music and the ability to abstract music in a visual way
- Simple harmony and canons with soprano flute
- Play on instruments: bourdon, for play and after play, counter voice
- Working with facts and music as a logic reality
- Practice of simple intervals on flute and with a simple scale on the black board

Class 5 (age 10/11)

- Polyphonic singing, starting with two voices and later on with three voices. First homophonic, later more polyphonic canons and quodlibets
- Playing on bigger flutes, diversity on low and high voices
- Experiencing major and minor, switching songs from minor to major and vice versa. Experiencing and recognising intervals
- Difficult rhythm canons. Let children make their own rhythm canon and let them conduct the performance of it. Simple rhythm scores and graphic scores
- Learning how to notate rhythms with rhythm components, not only in 4/4 but also in $\frac{3}{4}$ and $\frac{6}{8}$
- Practises in time measures
- Singing simple songs from sight reading
- The most important keys with the accidentals
- Dictation of melodic lines
- Give a lot of concerts; give presentations
- Rhythmic and melodic improvisation
- Expanding songs with foreplay, afterplay, interplay or performance of some parts on syllables. Children arrange these songs

Class 6 age (11/12)

- International repertoire, more rhythmic music. Pop songs. Let children bring in songs they want to sing
- Orchestra of the class: own instruments and school instruments combined together. Discipline in orchestra.
- Practising diverse scales, interval training. Music as sport!
- Experiencing and drawing the logic and laws of the circle of fifths
- "Oktaafstimmung" (Steiner); high and low as one, link between inner and outer world
- Music as a knowledge: logical links in music, facts, terms, Italian dynamic terms, staves, scores, notation etc
- More polyphonic songs, canons and music for flute
- Difficult rhythm scores with triplets, syncope's and rests
- Making your own rhythmic or graphic score
- Children as conductor or rehearsal director of a group
- The score is leading, not the teacher. Let children be the judge whether the song is in the right pitch or the text is well spoken
- Lectures about musical topics

(Overmars, 2022)

3.5.3. Important pedagogical principles of music education at Waldorf schools.

In studying Steiners words on music education and the Waldorf music curriculum in its present form I encountered important pedagogical principles as a blueprint for good music education at Waldorf schools. Based on the literature and the interviews I formulated the following principles:

Daily singing

“Singing works strongly on the social organism of the class. Doing it together, thriving to something, listening and adjusting to each other. It doesn’t matter much how good you are at singing” (Asselbergs, 2022).

“Core values of music education in Waldorf schools are for me; singing and choral singing for the upper classes” (Leeuw, 2022).

Daily singing is a core value in music education at Waldorf primary schools. Most class teachers sing daily with their children. Singing for joy, as a divertimento between two different lessons or to start the day with. At some schools a musically talented teacher or a qualified music teacher gives music lessons. Choral singing with class 1, 2, 3 (age 7 to 9) and class 4, 5, 6 (age 9 to 12) is organised and led by this talented class teacher or a specialist music teacher.

Music education is active music making with two streams; the vocal and the instrumental.

“It's about shaping the musical flow in the lesson. Active music making in which two streams can be recognized; the vocal and the instrumental” (Os, 2022).

“The children are addressed a lot in their heads because of subjects such as language and arithmetic and when they come to me I think it is important they get out of their heads. Having fun together is important to me, but seriousness also has its place” (Leeuw, 2022).

Daily singing covers the vocal part of this principle.

As for the instrumental part some beautiful instruments are made by Choroi, an anthroposophical oriented association with the aim to create new instruments. Due to the therapeutic effect, the string, stroke and wind instruments are especially suitable for music therapy and pedagogy. The Choroi impulse started with Norbert Visser, a Dutch musician, composer, music researcher and instrument maker. Visser studied violin at the Conservatory in The Hague and then worked as a concert violinist and teacher (Choroi, 2023). The Choroi instruments are widely known for their sensitive sound quality. In many schools the pentatonic and diatonic Choroi flutes are used. At some schools even the pentatonic lyres are played by the children in class 1 and 2. Besides of that a lot of instruments like sound bars, drums and shakers inspire children to make creative music, to improvise and play. The Choroi instruments are developed to create active music lessons with sensitive sound quality aimed to improvise, listen and play.

Music helps to build a community

Music and singing takes a big place in school life at Waldorf schools. For example: when children start in class 1 the children of class 2 to 6 sing songs to welcome the new children. When children of class 6 leave school the children of the lower classes sing beautiful songs for them as a goodbye.

Waldorf schools tend to give much attention to celebrating seasonal festivals. A vast repertoire of songs is sung during these festivities. Singing at Waldorf schools builds a feeling of community and traditions and rituals take place to feel the inner connection between all people involved.

High standard music repertoire that follows the developmental stages of child

As I will show in paragraph 2.6 the Waldorf music curriculum asks for a set of songs which try to connect to the developmental stages of the children. The website vrijeschoollieder.nl provides this material and gives insight in the use of songs and the appropriate age category. Furthermore songbooks developed especially for Waldorf schools are published to give teachers sufficient material for singing in classrooms.

The song material follows a certain evolution from songs in the mood of the fifth (see paragraph 3.5.2), pentatonic songs, songs with use of church modes, canons, and songs for polyphonic singing. In his work as a music teacher, Teun de Leeuw underlines the importance of the correct use of songs at the different age stages:

“Furthermore, I see as a core value that the songs offered fit the age stages, so no keynote oriented and rhythmic songs in kindergarten, for example. I recognize in my work that it fits to sing canon in a fourth grade and to sing in multiple voices in fifth grade” (Leeuw, 2022).

Music education is about movement

For young children (until the age of nine) music is experienced as movement (Ploeg, 2022), so learning songs with movement and by movement is very important in music teaching at Waldorf schools. An important goal of music education at Waldorf schools is that children can feel music in their movement and in their bodies (Leeuw, 2022). Incorporate learning is seen as an important tool to gain musical skills.

“For young children, music is equivalent to movement. Around the age of nine, that movement becomes more internal.” Ploeg also describes it as a way from the hearing towards the visual oriented music practise (Ploeg, 2022).

Music education is about creating together and develops a higher sense of hearing

According to Van Os good music education is closely intertwined with the "Spieltrieb", as described by Schiller (Schiller, 2009), the element of play in which a creative process with the children gets started. He sees self-creating improvisation and composing as the ultimate place to engage children in a musical process and to provide ownership. "Giving the impulses of children a resounding place in the interplay where the child can experience: "I create, I shape"" (Os, 2022).

In looking back on his working life as a music teacher at primary school, Ploeg notes that at that time he was mainly concerned with reproducing music with the children. He mainly focused on the children as performing musicians. Now he would approach music education differently. He would like to place more emphasis on the creative powers of the children by addressing them in improvising and composing. For Ploeg, this creates ownership among the children in shaping the musical process. It requires other working methods in which the teacher becomes more of an observer and supervisor and facilitator of space for a creative process in which he / she brings the children (Ploeg, 2022).

By making music together and creating spaces to create music together, children gain a lot of experiences in music. Asselbergs: "Singing challenges students to express themselves, it develops the ears through polyphonic singing and from singing you can experience phenomena in music and bring them to consciousness through melodic and rhythmic notation" (Asselbergs, 2022). These experiences bring awareness of phenomena and it develops the ability to listen deeper, more sensitive and with higher concentration.

Ploeg: "In preparation for the self-creating process, it would be good if children had essential encounters with phenomena in music. So for example, every day has its own tone. Can you really experience this tone? The color and possible smell of it, the quality of this tone. By gaining these experiences, the child can be brought into a self-creative process" (Ploeg, 2022).

Also from my own experience as a Waldorf music teacher I see the importance of helping children to open their ears and to train their ability to listen deeper into sounds, tone, timbre, melodic shapes and so on. Overmars: "Not easily measurable as a goal is the goal that the children develop a higher sense in listening through music making music" (Overmars, 2022).

Music education is about social interaction

Music is also a great tool to work in the social environment of the class (Leeuw, 2022). The higher goal of music is to contribute to social arts (Os, 2022). It is a powerful tool to mould the social interaction, ability to listen, to express and to collaborate with the purpose to achieve a musical experience (Asselbergs, 2022).

"For me, it's all about the group. Because of the individual in the group and that you as a group become the owner of the process and achieve successes together in making music with each other. I see music as a connecting activity that has a healthy effect in the group. The music lesson creates a good social atmosphere. As a music teacher, I see myself as a connector in this process"
(Leeuw, 2022).

Music education is not about goals but it is an instrument to help children in a balanced development

"Music education is not a goal, but a way to contribute to the development of the child" (Os, 2022).

"It is not about the music, but about the development of the children and how you can contribute to this with the music" (Overmars, 2022).

Like all education at Waldorf schools, music education follows the developmental phases of the children as described in paragraph 2.4. Music education is not a goal but is an art form in which the teacher can contribute to this development. The Waldorf music curriculum (described in paragraph 2.5.2) follows this development.

"Music is part of people's lives. Children have the right to music. Therefore, music should be part of every child's education. Because music helps them become themselves" (Ploeg, 2022).

Overmars' opinion on music education:

"It is not about skills and what you can do at the end of the ride, it is about what you have developed in making music and experiencing music in the music lessons. I think it is important that children have developed a relationship with creating music and musical processes" (Overmars, 2022).

3.6. Summary

Waldorf education is based on the anthroposophical ideas and philosophies of Rudolf Steiner. Important aspects for the school curriculum are the philosophy on the human being and the developmental stages of the child, as seen by anthroposophy.

Thinking, feeling and wanting are the three forces of the soul and education is aimed at a harmonisation of these three fields. Music education contributes in this realm:

- Feeling: experiencing music, harmony
- Thinking: analysing, melody
- Wanting: acting, moving, practising music, rhythm and beat

Important pedagogical principles in regard of music education are:

- Daily singing
- Music education is active music making with two streams; the vocal and the instrumental
- Music helps to build a community
- Music education is about movement
- Music education is about social interaction
- Music education is about creating together and develops a higher sense of hearing
- Music education is not about goals but it is an instrument to help children in a balanced development
- Songs in different modes relate to the different stages of development that the children are in:

Kindergarten	songs in mood of the fifth, Dutch folk songs with tonic, pentatonic songs
Class 1 / 2	pentatonic songs with a tendency to minor or major feel
Class 2 / 3	use of songs in modes. Songs with a tonic feel
Class 4	starting with polyphonic songs: canons. Songs with a strong tonic feel in it
Class 5	polyphonic singing SS, SSA
Class 6	polyphonic singing SSA, SAT

The age of nine is an important turning point. From this age on music is no longer just a gift to the child, but the child is able to practise music as an art. From this age on music is also something logical and understandable for the mind.

4. Strengths and weaknesses of music education at Waldorf primary schools in The Netherlands

4.1. Introduction

In this chapter I would like to provide an overview of the strengths and weaknesses of music education at Waldorf primary schools in the Netherlands. I used a variety of sources:

1. Minutes of meetings with the working field of Opleiding Docent Muziek (ODM) Leiden. (See annex 1 for the minutes of these meetings)

In the two years I worked for ODM Leiden, I investigated with the working field what the status is of music education at Waldorf schools is. I also investigated which developments appear in the curricula of the schools. In my lessons I tried to prepare the students so they could integrate easily in a professional career as a Waldorf music educator. Furthermore, we discussed opportunities to give impulses to the working field to improve music education at Waldorf schools.

2. The aforementioned interviews with five main representatives of music education at Waldorf schools. (See annex 2 for the questionnaire and annex 3 for summaries of these interviews, approved by the interviewees. The audio files and transcriptions of the interviews are accessible in the summaries by a link.)
3. My own experience as teacher at various Waldorf schools and as trainer for various Waldorf school teachers with regard to music education

I worked as a music teacher for 8 years at a Waldorf primary school in The Hague. And for several years I provided in-company training for teachers at Waldorf schools. In preparation for these training sessions, I always examined the questions and needs of the school and developed a fitting training programme for the teams.

4.2. Important pedagogical principles of Waldorf music curriculum and status of these principles at Waldorf schools in The Netherlands

In chapter 3 I described important pedagogical principles for music education at Waldorf schools in the Netherlands. This paragraph discusses the aspects of concern when looking at the current state of these components at Waldorf schools in the Netherlands.

1. Increasing insecurity in singing by Waldorf teachers.
Overmars is trainer at a summer course for Waldorf teachers. In his classes he meets a lot of 'zij-instromers' who feel insecure in singing (notulen werkveldcommissie ODM Leiden, 2022). In my own experience I see a lot of students with the same problem.
2. Lacking knowledge and skills on how to sing with children.
 - a. Most class teachers sing at their own vocal range which is too low for the children's voice (Asselbergs, 2022). Knowledge and ability to sing in a proper way with children is decreasing.
 - b. Knowledge of the development of children's voices is also decreasing.
 - c. Ploeg sees that today's generalist teachers seems to have less artistic baggage than in the past (Ploeg, 2022).
3. Increasing unawareness of pedagogical principles by teachers on music education at Waldorf schools.
Asselbergs sees the lack of awareness for the curriculum of music and the backgrounds from which you can teach as problematic (Asselbergs, 2022). In the in-company trainings I give I notice this lack of awareness as well.
4. Not every school has a well-trained specialist.
 - a. Not every school has music lessons or choral singing because there is no specialist or musically talented class teacher available.
 - b. According to De Leeuw and Overmars, a specialist is like a consultant for the general class teachers and can give a positive impulse to musical life at school. "As a specialist one shapes a musical culture that radiates throughout the school. You are often asked for inspiration as a kind of music consultant" (notulen werkveldcommissie ODM Leiden, 2022). Schools with a music specialist use this specialist not only as the teacher for music lessons, but also as a consultant for the other teachers (Os; Leeuw, Overmars; Ploeg 2022). This results in a flourishing musical life at schools and inspired class teachers.
5. Not all specialists are well trained and are aware of Steiner's point of view on music education.
 - a. For example knowledge on how to work with Choroï instruments in a creative way, making use of improvisation, is not a normal expertise of the music specialist. Even De Leeuw had difficulties to work in a proper way with Choroï flutes even though he had an anthroposophical oriented music education. "No flute lessons at the training; Teun experiences this as a loss" (notulen werkveldcommissie ODM Leiden, 2022).
 - b. Specialists who studied at a normal conservatoire are not aware of Steiner's point of view on music education.
6. Instruments are in a bad state, Choroï instruments are not always available at schools and teachers do not know what to do with them.
 - a. In my training sessions at primary schools, I often checked on the state of the instruments and asked if they were used in classrooms. Most schools have instruments, but they are rarely used. Teachers do not know how to work with these

instruments. The instruments I saw were often in a bad state and collected with no specific plan.

- b. Choro instruments are expensive and schools have a limited budget to buy new instruments.

7. Daily practice of music is decreasing.

According to Ploeg, daily practice of music is decreasing due to pressure on cognitive subjects and administrative tasks. Because of inspection (from government), parents who keep a close eye on cognitive development and increasing administrative tasks such as a pupil tracking system, Ploeg sees that art education is given less time in the timetable (Ploeg, 2022).

Below I have linked the aspects of concern to the important pedagogical principles for Waldorf music education as described in chapter 3.

Important pedagogical principles for Waldorf music education	
<i>Daily singing.</i>	1, 2a, 2b, 7
<i>Music education is active music making with two streams; the vocal and the instrumental.</i>	1, 2a, 4a, 4b, 5a, 5b, 6a, 6b, 7
<i>Music helps to build a community.</i>	4a, 7
<i>Music education is about social interaction.</i>	4b, 5a, 7
<i>Music education is about creating together and develops a higher sense of hearing.</i>	1, 2a, 2c, 5a, 5b, 6b, 7
<i>Music education is not about goals but it is an instrument to help children in a balanced development.</i>	3, 4a, 5a, 5b, 6b, 7
<i>Songs in different modes relate to the different stages of development that the children are in.</i>	1, 2a, 3, 4b, 6b, 7

According to Ploeg: for better music education at Waldorf schools specialist teachers are needed to do the difficult things in classrooms and guide the team in shaping music education. It is precisely in this collaboration that high-quality music education could be well designed. With 1 hour a week, the specialist teacher has too little influence on this and a collaboration with the class teachers could yield much more result (Ploeg, 2022).

“How ideal it would be if in every school a class teacher is available who does musical things and a specialist teacher is available who can give depth to that in such a way that the potential, present in school, can flourish” (Os, 2022).

4.3. Further points of concern in regard to music education at Waldorf schools in the Netherlands

Literacy is not or rarely taught

Although the Waldorf music curriculum, as described in chapter 3, mentions suggestions on how to teach musical literacy, it is rarely taught at Waldorf schools in the Netherlands at the moment.

De Leeuw: “It gives a sense of freedom if a person masters notation of music and can get started in making music by reading it. *However, practising literacy is not a part of my lesson plan.* I can’t make time for it and think other aspects of music education are more important, such as actively making music together. If I had 2 hours a week I would probably give it a place. The Kodály method would be a good tool, but I know it too little to really use it as a learning line” (Leeuw, 2022).

Asselbergs acknowledges the importance of students having the ability to read music. That should actually be standard practice. However, she also recognizes that this often cannot be achieved due to lack of time and absence of specialist music teachers who are skilled to take care of this in music lessons. “Practising rhythmic skill including notation is hardly practiced anymore” (Asselbergs, 2022).

In the interviews I conducted, I asked the interviewees their opinion on the importance of teaching music literacy to children in primary school. I also asked them if the Kodály method can give a worthwhile contribution to gaining literacy for children in primary school.

Van Os sees the importance of working with solfa and rhythm language as offered by Kodály and Gehrels¹ as a methodology for music teachers. He experienced working with rhythm language and solfa as a valuable impulse and has also worked with it himself in his active years in the classroom. It helps children achieve melodic and rhythmic awareness. For Van Os the main goal in this process is experiencing music in feeling, music in beauty and in logic. It doesn't have to become a skill (Os, 2022).

Overmars thinks that solfa and the rhythm syllables of the Kodály methodology can contribute to the Waldorf school music curriculum, but it probably requires more intensive practice than a single weekly lesson. The rhythm language is a bit more manageable, but letting the children master the solfa is more difficult (Overmars, 2022).

Ploeg thinks it is important that children learn to read and write music. As a teacher he took care of this as an important element in his teaching; the solfège. Children could eventually sing from sight reading. In learning the notation, he argues for a way from hearing to the visual. Ploeg acknowledges that the Kodály methodology can play a nice meaningful role in this. The methodology starts with what a child hears, the ears and this means the process to learn literacy provides in a lot of qualitative attention to music (Ploeg, 2022).

According to the interviewees and my own experience at Waldorf schools the conclusion is that musical literacy is rarely taught. Time, expertise and a methodology is missing to organise a proper way to teach musical literacy to children. The Kodály method could provide in a methodology to organise musical literacy in Waldorf music education.

¹ Willem Gehrels (1885-1971) was a Dutch music educator who wrote in 1942 his standard work “Algemeen vormend muziekonderwijs”. In this methodology solfège and working with solfa is a key characteristic. (wikipedia, 2023)

Music lessons are teacher centred and children gain little ownership

“I mainly work teacher centred in my classes” (Leeuw, 2022).

In the music lesson Overmars mainly works in a teacher centred way. He acknowledges it would be nice to give children more ownership to shape and create themselves, but does not truly incorporate this (Overmars, 2022).

All other interviewees also admitted the lessons they conducted were more teacher centred than child-driven.

Ploeg would like to put more emphasis on the creative powers of the children by addressing them in improvising and composing. For Ploeg, this creates ownership among the children in shaping the musical process. It requires other working methods in which the teacher becomes more of an observer and supervisor and facilitator of space to bring children in a creative process (Ploeg, 2022).

In the interviews some interesting exchanges occurred on the importance providing ownership in music lessons for children. With regards to creating a musical process this was deemed important, but in gaining skills or knowledge everything seemed subordinate to the general development of the children.

Music education, according to Overmars is not about what a child can or cannot at the end of the ride, it is about what a child experienced in his/her development to making music and experiencing music in the music lessons (Overmars, 2022).

4.4. Summary

In this chapter I tried to formulate strengths and weaknesses of Waldorf schools:

Strengths	Weaknesses
Music education at Waldorf schools is seen as an artform that stimulates social interaction and helps to build a community. Singing is seen as very important and most teachers sing every day with their classes.	Time to practise and prepare music lessons is diminishing. Increasing insecurity in singing by Waldorf teachers. Most teachers sing too low for the children's voice and do not have much knowledge about the children's voice and the way it develops.
Songs in different modes relate to the different stages of development of child as formulated by anthroposophy and the songs are often specifically written for a certain age.	Lacking knowledge and skills on how to sing with children.
www.vrijeschoolliederen.nl is a resource to teachers in finding suitable songs and gives access to the pedagogical principles of music education at Waldorf schools.	The knowledge of the pedagogical principles and Waldorf music curriculum seems to be decreasing for most teachers at Waldorf schools.
Music education is active music making with two streams; the vocal and the instrumental.	Literacy is rarely taught. The visual part in music lessons is less well designed.
Music education is about creating together and develops a higher sense of hearing.	Music lessons are mostly teacher centred.
The Choroï impulse has developed instruments to create active music lessons with sensitive sound quality aimed to improvise, listen and play.	Choroï instruments are not always available at schools and teachers do not know what to do with them. It requires a skilled specialist to integrate these instruments in the music lesson. Other instruments available at the school are often in a bad state.
Music specialists are an important inspiration and function as consultants for class teachers. They benefit to a flourishing musical life at schools.	Very few Waldorf schools have trained specialists to provide in Waldorf music education.

One aspect of Waldorf music education can be seen as strength and weakness:

- Music education is not about setting goals, but it is practised as a way to contribute to the development of the child. Play, experience of music and just doing it is seen as very important.

This is a strength because music is not just for fun, but it has a developmental purpose. Active music making and experiencing it is seen as very important. On the other hand the lack of clear goals makes music education weak in regard of gaining clear skills and knowledge.

“I propose that the reading and understanding of music be taught to our children from the very beginning of their school life; that they learn to participate with enthusiasm in the study of music from kindergarten through high school.

“No child is tone deaf; every child has the natural ability and desire to assimilate musical ideas and comprehend their combinations into musical forms. Every child can be taught to read music as he or she is taught to read words; and there is no reason why both kinds of reading cannot be taught simultaneously.

“...Children must receive musical instruction as naturally as food, and with as much pleasure as they derive from a baseball game. And this must happen from the beginning of their school lives.”

Leonard Bernstein (Bernstein, 1977)

5. What contribution can Kodály methodology bring to Waldorf music curriculum especially concerning ownership?

5.1. Introduction

In this chapter I would like to explore which tools of the Kodály methodology could contribute to the Waldorf music curriculum.

I have outlined in the previous chapters that in most Waldorf schools in the Netherlands daily singing and active music making aimed at experience is practised. Most teachers teach in a teacher centred way and music literacy is not or rarely taught. The aim of the musical activities and lessons is to help children in their development.

I have furthermore elaborated that cooperative activities help activate children in learning. And that ownership in music is about the ability to be present, act, understand and have skills in the field of music.

So, what contribution can Kodály methodology bring to Waldorf music education, especially concerning ownership?

I will start with comparing pedagogical and methodological principles of Waldorf music education and Kodály methodology. After that I will explain specific Kodály principles:

- The sound to symbol approach.
- Working with relative solmization.
- Working with rhythm syllables.
- Embodied learning and polyphonic skills.

To conclude I would like to suggest which aspects of Kodály methodology could contribute to the Waldorf music education curriculum in the Netherlands in order to give more ownership to children.

5.2. Methodical and pedagogical principles in Kodály methodology compared to Waldorf music education in The Netherlands

Steiner and Kodály both agreed that music education is essential in the lives of all children. According to Van Os music education at Waldorf schools is aimed to harmonise the human being in thinking, feeling and wanting (Os, 2003). Kodály aimed for a well-trained ear, mind, heart and hand. This is not completely the same but yet a beautiful similarity.

“One may also say that music has a rhythmic and harmonic influence on people. And that because of it these musical children, of whom music is actually a part, are becoming wholly harmonious people (Kodály Z. , 1964-1966)

In the table below, I will outline some different views:

<i>Primary purpose of music education</i>	<i>Primary purpose of music education</i>
According to Steiner, the human being experiences the spiritual world, his/her “own true home”, when engaged in music-making, listening or in the re-creation of music. As all subjects in Waldorf education are aimed to contribute to the development of a child, so is music. “Music education wants to contribute to the balanced development of the child. (...) Within Waldorf education, balance refers to the qualities of thinking, feeling and wanting or in other words to head, heart and hands” (Os, 2003).	Kodály’s main goal was to achieve musical literacy. He saw as his most urgent task “the struggle to move from an illiterate culture into one with writing”. (Kodály, 1974) Kodály also highlights an intellectual and spiritual significance in music education: “Music education has an extraordinary significance between the ages of 3 and 7, the most important period in the child’s intellectual and spiritual development” (Kodály, 2019).
<i>Methodology</i>	<i>Methodology</i>
Steiner did not give a method on how to teach music. He gave “indications” of how music could help in the development of the child. Within these guidelines the teacher is free to create his/her own programme.	The Kodály system on the other hand is very structured. A set sequence of rhythmic and melodic concepts is recommended for teaching. Each concept must first be prepared, then made conscious and finally reinforced, according to Choksy (Choksy, 1988). Thoughtful planning is essential!
In Steiner’s point of view music education should correspond to the developmental stages of the child.	Kodály argued that music education should start as soon as possible. Music education should begin “nine months before the birth of the mother.” Age three to seven, Kodály believed, was the critical age for learning. What was not experienced at this stage, he felt, could never be made up at a later stage (Kodály, 1974).

First experience music, both vocally as by instruments. Lessons with play, movement and aimed to develop the listening ear. Around age 9 music gets more objective and literacy starts. "A journey from an audible experience to a visual one" (Ploeg, 2022).	Teaching from sound to symbol. Teaching from the sequence preparation, presentation to practise (Houlahan & Tacka, 2015).
Teaching melody	Teaching melody
According to Steiner, for a young child, melody is the most important element of music. In chapter two I have outlined the way songs, modes, scales and tonality are used at the Waldorf schools. Songs follow children's development and try to connect with the different stages in this development. So first songs in the mood of the fifth, then pentatonic songs, songs with use of church modes and songs in major and minor scale.	A lot of songs used in the Kodály method are bases on the pentatonic scale, "The pentatonic folk songs are particularly suited to the kindergarten. It is through them that children can achieve correct intonation sooner, for they do not have to bother with semitones" (Kodály, 1974) Songs in pentatonic scale are followed by songs in the modes that occur in folk music and in major and then minor scales (Szonyi, 1973).
Teaching rhythm/beat	Teaching rhythm/beat
In Waldorf music education, beat is not emphasised until after the age of nine.	The Kodály method on the other hand emphasises beat and rhythm from the beginning of musical training.
Teaching harmony	Teaching harmony
The teaching of harmony in Waldorf schools is postponed until after age nine. Even the chordal accompaniment of the guitar and piano is not encouraged. Canons are generally introduced in class 4.	According to Choksy, canons, melodic ostinato patterns and the teaching of simple descants does not begin until class 2 (Choksy, 1988). So teaching harmony can start from age 7.
Teaching literacy	Teaching literacy
Steiner did not advocate the symbolization of music before the ninth year. First experience musical sounds, then symbolize.	Kodály believed in teaching the children from the beginning to learn to read and write music. In the Kodály method, children are introduced at the age of six to musical notation, but only after gaining a rich or varied repertoire of rhythmic and melodic patterns (Choksy, 1988).
Song material	Song material
According to Steiner folk songs are not required. Many songs in Waldorf schools are newly composed and relate to classroom topics, nature, seasons and festivals.	Kodály strongly advocated the use of folk songs: "The music education of Hungarian children must be founded on Hungarian music" (Kodály, 1974).

5.3. From sound to symbol

The intuitive experience and enjoyment of music should come first, such that the latter acquisition of formal musical skills occur inductively, that is, as an integral growth of the child's experience. A good deal of traditional music education has worked deductively: the formal rules have been taught in the abstract, for example, through verbal descriptions or written notation, rather than on the practical context of making sounds themselves (Hargreaves, 1986).

In “Kodaly Today”, written by Michaél Houlahan and Philip Tacka the sound to symbol approach is explained. This sound to symbol approach is a significant aspect of the Kodály methodology in learning musical literacy.

In teaching musical elements a teacher can follow a perceptual (from sound to symbol) or a conceptual (from symbol to sound) approach. In a sound to symbol methodology pupils have musical experiences before the abstract musical elements are taught. The activities aim to develop aural, visual and kinaesthetic awareness. This stage is called preparation. After this stage the experienced musical elements are brought into cognition. The musical element gets labeled or the notation is presented. This stage is called presentation. The third stage is called practice. In this stage pupils learn to use the musical element in a diverse way (Houlahan & Tacka, 2015).

In Waldorf school teaching this sound to symbol method is also used and practiced. Children first learn a song and then try to play it on the flute for example, just by hearing it and not by following a score. Children learn a song and when the teacher asks them to develop a way to write the song down; they try to show the form of the melody by drawing lines or by drawing dots to mark the single notes.

As Ploeg puts it: “The way to learn literacy in writing and reading music is a journey from the audible experience to a visual experience. Music gets objective in this way” (Ploeg, 2022). And as Teun de Leeuw puts it: “It offers freedom if someone knows how to read music, so you can create music out of the notes you read from the score” (Leeuw, 2022).

For me the ability to read and write music is strongly related to ownership in music. The ability to read music offers the possibility to create music from a score. Music is made accessible and objective. According to De Leeuw this is offering freedom for a musician.

5.4. Working with relative solmization

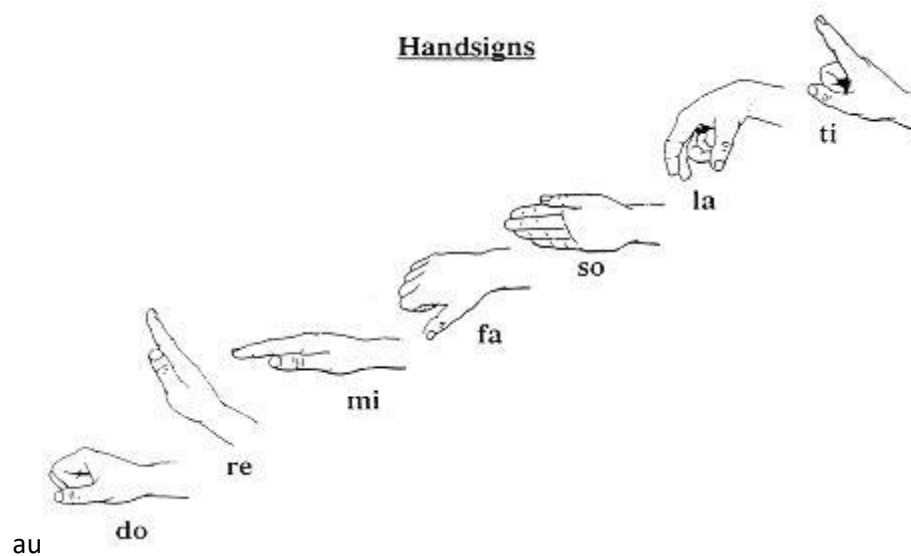
“I discovered the great advantage of “movable do” in England. Later I tried to urge its application in Hungary also, adapting it to our needs. We found that we had to start with the most familiar melodic turns of our folk songs, at first avoiding the scale. The scale should only be established later, when the intervallic leaps are already well mastered by the students” (Kodály, 1964).

Although the moveable do or tonic-solfa system is often considered as typically linked to Zoltán Kodály, the system was not invented by Kodály himself. Guido d’Arezzo was the first teacher that used a form of it for musical instruction. The system developed over the ages and John Curwen added hand signs to the system in 1862. Eventually it was adopted and adapted in Hungary by Kodály. He was convinced that relative solmization was valuable for developing both ear training and sight-singing abilities (Houlahan & Tacka, 2015, p. 154).

Relative solmization is a tool to teach children melodic elements. Students read from the staff, using a *do clef* and later on pitch-indicating clefs. According to Houlahan and Tacka singing with solfège

syllables engages students' vocal singing mechanism, cognitive thinking and emotional well-being. Singing solfège syllables with Latin pronunciation encourages singing using pure vowels. And singing with solfège syllables encourages to become aware of the noteworthy differences between sung intervals and well-tempered intervals (Houlahan & Tacka, 2015). Singing with relative solfa and solfège syllables helps aurally, physically and visually to develop intervallic relationships as audiation skills.

Moveable do-solmization can be used with any tonal system: major, minor, modal or pentatonic.





















Source: (Kodaly hand signs chart)

5.5. Working with rhythm syllables

“Rhythm syllables help the learner associate a “syllable” with the number of sounds heard on particular beats” (Houlahan & Tacka, 2015, p. 157).

In this system, certain rhythm syllables are linked to note duration. By speaking the rhythm syllables the child separates the rhythm from the pitch of the notes.

Some different systems occur in schools where the Kodály way of music education is taught, but I prefer the Takadimi method, developed in the early 1990s, because the rhythm syllables used in this system are beat oriented and pattern based. According to Hoffman, Takadimi helps to recognize rhythmic patterns similar to the way we read groups of letters as words and not one letter at a time (Hoffman, 2009).

Time sig.	Beat	Division	Subdivision
e.g. $\frac{2}{2}$ $\frac{3}{4}$ $\frac{4}{2}$	 ta	 ta di	 ta ka di mi
e.g. $\frac{2}{4}$ $\frac{3}{4}$ $\frac{4}{4}$	 ta	 ta di	 ta ka di mi
e.g. $\frac{2}{8}$ $\frac{3}{8}$ $\frac{4}{8}$	 ta	 ta di	 ta ka di mi
Time sig.	Beat	Division	Subdivision
e.g. $\frac{6}{4}$ $\frac{9}{4}$ $\frac{12}{4}$	 ta	 ta ki da	 ta va ki di da ma
e.g. $\frac{6}{8}$ $\frac{9}{8}$ $\frac{12}{8}$	 ta	 ta ki da	 ta va ki di da ma
e.g. $\frac{6}{16}$ $\frac{9}{16}$ $\frac{12}{16}$	 ta	 ta ki da	 ta va ki di da ma

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www.takadimi.net

Source: (Hoffman, Takadimi & Solfège)

5.6. Embodied learning and polyphonic skills.

Song is the instinctive, natural language of the child, and the younger they are, the more they like movement to go with it. (...) The organic connection between music and movement: singing games in the open air; have been some of the main joys on the lives of children since ancient times
(Kodály, 2019).

In paragraph 2.3.2 I described VARK (visual, auditive, reading and kinaesthetic) as a methodology to study as a student or teach as a teacher via diverse studying/teaching strategies. Both theories have the kinaesthetic way of learning as one of the ways to learn new things. I think movement is a very important way to learn music. Young children like to move and music is strongly connected to movement: without movement there is no music!

The importance of learning by movement is also described in chapter 3 as a specific way of teaching in Waldorf education.

I tried to find internationally recognized methods in which music education is linked to movement and found a nice example in the BAPNE method:

BAPNE is the acronym of five disciplines joined together to form a unified vision in the educational approach. They are biomechanics, anatomy, psychology, neuroscience and ethnomusicology. The body is stimulated while learning through the movement in space.

According to the BAPNE method learning music by movement has also an influence on the development of our brain:

“The BAPNE method is a scientifically proven method that uses body percussion, movement and dance to train specific parts of the brain. Through psychomotor coordination and dissociation, use of laterality, of imagined, spoken, recited and singing voice, the executive function, attention, concentration and short and long term memory are stimulated and enhanced. Not only for elderly people this is a beautiful way to stay healthy, both physically and cognitively, but also a nice way to teach music in an embodied way to children” (Cozzuttia, Blessanoa, De Biaggioa, Tomasina, Romer-Naranjo, 2017).

Through movement children have the ability to experience, learn and show characteristics in music like melody, sentences, mood etc. Learning by movement also contributes to a multi layered way of learning. In an article on contemporary Kodály oriented music education, Szirányi states:

“In our view while traditional singing-based music education approaches music learning predominantly from the side of musical hearing, by the conscious integration of motions into the process of the musical elements’ acquisition, the aural musical experiences gained by singing will be completed with kinaesthetic and, in many cases, visual experiences as well. With the unity of listening-seeing-body we can address children with different learning strategies at the same time” (Szirányi, 2023).

Movement is an important way to learn new things and learning by movement also stimulates the development of the brain. Learning by movement provides in a multi-dimensional way to learn new things.

In Kodály teaching the development of polyphonic skills is seen as an important part of music education.

“In line with Kodály principles, polyphony and the training of polyphonic skills has a key role of our methodology” (Szirányi, 2023).

During my studies, I learned that practising different aspects of music simultaneously or shortly after each other, like walking the heartbeat and singing the melody, is a good preparation for polyphonic singing. Also play forms in which activities are practised such as:

- call and response,
- solo-tutti singing,
- mirroring,
- sing and play,
- dance on music
- and the development of inner hearing

These play forms provide situation to address or improve polyphonic skills and musicianship.

5.7. Summary

Waldorf music education and Kodály methodology have a lot of similarities, but also differences:

Similarities:

- Music education is essential.
- First experience music and then move on to cognition and literacy (from sound to symbol).
- Song material that starts with pentatonic songs.
- Learning music by movement.
- Music education is aimed to harmonise the human being.

Differences:

<i>Steiner</i>	<i>Kodály</i>
Music as experience of a spiritual world	Music lessons with the goal of achieving musical literacy
Music contributes to the development and follows the developmental stages	Music lessons as soon as possible. Age 3-7 as most important age
No methodology	Strict methodology
Beat from age 9	Beat right from the beginning
Polyphonic singing from age 9	Polyphonic singing from age 7
Literacy from age 9	Literacy from age 7
Free use of songs	Folksongs of the country as song material
Choroi instruments, developed to create active music lessons with sensitive sound quality aimed to improvise, listen and play	No own instruments
No teaching method for melody	Teaching melody by hand signs
No directions for teaching rhythm	Teaching rhythm by rhythm syllables

The biggest difference between Waldorf music education and Kodály methodology is a pedagogical one: Waldorf music education is not about goals but aims to contribute to the development of children following the developmental stages, whereas Kodály methodology aims for music lessons with the goal of achieving musical literacy.

Steiner indicates the age of nine as a turning point.

From this age on:

- music is no longer just a gift to the child, but the child is able to practise music as an art.
- music is also something logical and understandable for the mind.
- harmony (polyphonic singing), beat and musical literacy can be integrated in music lessons.

The Kodály methodology is not very strict in regard of this, although the age of 7 is mentioned as a suited age for teaching literacy and singing in polyphony.

In teaching literacy, I think Waldorf music education can benefit from some tools the Kodály methodology offers:

- Singing with relative solfa is a good tool to bring awareness in melody, scales and tone height.
- Working with rhythm syllables and especially the Takadimi method could help to bring awareness in beat, rhythm and note lengths.

Both components, Takadimi and relative solfa can help to teach children in primary schools musical literacy. And I think the sequences in Kodály methodology can easily be transferred to Waldorf music curriculum.

Although Waldorf education has a strong connection to embodied learning, the dances, plays and songs with body percussion developed in the Kodály methodology are a useful source for the Waldorf music curriculum.

Teaching music lessons developed from a preparation-presentation-practise perspective can help to bring more awareness and cognitive orientation on specific musical elements.

6. Practical outcome: a new module for students at the Vrijeschool Pabo

6.1. Introduction

In this chapter I will present a new module for students at the Vrijeschool Pabo, who do not have much experience in making music, how to sing and how to read music. In this module I've tried to integrate the findings from this research. The basis of the module for students at the Vrijeschool Pabo was an assignment supervised by Daniel Salbert.

As a music teacher at de Vrijeschool Pabo I noticed some things in the students I teach. The students I teach are in the aged 25 till 65. Some of these students have difficulties with singing and bad experiences with music lessons. So my aim for them is that they feel comfortable and safe to learn to express themselves musically. Most of these students aren't able to feel the music in their body; walking metre, clapping rhythm or performing body percussion is a big challenge. The ability to read music is not or poorly developed. Singing feels uncomfortable for many students and polyphonic singing is relatively new for most of them.

My goal for all students of the Vrijeschool Pabo is that they can sing songs with the children in the classes they are going to teach. Besides that I would like to help them to integrate music in their body, so they can feel the beat and the rhythm and express it with body percussion for example. I also want them to have some basic understanding of musical topics like the difference between major and minor in music.

In my first year at the master's I had an assignment in which I had to develop a sequence of lessons in which I integrated some of Kodály's educational tools. I developed a sequence of lessons for the students I described above and I actually taught the sequence and had feedback from my teacher, Daniel Salbert on the lessons. In this feedback I noticed that I sometimes misused the terms preparation, presentation and practise. I was thankful for this feedback and changed it with the remarks I got from Daniel.

In this newest version I've integrated the findings I got from this research to develop more ownership in music for the students. I did this with the following elements:

- Working with relative solfa
- Working with Takadimi
- Play forms to address or improve polyphonic skills and musicianship
- Cooperative activities and student centred lessons
- Diversity in working visually, aurally, kinaesthetically and cognitively
- Diversity in activities: making, talking, moving, notating, listening, improvising, composing
- Lessons developed from a preparation-presentation-practise perspective

6.1.1. From known song to rhythm notation and staff notation

In this module I used songs and practises to learn how to sing, how to coordinate corporal rhythm and beat and some basic knowledge and experience with rhythmic notation and melodic notation by using solfa and Takadimi.

The title of the module is:

From known songs to rhythm notation and staff notation

And it is designed for:

Students who do not have much experience in making music, how to sing and how to read music. I already taught these students music in the normal lessons so some exercises are known to them already.

The main aims of the module are:

- The student can sing on the right pitch
- The student can sing easy songs for children in a proper way
- The student can combine singing and clapping/body percussion patterns
- The student has a basic knowledge of rhythmic and melodic notation, basic music terms
- The student knows the difference between beat and rhythm
- The student is prepared for a theoretical music test, which is about the subjects mentioned above

The module has 9 sessions of 1,5 hour.

See annex 4 for a detailed description of the lessons.

7. Summary and answer to the research question

In this chapter I will come to a summary and conclusion of this research. I will answer to my research question:

Which aspects of Kodály music methodology can give children at Waldorf primary schools in The Netherlands more ownership in music?

In my research question three aspects occur:

- **Ownership in music:** what is this?
- **Waldorf education:** current state of music education in the Netherlands at primary schools in regard of ownership in music.
- Aspects of **Kodály music methodology** that increase ownership in music.

Ownership in music

Over the last decades education developed from teacher centred to child centred. Cooperative activities and contextual learning give more autonomy and participation to students in the learning process. Biesta's threefold approach to education sets out for an educational process which aims at subjectification of children. Possibilities to create music in social interaction derived from ownership, learner agency and presence are significant goals as a starting point in developing a renewed music curriculum integrating child centred learning and ownership in music.

In this research I redefined ownership in music as the ability to be present, act, understand and have skills in the field of music.

I formulated aspects to develop a certain degree of ownership in music and ability to take part in social musical processes:

- awareness in hearing,
- the ability to analyse and understand elements of music,
- body integration of melody, rhythm and beat,
- literacy
- improvisation

I also found that specific ways of teaching are needed to develop ownership in music:

- Cooperative activities
- Child centred learning
- Lessons with visual, aural, kinaesthetic and cognitive ingredients
- Embodied learning
- Lessons with variety: (making, moving, speaking, listening, composing, improvising, notating)

Waldorf education

1. Curriculum

All education at Waldorf schools tries to support the developmental stages of the child. Music is seen as a powerful art for social interaction and to create a healthy social environment both in the classroom and in the school organisation. It helps to build a community and connects children to the spiritual world.

Music education is not about goals but it is an instrument to help children develop in a balanced development. It is aimed at a harmonisation of the child in regard to thinking, feeling and wanting.

Songs used in Waldorf schools are often custom composed for the different classes in appropriate modes and scales that relate to the developmental stages. Texts tie in with the themes that are discussed in the classes.

The Choroi impulse developed instruments to create active music lessons with sensitive sound quality aimed to improvise, listen and play.

The age of nine is seen as an important turning point. From this age on music is no longer just a gift to the child, but the child is able to practise music as an art. From this age on music is also something logical and understandable for the mind.

2. Current state

The knowledge of the pedagogical principles and Waldorf music curriculum seems to be decreasing for most teachers at Waldorf schools although singing is seen as very important and most teachers sing every day with their classes.

Although Choroi has created sensitive instruments, they are rarely used in Waldorf schools. It requires a skilled specialist to integrate these instruments in the music lesson. Specialists are an important inspiration for class teachers and nurture a flourishing musical life at schools but are not available at all Waldorf schools.

In regard of ownership I collected some points of concern in Waldorf music education:

- Literacy is rarely taught.
- The visual aspect in music lessons is less well taken care of.
- Music lessons are mostly teacher centred.
- Music education at Waldorf schools is not about setting goals. The lack of clear goals makes music education weak in regard of gaining clear skills and knowledge.

Kodály music methodology

Waldorf music education and Kodály methodology have striking similarities:

:

- Music education is essential.
- First experience music and then move on to cognition and literacy (from sound to symbol).
- Song material that starts with pentatonic songs.
- Learning music by movement.
- Music education at Waldorf schools is aimed to harmonise the human being in thinking, feeling and wanting. Kodály aimed for a well-trained ear, mind, heart and hand. This is not completely the same but yet a beautiful similarity!

The biggest difference between Waldorf music education and Kodály methodology is a pedagogical one: Waldorf music education is not about goals but aims to contribute to the development of children following the developmental stages, whereas Kodály methodology aims for music lessons with the goal of achieving musical literacy.

Steiner indicates the age of nine as a turning point.

From this age on:

- music is no longer just a gift to the child, but the child is able to practise music as an art.
- music is also something logical and understandable for the mind.
- harmony (polyphonic singing), beat and musical literacy can be integrated in music lessons.

The Kodály methodology is not very strict in regard of this, although the age of 7 is mentioned as a suited age for teaching literacy and singing in polyphony.

Kodály methodology offers powerful tools and pedagogical impulses to Waldorf music education that help to increase ownership in music:

*Working with **relative solfa** helps to visualise and incorporate a deeper experience of melody and harmony.*

*Working with **rhythm syllables such as Takadimi** helps to visualise and incorporate a deeper experience of beat and rhythm.*

***Polyphonic skills** help to incorporate musical aspects and prepares for inner polyphonic feeling.*

*Working with the sequence **preparation-presentation-practise** helps to bring more awareness and knowledge to musical elements.*

Answering my research question:

Which aspects of Kodály music methodology can give children at Waldorf primary schools in The Netherlands more ownership in music?

Working with

***relative solfa,
rhythm syllables: Takadimi,
polyphonic exercises
and the ppp sequence***

can give children at Waldorf primary schools in the Netherlands more ownership in music.

A follow up of this research could be a list of recommendations:

- 1) I think it would be useful to develop an updated music curriculum for Waldorf schools in the Netherlands with integration of Kodály tools like working with solfa and Takadimi.
- 2) I think it would be useful to collect musical exercises aimed at ownership, musical agency and presence.
- 3) I think it would be useful to create material for cooperative music making and child centred music lessons. The new module I developed for students at the Vrijeschool Pabo is a first step in this regard.
- 4) I think it would be useful to lobby for music specialists trained for Waldorf music education that inspire and train class teachers.
- 5) I think it would be useful to have a revaluation of (Choroi) instruments in teaching music. These instruments could contribute to active music lessons with sensitive sound quality aimed to improvise, listen and play.

Bibliografie

- Asselbergs, S. (2022, 3 11). Summary and audio of interview Sietske Asselbergs. (R. Boesten, Interviewer)
- Berg, A. K. (2017, maart 17). *Hoe-kunnen-docenten-het-eigenaarschap-van-leerlingen-in-het-voortgezet-onderwijs-versterken*. Retrieved from Kennisrotonde:
<https://www.kennisrotonde.nl/sites/kennisrotonde/files/migrate/180-antwoord-Hoe-kunnen-docenten-het-eigenaarschap-van-leerlingen-in-het-voortgezet-onderwijs-versterken-4.pdf>
- Bernstein, L. (1977). Testimony before the House Subcommittee on Select Education regarding a bill calling for a White House Conference on the Arts. New York City.
- Biesta, G. (2020, juni 16). Risking Ourselves in Education: Qualification, Socialization, and Subjectification Revisited. *Wiley online library*.
- (n.d.). Biestas interconnected education. *Twenty first century learners*. researchgate,
https://www.researchgate.net/figure/Biestas-interconnected-education-Source-Twenty-first-century-learners-13_fig4_326741063.
- Choksy, L. (1988). *The Kodály Method*. Englewood Cliffs, New Jersey: Prentice Hall.
- Dolloff, L.-A. (2009). Elementary music education:.. *Praxial music education. reflections and dialogues*, ed. David J. Elliot, pp. 281-296.
- Giorgio Cozzuttia, Elena Blessanoa, Caterina De Biaggioa, Barbara Tomasina, Francisco Javier Romero-Naranjo. (2017, 2 21). Body Solfege in the BAPNE Method – Measures and Divisions. *Elsevier*, pp. 1572-1575.
- Hargreaves, D. (1986). *The developmental psychology of music*. Cambridge: Cambridge University Press.
- Hoffman, R. (2009). *The rhythm book*. Franklin. Tennessee: Harpeth River Publishing.
- Hoffman, R. (n.d.). *Takadimi & Solfège*.
https://sites.google.com/a/staff.ankenyschools.org/achsbands/_/rsrc/1468863291698/standards/takadimi-solfège/takadimi.jpg.
- Houlahan, M., & Tacka, P. (2015). *Kodály Today*. New York: Oxford University Press.
- (n.d.). Kodaly hand signs chart. *Kodaly hand signs chart I Kodály/Orff I Pinterest*. Pinterest, Kodaly Hand Signs chart | Solfege hand signs, Elementary music lessons, Teaching music (pinterest.com).
- Kodály, Z. (1958). Folk song, art song, school song. (radio, Interviewer)
- Kodály, Z. (1964). Music education, music primary schools. (B. William Murphy, Interviewer)
- Kodály, Z. (1964-1966). My path to music-five conversations with Lutz Besch 1964-1966. (L. Besch, Interviewer)
- Kodály, Z. (1974). *The selected writings of Zoltan Kodály*. London: Boosey and Hawkes Music Publishers, Ltd.
- Kodály, Z. (2019). *Writings on music education*. Budapest: Liszt Ferenc Academy of Music .

- Leeuw, T. d. (2022, 3 10). Summary and video of interview Teun de Leeuw. (R. Boesten, Interviewer)
- Lievegoed, B. (1992). *Maat, ritme, melodie*. Zeist: Vrij Geestesleven.
- Lievegoed, B. (1993). Inleiding. In *Ontwikkelingsfasen van het kind* (pp. 13-14). Zeist: Vrij Geestesleven.
- Lievegoed, B. (1993). *Ontwikkelingsfasen van het kind*. Zeist: Vrij Geestesleven.
- Mayo, A. (2015). *Lectorale rede Autonomie in verbondenheid*. Leiden: Hogeschool Leiden.
- Mayo, A. (2023, January 20). Agency. (R. Boesten, Interviewer)
- Mills, N. D. (1992, 11). Not another inventory, rather a catalyst for reflection. *To improve the academy, vol 11*, p. 137.
- Murris, K. (n.d.). Gert Biesta's three aims of education . *A foundation for foundation phase teacher education: Making wise educational judgements*. Research gate, Oulu.
- Narayanan, M. (2012, 1 1). Assessment of learning using Fleming & Mills'VARK learning styles. *ASEE Annual Conference and Exposition, Conference Proceedings*.
- notulen werkveldcommissie ODM Leiden. (2022, 2 2). *220202 Notulen vergadering Werkveldcommissie ODM Leiden*. Leiden, Zuid-Holland, Nederland.
- Os, M. v. (2003, januari). Over muziekonderwijs op vrije scholen. *Pyramide*.
- Os, M. v. (2022, 3 11). Summery and video of interview Marcel van Os. (R. Boesten, Interviewer)
- Over ons*. (2023, 1 2). Retrieved from choroï.org: www.choroï.org
- Overmars, M. (2022, 12 31). *Het vrijeschoolleerplan muziek (klas 1 t/m 6) in een notendop*. Retrieved from vrijeschoollieder.nl: [https://www.vrijeschoollieder.nl/artikelen/vrijeschool-leerplan/het-vrijeschoolleerplan-muziek-\(klas-1-tm-6\)-in-een-notendop/](https://www.vrijeschoollieder.nl/artikelen/vrijeschool-leerplan/het-vrijeschoolleerplan-muziek-(klas-1-tm-6)-in-een-notendop/)
- Overmars, M. (2022, 2 24). Summary and video of interview Matthijs Overmars. (R. Boesten, Interviewer)
- Ploeg, R. (2022, 3 8). summary and audio of interview Reyer Ploeg. (R. Boesten, Interviewer)
- PM Senge, C. S. (2005). *Presence*. New York: Doubleday.
- Schiller, F. (2009). *Brieven over de esthetische opvoeding*. De vrije uitgevers.
- Schoots, A. (2023, 1 1). *Pentatoniek*. Retrieved from vrijeschoollieder.nl: <https://www.vrijeschoollieder.nl/artikelen/overige-artikelen/pentatoniek-astrid-schoots/>
- Steiner, R. (1984). Vijftiende werkbepreking en derde voordracht over het leerplan. In R. Steiner, *Praktijk van het lesgeven* (p. 161). Zeist: Vrij Geestesleven.
- Steiner, R. (1986). Rudolf Steiner over muziek. In R. Steiner, *Rudolf Steiner over muziek* (pp. 34-36). Zeist: Vrij Geestesleven.
- Stockmeyer, E. A. (1976). Rudolf Steiners Lehrplan für die Waldorfschulen. In K. Stockmeyer, *Rudolf Steiners Lehrplan für die Waldorfschulen* (pp. 257-274). Stuttgart: Pädagogische Forschungstelle beim Bund der Freien Waldorfschulen.

- Szirányi, B. (2023, 1 7). *Approaches to integrating movement into singing-based primary school level music pedagogy*. Retrieved from Kodály hub: <https://www.kodalyhub.com/for-teachers/methodology-materials/approaches-to-integrating-movement-into-singing-based-primary-school-level-music-pedagogy>
- Szonyi, E. (1973). *Kodály principles in practice: an approach to music education through the Kodály method*. London: Boosey and Hawkes Publishers, Ltd.
- The Phoenix Collective*. (2023, 2 18). Retrieved from Kodaly Method: <https://thephoenixcollective.co.uk/kodaly-method.html>
- vakliteratuur muziek*. (2023, 1 3). Retrieved from <https://ronddewereldineenjaar.jimdofree.com/>: <https://ronddewereldineenjaar.jimdofree.com/drama-muziek/vakliteratuur-muziek/>
- Vugt, A. d. (2005). Ieren. In R. v. Redactie: Jos Herfs, *Muziek Ieren* (pp. 37-45). Assen: Koninklijke van Gorcum.
- Wikipedia*. (2023, 2 18). Retrieved from upload.wikimedia.org: https://upload.wikimedia.org/wikipedia/commons/f/f5/Steiner_um_1905.jpg
- wikipedia*. (2023, januari 31). *Willem Gehrels*. Retrieved from [wikipedia](https://nl.wikipedia.org/wiki/Willem_Gehrels): https://nl.wikipedia.org/wiki/Willem_Gehrels