Exploring self-regulation, co-regulation and musical agency in an eight year old piano student

A single case study

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October 2018

Abstract

There is a wide consensus, that it takes 10 000 hours of deliberate practice to achieve mastery, however this long road is not easy to follow. Self-regulation, co-regulation and musical agency are important aspects of deliberate practice, and as these concepts are budding in the beginner student it is important to investigate how they affect the early stages of practicing. This study aims to deepen the understanding of how self-regulation, co-regulation and musical agency influences an eight year old piano student's practicing. This study was conducted as a single case study using video recorded practising sessions and the findings are presented as a synthesis of the data building on the theoretical framework of G. McPherson and J. Renwick (2001). The results suggest that the developing musical agency of the student supports her negotiations of self-regulation, but can be a hindrance in a co-regulated environment.

Keywords: *piano teaching, musical practice, musical agency, self-regulation, co-regulation, zone of proximal development*

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1. Introduction

"Play it again, Sofia"

"Why?!"

This small scene is from a video of Sofia's practice. Her mother asks her to repeat the phrase she has just played, Sofia doesn't see the point and becomes annoyed. Sofia is *not* enjoying her piano practice.

It is fair to assume, that most piano teachers have at times experienced students, who did not seem to enjoy practicing, which can cause frustration for teacher and student alike. It has been theorized that this is because: "*Most children today spend a great deal of their time watching television or playing video games, and they have adjusted to, perhaps even expect, quick-paced action and immediate results. Traditional music lessons require a type of concentration and diligence that is foreign for many of these children. Music teachers often lament the fact that children today do not want to work hard for any length of time; instead, they need constant stimulation and entertainment*." (McAllister, 2010, p. 17)

I believe this quote accurately describes the concerns many teachers have, it is certainly something I thought about while conducting this research. The student, an eight year old girl called Sofia, wants to be able to do everything at once and does not like to set long term goals or work strategically over a longer period of time. However, learning how to practice, play and eventually master the piano takes many years, even decades. Ericsson, Krampe and Tesch-Römer (1993) described the now famous 10 000 hours of deliberate practice it takes to master a skill. Children, who grow up without having to work for what they want to achieve, and who expect immediate results of their work, will experience this massive amount of time as foreign (McAllister, 2010).

A crucial part of the 10 000 hours of deliberate practice is that they have to be *deliberate*. Self-regulation or co-regulation combined with a strong sense of musical agency might provide a useful key to unlocking the deliberate aspects of the practice.

Drawing on the theory of self-regulation (McPherson & Renwick, 2001), co-regulation (de Bruin, 2018) and musical agency (Karlsen, 2011), I therefore aim to investigate *in what ways musical agency hinders or supports the development of self-regulation and co-regulation in a beginner-level piano student.*

In this research paper, I first offer a review of the literature and history of research on musical practice (chapter 2). The theoretical framework (chapter 3) contains my choice of sources for the self-regulatory and co-regulatory aspects, that I aim to look at, combined with S. Karlsen's definition of musical agency (2011). I explain my research design and rationale for this single case study using video recorded practicing sessions in chapter 4. A complete analysis of the videos is found in the Findings section (chapter 5) as well as in Appendix B. The discussions section (chapter 6) aims to bring new knowledge to the field, by aligning the findings with the interplay between the lenses of musical agency, self- and co-regulation, arguing that musical agency supports the development of self-regulation, but can hinder the development of co-regulation.

2. Literature review

A crucial element in learning an instrument is practice (Hallam et al., 2012). Consequently a vast body of research in music has in recent years been devoted to the topic of practice. In this section I will present an overview of the research relating to self-regulation, co-regulation, practice and self-regulation and case studies on piano practice.

2.1. Self-regulation

With its roots planted in the overarching Social Cognitive Theory, the work of A. Bandura on self-regulation has been developed and adapted to educational settings and music education (Miksza, 2015). Bandura (1991) provided a structure for "self-regulatory systems" which explains the elements that are required in this advanced system of learning. Bandura takes into account how often a task is performed, the performer's personal standards against the general standards and whether the performer has a rewarding or punishing self-reaction after the result of the performance.

Bringing the work of Bandura into learning and educational settings, B. J. Zimmerman has contributed a large body of research on self-regulation to the field, and describes in "Becoming a self-regulated learner: An overview" (2002) that the self-regulatory process can be divided into three parts 1. *Forethought phase* (e.g. goal setting and strategic planning), 2. *Performance phase* (e.g. self-control and self-regulation) and 3. *Self-reflection phase* (consisting of self-judgement and self-reaction) as a model for effective learning.

2.2. Self-regulation in musical practice

One of the key terms in musical practice is *deliberate practice*, which is explained in the pivotal work by Ericsson, Krampe and Tesch-Römer (1993). Through their studies of how students practice, they found that there is a clear connection between deliberate practice (understood as practice that is goal-oriented and structured) and the level of musical expertise. There is also evidence to suggest that not only deliberate practice is enough, there is also a question of the amount of time being spent, though with large differences due to the individual personality of each performer (Sosniak, 1990; Ericsson, Krampe & Tesch-Römer, 1993; Sloboda, Davidson, Howe & Moore, 1996; Jørgensen, 2002). Closely related to deliberate practice is the work of Susan Hallam, and her studies of practicing, which can be defined as "*that which achieves the desired end-product, in as short a time as possible, without interfering negatively with longer-term goals*" (Hallam, 1997b, p. 181). An important finding in her work is, that younger students tend not to correct errors, and that it requires a high level of skill to be able to identify and correct errors while practicing. Similar findings appeared in the research of Pitts, Davidson and McPherson (2000) and McPherson and Renwick (2001).

Particularly the work of G. McPherson & J. Renwick (2001) has been influential in bringing the work of B. J. Zimmerman on self-regulation theory into musical practice. They adapted the theory to fit musical practice and found that there are six key aspects to self-regulation: *Motive, Method, Time, Performance outcomes, Physical environment, Social factors*. Through videotaped practice sessions with students aged 7-9 playing woodwind and brass instruments, they were able to analyse and identify how the students spent their practice time. Findings suggest, that practice efficiency evolves as students progress, which is supported by other significant researchers in the field (e.g. Hallam 1995a, 1995b; Nielsen, 1999; Miksza, 2011).

Of particular interest in this paper is the aspect of co-regulation in musical practice (de Bruin 2018), where it is suggested that co-regulation is a process towards being able to self-regulate one's practice.

It is important to bare in mind, that all studies differ and it is therefore difficult to come to absolute conclusions. All of these types of studies are essentially studies of *processes*. What is good, strategic and regulated practice can be defined well by words but each student goes through a different process. On top of that, all different processes are non-linear which makes it difficult to provide general answers, and all processes are personal experiences (Varela, Abrami & Upitis, 2016).

2.3. Case studies about piano practicing

In the field of self-regulation in musical practice, piano is a quite well-researched instrument, though most research has been focused on the practicing habits of high-level students. Findings from research of piano students resonate with findings from other instruments, namely that as students progress, they develop better strategies for practicing and correcting errors (Gruson, 1988).

A study conducted at the Norwegian Academy of Music (Nielsen, 2001) found that to promote skillful self-regulatory learning, teachers must make sure to teach the students the tools for it. Findings also include that students have to have a clear goal for their practice and adjust strategies accordingly. In line with these results is the research of Pamela D. Pike (2017a, 2017b), which is also focused on self-regulation in college-level piano students.

M.M. Donnelley (2001) conducted a study, which focused on how thinking skills influenced the piano practice of two nine year old students. She found that they were not capable of transferring skills they learned in exercises to their pieces, but were very proud when they were able to solve a problem on their own. She emphasized how important it is to understand the process of practicing, not only the product which you hear in a performance.

In this section I have provided a brief overview of how self-regulation theory has developed from psychology to musical practice, the large body of research on practice and the interest that has developed in self-regulation within the last few decades, particularly through the work of G. McPherson and J. Renwick (2001). Research on self-regulation in piano practice

has mostly been focused on high-level students, and at the moment there is no other research that has focused on beginner-level piano students, applying the theoretical framework of self-regulation (McPherson & Renwick, 2001), co-regulation (de Bruin, 2018) and musical agency (Karlsen, 2011). This research paper seeks to offer new knowledge in this particular area.

3. Theoretical framework

After reviewing the literature it is clear, that though there is much research in the field of self-regulation, the particular combination of musical agency and self- and co-regulation has not yet been explored. In order to provide a convincing rationale for the use of these particular lenses, it is necessary to offer some understandings of the terms. In this chapter, I will therefore describe practice on a more general level using the definitions of types of practice by McPherson and McCormick (1999), practice as a process and different practicing strategies (Nielsen, 2001), self-regulation (McPherson & Renwick, 2001), co-regulation (de Bruin, 2018), musical agency (Karlsen, 2011) and finally the Zone of Proximal Development (based on the framework of L. Vygotsky, 1934/1986). The reader will see, that these multiple theoretical lenses has have overlaps, therefore I have also chosen to blend the categories, when it is possible, to reflect how the theoretical framework as a whole creates a tapestry of aspects of efficient practicing.

3.1.Practice

3.1.1 Types of practice

In a study made to investigate motivation and self-regulation (McPherson & McCormick, 1999) three aspects of practicing was identified as *creative practice* (improvising, playing by ear), *repertoire* (playing old and new pieces) and *technical work* (practicing scales, arpeggios, etudes and sight-reading). Their study found that the more time students spent practicing each type of practice, the more they showed signs of higher metacognitive abilities, as well more joy while practicing.

"*These results suggest that students who report higher levels of practice tend to [...] make critical ongoing judgements concerning the success or otherwise of their efforts. They also*

appear to be more capable of organizing their practice in ways that provide for efficient learning, such as practising the pieces that need most work and isolating difficult sections of a piece that need further refinement." (ibid., p. 101)

Students that are more cognitively active during practice do not only tend to practice more, the pleasure with which they learned increased, and they were also more efficient while working. All three types of practice (repertoire, creative practice and technical work) should be present in efficient practicing.

3.1.2 Practising strategies

Strategies for practicing are a "cyclical activity" (Nielsen, 2001) since it is revised continually by the student to be adjusted to the current situation and the current problems. "*No single learning strategy will work equally well for all students, and few, if any strategies will work optimally on all tasks. The effectiveness of a strategy will even change as a skill develops*." (ibid., p. 156) This highlights the practicing strategies as a process rather than a product, because it is in need of constant evaluation and development. Furthermore: "... *keeping track of key indicators of personal effectiveness as one performs, and to understand this method of self-regulation, it is necessary to examine whether the students knew when they were performing well and when they were not*. (ibid., p. 163)". In other words, awareness is a key component in efficient practicing.

Research about practising strategies has also been conducted by J. Nisreen (2007) who compiled a list of suitable and effective practicing strategies. For example there is: slow practicing, analysing the piece before playing, paying attention to playing with the correct fingering, starting the practice with scales and exercises, playing hands separately and many more.

I adapt the understanding of practicing, or perhaps rather efficient practicing as a synthesis of these aspects. Practicing includes repertoire, creative work and technical work, and it is a constantly developing, non-linear process, which has a clear goal that is reached by applying appropriate strategies to improve the specific skills required for a specific task. There are short term goal which take place within the Zone of Proximal Development, and long term goals, which one has to strategically and deliberately work towards, in incremental steps.

3.2. Self-regulation and co-regulation

An important theoretical framework for this research paper is the concept of self-regulation, as defined by McPherson & Renwick (2001). They studied the practicing habits of young woodwind and brass students using videotaped practicing sessions, and found that the work of B. J. Zimmerman (the three phases of self-regulation) could be adapted to musical practice in six aspects:

1. Motive – feeling free to and capable of deciding whether to practice.

2. Method – planning and employing suitable strategies when practicing.

3. Time – consistency of practice and time management.

4. Performance outcomes – monitoring, evaluating and controlling performance

5. Physical environment – structuring the practice environment (e.g. away from distractions).

6. Social factors – actively seeking information that might assist (e.g. from another family member, teacher, practice diary or method book).

Students who displayed abilities in these six aspects, were thought of as better self-regulators. Furthermore it was also found that: *"... distinguishing characteristics of experts [...] can also be found, to a greater or lesser extent, in the early stages of learning. It can therefore be speculated that musicians who display these characteristics early in their development will be more likely to practise harder and more efficiently, express more confidence about their own capacity to learn, and be more likely to achieve at a higher level."* (McPherson & Renwick, 2001, p. 184) In other words, it is highly important to nurture these aspects of young students' practicing as early as possible. Many young learners have the will to learn, but not yet the skills required to master efficient practice, so: *"... they [the six aspects of self-regulation] account for a large part of a student's subsequent progress"* (ibid., p. 184)

An important addition to the concept of self-regulation is the concept of co-regulation, which is seen as a process towards self-regulation (de Bruin, 2018). A process, that includes learning happening within a socially constructed environment which allows critical thinking, cooperation and the possibility to discover for oneself. Co-regulation is derived from sociocultural learning theory and is a type of learning that occurs between peers, sharing time and interest in the same activity and learning space. This is an essential part of the teacher-student relationship during a normal piano lesson, since it provides the possibility to

give appropriate advice on self-regulation and important guidance to the student in a social environment (de Bruin, 2018). Students have to interpret the task as well as to solve it, which creates a need for facts and guiding principles (Prince & Felder, 2006).
The co-regulation process facilitates the students gradual development to self-regulation with a more experienced person, in this case, the teacher, though it could also be in the form of a parent or a peer (Palincsar & Brown, 1984). Interestingly the idea of a more experienced person or capable other, can be quite vague, as: "*We use the term capable other quite loosely to acknowledge that it refers to a role rather than a particular person. For example, in a teacher-student dyad, both the teacher and the student bring diverse forms of expertise to bear on the problem at hand*" (Hadwin & Oshige, 2011 p. 247)
The role of the teacher (or more experienced other), is therefore understood as someone who is: *"…manipulating tasks, facilitating the development of adaptive learning and strategizing of goals, providing strategic lesson content in the form of guided expertise and feedback, and identifying appropriate and alternative strategic approaches."* and who: "[...] *encourage[s] [...] through engaging students in a verbalization of information by restating, requesting judgments of knowledge and learning, modeling thinking, and providing discussion for reflection on thinking."* (de Bruin, 2018 p. 495-496).

Teaching activates learning as socially contextualized (Vygotsky, 1930/1978) and internalized by social interaction (McCaslin, 2009). The interactive processes are jointly negotiated between student and teacher within the student's Zone of Proximal Development (McCaslin & Hickey 2001; Vygotsky, 1930/1978).

In other words, co-regulation forms the basis of self-regulation, because it allows the student to discover tools for self-regulation in a socially constructed learning environment with a teacher, parent or peer, who can facilitate the development. In that sense, it is arguably even more crucial to consider, when we are dealing with beginners and young students, as they are rarely practicing on their own, and most of their learning takes place with others.

In this research paper I therefore adapt the understanding of self-regulation as it is defined by McPherson and Renwick, but always bare in mind, that learning (especially in the case of small children) should not necessarily be seen as an isolated event, rather as something that takes place in a social context, a co-regulated environment.

3.3. Musical agency

Very much like the cyclical nature of practice and the developing nature of self-regulation, musical agency is a lens which allows us to focus on the *process*, not the end-result. I use the term musical agency, as it is described in the framework by Sidsel Karlsen (2011). Musical agency is a multi-faceted term, therefore it would be almost impossible to synthesize all meanings into one. Agency can be understood both on the collective level and the individual (Karlsen, 2011, p. 118). The collective level describes the regulation and structuring of social encounters, coordinating bodily action, affirming and exploring collective identity, knowing the world and establishing a basis for collaborative music action. The individual level describes self-regulation, shaping self-identity, self-protection, thinking, matter of being and developing music-related skills.

Particularly the individual level resonates with this research paper, and I will therefore use the term musical agency to describe the act of gaining ownership over one's musical identity. This inherently includes a variety of aspects, a.o. personal identity negotiations, social relations, meta-cognition and the development of the necessary skills, that allow for the musical expression to take place.

3.4. Zone of proximal development

Lev Vygotsky (1896-1934) was a scientist, pedagogue and philosopher in Russia/The Soviet Union whose work did not become known in the West until the 1960's, and the theory about the Zone of Proximal Development originates from his work. However there is some controversy about the specific meaning of his theory, since in all of his collected work, the theory only appears in a few pages (Murphy, Scantlebury & Milne, 2015). I will therefore attempt to synthesise some of the writings about the Zone of Proximal Development along with the work of Vygotsky into the understanding, I will be adapting in this research paper.

The Zone of Proximal Development is a theory, that describes the process of learning. "*functions which have not yet matured but are in the process of maturing. . . 'buds' or 'flowers' of development rather than 'fruits' of development*" (Vygotsky, 1930/1978, p. 86). The *proximal* side of this concept means that it is possible to easily learn what is close and relatable to the student's current knowledge. In other words, learning very complicated things

as a beginner-level student is not possible, since the student does not yet possess the advanced mental framework, they need to attach the new more advanced skills to.

Furthermore, the Zone of Proximal Development has been described as something that *"is not a specific quality of the child, nor is it a specific quality of the educational setting or educators[…][it is]collaboratively produced in the interaction between the child and more knowledgeable others"* (van Oers, 2007, p. 15). As it was seen in the section about self-regulation and co-regulation, the "knowledgeable other" can be used to describe any other person, who is present in the learning environment, be it a peer, a parent or a teacher.

In this paper the concept of the Zone of Proximal Development is understood as the space between ones current knowledge and the limit of what is possible to learn in a particular situation, like an interconnected "web of knowledge".

4. Methodology

As described above, practice is a key element in mastery. However, most practice takes place outside of the lessons and without the teacher. The teacher usually only hears the product of the practice and not the process, and because the time spent alone with the instrument often is a larger amount than the time spent with the teacher, it is of the utmost importance that the student spends the practice time well. Self-regulation, co-regulation and musical agency provides an interesting theoretical framework for the analysis of instrumental practice, and in this chapter I will lay out an overview of how I applied these theories to practice, by describing my research aim and questions, the use of a single case study, the data collection and analysis methods, thoughts on position as researcher and my ethical considerations.

4.1. Research aim and research questions

The aim of this research is to investigate *in what ways musical agency hinders or supports the development of self-regulation in a beginner-level piano student*, by using the self-regulation theory (McPherson & Renwick, 2001) with aspects of co-regulation theory (de Bruin, 2018) and the concept of musical agency (Karlsen, 2011).

As a subset of questions, I asked:

1. *In what ways is Sofia showing signs of self-regulation and co-regulation?*
2. *In what ways is Sofia showing signs of musical agency?*
3. *How do the two influence each other?*

4.2. Methodological approach: Qualitative single case study

I found Sofia interesting as a research participant, because I had worked with her for several years, and something was not adding up in her development as a piano student. I thought that she was very musical and a quick learner, who had good parental support and came from a musical home. It intrigued me, and I wanted to know more about her individual experience as a piano student, by investigating her at-home practice.

This lead to the use of a qualitative single case study, as it would allow me to focus on an in depth analysis of her practice over the course of four months. The choice of this approach felt natural, as I was interested in understanding how and why Sofia practiced, by focusing on her individual experiences, as opposed to having a larger test group, which would invite comparison between research subjects.

In fact, Pringle, Drummond, McLafferty and Hendry (2011) argue that "*reduced participant numbers allow for a richer depth of analysis*" (p. 21). It follows that a richer depth also entails more nuances and more individuality, but by that also fewer conclusions, that can be applied to the general public. Consequently my aim was never focused on the general; though, as the reader will see later on, there were many concurrences with similar studies, which could suggest a cautious generalisation of my findings. "*Above all, generalization through single cases demands theoretical imagination. [...] ...it may allow developing a more generalized understanding of thinking in different domains. As we have shown, imagination is a core dynamic of human and cultural development (Zittoun and Gillespie, 2016). The present paper reminds us that theory building demands imagination as well – as an important move within the production of new ideas*" (Zittoun, 2017)

4.3. Data collection

During september 2015 Sofia started taking piano lessons from me. She had by then not had any prior experience with piano playing. Sofia was, when this study was conducted, an eight year old student with two years experience of regular 45 minute, weekly piano lessons. I consciously let her take an active role in her own learning by letting her decide which pieces to play, letting her decide on many interpretative ideas as well as deciding how to practice, because: "*[Students] have higher motivation to practice pieces they have chosen themselves*" (Pike, 2011).

With the permission from Sofia's mother, Maria, we agreed that she would record Sofia's practicing whenever she had time and possibility to do so between October 2017 and February 2018. This resulted in nine videos, that not only helped my teaching of Sofia, but also served as the data for this study. The longest video was 7 minutes and 28 seconds and the shortest was 1 minutes and 49 seconds. The recording was done using a handheld smartphone in their apartment, where they have a tuned Yamaha upright piano and a piano chair where the height of the chair can be adjusted. The videos were sent to me one by one and I had the possibility to watch them during the project.

The environment of this study, from Sofia's point of view, was familiar, as it was at her home with her mother present. The unusual element was the handheld camera and Sofia's knowledge that I would watch these video of her practicing. This might have influenced her practicing towards something that she thought I, her teacher, would approve of. Another claim against this type of data collection is that, the videos only provide a picture of what is happening, but for obvious reasons, doesn't show what Sofia is actually thinking at any given moment. "*Participants' virtual awareness of the recording is such that some achievements will ever remain hidden to an inquiry relying on video data, and the researchers will not get through the recordings a full picture of what can happen in a specific setting*" (Tuncer, 2016).

Indeed, Jewitt (2012) suggests that there are various variables that might influence how reality is affected by the presence of a recording device. These suggestions include the differences whether the camera is fixed or mobile (Heath, Hindmarsh & Luff, 2010), the duration of the data collection with effect decreasing over time (Kress et al., 2005) and if the participants in the study are used to being observed (Jewitt, 2008).

In the beginning Sofia was not used to being recorded while practicing. However starting already in video 2, she seems to be back to her usual self, and she continues to act in this manner throughout the rest of the videos.

Anna Kuoppamäki (2015) found in her video recordings of Basics of Music lessons that: ”*In the beginning of the video recording, some children paid attention to the video cameras and made remarks about the fact that the lessons were recorded. After about two lessons, they seemed to become accustomed to the cameras.*” (p. 56). Heath, Hindmarsh and Luff came to similar conclusions: ”*Throughout our studies of a diverse range of settings and activities we found that within a short time, the camera is 'made at home'. It rarely receives notice or attention and there is little empirical evidence that it has transformed the ways in which participants accomplish actions*” (2010, p. 49). This suggests, that the presence of the recording device made the practice sessions somewhat artificial and had an effect on Sofia's practice, but this was only in the beginning, and after this initial insecurity, the camera did not affect her significantly.

4.4. Data analysis method

The data was analysed using a deductive approach, by applying the six aspects of self-regulation (McPherson & Renwick, 2001) and the social environment of co-regulation (de Bruin, 2018). As the analysis unfolded, I realised, I had to adjust certain aspects to fit this particular study, thereby adding elements of an inductive approach. Arguably this contributed to resilience of the research, as an approach that has both elements of inductive and deductive coding is more rigorous in its nature (Fereday & Muir-Cochrane, 2006).

The videos provide excerpts of the development in Sofia's practice over the course of four months, more than a day-to-day documentation. Therefore I chose to expand the idea of *Time*, so as to not focus on how often she practiced, but *how* the practice time was spent, by coding for *creative/informal practice*, *technical work* and *repertoire* (McPherson & McCormick, 1999). It is of course possible, that Sofia engages in other kinds of practice when the camera is off and no one is present, but again, I chose to focus on the data I have received from her mother and how she spends her time during her practice session. Furthermore, I chose to exclude the first aspect, *Motive,* of the six aspects by McPherson & Renwick (2001), because the videos only show what happens during the practice session, not

what leads up to them. It is not clear if she practices of her own free will or if she was told to do so. In aspect six, *Social factors*, I included a view that is based in the socially constructed co-regulatory learning environment rather than Sofia actively seeking outside information using her own intrinsic motivation, because all of Sofia's learning takes place within this socially constructed learning environment. This environment consists of me, as her teacher, herself and Maria, who acts as the capable other as explained by de Bruin (2018).

Having adapted the initial deductive coding (the six aspects of self-regulation by McPherson & Renwick, 2001) to include aspects of co-regulation (de Bruin, 2018) and creative, technical work and repertoire (McPherson & McCormick, 1999), I created inductively derived codes in the form of five questions:

A. Are there any specific practicing strategies used? (Method)
B. How much time is spent working on repertoire, technical work and creative/informal practice? How long time is spent not practicing, but engaged in other activities during the video? (Time)
C. How well is Sofia monitoring her performance? If a passage is repeated, because of an error, is it repeated in a way that is deliberately improved, or just repeated for the sake of repeating? (Performance outcomes)
D. Are there any visible or audible distractions? (Physical environment)
E. What does the socially constructed learning environment look like? Are there any comments or exchange of information between Sofia and the more capable other, Maria? (Social factors)

4.5. Researcher position

In this research project I acted both as researcher and teacher, and even though the data was collected without my presence, all of Sofia's practice was based on my instructions, thereby arguably making me a practitioner researcher (Cochran-Smith & Lytle, 2009). I use this definition not to describe my methodological approach, but rather to explain my thoughts on my position as a researcher.
This position comes with a certain set of responsibilities, but also many positive benefits. My in-depth knowledge of how Sofia worked during the lessons, the already established

relationship between me and her as well as my own professional context allowed me to easily recognize certain patterns and behaviours as I was analysing the videos. However, it also made me very aware of the power relations that were in play. As a teacher of a student (who is a minor), I am naturally put in a position of power. This situation must be handled with care as "*the situation is particularly delicate when the participants are children*" (Kuoppamäki, 2015, p. 62). I sought to be as respectful of Sofia's practice as possible, by analysing the videos on my own and never discussing or questioning the content of the videos with her. I wanted the videos to be as valid as possible by not interfering with the content, more than I had already done as a teacher giving instructions to a student.

The question of validity is also relevant when discussing practitioner research in general. As an active part of the community, that is the socially constructed environment of Sofia's learning, I have to take certain things into account. Knowing the student for years, and spending a lot of time considering how she would benefit the most from my teaching, might have left me with some blind spots. There was the risk, that I might be editing out important findings in my pursuit to confirm my intuitive ideas about her practice and development. However, all research, especially a qualitative single case study such as this, comes with editing choices from the researcher. Though I have sought to be as fair and respectful as possible, I have not necessarily sought to be completely objective, because true objectivity is arguably almost unattainable in most research. All data must be interpreted, and making subjective choices is unavoidable when conducting research as a practitioner researcher. This is by no means a negative quality, in fact the strength lies in the research's subjectivity: I don't know exactly what Sofia is thinking in the videos, but I know *her*, and that allows me to make qualified guesses about her mood, thoughts and feelings, that an outsider might not be able to. This also goes to argue for the use of video recordings, even if, as S. Tuncer (2016) remarks, it is not possible to understand the complete picture using video recordings as data.

4.6. Ethical considerations

Continuing the thought from the paragraph above, it was also very important to me, that this research was carried out in an ethically sound manner. That meant, that I would not share the videos with anyone outside of the research, (apart from my supervisors for this paper) to ensure the anonymity and privacy of my student and her mother.

Sofia, Maria and I verbally agreed that this project could be conducted and I prepared a consent form which I sent for them to sign (a copy can be found in appendix A) to ensure that the research was conducted as transparently as possible. The videos were located in my external hard drive until the project was published and afterwards they were deleted. “Sofia” and “Maria” are, for the sake of anonymity, not the participants’ real names.

5. Findings

In this chapter, I will present the findings, by answering the questions I constructed for the data analysis. The findings in this chapter are presented as a synthesis of all videos. In appendix B an analysis of each video can be found. Based on the methodological approach of a single-case study, which provides an in-depth analysis of one student, this chapter seeks to deepen the understanding of Sofia’s practice during this research project.

5.1. Findings according to the questions asked

A. Are there any specific practicing strategies used? (Method)

Sofia uses two strategies, playing hands separately and slow practice.

She practices with each hand on its own for a total time of 4 minutes and 10 seconds. However this is highly unbalanced, since she spends 3 minutes and 13 seconds practicing with the right hand and only 57 seconds with the left hand alone. This type of practicing is used in three different videos and accounts for 66% of the time using strategies. Slow practicing is being used for 2 minutes and 10 seconds in total, which is 34% of the total time using strategies. Slow practicing, by definition, is more time consuming and she only uses this type of practice in one video.

B. How much time is spent working on repertoire, technical work and creative/informal practice? How long time is spent not practicing, but engaged in other activities during the video? (Time)

Sofia is spending 27 minutes and 25 seconds practising *repertoire* and this represents the biggest part of these nine videos. She is not practicing any *technical work* but she plays her own composition in two videos for a total of 2 minutes and 20 seconds. Because it is her own

composition and that the piece is longer in the second occasion than it was in the first I have labeled it under *creative practice.* Sofia also spends time on different activities that are indirectly related to her practicing such as, *Finding material/Changing music* for 1 minute and 40 seconds, *Changing position of the chair* for 42 seconds and *Talking with Maria* for 27 seconds. She also spends time with other activities such as being *Distracted* for 10 seconds and being *Frustrated* for 60 seconds.

Frustration

It surprised me how often Sofia expresses frustrative behavior when practicing. What I see, that I interpret as frustration, is for example: collapsing shoulders, deep sighs, jumps up and down on the chair while flapping her hands as well as letting out annoyed grunts. This happens a total of 11 times.

C. How well is Sofia monitoring her performance? If a passage is repeated, because of an error, is it repeated in a way that is deliberately improved, or just repeated for the sake of repeating? (Performance outcomes)

Inspired by McPherson and Renwick (2001) I coded the videos according to three different types of errors Sofia makes during her practicing. This gives by no means a complete picture of the musical expression in the videos, but it is nevertheless interesting to look at what types of errors Sofia makes and which ones she corrects or improves.

Note errors

Note errors occur regularly through the videos. They are Sofias most common error and the error that causes the most frustration. She cares a lot about these errors because the always corrects them whenever they occur. She cannot just continue if she plays a wrong note.

Rhythmical errors

Sofia does almost as many rhythmical errors as note errors, but this type of error does not concern her much. She never corrects them and continues as if nothing has happened.The rhythmical errors seem to occur when Sofia has trouble knowing what notes to play next. She slows down or stops, and focuses on playing the correct notes whilst ignoring the rhythm.

Because of this I conclude that the awareness of the right notes takes over the awareness of rhythm. The rhythmical errors are random, they do not appear in the same way throughout multiple videos.

Pedalling errors

These errors are defined by having the pedal pressed down and not releasing it when it is necessary. This causes an unclear sound, when notes that are not part of the same harmony are sounding together. The pedalling errors are significantly fewer than the other errors, however the pedal is not used in most pieces. All pedalling errors occur in videos 8 and 9 which has a total practicing time of 6 minutes and 10 seconds altogether. These are, like the rhythmical errors, never corrected by Sofia.

All of the note errors are corrected and *none* of the rhythmical or pedalling errors are corrected. This suggests, that she is very aware of what the right notes are since she corrects them immediately.

Sofia shows a less clear musical objective when she is using a practicing strategy compared to when she is playing through with both hands together. For example in video 7 where she practices with one hand, but nevertheless makes several rhythmical errors, note errors and does not have a clear goal of expression. It is clear that she is more cognitively engaged when playing with two hands, even though she has not yet reached a level where she can play through the piece with hands together.

D. Are there any visible or audible distractions? (Physical environment)

The environment Sofia practices in throughout these videos is in her home, in the living room. It is free from distractions, with good a quality piano, chair, and lighting.

E. What does the socially constructed learning environment look like? Are there any comments or exchange of information between Sofia and the more capable other, Maria? (Social factors)

She also gets helpful and supportive comments from Maria, with a tone of voice that is supportive and using guided questions to let Sofia figure things out for herself. Sofia does not

actively ask questions by her own intrinsic motivation to gain more knowledge but she sometimes asks questions based on the constructive critical comments she receives. This sometimes lead to a small conversation where the amount of knowledge and understanding that Sofia has after such a talk is always greater than before. An excerpt of a conversation from video 9:

Maria: “On which beat does the left hand end?”

Sofia: “First”

Maria: “On the second isn’t it?”

Sofia: “Oh, yes”

Sofia: “So I practice from here?” (points with finger)

Maria: “Yes!”

5.2. Summary

After analysing the videos it can be concluded that around 79% of the time she practices without any specific strategy or goal. When she uses specific strategies, she either plays with one hand alone (66% of the time) or uses slow practice (34% of the time). However the musical expression, that cannot be explained in numbers, varies from very expressive (videos 4 and 6) to very few signs of expression (video 2 and 7). She plays in a less engaged manner when she is using practicing strategies.

Her practice consists of 92% repertoire and 8% informal/creative practice. She seems visibly more engaged in her practice, when she is working on creative aspects (music making, interpretation). When she is not engaged in repertoire or creative practice, she is very often spending time either thinking or being frustration, where 64% of the frustration comes from note errors. She corrects note errors and shows signs of self-regulation in doing this, but always leave rhythmical errors and pedalling errors unattended. Sofia has a very supportive practicing environment with no distractions, good quality piano, chair, and lighting, as well as the presence of Maria who gives helpful advice about how to practice, rhythmical errors and a general sense of encouragement.

6. Discussion

In this section I will discuss the findings from the previous chapter through the theoretical lenses of self-regulation (McPherson & Renwick, 2001), co-regulation (de Bruin, 2018) and musical agency (Karlsen, 2011) with the support of the theory of the Zone of Proximal Development (Vygotsky, 1934/1986; 1930/1978). As the reader will see, there are no subsections in this chapter. This is intentionally done so, to reflect the web-like nature of these concepts; it would not be possible for me to divide them, as they all play a part in Sofias practice.

In general, Sofia uses two different strategies for practising: slow practice and playing each hand separately. Nielsen (2001) defined practicing as a cyclical activity, that is continually adjusted by the student. Sofia's practicing sessions, like all musical practice, are by definition cyclical activities since whenever she returns to the piano, she does it with new knowledge that has been acquired since last time. E.g. in the development from video 1, where she is learning a new piece, to video 4, where she has mastered it. The times she cannot play a piece, she reduces it to slow practising or each hand separately. When she is using practicing strategies, she is not as involved in the musical expression, as when she is "just playing". This is particularly clear, when she is told how to practice, e.g. in video 7, where Sofia is asked to play with one hand alone, and does it, but is not happy about it.

Sofia's goal is to learn the piece correctly (the right notes in the right order), and to be able to play a complete performance of it. When she is unable to do so, it causes her frustration. This could suggest, that the pieces she is playing, or rather the skills she is attempting to master, is outside of her Zone of Proximal Development. A well-functioning "web of knowledge" should support her in gaining new knowledge. However, it seems that what Sofia considers a successful acquisition of new skills is being able to master all components immediately. Sofia is unable create a long-term strategy in multiple steps. In some ways she is disregarding the *proximal* side of her development, and in her eager to play, skips ahead to a point to far away from her Zone, becomes frustrated, clearly expresses her displeasement and gives up.

Interestingly, it could be assumed that the wish to be able to do things instantly would prompt her to do more slow practice or hands separately, or some other sort of practice, which would eliminate as many difficult variables as possible. In other words, she wants the instant gratification of being able to play, what she sets out to play: why not play something easier, e.g. one hand alone, and get the rewarding feeling of accomplishment?
Obviously, practicing is in many ways trying to achieve, what is currently unachievable. Why practice if you can do it already? However, one should practice what is reachable and within one's Zone of Proximal Development today, and by doing that, extend this zone further until the next practising session (Murphy, Scantlebury & Milne, 2015). Through constant evaluation and reevaluation of the chosen practicing strategies, the web of knowledge is furthered and builds new pathways, that will lead closer and closer to the goal. This feeling of step by step building is lacking in Sofia, which makes her set goals that too far away from her.

Sofia acts quite differently, when she has the opportunity to compose her own pieces. She enjoys composing and letting her creativity flow. And though this kind of *creative practice* is not something that occurs in every video, her interest in and dedication to her practice in these brief sessions is much higher, than when she is being told what to play. E.g. in video 6, where her sense of rhythm and musical expression, dynamics and timing is improved. She has a clear idea of what she thinks the phrase should sound like, before she plays it, because it is consistent from the first to the last note of the phrase. The next phrase is played differently and also consistent in its performance. I interpret this as a clear sign of musical agency, that she was able compose her own pieces and add musical ideas of phrasing and structure to them. In these sessions, she shows no signs of frustration or being worried about right notes, rather she is dedicated to the musical flow of her composition.

Apart from her creative practice, she practices repertoire, but never any technical work. The repertoire practice accounts for the most amount of her practice time, and consequently that is also where she shows the largest amount of frustration. The types of errors Sofia regulates, also goes to show what her goal is: to play the right notes. This is supported by the fact, that she never corrects any pedalling errors and easily disregards the rhythm in order to get the notes right, something she only corrects, when her mother specifically points it out. In other

words, when the goal is clear to her (i.e. playing the right notes) she is able to monitor her performance, which is in many ways the foundation of all self-regulation.
However, though her ability to recognize errors shows that she is able to monitor her performance outcomes (McPherson & Renwick, 2001), being able to recognize errors does not a self-regulator make! As discussed in the section above, her lack of the ability to set realistic goals and apply the suitable method, leads to frustration and giving up.

When Sofia *is* able to play a piece, she does many performances of it, which are very similar, and often she repeats a piece achieving the same musical result in both performances, with no audible improvement. Why is she then repeating the piece? Her *goal* seems not to be to improve the practice, and though it is possible, that she is attempting to solidify the performance through repeat, her appearance and interest in the practice suggests, that she is not playing with a strategy of solidifying. It is very possible, that she feels that she has achieved her goal of playing the right notes, and is unable to understand why she has to spend anymore time on the assignment. It could be argued that she feels like she ought to practice in that particular moment, because the camera is rolling, the mother is present and she is supposed to do the activity called "practice", which makes her do some piano-related activity for the amount of time, that has been assigned. Though I am not able to tell her exact motive for practicing, I can from her practicing strategies, goals and overall appearance assume, that she is not practicing because she is "*... feeling free to and capable of deciding whether to practice.*" (McPherson & Renwick, 2001). This lack of motive might in fact be an important factor in why her practicing is so often not well-structured or does not seems to bring her much joy: She does not feel like she has musical agency, something which is such an important factor in self-regulation, a term which in its very nature requires agency.

Of course, we must keep in mind that Sofia is only eight years old and as McPherson and Renwick point out: *"...the skills of knowing how to self-monitor, set goals and use appropriate strategies take time to develop in most young children."* (2001, p. 184). My goal is not to point out, that she is by any means a bad student, because she is not able to show consistent self-regulation in the videos, rather it is to highlight the intricate web of self-regulation, co-regulation and musical agency that is happening in every practice session. Sofia is, like any human being, negotiating her identity in every situation and interaction she

faces. She has a strong sense of her developing musical agency, and I believe it is this concept, that is influencing all her practice. She strongly rejects anything that can "threaten" her agency - e.g. not being capable of completing a task, being told how to practice, what pieces to play. On the other hand, she thoroughly embraces situations that allow her to take ownership over her music-making, e.g. when she is composing or otherwise engaged in the musical expression and working on dynamics. In fact Sofia's self-regulation seems to be supported, when she has a sense of musical agency. In video 4 she is not at all conscious of her surroundings but only focused on the music. She shows a clear process of being able to monitor her performance, apply correct methods to develop the performance and seems pleased with the result. This occurs when she has learned the piece and is in the process of "making it her own" by working on the interpretation.
In stark contrast to this video is an episode in video 8 where, she plays through a piece from her repertoire book. Sofia plays with imprecise rhythms and without a clear musical objective. When she is finished and Maria asks if she could play it once more with more focus on the rhythm, Sofia answers "Why?" in a displeased tone of voice. As discussed earlier, Sofia is always operating within a co-regulated environment, because she is practicing with her mother present who represent the "capable other". Maria offers practical advice, and how it affects Sofia varies from video to video: sometimes she continues to play without reacting to the comments, sometimes she becomes annoyed by the comments and in one video the comments are fruitful to the process, because they make her realise what is not working in her playing. It is in other words not black and white how the co-regulation affects Sofia's practice. However, I would argue that the general reaction from Sofia when she receives comments is not positive, rather it makes her more annoyed and often also defensive. The scene from video 8, is a situation where Sofia feels that her agency is threatened, and it makes her defensive and less willing to practice.

In this paper I adapt the understanding of co-regulation as the process towards self-regulation. The student must first learn the tools for self-regulation with a capable other and then gradually apply them to their playing. For Sofia her skill-level is not yet high enough to allow her to apply good self-regulating strategies in her practice. This resonates with findings from G. McPherson and J. Renwick (2001), L. de Bruin (2018), M. M. Donnelley (2001) and P. Pike (2017a; 2017b). The process of co-regulation should ideally allow for Sofia to develop

her self-regulation and in time find her musical agency. However Sofia's negotiations of agency are often obstructing her co-regulation, because she, to put it simply, does not like to be told what to do or how to practice.

Applying the theoretical lenses of self-regulation, co-regulation and musical agency, allowed me to find, that agency is very important to Sofia, and that it supports her self-regulation, but that it at times hinders the co-regulation.

7. Conclusion

7.1. Summary of findings

After reviewing the literature on self-regulation in musical practice (chapter 2), it was clear that the research on self-regulation in piano practice has mostly been focused on high-level students, and that there was no other research, which focused on beginner-level piano students, applying the theoretical framework of self-regulation (McPherson & Renwick, 2001), co-regulation (de Bruin, 2018) and musical agency (Karlsen, 2011). To contribute new knowledge to this particular area, I set out to investigate *in what ways agency hinders or supports the development of self-regulation in a beginner-level piano student* through a qualitative, single case study, based on the video recorded practice sessions of an eight year old piano student.

I asked: "in what ways is Sofia showing signs of self-regulation and co-regulation", and found that her self-regulation always takes place in a co-regulated environment, as her mother is present (by holding the video camera and sometimes offering supportive comments). She shows signs of self-regulation, but the moments are rare and far between. Most of the time she is not using any specific strategies, or showing any sign of self-regulation, and interestingly, when she uses the practice strategies, she is told to use (which are supposed to further her self-regulation), she shows less engagement and plays with less musical agency, than when she is not using strategies.

I also asked "in what ways is Sofia showing signs of musical agency" and found that Sofia has a strong sense of agency, e.g. her interest in composing her own music. When she experiences, that her agency is threatened (e.g. when she is asked to repeat a phrase without being able to decide for herself if she wants to), she has a strong reaction and is obviously not happy or engaged in her practice. That goes towards an answer to the final question: "how do the two influence each other". Her self-regulation is strongest, when she experiences a sense of musical agency, whereas when she experiences a lack of agency, and when there is "too much" co-regulation, she loses interest and her practice becomes disengaged.

In other words: A strong sense of musical agency can be a support to self-regulation, but it can be a hindrance in a co-regulated environment.

7.2. Limitations and avenues for further research

Some limitations with this research paper include the length of the data collection and the amount of videos. This study was conducted during a period of approximately four months. To be able to do a similar kind of research over a longer time period, would perhaps include a more significant development in the student, and therefore greater differences in the practicing. Furthermore, it could have been interesting to have a larger amount of videos, as it might give an even clearer picture of how Sofia practices, and if some aspects that occur once or twice, are in fact continuously recurring issues or not.

A study with a larger group of research participants, would provide an interesting contrast to this single case study. The possibility to compare findings between students would perhaps show even greater insight into how musical agency influences self-regulation and co-regulation. However, this particular research paper was not intended as a comparative study although a multiple case study would be an obvious avenue for future research.

An interesting aspect of self-regulation is motivation. I chose not to include this aspect as a main theoretical lens, but there would be many interesting opportunities to conduct further research into the relationship between motivation, self-regulation and agency. It would also be relevant to add "flow-theory" to the theoretical framework, because Sofia's experience of musical agency and self-regulation might very well be described as flow. However in this short research paper, I felt that I had to focus on a more narrow theoretical framework in order to give it the deep consideration I believe is necessary.

7.3. Final statement

This study is a single case study, and I would not attempt to make any generalisations based my conclusion. I will however allow for this study to be seen in the broader context, in which it is intended.

In the introduction I described how children nowadays seem to have everything available to them because of the technological development, and that this has caused them to seek instant gratification in everything they do; the ability to sit down and just work hard at something might be lost. Indeed, I had often thought that this would be an appropriate analysis of how Sofia works: She is so used to getting things instantly, that she wants to do everything perfectly immediately. However, as I conducted this research, I came to the conclusion that it is in fact her sense of musical agency, that has a huge impact on her ability to work as a self-regulating learner.

This does, in my opinion, call for a cautious suggestion, that the young generation of learners is not "lost" due to their easy access to everything, but rather that they, like any generation before them, need to develop their own sense of agency in everything they do. Working hard at achieving a goal does not seem like hard work, when one understands and enjoys the process, and I believe it is important to develop agency as a self-regulator.

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9. Appendix A

Consent to Participate in a Research Study

Title of Study: _____

Investigator:

Name: _____ **Dept:** _____ **Phone:** _____

Introduction

- You are being asked to participate in a research study of self-regulation in piano practicing
- You were asked to participate because I wanted to develop my understanding about how to develop students' practicing techniques, and share this information with other teachers
- I ask that you read this form and ask any questions that you may have before agreeing to be in the study.

Purpose of Study

- The purpose of the study is to understand more about the self-regulation of students practicing at home. This means their ability to direct and control their own learning.
- Ultimately, this research may be published in the Sibelius Academy e-thesis repository, although all participants will remains anonymous.

Description of the Study Procedures

- If you agree to be in this study, you will be asked to do the following things: regularly video record the students practicing at home and share these videos with the researcher.

Risks/Discomforts of Being in this Study

- There are no expected risks.

Benefits of Being in the Study

- Although there are no direct benefits of participating in this study, the results will better inform the teacher, and other teachers, with regards to supporting students' practicing.

Confidentiality

- Participating in this study is anonymous. I will not be collecting or retaining any information about your identity. I will keep the recorded videos in my external hard drive and when they are not needed anymore they will be deleted. The only persons who will have access to these recordings are myself, and my supervisors.

I will not include any information in any report we may publish that would make it possible to identify you.

Compensation

- There is no payment for participating in this study.

Right to Refuse or Withdraw

- The decision to participate in this study is entirely up to you. You may refuse to take part in the study *at any time* without affecting your relationship with the researchers or the Sibelius Academy. Your decision will not result in any loss or benefits to which you are otherwise entitled.

Right to Ask Questions and Report Concerns

Subject's Name (print): _____

Subject's Signature: _____ Date: _____

Subject's Guardian: _____ Date:

Date:

Investigator's Signature: _____

- You have the right to ask questions about this research study and to have those questions answered by me before, during or after the research. If you have any further questions about the study, at any time feel free to contact me at my email address jacob.lidakra@uniarts.fi or by telephone xxx-xxx xx xx. If you like, a summary of the results of the study will be sent to you. If you have any other concerns about your rights as a research participant that have not been answered by the researchers, you may contact Alexis Kallio or Danielle Treacy, the course instructors via email.
- If you have any problems or concerns that occur as a result of your participation, you can report them to Alexis Kallio and Danielle Treacy at the email addresses above.

Consent

- Your signature below indicates that you have decided to volunteer as a research participant for this study, and that you have read and understood the information provided above. You will be given a signed and dated copy of this form to keep, along with any other printed materials deemed necessary by the study investigators.

10. Appendix B

The purpose of this study is to understand how self-regulation or co-regulation is being used and how it affects the piano practicing for an eight year old student. This has been analysed using the following questions:

A. Are there any specific practicing strategies used? (Method)

B. How much time is spent working on repertoire, technical work and creative/informal practice? How long time is spent not practicing, but engaged in other activities during the video? (Time)

C. How well is Sofia monitoring her performance? If a passage is repeated, because of an error, is it repeated in a way that is deliberately improved, or just repeated for the sake of repeating? (Performance outcomes)

D. Are there any visible or audible distractions? (Physical environment)

E. What does the socially constructed learning environment look like? Are there any comments or exchange of information between Sofia and the more capable other, Maria? (Social factors)

I also included a *general statement* about each video to give the reader a more nuanced understanding of the events in each video. This could be the social interactions or or other aspects, that I found important to bring out to give the reader a more complete understanding of each video.

Video 1 (Total length of the video: 7 minutes 28 seconds)

General statement: This is the first video that was recorded in this project, and while analysing Sofias body language, I see that she is a bit insecure in this new situation: She does not know whether to look at the camera, or in the music or even how to behave. Sofia is focusing on what she is playing and no attention is directed towards external things while practicing. She practices only by playing through the music.

A. She does not use any practicing strategies.

B. Time spent practicing repertoire: 5 minutes and 30 seconds. Time spent practicing technical work or doing informal practice: 0 seconds.

Time spent engaged in other activities than playing: 2 minutes and 5 seconds.

C. Sofia does 3 notes errors and 1 rhythmical error. She spends 30 seconds thinking, without playing, but I cannot see nor decipher what she is thinking of. The playing before and after she has thought is the same.

D. There are no visible or audible distractions in this video.

E. Maria comments: “What about the rhythm? Can you play it once again?”, after a playthrough of a piece where the rhythm was a bit unprecise. When Sofia tries it again the playing improved.

Video 2 (Total length of the video: 3 minutes 47 seconds)

General statement: She starts practicing with the right hand only and continues to practice in a focused way throughout the video. She plays the same way throughout the video, with very little dynamic or expressive changes and the focus is on the correct notes. Sofia seems very concentrated.

A. Slow practicing for 2 minutes and 10 seconds and practicing with right hand only for 50 seconds. Left hand is not practiced alone.

B. 3 minutes and 7 seconds on repertoire. 0 seconds on technical work and informal practice. While not practicing she is thinking for 30 seconds, talking for 5 seconds and spends a few seconds being frustrated.

C. She does 1 note error which is immediately corrected. She repeats several passages, slow as well as in tempo. The times she plays in the proper tempo are more expressive than when she practices slowly, and the note errors occurs in slow practice. When she repeats the passage it sounds like it did the first time.

D. No distraction of any kind.

E. No comments by Maria, nor is Sofia seeking any new information.

Video 3 (Total length of the video: 3 minutes 54 seconds)

General statement: She practices in a focused way, and performs the first piece full of contrasting expressions. The second piece she plays with an appropriate expression even though she becomes frustrated that she does not know this piece as well as the first piece. She practices only by playing through the pieces.

A. No specific strategies used.

B. 2 minutes and 50 seconds playing repertoire. 0 seconds on technical work and informal practice. While not playing she is thinking for 15 seconds, changing music for 15 seconds, changing the chair position for 15 seconds and spending a few seconds on two occasions with being frustrated.

C. 2 note errors that are corrected immediately.

D. No distractions.

E. No questions, no comments by Maria and no intention of trying to find new information.

Video 4 (Total length of the video: 1 minute 49 seconds)

General statement: Sofia shows signs of self-regulation in this video. At one point she struggles at first with a few bars, but then stops and thinks for a few second before saying out loud "Now I get it!" and plays these bars with significant improvement. She practices by playing through or playing through from a spot in the music chosen by herself. This video which is 1 minute and 49 seconds shows Sofia very focused while practicing. She does not engage herself with anything or anyone outside of her and the music she is playing.

A. No specific strategies used.

B. 1 minute and 40 seconds spent playing repertoire. While not playing she is thinking for 10 second.

C. 1 rhythmical errors that is ignored.

D. No distractions

E. Sofia does not ask any questions or seek any information and Maria does not comment.

Video 5 (Total length of the video: 3 minutes 6 seconds)

General statement: Sofia practices by playing through the music properly but without the kind of clear musical inspiration, she has displayed in earlier videos. She is less focused and therefore makes a few unnecessary mistakes. After Marias comment her playing improves, since she is then becomes more dedicated.

A. No strategies used.

B. Playing repertoire for 2 minutes and 58 seconds, no technical work or informal practice. While not playing she is changing the position of the chair for 7 seconds.
C. She repeats passages but the way she plays does not change.
D. You can hear the sound of a cello in the background, but the sound is very vague and far away.
E. After Sofia makes a few mistakes during a short time and becomes a bit discouraged, Maria comments: “Focus Sofia, focus”

Video 6 (Total length of the video: 2 minutes 30 seconds)

General statement: Sofia plays with a great sense of expression, she shows changes in the dynamics, which she invents herself on the spot. She plays the same piece twice, but with different dynamics each time. After which she performs her own piece she composed in an equally expressive way. In this video all focus is directed towards the musical expression and not only towards the correct notes in the correct order.

A. No specific strategies used.
B. 2 minutes and 10 seconds spent practicing repertoire. While not playing she is changing the position of the chair for 20 seconds.
C. Sofia plays two pieces she is very familiar with and plays with big changes in dynamics. This signifies that she is comfortable enough with the notes and therefore plays in a different way to express something else.
D. No distractions.
E. After a successful performance by Sofia, Maria comments: “Nice! Can you put the chair a bit further back?” and later after a successful performance of another piece, Maria comments “Great!”

Video 7 (Total length of the video: 5 minutes 27 seconds)

General statement: Sofia is practicing a new piece that is more complex than her previous pieces and therefore she is in the beginning stage of learning. She practices to learn the right notes in the right order, the musical expressive element she showed in earlier videos is almost not present at all, and she appears less interested in practicing when only playing with one hand. This lack of interest is the source of several rhythm and note errors. She practices with

one hand in the beginning of the video to later include the other hand. After a while when Maria asks her to, she practices with one hand again. The atmosphere is calm albeit a bit tense because Sofia is not happy with her playing.

A. She practices the right hand alone for 1 minute and 53 seconds and the left hand alone for 57 seconds.
B. Plays repertoire for 5 minutes and 20 seconds. She spends a total of 20 seconds in four instances being frustrated.
C. She plays through to learn the notes, and keeps repeating the same passages with some success. Everything is in a very early stage, which results in many note errors and rhythmical errors. These errors sometimes trigger the moments of frustration.
D. No distractions.
E. After practicing with the right hand alone, Sofia plays the rhythms incorrectly in a bar and Maria comments: “Wait a second, have you seen the rhythm? The dotted rhythm is not correct. Try it once more”. Sofia plays it again and Maria goes to the piano to ask “Look at the rhythm in this bar, and play it with more precision”. After, Sofia continues to practice with the left hand alone and moves in closer to the piano, Maria comments “Sit a bit further away from the piano, what Jacob has said many times”. Sofia continues to practice and after a while where she makes a mistake and becomes discouraged again, Maria comments: “Try practicing again with one hand only”.

Video 8 (Total length of the video: 3 minutes 31 seconds)

General statement: She starts to play while looking happy but she gets frustrated early on, which affects the rest of this video. The annoyed tone in Sofias answer after Marias comment about playing the piece again, as well as how abruptly Sofia closes the music after the practice session (even before the recording device is turned off), makes me believe that she is not very motivated to practice in this video.

A. No strategies, only playthrough and repeat.
B. Sofia plays repertoire for 3 minutes and 20 seconds. She spends 10 seconds being distracted or frustrated.

C. She plays through the piece twice and corrects the note errors. The rhythmical errors and the pedal errors are does not corrected. She plays through the piece twice, the first time it is more successful because she is more focused.

D. No distractions.

E. After the first playthrough Maria asks her to play it again with better rhythm, and Sofia answers ”Why?” in a displeased tone of voice.

Video 9 (Total length of the video: 3 minutes 21 seconds)

General statement : Sofia starts by practicing right hand alone and she seems to be less engaged in the musical expression, when playing with only one hand. Shortly after she includes the left hand after Marias suggestion to do so. The piece she is playing is very active in both hands at the same time and Sofia has not had the time or practice, yet, to be completely able to play it. It also requires pedalling and in this video the pedal seems to be changed at random if at all. She does a few rhythmical mistakes which causes Maria to ask some guided questions, for Sofia to figure out the answers herself, with a successful result. Sofia plays through again, not flawlessly, but improved.

A. She practices with the right hand alone for 30 seconds.

B. Sofia plays repertoire for 2 minutes and 30 seconds. While not playing she spends 20 seconds talking and 10 seconds thinking.

C. She plays through and one time starting from the middle of the piece. The note errors she immediately corrects but the rhythmical errors and pedal errors she always ignore.

D. No distractions.

E. Sofia plays through the piece with the right hand, after which Maria comments: “Good Sofia! Try including the left hand now”. Sofia plays with both hands not together and Maria comments: “Look, the left hand starts here, and the C-major comes after”. When she continues to play and doing another coordination mistake Maria comments: “The left hand does not start yet”. Sofia finishes the piece with the hands unsynchronized, and Maria asks: “On which beat does the left hand end?”

Sofia: First

Maria: On the second isn’t it?

Sofia: Oh, yes

Sofia: So I practice from here? (points with finger)

Maria: Yes!

After finishing the piece with both hands better than before Maria comments: “Great! The left hand was not really correct, but great!”