A photovoice project on the self-regulation of teenagers: from self-regulating to regulating together through dialogue.

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ABSTRACT

This study concerns explorative research into stimulating self-regulation among young teenagers from a social-constructivist and emancipatory approach to learning and learners. We develop an interaction tool that challenges and supports young teenagers and their teachers in (1) conversations and reflections about self-regulation in the classroom and (2) the co-creation of a learning environment which fosters self-regulation. Using the Photovoice methodology we give the teenager a voice as fellow researcher in the development of this interaction tool. The same participative approach is carried over in the developed interaction tool. Inspired by the concept of 'socially shared regulation', the design centres learning together, directing together, and designing together. We are testing the instrument that emerges from this in various schools.

INTRODUCTION

Education research, policy, and practice all emphasise the importance of self-regulation. The conceptual frames used for this, however, are highly diverse, as are the terms used: self-regulation, self-direction, executive functions, self-regulated learning, ownership in learning, etc. Consequently, there are many questions among researchers, policy makers, and teachers regarding the conceptual boundaries and

clarifications, the place of self-regulation in the curriculum, and the concrete support you should offer as a teacher

In this research, we start from the challenge of encouraging self-regulation among young teenagers in a classroom context. After all, our education system often relies heavily on the self-regulation of teenagers, more so today with the regular use of remote learning due to the covid-pandemic. This requires the teenager to achieve certain learning objectives independently and consequently also self-regulated. We see that teenagers often find this self-regulated learning difficult and that they risk losing their motivation. We also listen to the concerns of teachers who wonder if teenagers are ready for this and who wonder how they can stimulate the self-regulation of teenagers.

In the context of encouraging self-regulation, teachers predominantly focus on teaching pupils self-regulation skills, often framed in lessons on 'learning to learn'. In the past years, several models, (teaching) methods, and concrete materials have emerged which can support them in this. These methodologies often start from a strongly directed approach that is gradually weakened. This mirrors the witticism 'you can't self-regulated learn self-regulation'. However, we wonder whether a more participative approach would connect better with the way young teenagers function and with an emancipatory view of learners. How do young teenagers 'themselves' interpret the self-regulated work and what need for support do they want to achieve targets or learning objectives? In other words, can we develop a methodology that allows young people participate in directing their learning and offer them the necessary support?

YOUNG TEENAGERS INTERACTION, REFLECTION AND SELF-REGULATION

Steinberg (2015) describes the teenage years as 'the age of opportunity'. In this paragraph we describe some typical traits of this promising time of life and what this means for the interaction, reflection, and self-regulation of and with them. We focus specifically on the age group ranging from 10 to 14-year-olds (young teenagers).

From a child's brain to an adult brain

The teenage brain is developing and very plastic. This means that new connections can be made very quickly, as is the case with young children. It allows teenagers to often think very flexibly and creatively. The teenage brain is going through major changes. The main change is that unused connections in the thinking and processing part of your child's brain (called the grey matter) are 'pruned' away. At the same time, other connections are strengthened. We call these processes 'pruning' and

‘myelenisation’. This is the brain’s way of becoming more efficient, more like an adult brain (Crone, 2008; Van Camp et al., 2015; Medina, 2018).

The parts of the brain that govern reflection and self-regulation are located in the prefrontal cortex, the part of the brain that is the last to mature. These structures continue to develop till the age of 25 (Steinberg, 2015). This makes it difficult for teenagers to direct themselves. They are often impulsive (Medina, 2018). *”Teenagers follow their instincts. They see and react. What is still in development is the little word that has to come between: seeing, thinking, and reacting.”* (Adriaenssens, 2006, p34). Teenagers can achieve strong cognitive accomplishments, but they need support in managing their emotions, thoughts, and behaviours. In the context of self-regulation, it is therefore important to support reflection and metacognition in teenagers (Debacker et al, 2021). This can be done by modelling and making explicit (De Smul et al, 2018) but also through providing scaffolding (Donggil & Dongho, 2020) for this with the use of methodologies which help them to control impulsive reactions, which encourage them to think, and which support them in verbalising their thoughts.

The challenges that teenagers face with regard to their developping self-regulation, don’t negate that they like having and taking responsibility for what they can. Research shows that focussing on ownership and responsibility with teenagers works. Deci & Ryan (2012) confirm this in their own research into the power of autonomy, togetherness, and competence to motivate teenagers in an educational context.

The social-emotional development of the teenager

Developmental psychologists mark the teenage years as a time when the importance of peer relationships increases sharply. Because teenagers are going through a period of large changes, they need peers with whom to associate and compare themselves (Wentzel, 2017).

We also see that the need for social recognition is very high during teenage years. This is confirmed by developmental psychologists and neurological research also proves that the impact of acceptance and positive feedback is larger for teenagers than for children or adults. This is in part because the reward centre (nucleus accumbens) is very sensitive in teenagers. The recognition or positive feedback from peers appears to be even more important in this regard than those of parents or teachers (Crone, 2008; Crone, 2012).

This makes the use of the teenagers' need for social comparisson and recognition a powerful tool to stimulate the development of teenagers. This means making time for (guided) interaction, even in the classroom. When doing this, it is important that you recognise the social-emotional vulnerability of the teenager and adapt your style of communication. *"Communication is difficult and yet most people only really realise that they have difficulty communicating when they talk to teenagers. (...) They let you know whether or not you're really communicating. (...) You need to really communicate with teenagers or they will, literally or figuratively, leave."* (Delfos, 2016, p.22) During interaction with teenagers, it is important that safety, equality, and connectedness are centred. Adopting the perspective of the other and trying to understand what they are saying has to be the starting point of the interaction (Beerten & van Waterschoot 2020; Laevers & Heylen, 2013). You can model and explain this attitude. "*Turning to an example is inherent in the identity development of young teenagers (just consider youth idols). Children and young people learn most behaviours by seeing and emulating their surroundings."* (Adriaenssens, 2006).

Self-regulation and learning in teenagers can also be viewed from the social development that is central to this period by starting from a social constructivist approach to learning and self-regulation. Co-creation, the joint creation (of meaning), is central to this approach. We find a social constructivist approach to self-regulation in the recent concept of 'socially shared regulation' (Hadwin et al., 2018). Only a little research has been done into the implementation of this theoretical concept in practice.

Starting from this information about the functioning of young teenagers, how can we work on self-regulation in class? Where are their strengths and needs? How exactly can we provide the support that will lead to more 'self-regulation'?

STUDY DESIGN

The following study concerns a Practice-oriented Scientific Research project that runs from September 2020 to August 2022. It concerns an explorative research, both though the *participative* and *constructivist grounded* approach and through the social constructivist approach of self-regulation as *'socially shared regulation'* and the interaction tool inspired by it developed for *young teenagers* and their teachers.

Research goal and research questions

Prior research confirms the importance of interaction, appreciation, participation, and social learning for young teenagers, as well as the supporting role of

metacognition and reflection in self-regulation. The goal of this study is to determine how we can encourage the *self-regulation* of young teenagers by using these insights. In doing this, we explicitly aim to start from the *language* that *young teenagers* use about self-regulation themselves.

The research question central to this study is: *'How can we – in cooperation with young teenagers and their teachers – design an interaction tool that challenges them (1) to talk about and reflect on self-regulation together and (2) to co-create a learning environment that encourages self-regulation?'*

We address the following sub-questions with this in mind:

A. What does the literature say about interaction, reflection, and self-regulation in young teenagers?
B. What are the words and images used by teachers and young teenagers to define self-regulation?
C. How can we relate these words and images to the literature on self-regulation?
D. How can we design an interaction tool inspired by the words and images of young teenagers and based on insights on interaction, reflection, and self-regulation, to challenge and to support?

(I) the interaction and reflection on the topic of self-regulation and
(II) the co-creation of a learning environment that improves self-regulation.

Research method

The study has 2 phases. In the first phase (research year 2020-2021) we conducted a literature review (research question A) and conducted a qualitative participative study using *photovoice* (research questions B and C). In the second phase (research year 2021-2022) we *have developed* an interaction tool to stimulate self-regulation in young teenagers (research question D) based on the theoretical insights generated in phase 1. Finally, we *are testing* this tool in practice.

The interaction-tool that we developed consists of (1) a *theoretical framework* regarding self-regulation, (2) a *theoretical framework* regarding encouraging self-regulation in a class, and (3) a *(teaching) method* that pushes young teenagers to interact, reflect, and co-create in the realm of self-regulation. The theoretical frameworks provide teachers and pupils with a frame of reference to deepen the interaction, reflection, and co-creation and will strengthen metacognition and self-regulation in the process. The method offers the teacher concrete handholds to stimulate the process of interaction, reflection, and co-creation among young teenagers in a classroom context. The underlying insights are explained to the teacher which strengthens the teacher's insight into the development of (self-regulation in) young teenagers and the encouragement of reflection and self-regulation in class.

In order to develop the theoretical frameworks, we chose a qualitative approach from Constructivist Grounded Theory (Charmaz, 2005) in which the theoretical framework is iteratively constructed through literature review and concepts based on empirical material. We used the Photovoice methodology to collect this empirical material. Photovoice collects information from an *'emic perspective'*. This means that the research starts from information coming from the target group itself and not from information from prior research. This allows for an unprejudiced start and gives new insights and perspectives a chance to develop (Wang & Burris, 1977). To do this, both young teenagers and their teachers were actively engaged in highlighting what self-regulation means for them by taking pictures about it. Giving a voice to a group of people through Photovoice goes much further than interviewing them starting from a photograph. The teenagers also remained involved with the analysis and reporting of the data. In this way, Photovoice supports the *empowerment* idea that also has an important value in this research into and especially for young teenagers and their teachers.

We started with a literature review to develop a (teaching) method. Based on this study, we put forward a number of design principles. These principles then guided the development of a concrete method for the teacher.

We further tested the developed interaction-tool, the theoretical frameworks and (teaching) method, by way of a professionalisation course.

Photovoice in order to design a frame of reference for 'self-regulation'

We developed a frame of reference for self-regulation for young teenagers and their teachers based on the language they themselves use. We used *Photovoice* to do this; a participative and constructivist grounded research method in which participants (in this case the teenagers and their teachers) take pictures based on a research question in order to share their perceptions on the topic. In the first research year (2020-2021) we got to work as researchers with two classes in a primary school and one class in a secondary school. In total, 63 pupils and 7 teachers participated in the Photovoice process. We worked with the pupils in groups of 4 to 6 pupils. The process with the teachers was done by team, separate from the pupils. The Photovoice process incorporates 6 phases (Emmers, 2019): (1) preparation phase, (2) opening phase, (3) active phase, (4) decoding phase, (5) linking back the results of the analysis to the participants, and (6) reporting of the conclusions by the participants.

In the opening phase (1) pupils got to know Photovoice and were encouraged to take up the role of co-researcher. Then the pupils got to work (2). Each pupil took five pictures to answer the question *'what do you do to achieve your goal'* or *'how do*

you take charge of your learning'. The pupils then selected two pictures which they provided with a story in small groups of 4 to 6 pupils. In the decoding phase (3), pictures with a story were given a code. The qualitative analysis consisted of the thematic structuring of the subjects of the pictures and stories. We linked this structure to the frameworks and theoretical concepts from the literature review. The frameworks of Zimmerman (as described by Thomas et al, 2020) and Laevers (2018) proved themselves to be especially useful for this. The linking back phase (5) involved testing and adjusting our analyses and interpretations with the participants. Finally, the results were reported (6). We formulated the participants' answer to the research question in the puzzle *'Directing Together through Dialoque'*. It gave us the pupils' and teachers' answer to what self-regulation means to them in their own words. This allowed the puzzle to be used as a frame of reference to discuss self-regulation with pupils, as a joint language for interaction, reflection, and also later co-creation involving self-regulation.

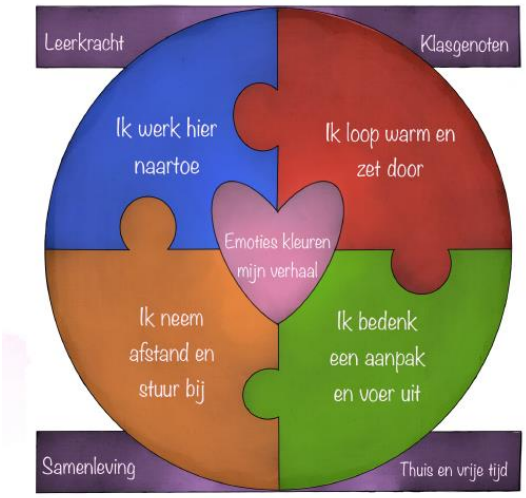


Figure 1: puzzle Directing Together through Dialogue (UCLL, Education & Development)

Photovoice to design a frame of reference for 'encouraging self-regulation'

After completing the Photovoice process, there was a further qualitative analysis of the empirically acquired material, both the pictures and stories and the conclusions formulated by teachers and pupils based on the process. In this analysis we hoped to get a view of variables in context which have an impact on self-regulation, and which can also be influenced in order to stimulate the self-regulation of young teenagers. This analysis led to a selection of six variables, which were further refined and

adjusted based on conversations with experts. We entered discussions with the panel of experts that assist and evaluate the project and with external experts during a roundtable conversation at the EAPRIL conference 2021. The result of this inquiry is a description of six parameters which teachers can emphasise to greater or lesser extent in function of the needs of pupils. With the concept parameter we created a tool to explore and develop changes in the learning environment flexibly in conversation with pupils. In other words, it is a frame of reference to foster the process of co-creation in service to a learning environment that offers opportunities for self-regulation.
These parameters are:

- goalsetting
- pressure
- structure
- choice
- challenge
- togetherness

Literature review to develop a method for the teacher

We consulted scholarship on interaction, refection, and self-regulation in young teenagers. We consulted sources from communication science, pedagogy, developmental psychology, and neurocognitive sciences. Based on this literature review, we prioritised the following principles for the development of a method to stimulate interaction, reflection, and self-regulation in young teenagers in the classroom.

- Focussing on metacognition and reflection
- Focussing on equality and safety
- Focussing on autonomy, connectivity, and competence
- Focussing on the social competence and social needs of the teenager

A method was developed for the teacher in line with these four design principles. The (teaching) method provides a structure and goals linked to Dorian De Haan's (2012) phases of 'exploring', 'connecting', and 'enriching'. By selecting the phases 'exploring', 'connecting', and 'enriching', we succeeded in integrating the above principles into the (teaching) method. In exploration and connection, the emphasis is on an open dialogue in which metacognition and reflection are central. Pupils and the teacher learn to know themselves and the other better through conversation. The 'directing together through dialogue' puzzle provides a shared language and becomes a touchstone for the pupils' own self-regulation. Enriching, inextricably tied to exploring and connecting, emphasises dialogue between pupils and teacher

and between pupils themselves in looking for challenges and enriching the learning environment.



Figure 2: explorng connecting enriching (UCLL, Education & Development)

Solid support from the teacher is crucial in order to bring a group of young teenagers collectively to metacognition and reflection. In the (teaching) method, teaching strategies are proposed to achieve this.
In the context of *'exploring'* and *'connecting',* we work with Photovoice (Wang & Burris, 1997) and Socratic dialogue (Poppelmonde et al., 2001). We clarify the supporting role the teacher can play here using an 'interaction guide' and 'rules of conversation'. We based the development of these materials on Clement (2016), TGI (Cohn, 1997), and Adriaenssens (2006).
In the context of *'enriching',* it's important that the teacher focusses on modelling, explaining, and visualising. Here, we started from De Smul et al.'s (2018) insights into implicit and explicit, and direct and indirect instruction.

Testing in practice

The interaction tool (frames of reference and teaching method) is now being tested in practice in the first two years of two secondary schools and the final two years of five primary schools. The involved teachers take part in a professionalisation course consisting of 3 study days, 2 coaching moments, and 1 evaluation moment. Throughout the professionalisation course, data is collected from teachers through reflections, surveys, and a focus group interview. Based on the resulting data, the interaction tool will be adjusted.

The project concerns an explorative study. Follow-up research will be necessary to test the design with a large group of teachers and pupils in order to measure the impact of the method, with a possible focus on specific groups.

FIRST CONCLUSIONS AND REFLECTIONS

In young teenagers' pictures and stories about self-regulation, several facets of self-regulation were highlighted that are overlooked or placed differently in the traditional models and theoretical frameworks. This led us to some conclusions and reflections, alongside an adjusted frame of reference on self-regulation. Also the process of Photovoice which we guided ourselves as researchers, offered us interesting reflections and questions about having and facilitating (reflection) discussions with young teenagers. We will describe and situate some of these reflections and conclusions from the research data and research process in the following paragraphs.

Self-regulation out-of-the-box

The pictures and stories we received from pupils often concerned emotions and *regulating emotions.* In their stories about self-regulation, pupils often discuss how they need and appreciate the warmth and proximity of a teacher, parent, friend, brother, sister, coach, or pet. Pupils also discuss how they look for and create rest and how they motivate themselves. The affective component of self-regulation received a lot of attention, more than say the cognitive component which centres learning strategies. This doesn't entirely correspond to how the affective component is integrated in conventional models of self-regulation. In many of these models the affective (or motivational) component is named (Zimmerman, Laevers, Boekaerts), but this is often more of a 'mention' within a model that predominantly stresses (meta)cognition. It is consequently unsurprising that, in practice, teachers give this component little explicit attention. This was also confirmed in the pictures and stories of the teachers, where we mostly received examples of the cognitive and metacognitive components of self-regulation. In a focus group interview with the teachers in question, they confirmed that they recognise the importance of the affective component, but that they devote less explicit attention or instruction to it in their support of self-regulation.

Pupils often referenced experiences *outside of the school context* in their stories and pictures. They learn a lot from these out-of-school experiences, also regarding self-regulation. In discussion, the teachers indicated that they got to know their pupil better through these out-of-school stories. They found it interesting to hear them talk about themselves and were surprised to learn how much self-regulation they already had. This offered them new information with which to discuss self-regulation with pupils and sometimes gave a new perspective on a pupil. Quote from a teacher: *"I absolutely hadn't expected this picture from M. I didn't think she had that much perseverance and had no idea that she trained for dancing that much (4 times a week!)."*

In their stories, pupils also name the strategies they use to achieve their goals. Starting from a concrete picture can help pupils to better describe how they go about learning. A number of stories neatly link up with the strategies put forward in effectiveness research, like *making a plan, alternating effort and relaxation, splitting up tasks, repetition,…* However, a number of stories also illustrate strategies that are not recommended by research, like *using a lot of colours, marking texts, studying everything at once and taking a long break, eating and drinking sweet things, studying in the (busy) kitchen, studying with music…* These strategies appeared to be meaningful to the pupils and they were often recognisable to other pupils. Quote from a sixth-grade pupil: *"I always use a lot of different colours. My desk is actually full of colours (she points to the picture). Some people think it's crowded and messy, but that's what makes me happy and then I enjoy learning more."*

How much SELF is self-regulation?

Self-regulation in school is often defined as the *independent* use of (meta)cognitive and motivational strategies by pupils to guide *their own* learning. Self-regulation in school takes place in a context in which goals, criteria for success, required results or norms, and even 'preferred strategies' are predetermined by others. By naming effective self-regulation strategies, what good self-regulation is, is decided for the pupil. Subsequently, the pupil's distance from this 'ideal' is assessed, together with how the teacher can guide the pupil toward it in order to, once the pupil can do so him*self*, allow the pupil to do so him*self*. The pupil's self-regulation is strengthened along the way by the powerful learning environment which the teacher develops for the pupil. We question whether this can really be called *self-regulation.*

In this project, we investigate whether more *self* is possible for young teenagers, including in the context of education. We do this firstly by allowing young teenagers to determine for them*selves* what self-regulation means and how they are self-regulated. In this we try not to put forth an a priori standard. We want to start from their stories, and their strengths, and not from not meeting our standards. In their stories, young teenagers show that they are (already) self-regulated in many ways. Using pictures, they can describe this well themselves. Their stories also show that what works for one pupil often doesn't work for another at all. Furthermore, our research suggests that predetermining what works for every young teenager runs counter to the actual goal of *self-regulation*. Namely, figuring out for yourself what you want, what works for you, when and why, and being able to make your own choices based on that. We especially want to create opportunities for teenagers to practice this. Don't predetermine, but actively involve them in the design of a learning environment that supports and encourages their self-regulation. Build a learning environment in which certain things are still expected, but not without any input about how. This absolutely needs to be guided. In this project, we study this support by letting the pupils and teachers get to know various forms of self-

regulation through discussion and reflection. The ‘framework for (encouraging) self-regulation’ offers an opportunity for more meaning and depth in this process. Examples of effective self-regulation strategies also offer inspiration and challenge. Together with teachers, we are currently investigating how this works in a classroom context.

Photovoice discussions were the basis of the design of our interaction tool. We determined that pupils came to a better understanding of themselves and their self-regulation through these discussions (1) because they were encouraged/challenged to tell their story themselves and (2) because they were encouraged during the discussion to see their story in relation to the stories of others. *A pupil will, for example, listen to the story of an enthusiastic fellow pupil about how he keeps trying, even if it’s difficult and it fails every time. This pupil can then wonder whether he could also persevere like that, whether or not he recognises that story. A pupil might have considered himself persistent, but have to revise that perspective after hearing this story.*

We determined that Photovoice wasn’t about the individual story of each pupil as much as it was about a co-story. What do we learn from each other and together from these stories and converations about self-regulation? And how can we continue ’writing’ this story about self-regulation together? During the reporting phase, pupils reached one joint answer to the research question. They did this by looking for what connects them in the different stories. In this study, in keeping with a social constructivist approach to learning, we view self-regulation as a concept and process that receives meaning within a social context. Collectively giving meaning to self-regulation like this is central to the interaction tool that we developed. We are now investigating how this co-story about self-regulation can develop into enriching the learning environment together.

In bepaalde bestaande methodieken rond zelfsturing wordt eerder vertrokken van een individueel begeleidings- of reflectiemodel naar meer zelfsturing. We nemen in de testfase van ons onderzoek ‘socialy shared regulation’ als centraal uitgangspunt: in de klas samen de verantwoordelijkheid nemen over mekaars zelfregulatie via samen-sturing.

During the Photovoice discussion, not only was the meaning of self-regulation determined together, but pupils also took up responsibility for each other’s self-regulation together. We found that pupils regulated each other. The term for this in the literature is ’socially shared *regulation’* (Hadwin et al., 2018). We believe the power of this collective process is insufficiently used in classroom contexts. In some existing methods about self-regulation, the starting point for increased self-regulation is an individual guidance or reflection model. In the testphase of our research we take ’socially shared regulation’ as a key starting point: collectively taking responsibility for each others self-regulation in class through: regulating

together through dialogue. Pupils and teachers share responsibility for designing a learning environment that supports their way of self-directing and that further challenges and supports their self-regulation. Research into cooperative work confirms that directing (learning) together lead to more involvement and participation from pupils, which leads to stronger results. We are now investigating, together with teachers, how this process of co-direction takes shape in classes, what the experiences of teachers and pupil are, and which factors help and hinder its realisation in a classroom context.

REFERENCES

Adriaenssens, P. (2006). *Praten met je tiener. De stap van discussiëren naar onderhandelen.* Lannoo: Tielt.

Beerten, M & van Waterschoot, T. (2020). *Herstelgericht handelen. Groeikansen voor de hele school.* Gompel & Svacina BV: Sint-Niklaas.

C. Wang & M.A. Burris (1977). Photovoice: concept, methodology and Use for participatory Needs Assessment, Health education and behavior, vol 24(3), 369-387.
Clement, J. (2016). *Inspirerend coachen: de kunst van uitdagend en dynamisch communiceren.* Tielt: Lannoo.

Cohn, Ruth C. *Van psychoanalyse naar themagecentreerde interactie. Bouwstenen voor een pedagogisch systeem voor onderwijs, vorming en hulpverlening.* Nelissen, Soest, 1997-4.

Crone E. (2012). *Het sociale brein van de puber.* Prometheus: Amsterdam.

Crone, E. (2008). *Het puberende brein. Over de ontwikkelig van de hesenen in de unieke periode van de adolsentie.* Prometheus: Amsterdam.

De Backer, L., Van Keer, H., & Valcke, M. (2021). Examining the relation between pupils' active engagement in shared metacognitive regulation and individual learner characteristics. International Journal of Educational Research.

De Haan, D. (2012). *Verkennen, verbinden, verrijken: didactiek voor een goede interactie met jonge kinderen.* Hogeschool Inholland, Universiteit Utrecht.

De Smul, M., Heirweg, S., Van Keer, H., Devos, G., & Vandevelde, S. (2018). How competent do teachers feel instructing self-regulated learning strategies? Development and validation of the teacher self-efficacy scale to implement self-regulated learning. *Teaching and Teacher Education, 71*, 214–225.

Deci, E.L. & Ryan, R.M. (2012). *Self-determination theory*.

Delfos, M. (2016). *Ik heb ook wat te vertellen! Communiceren met pubers en adolescenten.* SWP uitgeverij: Amsterdam.

Determinants of self-regulated learning practices in elementary education: a multilevel approach

Donggil, S; & Dongho, K. (2021) Effects of self-regulation scaffolding on online participation and learning outcomes, *Journal of Research on Technology in Education, 53:3,* 249-263, DOI: 10.1080/15391523.2020.1767525

Emmers, E. (2019). *Arts based research: giving a voice to the voiceless. SGEM International Multidisciplinary Scientific Conference on Social Sciences and the Arts (conference proceedings*). Albena, Bulgaria

Hadwin, A., Järvelä, S., & Miller, M. (2018). Self-regulation, co-regulation, and shared regulation in collaborative learning environments. In D. H. Schunk & J. A. Greene (Eds.), *Handbook of self-regulation of learning and performance (pp. 83–106).* Routledge/Taylor & Francis Group.

Laevers, F. & Heylen, L. (2013). *Een procesgerichte aanpak voor 6- tot 12-jarigen in het basisonderwijs.* Averbode: Cego Publishers.

Löhmer, C. en Standhart, R. *Themagecentreerde interactie. De kunst zichzelf en groepen te leiden.* Garant, Leuven/Apeldoorn, 1998.

Medina, J. (2018). *Attack of the Teenage Brain! Understanding and Supporting the Weird and Wonderful Adolescent Learner*. ASCD

Poppelmonde, W.; Van Rossem, K.; De Swaef, G. & Fransoo, P. (2001). *Filosoferen met jongeren.* Kluwer, Antwerpen.

Steinbert , L. (2015). *The age of opportunity. Lessons from the new science of adolescence.* Houghton Mifflin Harcourt: Chicago.

Thomas, V.; Peeters, J. , De Backer, F. & Lombaerts, K. (2020). Determinants of self-regulated learning practices in elementary education: a multilevel approach. In *Taylor & Francis online* pp 126-148.

Van Camp, T. et al. (2015). *Krachtig leren, cognitief neurowetenschappelijk benaderd.* Acco: Leuven.

Vangrinsven M. & Vissers B. (2016). *Kracht in samenwerken. Regie nemen in processen van zelfsturing en teamontwikkeling*. Conference paper.

Wentzel, K. R. (2017). Peer relationships, motivation, and academic performance at school. In A. J. Elliot, C. S. Dweck, & D. S. Yeager (Eds.), *Handbook of competence and motivation: Theory and application (pp. 586–603).* The Guilford Press.