"It is awesome to have both. But the priority should be obvious."

(Roman Rackwitz)
CEO Engaginglab

Motivation

it's not always what you see.

AUTONOMOUS MOTIVATION

when a child grows up in a non-motivated environment

RESEARCH DISSERTATION
Ida de vries
OLB Exchange research minor 2016 - 2017
Stenden South Africa

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Summary

This research was conducted at School X in grade Y. The school has to deal with the problem of unmotivated learners and low results. The children are not motivated to learn, have unmotivated attitudes, and they show bad behavior during classes. They don't do their homework, they don't listen to the teacher and they are bullying each other during class. The children are from townships and have a unmotivated environment. The following research question was set by reference to the problem: "How can a teacher from School X stimulate the autonomous motivation of children of grade Y from an unmotivated environment?".

Literature has been studied and questionnaires administered to teachers and students to get an answer to this question. Also there are performed two lessons, the one lesson the children received free choices in the processing of the material, the other lesson they did not.

The research has shown that structure, autonomy support, and interaction improve the three psychological needs: competence, autonomy, and relatedness (Deci & Ryan, 2000). The experiment demonstrated that working with the direct instruction model provides structure and that giving the free choices in the processing of the material improved motivation and performance.

Content

Introduction

"When you're not doing your homework, you will never get a good job." "Make your mother proud!" and "Well done!". "It seems like the children of today don't want to learn. I always did what the teacher asked me. Why don't my students do so?" teachers are saying. The teachers have a difficult job. They don't only have to teach the children but also have to motivate the children to learn. Every teacher has his own way to motivate the children. I'm graduating from the teacher training for primary school. During my teacher training, I saw different tutors who motivated in different ways. During my internship I used their manner of working, but what will I do when I have my own class? How can I motivate my students? How can I make sure that they want to learn? Can I motivate the children from an unmotivated environment? Does a teacher actually have grip on the motivation?

The research takes place at School X in a township (South Africa). The school suffers with the problem of unmotivated learners and low results. During various observations, I found out that many teachers find it difficult to keep a grip on the class and motivate the children. The teachers give punishments and yell a lot at the children. The children are not motivated to learn, have unmotivated attitudes and they show bad behavior during classes. They don't do their homework, they don't listen to the teacher, and they are bullying each other during the class.

The learners at School X are coming from townships. The environment of these children is not motivated and they live with the thought of everything happens to you and you can't change your fate. During my conversation with the supervisor of the learning support he said: "They think because they are born in a township, they will never make it. But that's not true."

A teacher wants to teach things to his students. A teacher would like students in the class who are happy and motivated to learn, because if the students are motivated to learn, they are open to the information the teacher wants to teach them.

According to Stevens (2002), learning outcomes will arise spontaneously when students are autonomously motivated (motivated from inside). Therefore I believe teachers should get more information about how to stimulate the autonomous motivation of the children, so the children will learn more from the classes and the teachers will get more satisfaction from their work.

The school wants to motivate teachers and learners, because when they are motivated they will achieve the highest results (Stevens, 2002). This will be an important advantage for the school because the school likes to have the highest possible results. For the children, it is also important to get the highest possible results. Good results mean a better future for these children.

We talked several times about motivation during my teacher training, but I have never delved into the theory about motivation. I did a lot to motivate the children during classes, so they were motivated to learn. But this has always been directed to the external motivation. I would like to delve into the theory of motivation in general. In addition, I want to focus on promoting autonomous motivation by children from an unmotivated environment. During my internship in a special needs school in the Netherlands I had to deal with children from an unmotivated environment. Also, at the school in Port Alfred, teachers have to deal with children from an unmotivated environment. For me, this is an important motivation for this research, but it is also important for teachers at this school and all other teachers in the world who have to deal with this problem.

1. Problem analysis

The practical problem is based on observations of different lessons and conversations with teachers, children, the principal and the supervisor of the learning support.

1.1 Practical problem

The school has to deal with the problem of unmotivated learners and low results. The children are not motivated to learn, have unmotivated attitudes and they show bad behavior during classes. They don't do their homework, they don't listen to the teacher and they are bullying each other during class. Also, their results are below average.

The teachers find it difficult to make sure the students are paying attention and to keep the learners motivated. The teachers give punishments to the children and yell a lot. There is almost no discussion between pupils and teachers because the classes are overcrowded. Also, the teachers declare and show that they are not motivated to teach anymore.

The school wants to motivate teachers and learners, because when they are motivated they will achieve the highest results (Stevens, 2002).

The problem arises during the lessons. Five minutes after the teacher starts his/her lesson, the children are not paying attention anymore; they talk with each other and walk around the classroom. It also takes place at the houses of the children. The children don't do their homework.

It is a big problem that teachers and children are not motivated at school. This has a bad influence on the results of the children. According to Stevens, the children would be learning spontaneously when they have intrinsic motivation (Stevens, 2002). When the learners have the intrinsic motivation they will benefit more from the education. The better the education, the better the result. And the better the results, the better future for the children. A good result will provide better job opportunities, but not only the result will provide a better job opportunity also a good attitude. Intrinsic motivation is the foundation of a good attitude (Deci & Ryan, 2000).

The learners at School X are coming from townships. Most of the parents aren't educated or didn't finish all years of education. They don't have a lot of money to spend and the children have to take care of the little brother and sisters. The environment of these children is not motivated and they live with the thought of everything happens to you and you can't change your fate. During my conversation with the supervisor of the learning support he said: "They think because they are born in a township, they will never make it. But that's not true."

1.2 Relevance of the research

This research is interesting and valuable to read for all teachers or other people and settings who have to deal with unmotivated children at the primary and secondary school. It is important to have knowledge about intrinsic and extrinsic motivation because then you know how to stimulate the motivation to achieve the highest results. This research is targeted to the children from townships of X but these children aren't the only one with this problem. Also in the Netherlands, there are children who are growing up in unmotivated environments. Their parents have bad experiences with a school of their own childhood and they transfer it to their children. As a teacher you have to know how to stimulate the intrinsic motivation of these children.

2. Theoretical framework

Before starting the research, it is important to create a clear context. This context consists of theoretical information about education systems of South Africa, intrinsic and extrinsic motivation and different influences on the children.

2.1 The education system of South Africa

The education system of South Africa is different in comparison with the Netherlands. I searched for information about the history and education system of South Africa, so I understand the culture and the school better. This is important for doing my research.

South Africa a Rainbow Nation

Cape of Good Hope was a marketplace for trade between Europe and India. Here people of different origins located. Dutch people and Englishmen were fighting to control the country. After a hundred years of different wars, the white government began to abuse their power. Non-whites have to live in separate areas. The system called apartheid became a law (Apartheid, 2010) Nelson Mandela wanted to change this, but he was arrested. He went to the prison at Robben Island for 26 years. When he came out of prison, he worked together with Mr. Klerk. Nelson Mandela and the government of Mr. Klerk repealed the law of apartheid. The official end of the apartheid system was in 1994.

The difference between poor and rich are very big in South Africa by the effects of the apartheid. By the effect of the difference between poor and rich, not everybody has had a good education. Thereby, the government gives a lot of money to develop the education.

Education system

The education of South Africa is divided in bands. There are three bands: general, further and higher education. The general education includes primary school and secondary school and adult basic education. It is from grade R till 9. Further education is also a secondary school, but more career-oriented. You receive diplomas and certificates at this level (Education in South Africa ,2015). Higher education is not accessible for everybody, because you need a lot of money. You go to public or private universities to get certificates or degrees.

Primary school

The primary school is from grade R (0) till grade 6. During grade R the children are 4 or 5 years old. During grade 1 the children are 6 or 7 years old. During this grade they will learn to read and write. Grade R till grade 3 are the fundamental phases. During these phases, they learn basic numeracy and literacy. In these grades, they have one class and one teacher. During the intermediate phase they have different teachers for different subjects. The intermediate phase is grade 4 till grade 6.

The subjects they teach in the intermediate phase are: languages (English and Afrikaans, Xhosa (depending with learning area)), mathematics, natural science, life orientation, social science, economic, and arts and culture. (Province of the Eastern Cape Department of Education, 2004)

BAND	SCHOOL GRADES	NQF LEVEL	QUALIFICATIONS
HIGHER		8	Doctor's degree
		7	Master's degree
			Honours degree
			Postgraduate diploma
		6	General first degree
			Professional first degree postgraduate
			Bachelor's degree
		5	First diploma
			Higher certificate
			Certificate
FURTHER	12	4	Diplomas
	11	3	Certificates
	10	2	
GENERAL	9	1	Grade 9 / Adult Basic Education and Training level 4
	8		
	7		
	6		
	5		
	4		
	3		
	2		
	1		
	R		

Figure 1, Education system of South Africa (SouthAfricainfo, 2015)

Challenges

There are a lot of education challenges in South Africa. There are resource issues, staff related issues and learner issues. These challenges also occur in the School X.

The motivation of the teachers in South Africa is not really high, because there are not a lot of instruction materials and teaching materials. There are not enough relevant textbooks and there are un-resourced libraries. This makes teaching to big groups of children more difficult. Also because the poor conditions of buildings, shortage of classroom space, disorderly learning environments and shortage of facilities, and there is not enough time on tasks. Factors that contribute to low educator motivation and moral include heavy work and working conditions. Because of the big groups, there is a high educator to learner ratio. Another factor for the low motivation is the education reform policies and the policy overload. The last factor is the social and community factor (Legotlo, 2014).

The children's motivation is not really good. They don't have a lot of discipline and are not well prepared. Problems as a result of poverty are substance abuse and psychological problems (Legotlo, 2014). The poverty gives the children less opportunity because of cultural and social factors. These factors are determinative, because the cultural and social factors are not good enough (Oni, 2013). Not all of the children live with their parents in a house with a quiet room to do their homework. Some children live with grandparents or aunts or have a lot of brothers and sisters and live in a small house. Rural school learners are further burdened by differences between the language used as the educational medium and the language spoken at home (Legotlo, 2014).

A lot of children drop out or repeat grades because of the bad health environment. There are children who learn slower than other children because they have health problems that are not diagnosed. These children will be seen as slow learners (Fleisch, 2008).

Because of the shortage of appropriately trained educators, there is not enough competent staff. The staff has high job insecurity, because they don't know enough teaching and learning strategies and there is a lack of staff discipline (Legotlo, 2014).

Action Plan
The government made a plan to realize better education called: "Action Plan to 2019: Towards the realization of Schooling 2030". The teacher will get more training about effective teaching and inclusive education. Children would be more motivated and there would be consequences when the child is not coming to school. The government would give more learning and teaching materials. They also want to improve the parent involvement (Department of basic education, 2016).

2.2 Motivation theory
"The behavior of people has a reason and a purpose. We call it motivation." (Hooijmaaijers, Stokhof, & Verhulst, 2012, p. 65). There are two kinds of motivation: intrinsic and extrinsic motivation. If the teacher makes the curriculum nice so the children are playing and learning at the same time, the children use their intrinsic motivation. This motivation doesn't require a lot of energy and concentration. When the children just have to make exercises the children use their extrinsic motivation. They want good results and they want a reward or a compliment from the teacher. This motivation requires a lot of energy and concentration (Hooijmaaijers, Stokhof, & Verhulst, 2012). There are different theories about the intrinsic and extrinsic motivation. Below I will describe the Operant Conditioning of Skinner, the Basic Needs Theory of Abraham Maslow, and the Self-determine Theory of Deci & Ryan.

Operant conditioning
Skinner's theory about "behavior shaping" is one of the most used theories in education. He claims that a child can be motivated through rewards and punishments. He tested this theory with experiments using laboratory mice. When you want to change the behavior you have to respond to the first behavior. There are four responses: positive reinforcement or reward, negative reinforcement, no reinforcement (ignore) and punishment (Mergel, 1998). If the child shows a good behavior, you give a positive reinforcement or reward. The child will repeat his

behavior so he gets another reward. You can also stimulate a child to repeat his behavior by a negative reinforcement. A negative reinforcement is to take away a negative situation. When a child shows behavior you don't want to see, you can just ignore him. When he doesn't get attention, he will change his behavior. If the child shows behavior you don't allow, you can give him a punishment. It is not effective if there is too much time between the behavior and the responses. Positive reinforcements are more effective than punishment (Skinner, 1979).

Basic needs

Behavior is something we do. According to Skinner, we respond to our environment (rewards and punishments) (Skinner, 1979). Psychiatrist Alfred Adler discovered that in all of our actions we always have, either consciously or unconsciously, a purpose. This purpose is always aimed at satisfying a need (Geel, 1995). American psychologist Abraham Maslow (1908-1970) prepared a theory about five fundamental needs present in all people (Kruger & Schalkwyk, 1997). Maslow integrated some insights about human needs in his theory about the hierarchy of five basic needs present in all people (Hooijmaaijers,

The five basic needs:

1. Physiological needs
2. The need for safety and security
3. Social need
4. The need to respect and esteem
5. The need for self-realisation

Stokhof, & Verhulst, 2012).

The first, Physiological Needs, is the most important. You need food, shelter, clothes and rest to stay alive. The needs are ordered hierarchical: some needs are more fundamental than other needs. If you don't satisfy the physiological needs at first, you will die (Geel, 1995). The need for safety and security is the second need, "the need to protect life from

Figure 2, Maslow's hierarchy of needs (phdinparenting, 2010)

everything that may threaten it" (Kruger & Schalkwyk, 1997). Also the social security and fear of rejection plays an important role in the safety of people. Also, children will do everything in order to adapt to their peers. If they fit in, they are safe. Sometimes this will develop unwanted behavior.

The third need is Social Need. People need friendship, interaction with other people, love and togetherness. Younger children need connectedness with their teacher. The need to respect and esteem is also a social need. Only love and friendship is not enough, people need esteem and appreciation. Others can give you appreciation, but also self-esteem is a need. School is the perfect place to crumble all self-confidence. The students are assessed to their performance, behavior and commitment. If they often get negative feedback, their self-respect will be worse (Geel, 1995).

The last need is the need for self-realization. People develop all the powers and talents. They become the person one was intended to be, including the attitude, interests, background, education, hobbies, and expectations of life (Kruger & Schalkwyk, 1997).
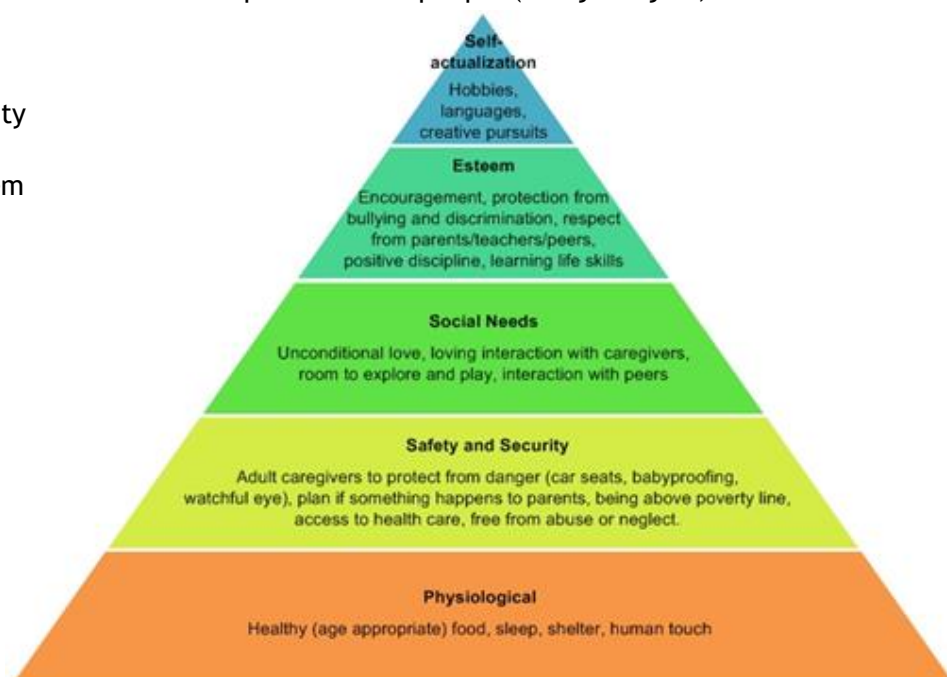
The need for self-realization is actually the latest one, but Maslow noted a need of all people (not individually), the need to know and understand. People in all different cultures want to have knowledge of the world and the mysteries of life. (Geel, 1995)

Self-determine theory

We imagine that every child is curious, vital, self-motivated and striving to learn. However, there are also children who are not motivated and don't do their responsibilities (Deci & Ryan, 2000). Deci and Ryan did research where circumstances enhance or diminish the intrinsic and extrinsic motivation. They created the Self-determine Theory. This theory describes the difference between intrinsic motivation and extrinsic motivation. Deci and Ryan found out, like Maslow, that we act to meet our needs. They describe three psychological needs: competence, autonomy, and relatedness (Deci & Ryan, 2000).

Intrinsic motivation

Intrinsic motivation is an impulse from the inside to do an activity. This is carried by autonomy and competence (Deci & Ryan, 2000). The intrinsic motivation for an activity will depend on interest, curiosity, challenging and the aesthetic values of the person (Deci & Ryan, 2000). The first research of Ryan and Deci proved that the intrinsic motivation was improved by positive feedback because positive feedback gives a higher feeling of competence. Later their research proved that positive feedback only improves the intrinsic motivation when there was a case of autonomy (Deci & Ryan, 2000). Beside autonomy and competence, also relatedness is an important part of intrinsic motivation. Anderson, Monooglan & Reznick did experiments with intrinsic motivated children with an uninterested teacher in 1986 (Deci & Ryan, 2000). They proved that the children get less intrinsic motivation after an extended time they had to work with this teacher. Naturally, the intrinsic motivation is an internal process. However, the relatedness is important to maintenance of intrinsic motivation (Deci & Ryan, 2000).

Difference between intrinsic and extrinsic motivation

In early childhood, the children discover the world from intrinsic motivation. After early childhood, there are more social pressures, so the child has to do not interesting things. The intrinsic motivation declines and the children use more extrinsic motivation (Deci & Ryan, 2000). The difference between intrinsic and extrinsic motivation is not only the autonomy, because extrinsic motivation also has an autonomous form. Intrinsic motivation is the importance of the pleasure activity. Extrinsic motivation is an activity with a goal. Also, when a child is motivated to make an exercise because he wants a good job when he is older, he is extrinsically motivated. He doesn't like the exercise, but he uses that activity to reach a goal. Intrinsic motivation is to satisfy with the activity itself (Deci & Ryan, 2000).

Extrinsic motivation

The classic theories describe extrinsic motivation as not effective in comparison with intrinsic motivation, but Deci & Ryan prove otherwise. Intrinsic motivation is not the only self-determine way of motivation. The Self-determine Theory describes different forms of extrinsic motivation which are dependent on the extent of the amount of autonomy. The forms go from internalization to integration. (Deci & Ryan, 2000).

The Self-Determination Continuum Showing Types of Motivation With Their Regulatory Styles, Loci of Causality, and Corresponding Processes
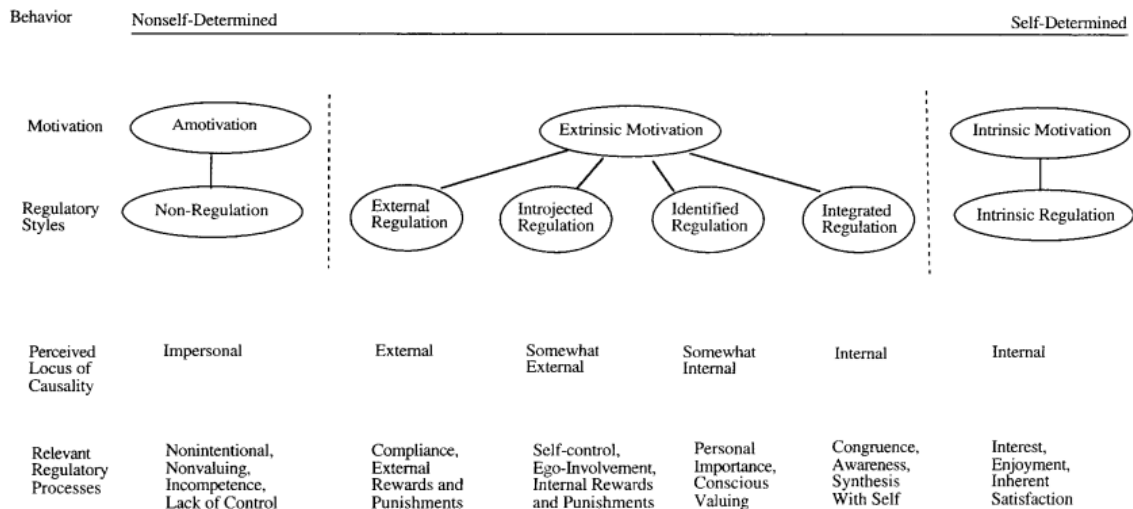

Figure 3,The taxonomy of human motivation (Deci & Ryan, 2000).

When a child is not motivated, there won't be results or the result would be low. This is because the child doesn't feel competent and the child has no control about his life. The lowest form of extrinsic motivation with autonomy is *external regulation*. The activities and behavior are controlled from externally. This is the form of motivation using external rewards and punishments. It fits with the Operant Conditioning Theory of Skinner. The second form of extrinsic motivation is *introjected regulation*. It is motivated from inside, but is aimed at avoiding punishments and guilt or to get rewards, pride and appreciation (Deci & Ryan, 2000).

Identified regulation is the third form of extrinsic motivation. The child does conscious behavior and activities because the activities are personally important, also named as regulation through identification. The child has more autonomy. The highest form of extrinsic motivation is *integrated regulation*. The activity is transferred and compared to other values and needs. Integrated regulation had the same qualities as intrinsic motivation, but extrinsic motivation has the activity a goal and intrinsic motivation has the activity as a pleasure (Deci & Ryan, 2000).

Controlled motivation versus autonomous motivation

The different forms of motivation of the Self-determine Theory are divided into controlled motivation and autonomous motivation (Vansteenkiste, 2007). Vansteenkiste created after reading of the self-determine theory a Two-way Theory about controlled motivation and autonomous motivation. Controlled motivation is motivation from externally. Among these motivations are *external regulation* and *introjected regulation*. Behavior taught by this motivation is not strong and when there are no teachers or parents, the behavior will not continue (Vansteenkiste, 2007). The autonomous motivation is intrinsic motivation or self-regulated extrinsic motivation. Among these motivations are *Identified regulation, integrated regulation* and intrinsic motivation. Because this motivation is from inside, the behavior will also continue when teachers or parents aren't present (Vansteenkiste, 2007).

2.3 Ecological System Theory

Bronfenbrenner is the founder of Ecological Education. He describes in his theory that human development is influenced by its environment. He distinguishes five systems: microsystem, macrosystem, chronosystem, exosystem and the mesosystem (Hooijmaaijers, 2009). The microsystem is closest to the child. This includes the family, school, and friends. Because this is the closest, these factors also have the most influence on the child. Under the macrosystem are religion, politics in the country, and the culture. The chronosystem consists of changes in life circumstances such as the death of a family member. The exostysteem includes the circles in which parents find themselves. The mesosysteem is what influenced the child outside the family life, such as school. Bronfenbrenner mentions interaction as the most important factor for the development of the child. When the interaction is better and more intensive, the better development for the child. Here he emphasizes the importance of the educator. They can create a good basis for interaction. Under educators are both parents and teachers (hooijmaaijers, 2009).

3. Problem statement

The purpose of this research and the main question are prepared to delimit the practical problem.

3.1 Research objectives

The purpose and questions are discussed with the teachers and principal. The purpose of this research is a three-way. I have a personal purpose, a purpose for the school and a social purpose.

The school wants to motivate teachers and learners, because when they are motivated they will achieve the highest results (Stevens, 2002). The teachers need clear information about intrinsic motivation so they know how to stimulate the children's motivation and results.

I want to get the best out of each child. To achieve the best results for the children they have to be intrinsically motivated. I want to know how I can stimulate the intrinsic motivation of the children.

This research is also a social importance because there are children everywhere in the world who are growing up in unmotivated environments. Teachers need clear information about intrinsic and extrinsic motivation and how to stimulate intrinsic motivation by these children to achieve the highest results.

3.2 Main question & research questions

The main question was created based on the purpose of the research and the survey of literature. Improving the intrinsic motivation was (meant to be the initial approach)/first goal, but through reading that was discovered to be impossible. One person can't change the entire school system, so the main question was changed to improve autonomous motivation.

"How can a teacher from the School X stimulate the autonomous motivation of children of Grade Y from an unmotivated environment?"

3.2.1 Research questions

The research questions are created to get an answer to the main question.

→ To what extent are students in Grade Y at the School X motivated right now?
→ Which influence do teachers have on the motivation of the child?
→ Which influence do parents have on the motivation of the child?
→ Can a teacher stimulate the autonomous motivation of children in Grade Y at the School X through giving them free choices during the class?

3.3 Hypothesis

The hypothesis is created on the basis of the theoretical framework. In my opinion, the parents have a big influence on the children, but also a teacher can make a different. In my opinion the autonomous motivation will improve when the autonomous, competence and relatedness (Deci & Ryan, 2000) will be improved. To create a good, safe, and structured educational climate, by using games, to stimulate interaction between students and to give students free choices during class, the autonomous, competence and relatedness would be improved and so does the autonomous motivation.

The problem statement is discussed with the principal and the involved teachers. They agreed. This principal has given his agreement for all research activities that will take place and that agreement is recorded in a letter (Appendix B).

4. Research strategy

To carry out the research systematically, use is made of the cycle (Donk & Lanen, 2012). Vander Donk and van Lanen describe in their book seven steps for carrying out a design research. The seven successive steps: Orientation, Focus, Planning, Collection, Analysis and Conclusion, Designing, Reporting and Presentation.

Going through these steps will lead to a good main question and ultimately to a well-founded conclusion.

Figure 4, Research cycle (Donk & Lanen, 2012)

4.1 Research group

This research will take place at the School X in the township Station Hill (Port Alfred). This school has 835 learners and 22 educators. This school is situated at Station Hill since 1987, a township that was established as a separate residential area for Coloured people under the apartheid system of Group Areas Act. The school only accommodated learners from Grade R until Grade 9. The language of instruction is English and Afrikaans. There are also children from Nemato (Nelson Mandela Township) because they teach Afrikaans.

The children are taught in English from grade 4, that is why our research has to take place in grade 4 or 5. The children in grade 6 are, compared with Netherlands, no longer in the age of the primary school. A different study has already been carried out in grade 4; therefore this study will take place in grade 5. Grade 5 is compared to the Netherlands almost the same as "group 7". The children's age in grade 5 has an average of eleven. There are two classes in grade 5. 5A is the Afrikaans class and 5B is the English class. To make it easier to interact with the children, the focus will be on Grade Y. There are 48 learners in class 5B.

4.2 The Data collection method

In this research there are different methods of data collection used to get an answer to the questions.

4.2.1 Survey

I want to ask teachers and students different questions. I can do an interview or take a survey. I used a survey, because I want to ask a big group of teachers and students so this wouldn't take much time and I will not influence the respondents (Donk & Lanen, 2012). I used multiple choice and open questions. Multiple-choice questions are good to compare, while open questions get opinions of the respondents (Donk & Lanen, 2012). I read different surveys. I compared the different surveys. I finally chose the Academic Self-Regulation Questionnaire (Deci & Ryan, 2016) for the students because this questionnaire makes the difference between controlled and autonomous motivation. I will use the version for learners with learning disabilities because I saw that the students found it hard to do questionnaires. I will create the questionnaire for teachers and parents based on the literature.

4.2.2 Observe

I will observe different teachers in grade 5. According to van der Donk (2009) there are different ways to observe. There exists a structured observation; this is a very detailed and systematic observation. You observe with the points you wrote down before. Furthermore,

there is a semi-structured observation. This takes place with points, but these points are not even clear as the structured observation. Finally, there is a free observation. This defines a main topic.

There are two methods to register an observation. This can be a descriptive observation or an observation scheme. The descriptive observation is a report of all the things you see during the observation. The observation scheme is a tick-off or a list with questions (Donk & Lanen, 2012). I will use an observations scheme, because I observe different classes and teachers and I want to compare these observations.

4.3 Plan of action

In the following scheme, the research activities are described, description in results, which persons are needed and when it's scheduled per sub question.

4.3.1 Research activities

Sub question	Research activity	Description in results (C5)
1. To what extent are students in Grade Y at the School X motivated right now?	- Prepare a questionnaire for students (Grade Y). -Taking the questionnaires of the students. *Method of data Collection: study, interview*	The outcomes will be present in a table and graphs. The outcomes will present in a two-way: average subscales and the relative autonomy index.
2. Which influence do teachers have on the motivation of the child?	- Reading literature. - Prepare survey questions for teachers (grade 5) and an observation scheme. - Taking the survey of teacher. - Observe different teachers during the class (grade 5A & 5B) *Method of data Collection: study, interview, observe*	The literature will be described shortly. Question 1 till 25 will be present in a table. Question 26 till 28 will be described. The highlights of the observe scheme will be described.
3. Which influence do parents have on the motivation of the child?	- Reading literature. - Prepare survey questions. - Visiting parents of at least 10 children of grade 5 (randomly chosen, after asking permission). - Asking the parents questions about their upbringing and the motivation of the children. - After my visits compare the answers with the motivations scores of the child (sub question 1). *Method of data Collection: study and visit*	The literature will be described shortly. Questions 1 till 3 and 10 will be described. Questions 4 till 9 and 11 till 15 will be present in a table and graph. Also the motivation of the child will be compared with the answers of the parents and described.

4. Can a teacher stimulate the autonomous motivation of children in Grade Y at the School X through give them free choices during the class?	- Reading literature. - Elaborate two lessons in mathematics. - One lesson: with free choices for children - Other lesson: without free choices for children. - Test the lessons. *Method of data Collection: experiments*	The literature will be described shortly. Compare both lessons get tested at: - The work of the children (how many exercises did they do and how many they did wrong) will be shown in a graph. - Children's reaction will be described. - Math teacher's reaction will be described.

4.3.2 Implementation
Some implementations and calculations need additional explanation. Below is described this explanation per sub question.

Sub question 1
The questionnaire for the children consists of 17 questions. The question consists of a proposition that the children can answer with always, most of the time, sometimes and never. After the children finished their questionnaires, the data will be calculated. The subscale scores will be calculate at first. The subscale score can be calculate through averaging the items of that subscale. There are four subscales: external regulation, introjected regulation, identified regulation and intrinsic regulation. All answers get a score; always scored 4, most of the time scored 3, sometimes scored 2 and never scored 1 point. Every question belongs to a sub scale.

External Regulation: 1, 6, 11, 13, 16
Introjected Regulation: 2, 4, 8, 9, 14, 17
Identified Regulation: 3, 12, 15
Intrinsic Motivation: 4, 7, 10

After calculating the averages of the subscales, we calculate the Relative Autonomy Index (RAI). The RAI will be calculate with the formula
(2x Intrinsic regulation) + Identified regulation – introjected regulation – (2 x external regulation) (Deci& Ryan, 2016).

Sub question 2
The questionnaire for teachers consists of 25 closed questions and three open-ended questions. Teachers can answer the questions with a score of 1 to 5, where 1 is disagree and 5 agree. The points of question 4 are used in the opposite direction, so a 1 is a 5 value and a 5 is a 1 value. The questions are divided into categories, based on the literature. Per category there will be an average, so that it is possible to compare the relationships between them. Every question belongs to a category.

Teacher's motivation: 1,2,4
Children's motivation: 3
Relation with children: 5,6,7,8,9,10
Structure: 12,13,15,16,17
Control: 19,23,24
Autonomy support: 11,14,18,20,21,22,25

The parents will be asked if they agree to a home visit. From all notifications, at least ten parents will be chosen randomly. The survey is conducted during the home visit.
The results will be presented per child/parent because the relationship between the motivation of the child and the education of the parents can be compared.

Sub question 4
The worksheets of both classes are checked and per pupil will be the number of exercises and the number of good made exercise written. Thereafter, the average of all the students will be calculated. The percentage of well-crafted exercises will be calculated.

At the end of each lesson, there will be a reflection and evaluation take place. Students are able to indicate what they thought of the lessons. They will show this by holding their hands high or down. High means good, low means not good.

During the lessons, the teacher gives feedback on the lesson form. It is used to gauge the opinion of the teacher.

4.3.2.1 Ethical issue
The sub question about the parents can be seen as an ethical issue, because some parents are ashamed of their work and their unemployment. They may feel ashamed for their home because not all people in the townships are well endowed. During the interview, there has to be shown some consideration for the parents.

4.3.3 Planning

Sub question	Who is needed?	When scheduled?
1. To what extent are students in Grade Y at the School X motivated right now?	- Collaboration of the students from Grade Y. Also need permission of a teacher to use his/her lesson time.	Preparing survey/observation: week 40. Taking the surveys: week 41. Week of 12th October 2016. Report survey: week 41.
2. Which influence do teachers have on the motivation of the child?	- Collaboration of all teachers in grade 5.	Reading literature: week 39 & 40. Preparing survey/observation: week 40. Taking the surveys: week 41. Report survey: week 41. Observe: week 41, 42 Monday, Tuesday and Wednesday.
3. Which influence do parents have on the motivation of the child?	- Collaboration of the parents for visiting. Also need collaboration of the principal to organize the visits.	Reading literature: week 39 & 40. Visiting parents: Planning with parents in week 41 till 44.

4. Can a teacher stimulate the autonomous motivation of children in Grade Y at the School X through giving them free choices during the class?	- Collaboration of the teacher of Mathematics.	Experiment on Monday 31th of October 2016. Lesson 1: 11:35 – 12:20h. Lesson 2: 13:20 – 14:05h.

5. Results

The results and the difference in implementation are described per sub question below.

Sub question 1

The first sub question was: "To what extent are students in Grade Y at the School X motivated right now?"

Data collection

As was described in the plan, the questionnaires were conducted in Grade Y on 12 October 2016 (Appendix, C). The children were asked if they wanted to participate in this research. All 48 children filled in the questionnaires. Not all questionnaires could be used, because there were a couple of children who didn't answer all the questions and to make the calculations all the questions have to be answered. Finally, there were 39 of the 48 questionnaires that were usable. This is more than eighty percent of the group, so it will give a good representation of the motivation of the children in Grade Y.

Below the results are described in two ways; the subscale scores and the relative autonomy index.

Subscale scores

The controlled motivation is motivation from externally. Among this motivation are *external regulation* and *introjected regulation*. The autonomous motivation is intrinsic motivation or self-regulated extrinsic motivation. Among this motivation are *Identified regulation, integrated regulation* and *intrinsic motivation* (Vansteenkiste, 2007). Children's motivation comes from different regulations. Based on the questionnaires, the value per regulation for each child is calculated. The table shows the different value of each subscale, so the quantities the children are controlled or autonomously motivated will be viewed. The maximum score per regulation is 4; the minimum score per regulation is 1.

What stands out is that both girls and boys have the same score at the external regulation while there are 23 girls and 16 boys. The difference between girls and boys is not big, except at the intrinsic motivation. The difference between the ages are big, only the intrinsic regulation is almost the same.

		N	Intrinsic regulation	Identified regulation	Introjected regulation	External regulation
Sex						
	Female	23	2,73	3,26	2,80	3,31
	male	16	3,06	3,19	2,78	3,31
Age						
	10 years	3	3,00	3,47	2,27	3,40
	11 years	26	2,85	3,32	2,88	3,35
	12 years	9	2,96	2,99	2,78	3,20
	13 years	1	3,00	2,33	2,33	2,00
Total		39	2,90	3,23	2,79	3,31

Figure 5, Table subscale scores

Relative autonomy index

The Relative Autonomy Index (RAI) indicates the quantity of self-regulation (motivation). The controlled motivation is weighted negatively. The external subscale is weighted -2; the introjected subscale is weighted -1. The autonomous motivation is weighted positively. The identified subscale is weighted +1, and the intrinsic subscale is weighted +2. The more controlled the regulatory style represented by a subscale, the larger its negative weight; and the more autonomous the regulatory style represented by a subscale, the larger its positive weight (Deci & Ryan, 2016).

In this graph are the RAI scores of all 39 children presented. The graph shows that most of the RAI scores are negatively weighted.
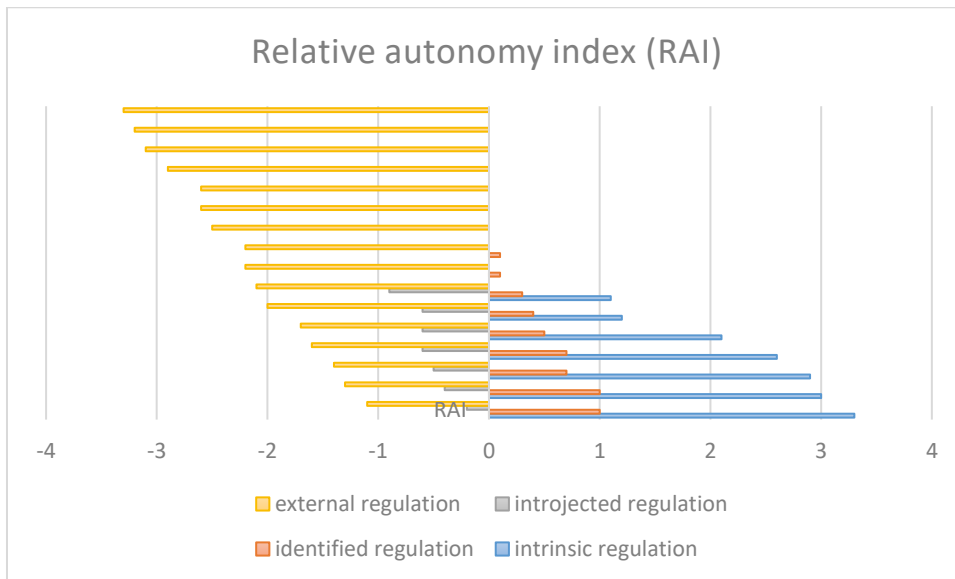

Figure 6, Relative autonomy index

Sub question 2

The second sub question was: "Which influence do teachers have on the motivation of the child?"

Data collection

As was described in the plan, the questionnaires were conducted by teachers in week 41 and 42 (Appendix, D). The teachers were asked if they wanted to participate in this research. All 7 teachers of grade 5 filled in the questionnaires. It was hard to observe lessons (Appendix E), because sometimes there were no teachers. I tried to visit 10 classes, but at the end I visited six classes.

Below I described the theory, the results of the questionnaires, and the highlights of the observations.

The influence of teachers

According to Vansteenkiste (2007), the interpersonal style of the teacher has a big impact on the quality of the motivation of students. The teaching style refers to the general attitude of the teacher at compared to its students. There are two things that stimulate the autonomous motivation: structure vs. chaos and autonomy support vs. control (Vansteenkiste, 2007).

Structure gives the children hold; the children know what is expected of them. A teacher can provide structure in two areas, namely the disciplinary part and in the learning process of students (Vansteenkiste, 2007). The disciplinary part is about establishing rules and

consistently enforcing them. Structure offered to students' learning gives students a sense of competence (Skinner & Belmont, 1993). By providing the material in small steps, giving tips, positive feedback and challenge is the structure achieved (Vansteenkiste, 2007).

Autonomy support consists of three parts: *Identify*, *Nurture* and *Construct* (Vansteenkiste, 2007). Identify is about gain insight into the interests of the students. This can be done by interactively teaching or to engage in a personal conversation with a student. Children are respected and they feel that they are listened to. Time to do work independently is a part of nurture. Also, when students get the possibility to do experiments and get free choices during the lessons, it's about nurture. During school, the material is not always in the area of interest of the student. By providing the material in a meaningful, realistic, and concrete way, students can still be motivated to work on the assignment. The section construction goes about building interest in another field, to reason well the importance of the subject matter (Vansteenkiste, 2007).

The teacher with a controlled way of teaching emphasizes results, gives criticism and gives solution instead of giving tips. This teacher gave orders and used language like "you have to ..", "I expected .." and "you should ...". This teacher gives conditional positive feedback and responded to feelings of guilt. "Such monitoring teaching style, which is certainly motivating, only bring short-term changes with it. Because the students' behavior is dictated, they will however only superficially the matter through and only briefly sustain the learned behavior." (Vansteenkiste, 2007, p. 55).

Despite the fact that freedom of choice is very important in class, it is not intended that the children receive unlimited freedom. This creates chaos, because the children do not know where to begin and no longer feel competent. Structure is essential in combination with autonomy support (Vansteenkiste, 2007).

In the past, did Skinner & Belmont(1993) research on the influence of teachers in the autonomous motivation of students. They also concluded that the structure and autonomy support were important in the development of student's motivation, but they also found that the relationship between teacher and student is very important. They found reciprocal effects between the student's motivation and the teacher involvement. The more the student was motivated, the more the teacher ensures the involvement, structure and autonomy support (Skinner & Belmont, 1993).

Results questionnaires

The table and the graph are the scores for the different parts compared well with the motivation of the children. All seven teachers from grade five participated the questionnaire. The maximum score per part is 5, the minimum score is 1. What is striking is that every teacher scores higher in the control than the autonomy support.

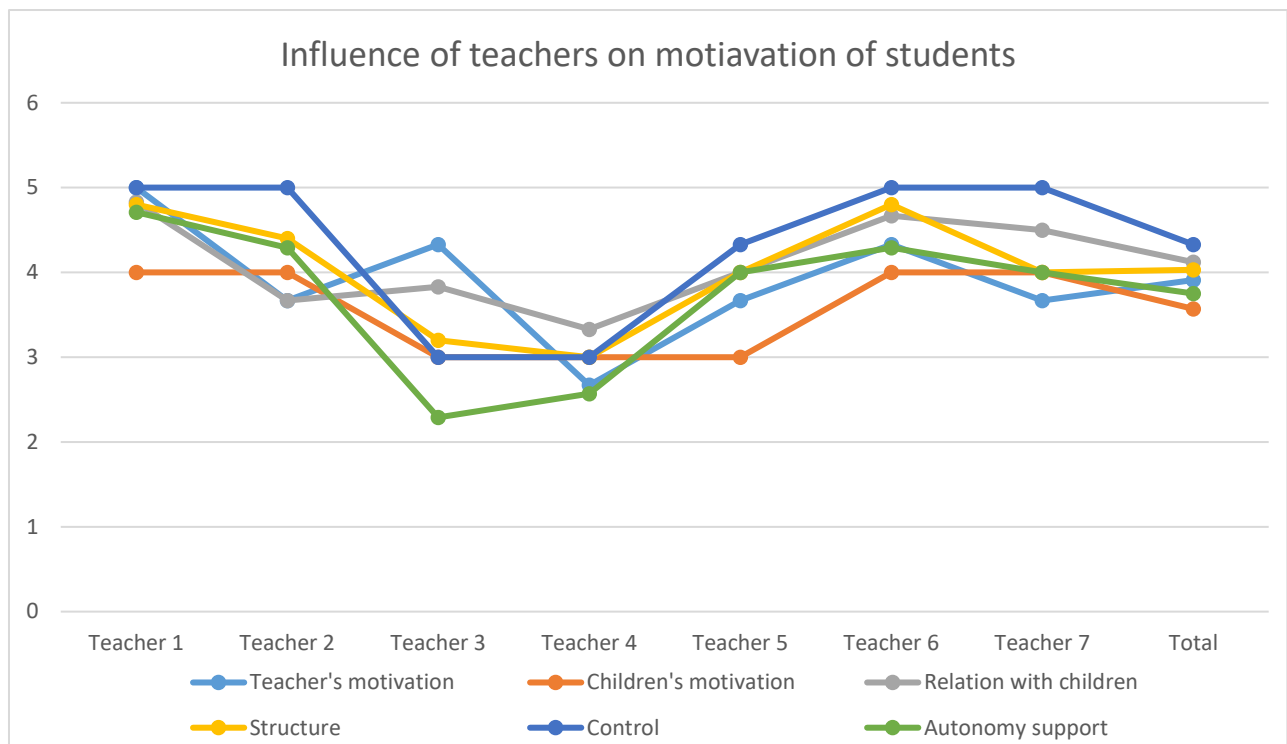|	Teacher's motivation	Children's motivation	Relation with children	Structure	Control	Autonomy support
Teacher 1	5,00	4,00	4,83	4,80	5,00	4,71
Teacher 2	3,67	4,00	3,67	4,40	5,00	4,29
Teacher 3	4,33	3,00	3,83	3,20	3,00	2,29
Teacher 4	2,67	3,00	3,33	3,00	3,00	2,57
Teacher 5	3,67	3,00	4,00	4,00	4,33	4,00
Teacher 6	4,33	4,00	4,67	4,80	5,00	4,29
Teacher 7	3,67	4,00	4,5	4,00	5,00	4,00
Total	**3,91**	**3,57**	**4,12**	**4,03**	**4,33**	**3,75**

Figure 7, Table influence of teachers

Figure 8, Influence of teachers

When asked whether they were motivated students, all teachers answered yes. Below are some quotes from the teachers. "My learners are motivated, although there are a number of learners who experience barriers to learning." "I try to motivate them and most of them are keen to learn about the topic(s). Sometimes they do not find the topic interesting and then it is hard to motivate or keep their interest." "I think my students are motivated because I encourage them a lot. I tried to explain the work as simple as possible/ give work that cater for different cognitive levels." "90% of the learners are motivated in my class. The 10% is unmotivated because of their learning barriers." The teachers indicated that they need more learning materials, more time to work with slow learners and more parental involvement.

Highlights observations
During my observations came in 40% of the classes show no teacher or the teacher ran away after five minutes to do other work. Eventually I visited six completed classes. Only one of the teachers communicated her lesson-goal with the students. Both the students and the teachers didn't seem happy and motivated very well. They scored an average of 2.67 (maximum is 5).

There was no interaction allowed in 66% of the classes. During these lessons, there was no interaction between students and teachers; only the teacher was speaking. Students did have interaction while working independently, but this was not allowed and penalties were here on, although the penalties were not applied consistently in all six classes. During one lesson, the children had a free choice as to raise their finger, or not, to give the answer.

Sub question 3
The third sub question was: "Which influence do parents have on the motivation of the child?".

Data collection
The data collection didn't go as planned. There were seven parents of the 48 who responded, and six of them gave an agreement for the home visit. It was difficult to make the appointments. Parents didn't take the phone call and the communication through the children

didn't go too well. Finally, there were two parents able to make an appointment. Of these, only one parent actually visited. The other parent was not present at home at the time of the appointment and later she said she didn't want an appointment anymore. Because one parent is not sufficient for a valid survey, it was decided to process only the theory in the results and to base the conclusion on this theory.

The influence of parents

"Self-determination theory identifies three dimensions of parenting; autonomy support versus control, involvement, and structure, as facilitating children's autonomous motivation in school."(Grolnick, 2009, p. 164) The autonomy support versus control and structure are the same as the theory of the teachers (sub question 2). When the parents give the children responsibilities and stimulate the initiatives of the children, they encourage the autonomy. It is important to have clear rules and to apply them consistently to provide structure to the children. Finally, it is also the parents' involvement is important. If the parents involved in the child, the child feels supported and the child will get more confidence (Grolnick, 2009). Parents can be involved in their children by helping with homework or talking with the children about what is going on.

Katz (2011) discovered in his research that there is a positive relationship between the autonomous motivation of children and parent involvement and to what extent the psychological needs (relation, competence and autonomy) are met.

Sub question 4

The fourth sub question was: "Can a teacher stimulate the autonomous motivation of children in Grade Y at the School X through giving them free choices during the class?".

Data collection

Both classes were scheduled on the same day, so the conditions were the same. Unfortunately, the lessons on Monday were canceled due to circumstances, which the lessons were conducted on Tuesday and Wednesday.

On the day of the experiment, there were fewer children present in the class, because there were a large number of children at the prize giving. During the experiment, there were 27 children present. During the control lesson, there were 47 children present. This is not a problem for the research, because there is used averages.

Autonomy support during lessons

The autonomous motivation is built on competence, autonomy, and relatedness (Deci & Ryan, 2000). In sub question 2 is the theory about structure and autonomy support of Vansteenkiste (2007) already discussed. Like Vansteenkiste Stevens (2002) also mentions the importance of a good material building for a sense of competence. He also emphasizes the importance of interaction in class, both interaction between teacher and student and between student and student. Interaction will strengthen relatedness, competence and autonomy (Stevens, 2002).

The direct instruction model (Bosch, 2012) provides structure for a well-structured instruction and allows for moments of interaction.

Vansteenkiste (2007) discloses that only freedom in the classroom do not improve the autonomy, but a diminished sense of competence. Stevens (2002) indicates that students develop more autonomy as they have choice in the way of processing material. Therefore, during this experiment, the students are given the freedom to choose what tasks they want to do and in what order. By using the direct instruction model, the students will be offered structure. The lesson are prepared in a lesson plan (Appendix F & G).

The work of the children

During both lessons the children received worksheets. During the experiment, the children were allowed to choose what tasks they wanted to do and in what order. During the control lesson, all pupils had to start with task 1 (worksheets at Appendix H & I). In both classes the children were structured instruction and worksheets were built at the same level. The averages are calculated and presented in the following graph. The graph shows how many students attended each lesson, how many exercises they have made and how many exercises they have made correctly.
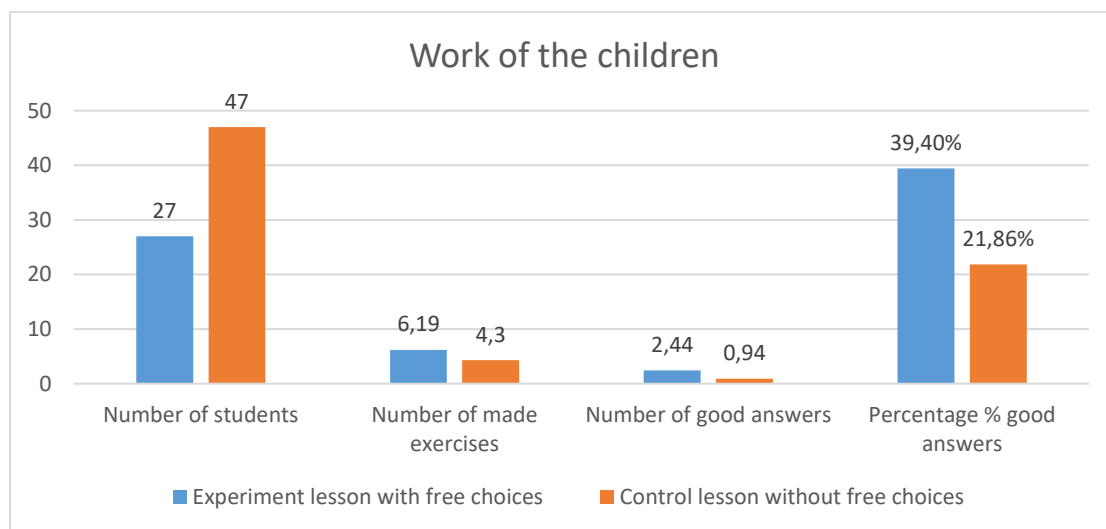

Figure 9, Work of children

Children's reaction

During the experiment lesson, the children were very focused at work. The had the opportunity to interact with each other and they helped each other. During the reflection, the children indicated that their attitude in the experiment lesson was better than the control lesson. The children found it difficult to say whether the learning goal was achieved. It was striking to see that the involvement with the reflection and evaluation was lower during the control lesson.

Math teachers' reaction

The Math teacher gave her reaction about the lesson on a feedback form. Below the reaction of both lessons are described.

Experiment lesson with free choices
"The lesson was well-structured. The learners were actively involved during the ball game. The teacher interacted with the learners. The learners found the lesson interesting. The activities/worksheets cater for learners with different cognitive levels and made use of Bloom's taxonomy (from the known to the unknown)."

Control lesson without free choices
"Good lesson. The learners were actively involved. The teacher were in control of the class. The activities was well-structured."

6. Conclusions, recommendations and discussion

The conclusion, recommendations and discussion will be described below.

6.1 Conclusion

First, the sub-questions will be answered, so that will be given a well-founded answer to the main question: "How can a teacher from the School X stimulate the autonomous motivation of children of Grade Y from an unmotivated environment?".

To what extent are students in Grade Y at the School X motivated right now?
The table (figure 5)shows that the children in Grade Y are mainly external regulated. According to the theory of Deci and Ryan(2000), this is de lowest form of extrinsic motivation. The activities an behavior are controlled from externally by using external rewards and punishments. After that they are mainly Identified regulated. They do activities and behavior because they are personally important (Deci & Ryan, 2000). In intrinsic regulation is there to see a big difference between boys and girls. The boys are more regulated intrinsically. Intrinsic motivation is motivation from inside. The children do the activities for fun. It is notable that between the ages almost no difference was seen in the intrinsic regulation, but with the other regulations there are big difference. The introjected regulation scores the lowest. On the basis of the theory, we can conclude that the children are not motivated by avoiding punishments or to get rewards (Deci & Ryan, 2000). Figure 6 shows the Relative autonomy index. It can be seen that there are a lot indexes are negative from this is to conclude that most children are motivated controlled. According to Vansteenkiste (2007), behavior taught by this motivation is not strong and when there are no teachers or parents, the behavior will not continue.

Which influence do teachers have on the motivation of the child?
Figure 7 and figure 8 show that the teachers mostly work from control rather than autonomy supportive. In these figures, it is not clear to see the influence of the teachers on the motivation. The teachers are all rated as fairly high motivation of the children. They hereby made no difference between the controlled motivation or autonomous motivation. But the theory of Vansteenkiste(2007) shows that structure and autonomy support stimulate the autonomy motivation and that chaos and control provide for the controlled motivation. During the observations, showed that both teachers and students had low motivation. This also was clearly when there was no teacher showed up in many cases. In most classes, there was no interaction allowed, while both Vansteenkist(2007) and Skinner & Belmont(1993) describe the importance of interaction.

Which influence do parents have on the motivation of the child?
Parents have the same effect on the motivation of children and teachers. They can also stimulate the autonomic motivation to be involved, to create structure and by its autonomy supportive. Chaos and control give here also the opposite effect (Vansteenkiste, 2007).

Can a teacher stimulate the autonomous motivation of children in Grade Y at the School X through giving them free choices during the class?
The graph (Figure 9) shows that children made more exercises during class with the free choices. The percentage of well-crafted responses nearly doubled. On the basis of the reactions of the pupils and the teacher shows that the attitude of the students is better in class

with the free choices. It can be concluded that by giving free choices in lessons both attitude / motivation and results will be improve.

"How can a teacher from the School X stimulate the autonomous motivation of children of Grade Y from an unmotivated environment?".

Bronfenbrenner states in his theory that both teachers and parents influence the student. If a student comes from an unmotivated environment, so a teacher can indeed mean something. The teacher does matter! He discloses that interaction is the most important factor in the development of the child. Stevens also has the Importance of interaction in the classroom. He says this improved relatedness. For as Deci & Ryan argue in their theory, autonomous motivation is supported by relatedness, autonomy and competence.

According to Vansteenkiste, competence can be promoted by providing the structure to the students. It is meant as a structure in maintaining clear rules and structure as the well-structure of the material. Autonomy can be improved by autonomy support. This means deepening the interests and values of the children. Also giving free choices in the classroom, working independently and argue the importance of the lesson encourages autonomy. By too much freedom in class, the children will feel incompetent, because they don't know what to do.

As demonstrated in the experiment is working with the direct instruction model provides structure and that giving the free choices in the processing of the material improved motivation and performance.

6.2 Recommendations

The recommendations are based on the conclusion.

To stimulate the autonomous motivation of children of Grade Y from an unmotivated environment as a teacher, it is recommended to:

- → Create rules together with students at the beginning of the year
- → Enforce these rules consistently
- → Stimulate interaction during lessons and to communicate clearly with the students when there is time for interaction.
- → Have a clear and well-structured building in exercises
- → Give children free choices by processing the material
- → Start your lessons with a lesson goal
- → Explain the importance of the goal
- → Reflect together with students
- → use Direct Instruction Model

To stimulate the autonomous motivation of children of Grade Y from an unmotivated environment as a principal, it is recommended to provide courses and workshops for teachers on the above recommendations.

If the compliance with these recommendations will develop the children's autonomy motivation because structure is provided, there is autonomy support and there is a good relationship created between teacher and students.

6.3 Discussion

Here are some critical notes in the research and recommendations for future research will be described.

During the experiment, a group of children were not there because they were at the prize giving. Probably, results at the lesson with free choices have been even higher, because all motivated and high-scoring students were absent from class. This study is based on an experiment at one moment in one class. To get a better picture of the impact of the structure, autonomy and support the free of choices in the lessons, the study should be conducted in multiple classes for a year. While this study looked at the influence of teachers on motivation in general and not specific to autonomous motivation. It would be interesting to do further research for. There were also only seven teachers participated in this study. To find out the influence of teachers on motivation, should be done research with more teachers from different schools.

It would be interesting to do further research about the influence of parents on the (autonomous) motivation of children. In this study, the conclusion was based solely on the literature.

On the basis of this study are interesting issues arise for a new researches. The conclusion showed that the relationship between teacher and student is very important, but how can you boost the relationship in a group of 50 students? Also teaching with different level groups in a large class is a good follow-up research, because this improves the competence of the children (Stevens, 2002).

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Appendix A, Logbook and reflection

X

Appendix B, Letter principal School X

X

Appendix C, Questionnaire children

Why I Do Things

Name:_____ Age: _____ Boy or Girl (circle one)

1. I do my classwork so that the teacher won't yell at me.
    Always   Most of the time   Sometimes   Never

2. I do my classwork because I want the teacher to think I'm a good student.
    Always   Most of the time   Sometimes   Never

3. I do my classwork because I want to learn new things.
    Always   Most of the time   Sometimes   Never

4. I do my classwork because I'll feel bad about myself if it doesn't get done.
    Always   Most of the time   Sometimes   Never

5. I do my classwork because it's fun.
    Always   Most of the time   Sometimes   Never

6. I do my classwork because that's the rule.
    Always   Most of the time   Sometimes   Never

7. I enjoy doing my classwork.
    Always   Most of the time   Sometimes   Never

8. I try to answer hard questions in class because I want the other kids to think I'm smart.
    Always   Most of the time   Sometimes   Never

9. I try to answer hard questions because I'll feel bad about myself if I don't try.
    Always   Most of the time   Sometimes   Never

10. I try to answer hard questions because it's fun to answer hard questions.

    Always   Most of the time   Sometimes   Never

11. I try to answer hard questions because that's what I am supposed to do.

    Always   Most of the time   Sometimes   Never

12. I try to answer hard questions to find out if I'm right or wrong.

    Always   Most of the time   Sometimes   Never

13. I try to do well in school because that's what I am supposed to do.

    Always   Most of the time   Sometimes   Never

14. I try to do well in school so my teachers will think I'm a good student.

    Always   Most of the time   Sometimes   Never

15. I try to do well in school because I like doing a good job on my school work.

    Always   Most of the time   Sometimes   Never

16. I try to do well in school because I will get in trouble if I don't.

    Always   Most of the time   Sometimes   Never

17. I try to do well in school because I'll fell really bad about myself if I don't do well.

    Always   Most of the time   Sometimes   Never

Appendix D, Questionnaire teachers

Questionnaire for teachers

Name:_____ Subject: _____

Teaching grade: _____ I'm teaching for _____ years now.

1. I'm happy to be a teacher.

    Disagree   1   2   3   4   5   Agree

2. I would like to have another job.

    Disagree   1   2   3   4   5   Agree

3. The students are motivated during my lesson.

    Disagree   1   2   3   4   5   Agree

4. My students' achievements really motivate me to get on with my job.

    Disagree   1   2   3   4   5   Agree

5. I greet my students.

    Disagree   1   2   3   4   5   Agree

6. I talk with my students about their interests and values.

    Disagree   1   2   3   4   5   Agree

7. I'm empathetic involved with my students.

    Disagree   1   2   3   4   5   Agree

8. I'm listening to my students so I can understand.

    Disagree   1   2   3   4   5   Agree

9. The students get time to share their opinions in class and they know at what time they may do so.

    Disagree   1   2   3   4   5   Agree

10. I have interaction with my students, during the class.

    Disagree   1   2   3   4   5   Agree

11. I provide opportunities for cooperative learning.

    Disagree   1   2   3   4   5   Agree

12. There are clear rules in my classroom and the children know these rules.

    Disagree   1   2   3   4   5   Agree

13. I enforce these rules consistently.

    Disagree   1   2   3   4   5   Agree

14. I have prepared the rules with the children.

    Disagree   1   2   3   4   5   Agree

15. I adjust the curriculum to the initial situation of the children.

Disagree   1   2   3   4   5   Agree

16. I have learning goals and I communicate these goals with the children during class.

Disagree   1   2   3   4   5   Agree

17. I break complex tasks into smaller steps.

Disagree   1   2   3   4   5   Agree

18. I encourage pupils to bring in personal items related to topics.

Disagree   1   2   3   4   5   Agree

19. I give the solution when a student has a question.

Disagree   1   2   3   4   5   Agree

20. I give a tip when a student has a question.

Disagree   1   2   3   4   5   Agree

21. I give students the opportunity to experiment.

Disagree   1   2   3   4   5   Agree

22. I give freedom of choice during the class.

Disagree   1   2   3   4   5   Agree

23. I use : You have to….. and I expect… when I'm talking with students.

Disagree   1   2   3   4   5   Agree

24. I give a comment to my students.

Disagree   1   2   3   4   5   Agree

25. I give positive feedback to my students.

Disagree   1   2   3   4   5   Agree

26. I became a teacher because:

27. I think my students are motivated/unmotivated because:

28. To motivated my students more I need:

Appendix E, Observe scheme

Observe scheme motivation

Date: _____ Teacher: _____ Subject: _____

Grade: _____ Number of students:_____ Duration of the lesson:_____

1. The teacher has a learner goal yes/no

      Communicate these goals with the children during class yes/no

2. The teacher enforce his/her rules consistently yes/ no

3. The teacher looks happy/motivated: 1 2 3 4 5

4. The students look happy/motivated: 1 2 3 4 5

5. Structure of the lesson:

Time:	Activity	Interaction? How many?	

6. When a student doesn't understand the teacher:

    ☐   Give a tip
    ☐   Give the solution

7. The teacher gives positive feedback. Yes/no how many:

8. The teacher give a comment to his/her student. Yes/no how many:

9. The teacher give the children choices. Yes/no

For example: _____

_____

_____

_____

_____

Appendix F, Lesson plan Control lesson

Mathematics	Grade: Y	Children: 48	Date: 1st of November 2016	Stenden hogeschool
Topic: 34 Division		Time: 13:20 – 14:05		

Lesson goal:
- The children can find multiples and factors of whole numbers up to 100 at the end of the lesson.
- The children can round off to the nearest and 10, 100, 1 000 at the end of the lesson.
- The children can divide three-digit numbers by two digit numbers at the end of the lesson.

Lesson plan			
Time	Activities	Interaction/ Didactic forms	Materials
	Introduction		
10 min	**Review:** Game with multiplies. The teacher throw a ball to a child and ask a multiple. The child throw the ball back and gives the answer. At the end the teacher ask also some divides (easy and opposite of a multiple. **Orientation:** Introduction divisions and multiples. And de relations between these. The teacher tells the goals of this lesson (and write down on the blackboard).	interaction	Ball
	Core:		
30 min	**Instruction:** -Instruction about factors - explain clue board using by divisions. **Accompany:** Teacher explains all the stencils. Make the first one of each exercise. **Independent work:** The children make the stencils in order (made by the teacher). The teacher walks around and gives help.	Interaction Interaction Children are allowed to help each other, but they are whispering.	Blackboard piece of chalk worksheets
	Close:		
5 min	**Evaluation:** The teacher ask the children questions. Did you like the way of working? Did you learned something? Teacher gives compliments about the working attitude. **Preview** Teacher tells what the next lesson will be.	Interaction	-

Appendix G, Lesson plan Experiment

Mathematics	Grade: Y	Children: 48	Date: 2nd November 2016
Topic: 34 Division		Time: 11:35 -12:20	

Lesson goal:
- The children can solve problems using divisions at the end of the lesson.
- The children can divide three-digit numbers by two digit numbers at the end of the lesson.

Lesson plan			
Time	Activities	Interaction/ Didactic forms	Materials
	Introduction		
10 min	**Review:** Game with multiplies. The teacher throw a ball to a child and ask a multiple. The child throw the ball back and gives the answer. At the end the teacher ask also some divides (easy and opposite of a multiple). **Orientation:** Starting with an easy problem. There are a bag with 673 candies. 48 children have to share them. How many candies do they get? (Using different methods) The teacher tells the goals of this lesson (and write down on the blackboard).	Game Interaction Interaction Teacher speaks.	Ball Blackboard (piece of chalk)
	Core:		
30 min	**Instruction:** Instruction about using a clue board. How to solve a word problem? Also explain the clue board again. Teacher explains all the stencils. The children can choose with worksheet they want to make and in with order. **Accompany:** With some children the teacher will make the stencil with divisions with clue board. **Independent work:** The children make the stencils of their own choice. The teacher walks around and gives help.	Interaction Interaction Children are allowed to help each other, but they are whispering.	Blackboard (piece of chalk) worksheets
	Close:		
5 min	**Evaluation:** The children make a reflection about their behavior and their work.	Reflection Interaction, but in a silence way.	-

	They do it in silence. All the children close their eyes. How was your work attitude today? With hands they show how good their behavior was. Did you reached your goal today? Did you like the way of working? Did you learned something? Teacher gives compliments about the working attitude. Do we reached or goal? **Preview** Teacher tells what the next lesson will be.	Interaction	

Appendix H, Worksheet Control lesson

Division

Name:_____ Grade 5____   November 1st 2016

Exercise 1 Find all of the factor pairs for each number.

a) 45_____

b) 62_____

c) 39_____

d) 78_____

e) 100_____

f) 88_____

g) 42_____

h) 50_____

i) 66_____

j) 96_____

k) 36_____

l) 56_____

Exercise 2

a) Find a multiple of 8 between 41 and 50._____

_____

b) Find a multiple of 9 between 60 and 70._____

_____

c) Find a number between 80 and 90 that has 7 as a factor._____

_____

Exercise 3 Find the missing numbers.

a) 25 x _____ = 75 so 75 : 25 = _____

b) 120 : 10 = _____ so _____ x 10 = 120

c) 110 x 3 = _____ so _____ : 3 _____

d) 440 : 4 = _____ so _____ x 110 = 440

e) 60 x 30 = _____ so _____ : _____ = 30

f) _____: 5 = _____ so 12 x _____ = 60

Exercise 4 Find the missing number and use an inverse operation to check your answer.

a) 350 : 50 =_____

b) 880 : _____ = 44

c) 720 : _____ = 6

d) _____ : 70 = 60

e) _____ : 9 = 200

f) _____ : 30 = 40

Exercise 5 Write down two division facts for each statement.

a) 21 x 43 = 903 _____

b) 15 x 62 = 930_____

c) 72 x 11 = 792_____

Exercise 6 First estimate each answer, and then use a clue board to do these divisions.

a) 735:15 =	b) 536 : 53 =
c) 710 : 72 =	d) 614: 61 =
e) 439 : 32 =	f) 257 : 47 =

Appendix I, Worksheets Experiment lesson

Exercise 4 Find the missing number and use an inverse operation to check your answer.

a) 350 : 50 =_____

b) 880 : _____ = 44

c) 720 : _____ = 6

d) _____ : 70 = 60

e) _____ : 9 = 200

f) _____: 30 = 40

Exercise 5 Write down two division facts for each statement.

a) 21 x 43 = 903 _____

b) 15 x 62 = 930_____

c) 72 x 11 = 792_____

Exercise 6 First estimate each answer, and then use a clue board to do these divisions.

a) 735:15 =	b) 536 : 53 =
c) 710 : 72 =	d) 614: 61 =
e) 439 : 32 =	f) 257 : 47 =

Solve division problems

Use a clue board to help you find the answers in this exercise. Remember to estimate the answer first, and to check the answer by multiplying.

EXERCISE 34.4

1. There are 44 learners in Grade 5C and each learner has 15 coins. Sonto thinks that the learners have 660 coins altogether. Use division to check if Sonto is correct.

2. There are 18 shelves in the library and each shelf has 28 books on it. Kyle thinks that there are 502 books altogether. Use division to check if Kyle is correct.

3. A car travels 693 km in 7 hours. What is the speed of the car per hour? Write your answer in km/h.

4. The total mass of 14 bags of cement is 588 kg. What is the mass of each bag?

5. Lillian collects stamps and sticks them into a scrapbook. She has 800 stamps and she sticks 32 on each page. How many pages of her scrapbook will she use?

6. A builder mixes 4 kg of gravel with 1 kg of cement. How many kilograms of cement must he put into the cement mixer together with 156 kg of gravel?

7. Sam works at the local shop and gets paid R784. If he worked seven times as long as his friend, how much was his friend paid?

8. Melanie buys 16 boxes of beads for R416 to make necklaces.
   a) What is the price of 1 box of beads?
   b) How much will she pay for 13 boxes of beads?

Challenges

1. How can you arrange 960 chairs in rows of equal length?

2. What would be the best layout for a school hall?

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Math Crossword Puzzle

Fill in the blanks of each crossword puzzle
to make the division equations true.

64	÷		=	8			÷	2	=	27
÷				÷		÷				÷
	÷		=	2			÷	2	=	
=				=		=				=
32			÷		=	9				9

				36	÷		=	2			68
÷				÷		÷					÷
12		81	÷		=						
=				=		=					=
12	÷		=	4			÷	1	=		

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