

# Teachers' Behavioral Interventions for Children with ADHD in Regular Classrooms

*An observational study of teachers' use of  
reinforcement and punishment strategies in Japan*

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# **Teachers' Behavioral Interventions for Children with ADHD in Regular Classrooms**

An observational study of teachers' use of  
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# Abstract

Today, many teachers are assigned regular classrooms that include students with Attention-Deficit Hyperactivity Disorder (ADHD), where more knowledge regarding strategies teachers use to meet the needs of students with ADHD while still managing the classrooms is required. This research especially focuses on the reinforcement and punishment strategies used by teachers to accommodate the behavioral problems of students with ADHD. During the observation of seven elementary school teachers teaching first to third grade students in Japan, various intervention strategies were observed. The teachers used reinforcement strategies more often, but there was a greater variation in punishment strategies used compared to reinforcement strategies. The execution of reinforcement strategies for behavioral improvement of students with ADHD mostly aligned with the recommendations by psychologists and professionals in the educational field, but there were several issues to discuss and improve upon regarding in the use of punishment strategies.

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# Abbreviations used in the thesis

ADHD -	Attention-Deficit Hyperactivity Disorder
APA -	American Psychiatric Association
ASD -	Autism Spectrum Disorder
DSM-5 -	Diagnostic and Statistical Manual of Mental Disorders, 5 <sup>th</sup> edition
LD -	Learning Disability
ICF -	The International Classification of Functioning, Disability and Health
MEXT -	Ministry of Education, Culture, Sports, Science and Technology - Japan
NSD -	Norwegian Centre for Research Data
PBIS -	Positive Behavioral Intervention and Support
SEN -	Special Educational Needs
UNESCO-	United Nations Educational, Scientific and Cultural Organization





# Table of Contents

<b>Abstract</b> .....	<b>V</b>
<b>Acknowledgements</b> .....	<b>VI</b>
<b>Abbreviations used in the thesis</b> .....	<b>VII</b>
<b>Table of Contents</b> .....	<b>IX</b>
<b>1 Introduction</b> .....	<b>1</b>
<b>1.1 Purpose of research</b> .....	<b>1</b>
1.1.1 Inclusive education in international and Japanese contexts.....	2
1.1.2 Research problems.....	3
<b>1.2 Focus of research</b> .....	<b>4</b>
<b>1.3 Research questions</b> .....	<b>5</b>
<b>1.4 Key words</b> .....	<b>5</b>
<b>2 Background and theoretical model</b> .....	<b>6</b>
<b>2.1 ADHD</b> .....	<b>6</b>
2.1.1 Behavioral problems of children with ADHD .....	8
2.1.2 Behavioral intervention for children with ADHD .....	9
<b>2.2 Behaviorism</b> .....	<b>10</b>
2.2.1 Behaviorism and behavioral problems.....	11
2.2.2 Behaviorism and behavioral intervention.....	11
<b>2.3 Skinner’s theoretical models</b> .....	<b>12</b>
2.3.1 Reinforcement and Punishment .....	12
2.3.2 Reinforcement strategies.....	14
2.3.3 Punishment strategies.....	16
2.3.4 Historical tendencies of reinforcement and punishment.....	17
2.3.5 Prevention of behavioral problems by making learning environment .....	18
<b>2.4 Summary of background</b> .....	<b>19</b>
<b>3 Research Methodology</b> .....	<b>21</b>
<b>3.1 Participants</b> .....	<b>22</b>
3.1.1 Criteria of samples.....	22
3.1.2 Procedure for recruitment of participants .....	24
<b>3.2 Preparation</b> .....	<b>25</b>
3.2.1 Questionnaire .....	25
3.2.2 Observation .....	26
<b>3.3 Data collection</b> .....	<b>27</b>
3.3.1 Pre-observational meeting.....	27
3.3.2 Questionnaire .....	28
3.3.3 Observation .....	29
<b>3.4 Data analysis</b> .....	<b>31</b>
<b>3.5 Reliability and Validity</b> .....	<b>32</b>
<b>3.6 Ethical issues</b> .....	<b>34</b>
<b>4 Results</b> .....	<b>37</b>
<b>4.1 Description of samples</b> .....	<b>37</b>
4.1.1 Teacher 1 .....	38
4.1.2 Teacher 2 .....	38
4.1.3 Teacher 3 .....	39
4.1.4 Teacher 4 .....	40

4.1.5	Teacher 5 .....	40
4.1.6	Teacher 6 .....	41
4.1.7	Teacher 7 .....	41
4.1.8	Teachers' perceptions on behavioral problems of students with ADHD .....	42
<b>4.2</b>	<b>Strategies used by the teachers.....</b>	<b>43</b>
<b>4.3</b>	<b>Reinforcement and Punishment .....</b>	<b>43</b>
<b>4.4</b>	<b>Use of reinforcement strategies.....</b>	<b>44</b>
4.4.1	Verbal praise .....	44
4.4.2	Behavioral contract.....	45
4.4.3	Token economy system .....	47
<b>4.5</b>	<b>Use of punishment strategies.....</b>	<b>47</b>
4.5.1	Time-out.....	48
4.5.2	Response cost .....	49
4.5.3	Selectively ignoring .....	50
4.5.4	Behavioral contract.....	51
4.5.5	Redoing failed activities .....	51
4.5.6	Halting the lecture .....	52
4.5.7	Sarcastic question .....	53
<b>4.6</b>	<b>Environmental strategies to prevent behavioral problems .....</b>	<b>54</b>
<b>5</b>	<b>Discussion and Conclusion.....</b>	<b>57</b>
<b>5.1</b>	<b>Strategies used by teachers .....</b>	<b>57</b>
<b>5.2</b>	<b>Reinforcement and punishment .....</b>	<b>57</b>
<b>5.3</b>	<b>Reinforcement strategies .....</b>	<b>59</b>
5.3.1	Effective ways that teachers used the strategies .....	59
5.3.2	Points to be improved .....	60
5.3.3	Diverse practices among different teachers .....	61
<b>5.4</b>	<b>Punishment strategies.....</b>	<b>61</b>
5.4.1	Effective ways that teachers used the strategies .....	62
5.4.2	Points to be improved .....	63
5.4.3	Diverse practices among different teachers .....	65
<b>5.5</b>	<b>Environmental strategies.....</b>	<b>66</b>
<b>5.6</b>	<b>Conclusion.....</b>	<b>68</b>
<b>5.7</b>	<b>Strengths and limitations of research.....</b>	<b>68</b>
5.7.1	Strengths.....	69
5.7.2	Limitations .....	70
<b>5.8</b>	<b>Impact practice.....</b>	<b>71</b>
<b>5.9</b>	<b>Further research.....</b>	<b>71</b>
	<b>Bibliography .....</b>	<b>73</b>
	<b>Appendices .....</b>	<b>76</b>
	<i>Table 1: Types of reinforcement and punishment .....</i>	<i>13</i>
	<i>Table 2: Information about the seven teachers .....</i>	<i>37</i>
	<i>Figure 1: Partial sample of questionnaire.....</i>	<i>25</i>
	<i>Figure 2: Example of observation sheets for taking notes .....</i>	<i>26</i>

# 1 Introduction

Managing a classroom with pupils who have diverse characteristics is one of the biggest challenges for teachers. It is especially challenging for teachers when regular classrooms include pupils with special educational needs (SEN) because teachers need to meet these pupils' needs and teach regular curriculums at the same time. In inclusive education, regular classrooms that include children with SEN are required to meet various educational needs of all individuals in the classroom (Unesco, 1994; Vislie, 2003). Therefore, appropriate instructions are required in regular classrooms to organize class while meeting each educational need.

Children with attention-deficit hyperactivity disorder (ADHD) are a group of students that needs special support and instructions by teachers. As a previous assistant teacher in Japanese public after-school, I experienced instructing several children with ADHD. Their behavior changed both positively and negatively, depending on how I interacted with them. I realized that providing suitable instructions for each child with ADHD is important for them learning appropriate behavior. In addition, I found that other teachers used different kinds of educational intervention for behavior of children with ADHD. Some of them used interventional strategies that they learned through their long teaching experience at educational institutions, while others used interventional strategies that they learned from scientific resources. I found these experiences intriguing. These experiences made me interested in researching behavioral interventions used by teachers for children with ADHD.

In this introduction, I will firstly describe the purpose of this research with some background information and research problems. This will be followed by the specific focuses of this research and the reasons of the focuses. The chapter finishes with the research question together with four sub research questions.

## 1.1 Purpose of research

This research is dedicated to gain knowledge of strategies teachers use to instruct children with ADHD to meet their behavioral problems in regular classrooms. In order to describe the background information and problems behind this topic, I will firstly introduce the concept of inclusive education in international context, how it affected the Japanese educational

practices and what are the problems in current practices in Japanese inclusive education. As we discover problems in Japanese inclusive educational practices, the section will lead to the research problems and the significance of conducting the research about the behavioral interventions for the behavioral problems of students with ADHD.

### **1.1.1 Inclusive education in international and Japanese contexts**

It was in 1994 when the World Conference of Special Need Education was held in Salamanca, Spain, in cooperation with the United Nations Educational, Scientific and Cultural Organization (UNESCO). The conference adopted the Salamanca Statement which suggests a concrete framework for principles, policy and practice in special needs education (Unesco, 1994). One of the significant concepts that the Salamanca Statement introduced was “inclusion” as an international basis of education (Unesco, 1994).

With the term “inclusive schools”, the Salamanca Statement suggested that all children should learn regardless of their difficulties and differences and their diverse needs must be met (Unesco, 1994). The statement argues that this inclusive practice is most meaningful for the utmost educational progress and social integration of children with SEN and the solidarity between children with SEN and their peers (Unesco, 1994). To achieve inclusive educational practices, flexible and adaptive school systems that meet diverse needs of children are required (Unesco, 1994).

Being affected by the international trend of inclusive education, Japanese educational laws and systems underwent significant changes (Harada, 2014; Tsuge, 2014). One of the big changes was the enforcement of the new law, the Act on Support for Persons with Developmental Disabilities, in 2005, which asserted that children with developmental disabilities (which, in this act, mean learning disability (LD), autism spectrum disorder (ASD) and ADHD) would get education in regular classrooms as much as possible with special support. Children with disability had attended special schools or special classes for a long time in Japan, but as a consequence of this new standard, more students with SEN, including ADHD, attend regular classrooms and teachers got a bigger chance having to manage a classroom including individuals with SEN in Japan. In fact, the research in regular classrooms in public elementary and junior-high schools conducted by the Ministry of Education, Culture, Sports, Science and Technology – Japan (MEXT) suggested the rate of

the students in regular classrooms who possess symptoms of ADHD became higher in recent 10 years from 2.5% (2002) to 3.1% (2012).

MEXT also suggested a guideline (2004) to prepare educational support and system for students with LD, ASD and ADHD in regular elementary and junior-high schools. As one of the revision of educational systems, the guideline urges to prepare special-support-education coordinators who support regular teachers and coordinate educational framework for children with special needs in regular classrooms. This new suggestion implies that more regular classroom including students with SEN should have a multiple-teacher system.

### **1.1.2 Research problems**

In the international trend of inclusive education, Japanese educational law declared that children with SEN, including ADHD, should learn in regular classroom as much as possible and Japanese government suggested to introduce multiple-teacher education in regular classroom. However, research shows that many of the special-support-education coordinators are at the same time a regular teacher in other classrooms, and therefore, cannot contribute enough to their duties as coordinator (Otsuka & Ohishi, 2007). It is also pointed out that the coordinators lack knowledge of concrete educational ways to support children with ADHD (Muramoto & Sonoyama, 2009; Otsuka & Ohishi, 2007). While the number of students with SEN, including ADHD, in regular classrooms is increasing, in reality, the system of coordinators does not always seem effective. As a result, there is a higher possibility that many teachers in regular classrooms must meet the needs of children with ADHD in regular-classroom settings by themselves.

Based on this fact, I would like to learn about current and actual practices that Japanese teachers use in order to manage regular classrooms that include students with ADHD. The knowledge found might also be helpful for teachers in Japanese regular classrooms to know how and with what kind of teaching strategies other teachers manage classroom including students with ADHD by themselves.

In addition, I could not find many research papers about Japanese educational practices for children with ADHD written in English and published internationally. Therefore, this research might be helpful to spread the knowledge of how teachers instruct children with ADHD in a real Japanese context to the international educational field. Teachers of different

countries can also learn how to use educational strategies to manage classrooms with students with ADHD, what kind of strategies they have used and new instructional ways for students with ADHD, regardless of their cultural background. For these reasons, this research tried to find how teachers instruct children with ADHD to meet their needs and to manage classrooms in Japan.

## 1.2 Focus of research

This research specifically focuses on teachers' usage of reinforcement, a strategy to increase frequency or duration of desirable behaviors, and punishment, a strategy to decrease or suppress undesirable behaviors (Hoy, Hughes, & Walkup, 2008). The reason of this focus in this research is that I recognized in my previous workplace that some teachers focused on reinforcing desirable behavior of students with ADHD, while others emphasized on the reduction of inappropriate behavior of the students. I also found different perceptions on reinforcement and punishment as teaching strategies in Western countries and Japan. In many Western countries, reinforcement has been seen more preferred in educational field than punishment since 1980s (Sasaya, 2017). However, past research shows that teachers in Japan tend to approach behavioral improvement of children with punishment and scolding (Kishino & Muto, 2005). These factors made me interested to know how teachers in Japan use reinforcement and punishment for behavior of children with ADHD.

In order to describe and discuss the reinforcement and punishment strategies, I will introduce a theoretical approach called *behaviorism*, and one of the significant founders of behaviorism, B.F. Skinner, in upcoming Chapter 2. Behaviorism is a theoretical framework that emphasizes human behavior as influenced by the environmental factors (Cline & Frederickson, 2009; Hoy et al., 2008). With this theoretical approach, B.F. Skinner theorized the effect of reinforcement and punishment on human behavior (B. Skinner, 1938; B. F. Skinner, 1953, 1969). For this reason, this thesis will describe and discuss behavioral interventions for children with ADHD in behaviorism's and Skinner's theoretical perspectives.

## **1.3 Research questions**

The main question of this research is:

How do teachers instruct children with ADHD to meet their behavioral problems in regular classroom?

The overall goal of this research is to gain knowledge of strategies teachers use to instruct children with ADHD to meet their behavioral problems in regular classrooms. This knowledge will be useful to know how Japanese teachers use these strategies in current situations.

In order to answer the main research question, I set the following four research questions:

1. What strategies do teachers use to meet behavior of children with ADHD?
2. Do teachers use more reinforcement or more punishment for behavior of children with ADHD?
3. How do teachers use reinforcement for children with ADHD?
4. How do teachers use punishment for children with ADHD?

## **1.4 Key words**

ADHD, Behavioral problems, Behavioral intervention, Regular classroom, Behaviorism, Reinforcement and Punishment, Observation

## **2 Background and theoretical model**

This chapter offers background information of the focused factors of this research and describes theoretical framework related to this research for thorough understanding of the study. The chapter firstly describes what ADHD is, the possible behavioral problems that children with ADHD might face and the importance of behavioral intervention for them. These educational interventions is described based on the theoretical approach, behaviorism. The reason of this focus on behaviorism is that the theoretical framework gives significant possibility to teachers' instructions and affirms life-long learning of the behavior of children with ADHD by focusing on the environmental factors as main causal factors of human behavior (Cline & Frederickson, 2009; Hoy et al., 2008; B. F. Skinner, 1953; Watson, 1919). The chapter follows with introducing theories of B. F. Skinner (1938, 1953, 1969), one of the significant founders of behaviorism, to understand behavioral interventions for children with ADHD from the perspective of behaviorism. This chapter ends with summarizing the background information and theoretical model described.

### **2.1 ADHD**

The diagnostic criteria and characteristics of ADHD can be found in Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5), an authoritative guidebook to the diagnosis of mental disorders published by American Psychiatric Association (APA) and used by health care professionals all over the world (2013). According to DSM-5, ADHD is a diagnosis of a persistent pattern of three core symptoms; inattention, impulsivity and hyperactivity. The diagnostic criteria of inattention are that one has six or more out of nine symptoms, such as failing to give attention to details or sustain attention in tasks or activities, losing things, being easily distracted and forgetting things often (Association, 2013). The diagnostic criteria of impulsivity and hyperactivity is that one has six or more out of nine symptoms, such as often moving restlessly, often leaving seat when seating is expected, being unable to be still or to wait, and often interrupting others (Association, 2013).

Based on these three core symptoms, ADHD has three subtypes; predominantly inattentive, predominantly hyperactive-impulsive, and combined hyperactive-impulsive and inattentive subtypes (Association, 2013; Schachar & Tannock, 2002). Predominantly inattentive subtype means that one meets the criteria of inattention but not hyperactivity and impulsivity, while



predominantly hyperactive-impulsive subtype means that one meets the criteria of hyperactivity and impulsivity but not inattention (Association, 2013). Combined hyperactive-impulsive and inattentive subtype means that one meets criteria of both inattention and hyperactivity/impulsivity (Association, 2013).

DSM-5 affirms that the symptoms of ADHD begin in childhood before 12 years old and “ADHD is most often identified during elementary school years” (p.62). It is also pointed out that hyperactive-impulsive subtype is more common at a young age while inattentive and combined subtypes are equally prevalent among school-age children (Schachar & Tannock, 2002). These factors mean that children with ADHD might have difficulties in their inattentiveness, impulsiveness and hyperactive characteristics from elementary school age, especially younger age in elementary school.

A content analysis research reviewing over 9,000 records and 300 articles all over the world found that ADHD occurs approximately five percent of children in most cultures (Polanczyk, De Lima, Horta, Biederman, & Rohde, 2007). The similar prevalence is reported by a Japanese research using a questionnaire for over 35,000 children in regular classrooms in public elementary schools conducted by MEXT (2012). The research suggests that 3.5% of the students in regular classrooms possess either inattentiveness, hyperactivity or impulsiveness, and the younger the children are, the higher the rates of these symptoms they have, with the highest rate of 4.5% in first grade.

Because of their characteristics, individuals with ADHD have a risk to face social, academic and emotional challenges (Hoy et al., 2008; Kirk, Gallagher, Coleman, & Anastasiow, 2011; Schachar & Tannock, 2002). For their development of social, academic and emotional skills, children with ADHD need special support and treatments. While medication is one possible treatment for children with ADHD (Association, 2013; Schachar & Tannock, 2002), educational instructions that teach life-long learning in academic, social and emotional improvements are crucial for them.

In the next section, I will describe behavioral problems of children with ADHD, as possible problems that they might face. Bearing the problems of children with ADHD in mind, I will explain the importance of behavioral intervention for them.

### **2.1.1 Behavioral problems of children with ADHD**

It is challenging to define what behavioral problems are and what are not because all children exhibit inappropriate behavior from time to time. According to Woolfolk et al. (2008), what separates behavioral problems from time-to-time inappropriate behavior is that behavioral problems deviate so much from the norm that they interfere with the child's own growth and development and the lives of others. It is also suggested that problematic behavior is behavior that deviates from the discipline of the study environment and decreases the efficiency of teachers' instruction (Sasaya, 2017). In short, behavioral problems of children influence both their own learning and development, and classroom management for teachers.

Although not all children with ADHD have behavioral problems, problematic behavior is one of the main comorbidities of ADHD and is often evident in children with ADHD (Hoy et al., 2008; Kirk et al., 2011). The overactive, impulsive and inattentive nature of children with ADHD can lead to their behavioral problems. Especially hyperactive and impulsive characteristics of ADHD tends to be predictive offending and aggressive behavior (Schachar & Tannock, 2002). Because of their behavioral problems, students with ADHD are often a source of disruption in the classroom (Kirk et al., 2011). It is, therefore, rational to approach behavioral problems of children with ADHD in order to manage the classroom.

The behavioral problems of children with ADHD can have multiple negative results for their development. The cause of behavioral problems is strongly related to problems in their own learning and social participation. Children's difficulty in maintaining and directing focus and attention towards tasks and goals might interfere with their academic achievement and learning (Hoy et al., 2008; Kirk et al., 2011). Impulsiveness and inappropriate responses to others might lead to difficulty in adjusting to a community and social relationships. For these reasons, children with ADHD need special support to manage their behavioral problems.

Their behavioral problems also influence classroom management, and as a consequence, influence other students' learning. Research proves that problematic behavior of student decrease 40% of the time that teacher can focus on giving clear instructions (Karweit, 1989). Teachers cannot focus on regular curriculum when there are behavioral problems in the classroom. This also means that other students' learning is disturbed. Therefore, approaching problematic behavior of students with ADHD is important for teachers' classroom management and other students' learning, as well.

### **2.1.2 Behavioral intervention for children with ADHD**

Behavioral problems of children with ADHD are partially caused by their diagnostic characteristics, such as overactive, impulsive and inattentive nature. However, environmental experiences can counteract the genetic influences on the risk of behavioral problems (Rye, 2001). One of the ways to change children's environmental experience is intervention by teachers. Intervention is to provide necessary support needed to optimize the children's development (Kirk et al., 2011). For behavioral improvement of children with ADHD and their utmost learning and development, behavioral intervention by teachers is crucial. According to the guideline published by United States Department of Education (2008), behavioral intervention is one of the recommended instructions for children with ADHD, along with academic instructions and adjustment of classroom accommodations.

As behavioral problems interfere with the child's own learning, intervention for their behavior is crucial. Behavioral intervention for children with ADHD should aim to assist them learning how to control their behavior and focus during class for their optimal learning and academic achievement (Arcia, Frank, Sanchez-LaCay, & Fernández, 2000; Kirk et al., 2011). Behavioral intervention is also crucial for social participation of children with ADHD. Behavioral intervention for children with ADHD should display socially appropriate behavior for equal participation in class and pupil groups (Arcia et al., 2000; Kirk et al., 2011).

Behavioral intervention is needed by children with ADHD not only for their own learning, development and social participation, but also for teachers' classroom management. If teachers manage to reduce behavioral problems during class, they can focus more on regular curriculum. Behavioral intervention also avoids negative interactions between students with behavioral problems and other students by teaching socially appropriate behavior. In other words, behavioral intervention organizes classroom environment in order to maximize the learning for the entire class (Arcia et al., 2000).

Behavioral intervention for children with ADHD has a lot of benefits, but conducting it is often very difficult and challenging for teachers. Some approaches to students' behavior might have negative effects on their behavior if it is used improperly (Sasaya, 2017). Therefore, the behavioral intervention would be one of the most difficult tasks for teachers (Sasaya, 2017). It takes time to change children's attitude and behavior, as well (Maag, 2001). Even if the students' behavioral problems have reduced temporarily at the settings, it

does not necessarily mean that their attitude and behavior have changed in the long run. For these reasons, more research on behavioral intervention for children with ADHD is crucial in the educational field.

## **2.2 Behaviorism**

Even though the diagnostic nature of children with ADHD partially causes their behavioral problems, it is important to minimize and prevent their behavioral problems by behavioral intervention. *Behaviorism* is one of the theoretical frameworks that support this way of thinking. The behavioristic perspective on behavior is that behavior is learned through what happens in the environment around the learner (Cline & Frederickson, 2009; Hoy et al., 2008). People have consistent behavioral patterns caused by particular responses from the environment around the learner. Since the environment influences behavior, behavior can be changed by changing environmental factors and the way people interact with the learner (Cline & Frederickson, 2009; Hoy et al., 2008).

Behaviorism also stands on the position that the human mind can be explained by the relationship between the response from the immediate environment and behavior (B. Skinner, 1938). B. F. Skinner, known as one of the significant founders of behaviorism, tried to explain human behavior by recording environmental stimuli that can be controlled and responses to the environmental stimuli that can be observed objectively (B. Skinner, 1938; B. F. Skinner, 1953). Behaviorism focuses on scientifically observable behavior and aims to assess and research educational ways objectively. In the educational field, therefore, behaviorism makes it possible to assess and adjust teachers' instructions by analyzing students' behavior as a response to the teachers' instruction (Watanabe, 2012). For this reason, behaviorism uses objective methodology such as observation (Saitoh, 2009).

The reason why behaviorism approach may be used as a framework to understand and change challenging behavior in the classroom is its focus on environmental factors. Behaviorism tries to approach behavioral problems of children by changing the environment conditioning (Watson, 1919). This notion gives the possibility for teachers to modify a child's behavior. Behaviorism's focus on the effect of environmental factors also affirm human's life-long learning of behavior, because people continuously learn and change their behavior by encountering new situations. Behaviorism sees behavior of children as changeable with modification of the educational environment and support from teachers,

instead of depending fully on genetic and biological explanation (B. F. Skinner, 1953). For these reasons, this research focuses on behaviorism as an approach for behavioral problems in children.

### **2.2.1 Behaviorism and behavioral problems**

Behaviorism understands behavioral problems of children to be affected by the children's unpleasant experiences in the environment and contexts, and their history of responses from their environment (Cline & Frederickson, 2009; Hoy et al., 2008). How people around the children have interacted with children over time and place affect their behavioral patterns. Therefore, if people around the children interact with them in negative way, this might encourage their behavioral problems.

Behaviorism also believes that children might learn problematic behavior which causes desirable outcomes, and they generalize their problematic behavior (Cline & Frederickson, 2009). For example, when children show problematic behavior to escape from tasks that they do not want, teachers have tendency to cancel the tasks to terminate their problematic behavior, which encourages their usage of problematic behavior makes unpleasant cycle of reinforcing and generalizing the behavioral problems to cancel the tasks (Carr, Taylor, & Robinson, 1991). Moreover, behavior of children which looked problematic for teachers might have purposes, such as gaining attention or answering other students' expectations (Kato & Okubo, 2006). If teachers or other students react to this type of behavior, this might play a role of reward for the children who showed the inappropriate behavior.

### **2.2.2 Behaviorism and behavioral intervention**

Behaviorism thinks of behavioral problems as influenced and reinforced by responses by the child's social environment. It, however, also means that a healthy and positive environment where children grow up can reduce or minimize their behavioral problems (Rye, 2001). Therefore, in the classroom settings, the behavioral development and learning of children with ADHD depend heavily on how teachers approach the children's behavioral problems.

In behaviorism's view, teachers' behavioral intervention should focus on the change in environmental conditions to help the child unlearn undesirable behavior and learn desirable behavior instead (Cline & Frederickson, 2009). The International Classification of Functioning, Disability and Health (ICF) also thinks of behavioral intervention from a similar

view as behaviorism, by describing intervention as to “*seek environmental modification, either by eliminating environmental barriers or creating environmental facilitators for expanded performance of actions and tasks in daily living*” (p.8).

It is also important to focus on identifying the features of the environment that might encourage undesirable behavior (Cline & Frederickson, 2009). Because teachers’ instructional interaction with children often affects their behavior (Hirasawa & Fujiwara, 1996), teachers are required to analyze what kind of effect their intervention and communication with children has on their behavior. In addition, the environmental factors around the learner, such as peers, might also affect their behavioral problems. By analyzing what reinforces children’s behavioral problems, teachers will be able to know how to support changing children’s behavior positively (Repp & Karsh, 1994).

## **2.3 Skinner’s theoretical models**

One of the most influential psychologist in the field of behaviorism is B.F. Skinner (1938, 1953, 1969). He invented and developed many theoretical concepts and approaches to behavior (Saitoh, 2009). This section introduces some of his theoretical models related to the research, and describes behavioral interventions for children with ADHD, based on the theoretical models.

### **2.3.1 Reinforcement and Punishment**

B. F. Skinner (1938, 1953, 1969) developed several momentous theories on human behavior (Hoy et al., 2008; Kirk et al., 2011). One of his theoretical approaches to human behavior is the concept of *operant conditioning*; a learning process in which people’s voluntary behavior increase or decrease by environmental influences before and after the response (1938, 1953, 1969). Strategies to manage behavior based on the operant conditioning are divided into *reinforcement* and *punishment* (B. F. Skinner, 1953). Reinforcement is a strategy to increase frequency or duration of desirable behavior, while punishment is a strategy to decrease or suppress undesirable behavior (Hoy et al., 2008).

Both reinforcement and punishment have two subtypes (Cline & Frederickson, 2009; Hoy et al., 2008) as illustrated in Table 1. Reinforcement includes *positive reinforcement* and *negative reinforcement* (Cline & Frederickson, 2009; Hoy et al., 2008). Positive

reinforcement is to strengthen behavior by presenting a desirable stimulus, while negative reinforcement is to strengthen behavior by removing an unpleasant stimulus when the behavior occurs (Hoy et al., 2008). Punishment also includes *positive punishment* and *negative punishment* (Hoy et al., 2008). Positive punishment aims to decrease the occurrence of behavior by presenting an unpleasant stimulus, while negative punishment is to decrease the occurrence of a behavior by removing a pleasant stimulus (Hoy et al., 2008).

*Table 1: Types of reinforcement and punishment*

	Presenting	Removing
Desirable stimulus	<b>Positive Reinforcement</b> (presenting desirable stimulus)	<b>Negative Punishment</b> (removing desirable stimulus)
Undesirable stimulus	<b>Positive Punishment</b> (presenting undesirable stimulus)	<b>Negative Reinforcement</b> (removing undesirable stimulus)

Many educators and psychologists assert educational intervention for children with ADHD should use reinforcement rather than punishment (Kirk et al., 2011). This is because reinforcement produces the changes in attitudes that will shape a student’s behavior in the long run (U.S. Department of Education, 2008). It is recommended that the behavioral interventions should be viewed as an opportunity of teaching rather than an opportunity of punishing (U.S. Department of Education, 2008). Even when children with ADHD misbehave, teachers should think about replacement behaviors that is socially acceptable, rather than evaluating and punishing inappropriate behavior (Muramoto & Sonoyama, 2008; U.S. Department of Education, 2008).

However, reinforcement is not popular among teachers (Maag, 2001). One of the reasons is that reinforcement is time-consuming and requires a lot of effort from the teachers (Maag, 2001). This is because positive intervention aims to approach students’ behavior in the long run but does not always affect students’ behavior immediately. It is also argued that using only reinforcement is not effective to keep children’s behavior appropriate, and it is, in fact, more effective to use reinforcement partially (Saitoh, 2009).

Punishment, is widely accepted by teachers because it is seen as connected to school discipline and classroom control (Maag, 2001). Punishment is highly effective to reduce behavioral problems immediately (Muramoto & Sonoyama, 2008). This is because it can

produce a rapid suppression in students' inappropriate behavior (Maag, 2001). This immediateness of punishment makes it possible to be administered quickly and easily, and teachers find them desirable to control classroom disruptive behavior (Maag, 2001). The immediate nature of punishment also makes it possible to terminate unpleasant behavior in the classroom, especially in the case that teachers can remove aversion of a child from the classroom, such as getting the child to leave the classroom for a while (Maag, 2001).

Even though punishment may immediately change the behavior of children, it rarely changes the attitude of children (U.S. Department of Education, 2008). Students will not be willing to show socially acceptable behaviors by suppression. It is also pointed out that the effectiveness of punishment to modify behavioral problems is temporary (U.S. Department of Education, 2008). Research also shows that more emotional and aggressive behavior came up after conducting punishment for children (Baldwin & Baldwin, 2001). Furthermore, punishment may only teach children what not to do, and does not teach what behavior is appropriate and how to control their behavior (Maag, 2001). Finally, there is an ethical problem of using punishment since the strategy often causes agony for the children (Muramoto & Sonoyama, 2008).

It is important to remember that different things are experienced as reward or punishment by different pupils (Cline & Frederickson, 2009). For example, so-called punishment that removes students with ADHD from the classroom might let students avoid unpleasant tasks (Maag, 2001). In this case, punishment actually works as reinforcement for the student. On the other hand, giving extra time to use the computer to students who are not interested in the computer does not work as a reward for the students. Researchers need to observe effects and results of interventions carefully to avoid mixing up reward and punishment (Cline & Frederickson, 2009).

### **2.3.2 Reinforcement strategies**

In the last section, the positive and negative aspects of both reinforcement and punishment strategies are discussed. Even though there are different opinions for each type of strategy, it is worthy to refer specific examples of each type of teaching strategy in order to understand what reinforcement and punishment strategies are like. It is also helpful to explain how they are recommended to be used in order to compare with the actual practices of the teachers in this research. This section firstly explains reinforcement strategies for behavioral



improvement of children and the usage of them that is recommended by some educators and psychologists.

One of the most effective and significant positive reinforcement strategies is *verbal praise* (U.S. Department of Education, 2008). This strategy is to give praise to students when they begin and complete an activity to reinforce desirable behavior (U.S. Department of Education, 2008). Verbal praise has a base on “praise rather than punishment” (U.S. Department of Education, 2008), therefore, teachers are required to look for a behavior to praise rather than finding behavior to punish. It is recommended to define appropriate behavior when teachers praise students (U.S. Department of Education, 2008), although research found that teachers tend not to clearly specify desirable behavior when they praise children with ADHD (Arcia et al., 2000). Research also shows children with ADHD prefer small immediate over larger delayed rewards (van Meel, Heslenfeld, Oosterlaan, Luman, & Sergeant, 2011), and children with ADHD often forget things and get easily distracted because of their inattentive nature. Taking these factors into account, it is important for teachers of children with ADHD to give praise to them as immediately and frequently as possible (DuPaul, Gormley, & Laracy, 2014). Their praise words should also be variable so that children with ADHD will not get bored and the praise does not lose value.

Another reinforcement strategy is *behavioral contract*. Behavioral contract is to identify behavioral goals for children and make rules according to the goals (Kirk et al., 2011). Children with ADHD may easily forget the behavioral rules and may feel difficulty in organizing their behavior because of their inattentiveness. Therefore, DuPaul et al. (2011, 2014) suggest that teachers should explain classroom rules clearly in the beginning and review them frequently through the year. In case of an individual behavioral contract for children with ADHD, it is also important that the contract is directed by the student for their self-management and set realistic goals not to discourage the children (Kirk et al., 2011; Maag, 2001).

A *token economy system* is also one of the reinforcement strategies. In this strategy, teachers give certain kinds of tokens for appropriate behavior to students and exchange the earned tokens with some rewards (DuPaul et al., 2014; Hoy et al., 2008; Kirk et al., 2011). Examples of tokens are stickers and points, and those tokens will be exchanged with some kinds of rewards, such as getting priority to choose next activity or extra time at a computer. While teachers tend to think token economy systems are not effective (Arcia et al., 2000), some

researchers show that the system is effective to increase socially desirable behavior of children (DuPaul et al., 2014; van Meel et al., 2011). Children with ADHD also tend to show a stronger tendency to seek rewards (van Meel et al., 2011). Although research shows that teachers typically use the token economy in a random manner, it is important to use the strategy systematically and coherently to increase its effectiveness (Arcia et al., 2000). It is also important that the strategy is applied to all students in the classroom, in order to ensure children's equal participation that enhance the value of the rewards.

### **2.3.3 Punishment strategies**

In addition to reinforcement strategies, there are also some examples of punishment strategies for behavioral problems of children shown by some educators and psychologists. This section will explain the definitions and characteristics of each teaching strategy and the way they are recommended to be used in this section.

*Time-out* is one of the punishment strategies used to decrease behavioral problems in children with ADHD. Time-out is a strategy to send students, who have violated classroom rules with disruptive behavior, to a separate part of the classroom, in a place nearby the teacher or outside of the classroom for a short period (DuPaul, Weyandt, & Janusis, 2011; Kirk et al., 2011). When children with ADHD become hyperactive, they need time to settle down and regain control of themselves. They can come back from the separated place when they feel they are ready to focus on the class. However, it should be taken into consideration that the entire class should be cooperative (DuPaul et al., 2011), otherwise both children with ADHD and other pupils feel unfairly treated. The cooperative characteristics of the class during time-out is also important to avoid children with ADHD to get "reward" of attention from their peers, which means the peers might praise the child as someone they look up to, like a cool rebel. It is also recommended to cooperate with supporting teachers when using the time-out strategy. This is called "Think-Time strategy" (Kirk et al., 2011), and the support teachers are supposed to assist children in the separated space to review inappropriate behavior and what they need to do when returning to the classroom.

An economy system, which was introduced above as a reinforcement strategy, might also have a style of punishment strategy. Token economy system that focus on decreasing disruptive and off-task behavior is called "*response cost*" (DuPaul et al., 2014). In this system, students not only gain rewards when they had desirable behavior, but also lose the

rewards for inappropriate behavior or unaccomplished goals. Writing down names of the students who misbehaved on the board is one of the negative approaches of token economy system. Students whose names were written on the board will get some sort of punishment, such as losing privileges and having disadvantages in future activities.

In some research papers, it was also recommended to selectively ignore inappropriate behavior, which is a negative punishment strategy because the attention from the teacher is removed (U.S. Department of Education, 2008). The strategy, *selectively ignoring*, is especially effective when children's behavior is unintentional, unlikely to recur or intended only to gain the attention from teachers or their classmates (U.S. Department of Education, 2008). As long as their behavior does not disrupt the classroom or interfere with the learning of their classmates, teachers can selectively ignore their inappropriate behavior. In this way, students with ADHD would focus on other more intense behavioral problems and intervention for these behavioral problems would gain more value.

*Behavioral contract* is introduced above as a reinforcement strategy, but it can also be used as a punishment strategy. When teachers and children with ADHD identify behavioral goals and rules, they might focus on decreasing inappropriate behavior instead of increasing appropriate behavior. In this punishment approach with behavioral contract, self-monitoring of behavior by the children themselves also will focus on decreasing socially inappropriate behavior rather than increasing ideal behavior. Self-management and self-monitoring that try to control inappropriate behavior is effective for children with ADHD to see themselves as in control over their behavioral problems (Hoy et al., 2008).

#### **2.3.4 Historical tendencies of reinforcement and punishment**

Some past research shows that punishment had historically been used for the behavioral problems of students with SEN (Foxy & Bechtel, 1983; Iwata & Bailey, 1974; Simmons III & Lovaas, 1969). However, from the 1980s, the trend that teachers should try to make students behave appropriately and spontaneously instead of punishing inappropriate behavior has been seen in Western society (Muramoto & Sonoyama, 2008; Sasaya, 2017). Instead of forcing to stop behavioral problems, letting children learn appropriate behavior to avoid other behavioral problems became a trend for classroom management. There are a lot of programs and educational efforts based on reinforcement, such as the Positive Behavioral Intervention and Support (PBIS) (Kirk et al., 2011). Research also shows that teachers who succeed in

classroom management follows up children with behavioral problems and remind the children of the classroom rules instead of scolding and stopping the problematic behavior immediately (Emmer, Evertson, & Anderson, 1980).

On the other hand, some psychologists and specialists in the educational field in Japan show that Japanese schools has historically systemized “appropriate behavior” and behavior that deviates from systemized appropriate behavior has been seen as behavior that should be stopped immediately by punishment and scolding (Kishino & Muto, 2005; Sasaya, 2017). Especially for children with special educational needs who often show behavioral problems, punishment has been used more than reinforcement (Kishino & Muto, 2005; Muramoto & Sonoyama, 2008). Furthermore, another research in Japan shows that both Japanese teachers and students under teacher training lack skills to understand students’ behavior from the perspective of operant conditioning (Watanabe, 2012). This implies that operant conditioning is not well known instructional framework in the Japanese educational field.

### **2.3.5 Prevention of behavioral problems by making learning environment**

In addition to the theory of operant conditioning, Skinner introduced the concept of *antecedents* and *consequences*, as environmental factors that determine behavior of children (1953). Antecedents are environmental influences that precede behavior, while consequences are environmental influences that follow behavior (Hoy et al., 2008; B. F. Skinner, 1953). Skinner describes that children’s voluntary behavior is determined by both antecedents and consequences. This behavior-environment relationship can be modeled as antecedent-behavior-consequence, or simply *A-B-C model* (Hoy et al., 2008; Kirk et al., 2011).

Reinforcement and punishment strategies described above focus on consequences in the A-B-C model, because both strategies are teachers’ response to children’s behavior that has already occurred. However, it is also important for teachers to prevent behavioral problems of students with ADHD, since human behavior is caused not only by consequences but by antecedents from the perspective of A-B-C model (Hoy et al., 2008; Kirk et al., 2011; B. F. Skinner, 1953). Some researchers agree with this by insisting that behavioral interventions for students with ADHD should include perspective of both antecedent and consequence (DuPaul et al., 2011). Teachers should firstly observe the environmental circumstances surrounding children that might cause their misbehavior (Kirk et al., 2011). Through this

careful observation, teachers can adjust and structure the environment so that they can minimize misbehaviors of children (Kirk et al., 2011).

One of the examples of making a learning environment to prevent behavioral problems of students with ADHD is physical adjustment of the classroom and resources that they use. Teachers may want to remove destructive stimuli that interfere focus of the students by adjusting classroom layout and resources. It is also recommended to use some tools, such as timers and pointers, make the tasks visualized and help children with ADHD to track teachers' instruction visually (U.S. Department of Education, 2008).

Another example that teachers can do for a better learning environment of children with ADHD is to offer additional material and information to accomplish tasks, and modified content for the task (Hoy et al., 2008). These physical additional offers are also called *hurdle helping* (U.S. Department of Education, 2008). Teachers can prevent students with behavioral problems from becoming frustrated with a task and let them control their learning environment by using hurdle helping (Hoy et al., 2008).

## **2.4 Summary of background**

Individuals with ADHD have inattentive, impulsive and/or hyperactive characteristics. Because of these characteristics, problematic behavior is often evident in children with ADHD. Their behavioral problems deviate from study discipline and influence both of their own learning and development, and classroom management of teachers. Therefore, teachers' approach towards problematic behavior of students with ADHD is important.

Although behavioral problems of children with ADHD are partially caused by their genetic characteristics, behavioral intervention counteracts the genetic influences on behavioral problems. For behavioral improvement of children with ADHD, behavioral intervention by teachers is crucial. Conducting behavioral intervention is, however, often very difficult and challenging for teachers. Therefore, more research on behavioral intervention for children with ADHD is crucial in the educational field.

One of the theoretical frameworks that support effectiveness of behavioral intervention on minimizing and preventing behavioral problems of children with ADHD is behaviorism. Behaviorism argues that human behavior is learned through what happens in the environment around the learner. Since environment determines behavior, behavior can also be changed by

changing the way people interact with children. This notion gives significant possibility to teachers' instructions and affirms life-long learning of behavior of children with ADHD.

Behaviorism thinks that behavioral problems of children are influenced by the children's unpleasant experiences in the environment, or desirable outcomes of their problematic behavior. This also means that positive environment can decrease their behavioral problems. Therefore, the behavioral development and learning of children with ADHD depend on how teachers approach the children's behavioral problems in the classroom settings. It is also important to analyze the features of the environment that might encourage undesirable behavior in order to know how to support changing children's behavior positively.

B. F. Skinner (1938, 1953, 1969) developed the concept of operant conditioning. In this concept, strategies to manage behaviors are divided into reinforcement and punishment. Both reinforcement and punishment have advantages and disadvantages. The focus of this research is on the concept of reinforcement and punishment strategies that teachers use for behavioral problems of students with ADHD. However, it is also important to bear in mind that prevention of behavioral problems by adapting the learning environment for students with ADHD is important, because children's behavior is also determined by preceding influences in the environment around the children.

### 3 Research Methodology

For this research, qualitative approach is used. Qualitative research is a research approach to describe and interpret subjects and to understand phenomena in real-world and context-specific settings (Biddle & Anderson, 1986; Golafshani, 2003). The reason of using qualitative approach in this research is because this research investigates how teachers instruct children with ADHD to meet their behavioral problems in regular classrooms.

In this research, observation is used as the main research method. Observation is to obtain data by watching the participants without altering or manipulating the natural environment experienced by the participants (Gay, Mills, & Airasian, 2009). There are several reasons why observation was chosen for this research.

Firstly, observation is most suitable for this research, because this method is in line with behaviorism. As discussed in Chapter 2, behaviorism sees human behavior as an observable phenomenon. Human behavior can be objectively analyzed and explained, unlike the human mind, by recording environmental stimuli and human reactions to the stimuli objectively. Therefore, objective methodology, including observation, is an ideal research methodology to assess educational instructions by teachers by analyzing their and their students' behavior.

Secondly, observational methods can avoid the inaccuracy and bias of self-report data (Gall, Borg, & Gall, 1996). Observation lets researchers get more objective information compared with teachers' self-reported information (Gay et al., 2009). Therefore, observational study makes it possible to investigate teachers' actual instructions for children with ADHD without their subjective bias.

Moreover, teachers are not required to possess any knowledge of behavioral intervention in observation. This is because the phenomenon and behavior can be fully described with the knowledge of the researchers and several sources in observation research (Gall et al., 1996). There is a big possibility that teachers do not know what kind of strategies they use to instruct children with ADHD, and what kind of theoretical models there are behind those strategies, even though they actually use their own educational strategies through their career as a teacher. In this case, observation makes it possible to investigate and describe teachers' actual educational strategies objectively without teachers' knowledge about behavioral intervention.

Finally, observation in qualitative research makes it possible for researchers to widen their focus to include context (Gall et al., 1996). Observation lets researchers observe contexts and circumstances around students and teachers when the behavior and reactions occurred. Therefore, not only teaching strategies, but also other contexts that might affect these strategies, such as communication with other students and the placement of the student, could be described.

This study also used a small questionnaire to compliment the findings by observation. The questionnaire was intended to collect basic information about teachers and students with ADHD related to the research for better analysis of the observational study. There is some basic information that cannot be observed in classroom, such as teachers' length of service, amount of experience teaching children with ADHD, and experience taking courses about how to instruct children with ADHD. These kinds of information can affect findings and results of this research. Therefore, it was important to collect basic information about teachers and students with ADHD by questionnaire for high trustworthiness of this research.

## **3.1 Participants**

This research planned to get approximately 5-6 sample cases, considering the research period, which was approximately 3 months, and the sampling period, which was planned to be 2 weeks per sample. The sample size was set as relatively small in order to describe and interpret each case thoroughly, as the goal of sampling in qualitative research is to select cases that are information-rich for the purpose of the study (Gall et al., 1996).

### **3.1.1 Criteria of samples**

Some criteria for the participants in this research were set for purposeful sampling, which is to choose samples that suit the purpose of the study (Golafshani, 2003). The purpose of this research is to gain knowledge of how teachers instruct children with ADHD to meet their behavioral problems in a regular classroom. In total, four criteria of participants were set in order to achieve this purpose of the research as follows;

- 1) Samples are teachers in a regular classroom in elementary school.
- 2) The classroom contains a child who is diagnosed with ADHD.
- 3) The age of the child is between six and nine years old.
- 4) Teachers have experienced teaching children with ADHD for at least six months.



The main purpose of this research was to find teachers' educational instruction (for children with ADHD) in regular classrooms. Therefore, direct samples are teachers in regular classrooms, while students with ADHD are indirect samples. Also, the reason why this research should be conducted in regular classrooms is that more and more students with ADHD have started to learn in regular classrooms in Japan these past ten years and thus information regarding teachers' management of regular classroom including students with ADHD, is needed.

The condition that the classroom has a student with ADHD is important since the research investigates teachers' educational instructions for children with ADHD. Teachers sometimes notice there is a possibility a student has ADHD in some students even though they are not diagnosed. However, those cases should be excluded from this research to avoid confusion and validity of the research.

Elementary school starts at the age of six, and the first half period in elementary school is until nine years old in Japan. The reason why this research focus on the younger children in elementary school is that the younger children are, the higher possibility there are that they have symptoms of ADHD, as research by MEXT (2012) shows. In addition, behavioral problems of children with ADHD often become obvious around this age because the environment changes from kindergarten to elementary school and they are not used to it. School life might be more challenging for students with ADHD in earlier grades in elementary school, and it is also difficult for teachers to manage classrooms including students with ADHD in this age. Furthermore, behavioral intervention at an early stage is called for so that preventive intervention can take place (Landrum, Tankersley, & Kauffman, 2003). For these reasons, more research about educational instructions for students with ADHD in lower grades are needed.

The academic year in Japan starts from April and the data collection of this research was conducted from October. Therefore, this condition is equal to that the samples (teachers) have continuously taught their current class at least from the beginning of the school year. If teachers have less than six months experience, they might be still struggling to find their teaching methods and their teaching strategies might not be stable. Therefore, teachers with less than six months teaching experience should not be included for stability and validity of the research.

### **3.1.2 Procedure for recruitment of participants**

The researcher firstly contacted some municipal boards of education in Japan to ask for conduction of research and information about elementary schools in their municipalities. But the municipal boards suggested to contact each school personally since the researcher belonged to Norwegian educational institution, not Japanese one. Usually the request for participation of educational research is done by university or department in Japan. Therefore, this case where a researcher belongs to foreign educational institution and requests conduction of research by herself was a rare case and the researcher had to contact each elementary school personally.

The researcher called or sent messages to public elementary schools, as first contacts, to request participation in the research. The list of public elementary schools in a municipality were used for the first contacts to the schools. The list was in alphabetic order and the researcher contacted the schools from the top of the list. The criteria of participants described above were mentioned when the schools were asked for participation in this research.

The researcher got some opportunities to meet the headmasters of the schools and explain my research face-to-face after the first contacts on mail and telephone call. An information letter was brought to this first meetings. The information letter contained the purpose the research, the summary of the research and the ethical issues that the research would deal with, as in Appendix A and Appendix B. The overview of the research was explained and how the research should be conducted were discussed with the headmaster. Out of around 40 schools, three public elementary schools had suitable teachers for the criteria and accepted to participate in this research, and from these three schools, seven sample cases were observed.

There were several reasons why other schools did not accept the conduction of the research. Many of them were that the schools did not have teachers or classroom that suit the criteria of sampling written above. The samples that are required in this research is very specific and therefore, the number of possible participants were not so many. There were also many schools which cared about privacy issues. The ways to treat personal information and confidentially were explained, but schools have responsibility on security of students and their home, so they did not want to take a risk. Some schools at a municipality rejected the research because they got a privacy problem previously where a real student's name was written in a research paper by mistake.

## 3.2 Preparation

In order for effective research, developing sound plans and preparations before conduction of the research is required (Gall et al., 1996). Therefore, full effort was used in the preparation of this research. As the research used two research methods, questionnaire and observation, the preparation was needed for both of them.

### 3.2.1 Questionnaire

The questionnaire included three basic questions and four major questions regarding teaching experience of teachers, as partially illustrated in Figure 1. The three basic questions were the teacher's age, the teacher's length of work and the grade of the class. The four questions about teaching experience were how long they had been teaching in the current class, previous teaching experience to children with ADHD, experience getting guidance to teach children with ADHD and specific behavior of children with ADHD that they care mostly about. See Appendix C and Appendix D for more details of the questionnaire.

Basic information	
Your age	
Your length of work	
Grade of your class	

  

Question 1      How long have you taught your current class?

  

Question 2      Have you taught children with ADHD before?

                            → If “yes” : How long did you teach those children?

  

Question 3      Have you gotten any guidance to teach children with ADHD?

                            → If “yes” : Where or how did you get them?

                            → What kind of guidance was it?

  

Question 4      What kind of specific behavior of children with ADHD you usually keep in mind? Please list up.

Figure 1: Partial sample of questionnaire

These questions were intended to make the conduction of observation complement information from the observation during data analysis. After the questionnaire got supervision from the supervisor of this research, the sample questionnaire was sent to Norwegian Centre for Research Data (NSD). After the sample questionnaire was officially accepted by NSD, it was translated to Japanese, as shown in Appendix D.

### 3.2.2 Observation

Hand writing notes were chosen rather than taking notes with a lap-top computer, video-taping, and microphone recording, because taking notes on digital devices might distract participants in a classroom setting (Gall et al., 1996). Sheets to write notes were prepared in advance, as the example is shown in Figure 2. Its size was small enough to put in the pocket so that the observer could walk around and communicate with students in the class freely while being able to record whenever behavioral deviations of children with ADHD and the teachers' intervention for them were observed.

<i>Behavioral problems of the student with ADHD</i>	<i>Teacher's instruction</i>	<i>Behavior of the student after the instruction</i>
After being pointed out from other students that he lied on his desk and did not read a textbook during the class, started to cry, stand up and pack all his stuff to get home.	“What happened? Go to teachers' room for now.”	Put his stuff back his locker and seated.
After getting angry towards another student for putting shoes of the student with ADHD on his desk, broke other students' artworks and sit on a desk that no one used.	“If you cannot be calm down, will you be out of the classroom for a while?”	Back to his own seat.
Not interested in practicing instrument and seat without doing anything	“Let's try only this part. Tell me once you practiced three times”	Started to practice

Figure 2: Example of observation sheets for taking notes

The sheets for taking notes were separated in three spaces for “behavioral problems of a student with ADHD”, “teacher’s intervention to the behavioral problems” and “how behavior of the student changed”, as illustrated in Figure 2. The recording sheet were prepared in this way to know how teachers approach behavioral problems of children with ADHD and what kind of effect the approach has for the behavior of children with ADHD. On the other hand, teachers’ intervention was not separated into behaviorism’s four categories; positive and negative reinforcement, positive and negative punishment from the start. This is due to certain teachers’ interventions that cannot be categorized into these categories.

These detailed notes were written after the data collection was conducted. Only quick notes were taken at the classroom settings, in accordance with the three separated observation points. This will be explained in the next section.

### **3.3 Data collection**

The data that will be described and discussed in the following chapters was collected in the three phases; pre-observational meetings with the teachers, the questionnaire for the teachers and the observation in the classrooms. Data collected in each phase complemented each other and developed understanding of the teachers’ practices more deeply.

#### **3.3.1 Pre-observational meeting**

Before starting the research, a small meeting with each teacher was set. We discussed how to conduct the research and what kind of observer role the observer should have during data collection in order to know how much the observer should participate in the classroom and how the observer should introduce herself to the pupils. Some information about the classroom and students with ADHD were also provided during the meeting. The teachers informed what the main behavioral problems of the student were, and what the classroom looked like as a whole. In some cases, head teachers attended the meeting and gave information about how the entire school approach special needs education. A questionnaire was handed out on paper to the teachers in this meeting and was written and collected by hand

### 3.3.2 Questionnaire

The Japanese version of questionnaire (Appendix D) were brought to the preceding meeting so that teachers can answer questions by the first day of observation and provide some information before the observation was started. In some cases where several teachers were observed in one school, the school leader was asked to hand out the questionnaire to the teachers who would be observed.

The questionnaire was handed out before the observation started and the teachers were not asked to answer right at the place. As a consequence, teachers had time to think about the questions and to answer them. This way was chosen because their immediateness of response was not required. More emphasis was put on their consideration about behavior of children with ADHD, which might take time to remember or to structure to explain. Also, the main research methodology was observation and teachers' naturalistic practice would be able to be observed from the observational study, not from the questionnaire.

Although the teachers were asked to answer the small questionnaire and submit it by the first day of observation, some teachers forgot to answer or submit it, and the questionnaire was not collected before observation. However, we had preceding meeting in most cases and the teachers at least provided the information about what kind of specific behavioral problems the children with ADHD have, before the observation. Most of the teachers answered all questions but one teacher skipped several questions.

The teachers were asked what kind of behavior of the children with ADHD they cared about in advance through the questionnaire. The teachers' answers to the questions enlarged the effectiveness of the observation. The answers gave anticipation of when teachers' intervention for behavioral problems of students with ADHD would happen, and their behavioral intervention could be recorded as quickly as possible. The answers in the questionnaire helped data analysis, as well. The questionnaire included some perspectives and experiences of teachers on behavioral problems of students.

### 3.3.3 Observation

Usually on the first days of each observation, the teachers informed which student was diagnosed with ADHD, but there was also a teacher who showed a picture of a student with ADHD in the previous meeting. The researcher usually introduced herself to entire class on the first day of observation. In some classrooms, the researcher introduced herself as a volunteer teacher while in other class the researcher introduced herself as a trainee-teacher, depending on what each teacher wanted her to do. The researcher visited some of the classrooms before the observation study, or in other classrooms, the researcher attended without recording anything for a certain period before the data collection. The research was done as such so that both teachers and students would not feel uncomfortable and awkward towards the observer and reliable data could be collected.

The observer role of the researcher was different in different classrooms, depending on the teachers' expectations. In the preceding meeting with teachers, teachers were asked how much the researcher should participate in the classrooms during observation. Between the two extreme poles of observer role; participant and observer. The researcher mostly played the participant-observer role in this research, because many teachers expected the researcher to play this role. The participant-observer role is where a researcher observes and interacts closely enough with individuals to establish a meaningful identity within their group, but the researcher does not engage in core activities (Gall et al., 1996). The researcher interacted close enough with individuals in the observed classrooms to make a trustful relationship and to observe natural behavior of both children and teachers. However, the researcher did not participate in core activities, especially when behavioral problems of children with ADHD occurred, so that the researcher herself would not affect the phenomena and behavior. In other cases where teachers did not expect the researcher to participate in the class, the researcher almost only observed the classes from the backside of the classrooms.

The researcher visited each classroom for one to two weeks. In some cases, the researcher observed from the beginning of the school day until students left the classroom to go home, including morning and end-of-the-day meetings, break time, and lunch time. On the other hand, some other schools requested the researcher to visit only 2-3 classes per day. In addition, there were some exceptional cases and observational days. For instance, one school had an open-school day for a day, when parents of students, people from other educational institution and others could freely observe classes. Another school had a school festival right

after the observation conducted and had irregular curriculums to prepare for the festival for the entire observation term of this research. Conditions and situations of each sample case will be described later in chapter 4.

Quick notes were taken when behavioral problems of students with ADHD happened and teachers reacted to them during the observation. It was also tried to record teachers' preventive approaches towards behavioral problems of children with ADHD. The biggest difficulty was that the researcher was in the classroom all day in many cases and could not write detailed notes soon after the phenomena happened. Therefore, abbreviations were used, and the researcher tried not to be distracted by other factors in the classroom when notes were taken.

Detailed notes were taken soon after the researcher left the field setting. At some schools where only one teacher was observed, the detailed notes were made at the end of the day outside of the school. At the other school where several teachers were observed in one day, the detailed notes were made after each class at a spare room for teachers. The detailed notes were concreted to avoid vague and overgeneralized description since good field notes in qualitative research are descriptive and reflective (Gall et al., 1996).

There was an exceptional case where a school had an open-school day. During the period, the researcher was not supposed to take notes so that people around her would not be skeptical about the research. Therefore, the researcher took very short notes during short break time between classes outside of the classrooms and made detailed notes outside of the school at the end of the days.

The focus of this research was behavioral intervention, and therefore, the researcher did not intend to record other types of instruction, such as academic intervention and teachers' communication with other students that does not affect behavior of a student with ADHD. Making it clear what will be written in the notes and what will not be written was effective since there was not enough time to write detailed notes right after the phenomena happened. The teachers were explained that the researcher would not record other types of instructions beforehand. By deciding the specific behavior to observe, there is less possibility to overlook phenomena or to miss recording them.



### **3.4 Data analysis**

After taking notes during and right after observation, teachers' intervention to behavioral problems of children with ADHD were categorized into four types of operant conditioning: positive reinforcement, negative reinforcement, positive punishment and negative punishment. The researcher analyzed whether the interventions gave pleasant or unpleasant stimuli to the children with ADHD, or reduced pleasant or unpleasant stimuli to them. Afterwards, the chart of reinforcement and punishment (Table 1) was used to categorize the analyzed interventions into the four categories shown above.

Secondly, specific intervention techniques for behavioral problems of children with ADHD that were categorized into reinforcement and punishment were analyzed. The researcher had some knowledge of reinforcement and punishment techniques from the literature review that was done before conducting the research. Some of the techniques that the teachers used were found during the observation. In this case, the interventions were analyzed by being compared with the previous findings or with the recommendation from psychologists and professionals in educational fields. However, there were some interventional techniques that some teachers used several times but the researcher could not find in papers and books searched as literature review in this research. In these cases, the researcher named the interventions, described them and discussed them by comparing different practices of different teachers and with her educational insights gained from the literature review of other strategies.

And finally, the researcher described and discussed unique cases that are interesting to be mentioned from the perspective of reinforcement and punishment. The aim of this research was to find how teachers instruct children with ADHD to meet their behavioral problems in regular classrooms. The focus was more on how each teacher used reinforcement and punishment as behavioral interventions, rather than generalization of teachers' practices. Therefore, it was rational to describe and discuss thoroughly each strategy even though it was uncommon and unique.

It was important to take into consideration that different things are experienced as reward or punishment depending on the pupils. As mentioned in chapter 1, so-called punishment might be taken as reward for children with ADHD, or reinforcement might not be considered as reinforcement in some cases. Therefore, the part "behavior of students with ADHD after an

instruction” included in the observation sheet and in the notes helped to sort out the interventions into the two categories properly.

The teachers’ answers in the questionnaire helped data analysis. The questionnaire included behavior of the children with ADHD that the teachers currently care about, length of teaching in the current class, previous teaching experience to children with ADHD, and experience of getting guidance to teach children with ADHD. The researcher could analyze and discuss the findings, understanding the focus point of the teachers’ behavioral interventions for children with ADHD and the background belief of the interventions.

### **3.5 Reliability and Validity**

Reliability is the extent to which results are consistent over time and an accurate representation of the entire population, and validity determines whether the research truly measures what was intended to measure or how truthful the research results are (Joppe, 2000). Both terms are originally derived from quantitative research, but it is important to ensure them in qualitative research (Golafshani, 2003).

One of the important ways to secure reliability and validity in an observation study is to reduce observer effects. Observer effects mean observer’s negative effect on the validity or reliability of the data by presenting in the field-settings (Gall et al., 1996). In order to reduce these observer effects on research data, the observer visited some classrooms before the observation study, or otherwise stood in the classrooms for a certain period without recording anything on the first day of observation. Teachers and students would be more used to the presence of an observer in the classroom and reliable data could be collected by doing this. However, while the researcher could reduce observer effects to some extent, her presence might still affect the classroom setting. Gall et al. (2007) insists that observers should explain and analyze reactions of participants to the observer’s presence as a part of the research procedure. Therefore, the thesis describes how the presence of the researcher in the classroom setting seemed to affect teachers’ and students’ reactions and behavior to some extent in the discussion.

It was also helpful to communicate with and ask some questions to the teachers outside of the observation period. Gall et al. (2007) recommends spending prolonged time in the field to develop an in-depth understanding of the phenomenon under study. In fact, outside of the

decided observational period, the researcher could get information of teachers' thoughts on education for children with ADHD and their intentions for using some teaching strategies that the researcher could not directly observe. This information helped to analyze data more deeply and accurately, and consequently, helped to secure validity and reliability of the research.

Contexts and each case's conditions are explained in detail. While reliability and validity of quantitative research depend on the construction of research tools, they are dependent on the ability and effort of the researcher in providing rich and thick descriptions in qualitative research (Gall et al., 1996; Golafshani, 2003). Contexts that could affect data of this research were such as Japanese cultural contexts, legal conditions in Japanese educational field, classroom environment, school environment, and students' conditions. The frequency and length of observation, observer roles and basic information about the participants that is collected by the questionnaire are also explained as conditions of the research. These factors are explained in detail to show full pictures around the phenomenon that was observed.

Since rich and detailed explanation is important for securing validity and reliability in qualitative research, it is also important to present negative aspects of the research. Gall et al. (2007) affirms that presenting negative or discrepant information that is counter to the themes is important in order to add the credibility of an account. The disadvantages and limitations of this research are explained in Chapter 5: discussion part.

It is recommended to use multiple approaches to assess the accuracy of the findings (Gall et al., 1996). In order to analyze and discuss the findings from observation, questionnaire was used as another research methodology to compliment observation study. As already explained, the questionnaire helped to record teachers' behavioral intervention as quickly as possible during the data collection, and to include the teachers' intention and their background in data analysis. This multiple approach made it possible to complement the accuracy of the findings.

As for reliability, narrowing focus is an important factor. The researcher focused on the teachers' behavioral intervention to their students with ADHD and thus, did not record any other types of educational intervention, such as academic intervention and the teachers' behavioral intervention to other students. By limiting the focus of this research, it reduced the possibility that the different factors affect the results.

### **3.6 Ethical issues**

According to de Vaus & de Vaus (2013), there are five ethical responsibilities towards research participants; voluntary participation, informed consent, no harm, confidentiality and privacy. From the perspective of voluntary participation, people should not be forced or required to participate in the research because the research handles personal information, private views and personal time (De Vaus & de Vaus, 2013). Therefore, the researcher told participants in advance that the research is voluntary and can be terminate at any time when the participants feel like it without stating any reason. Participants could also choose not to fill in the questionnaire without stating any reason.

As for informed consent, participants must be provided the right to make a choice and to access accurate information relating to the research (De Vaus & de Vaus, 2013). This research got consent from head-teachers and teachers with written letters. Children with ADHD were not the direct participants but indirectly related to the research, so each teacher got verbal consent from their parents. The letter was mainly about the purpose of the research, how the observation and questionnaire will be conducted, why they were chosen as participants (conditions of sampling), and how personal data will be treated. However, too disclosed research might influence teachers' interaction and attitudes towards the children and might also influence the behavior of children with ADHD. Therefore, the information letter did not include information about the "reinforcement and punishment".

Participants are potentially exposed to harm because of the intervention of researchers (De Vaus & de Vaus, 2013). Observation itself can distress and embarrass participants and may create psychological harm (De Vaus & de Vaus, 2013). The selection of participants itself can also harm them because this research is dealing with a sensitive topic. To ensure no harm for the teachers and children, the researcher explained the research with extra emphasis on that the purpose is not to judge the educational practices they do are right or not, but to find how teachers manage regular classroom that include behavioral problems caused by children with ADHD. This is a rather positive perspective to their practices. This research respected the teachers' practices in the process of writing this thesis, as well. The parts that teachers potentially might be embarrassed or distressed about are explained carefully and without specifying whose practices they were. The researcher also tried to create an as intimate

relationship as possible with the teachers and schools. The researcher communicated with the teachers outside of the observation period to make them feel more relaxed.

Most obvious way in which participants can be harmed is that the confidentiality of responses is not honored (De Vaus & de Vaus, 2013). There are three main reasons for assuring confidentiality; for the quality and honesty of responses, for voluntary participation in the research, and for the protection of a person's privacy. The researcher ensured the participants that even though the researcher would be able to identify participants, no one else, including her supervisor and teachers, would be able to access the defining information of the participants. Informed consent, observation notes, and questionnaires were stored separately from each other in different files. Instead, the records were given ID numbers to be identified which recordings are from which teachers. As for the identification of locality and personal information, this thesis does not show name of the teachers, students, class, school and even municipality where the research was conducted, and the participants were informed about this beforehand.

Privacy is a base for voluntary participation and confidentiality, and an important factor to think about in the ethical field (De Vaus & de Vaus, 2013). Although the researcher promised the schools to send a short report about the research, it was emphasized that the researcher will not contact the schools and participants for any other reason after the research has completed. In addition, qualitative research often needs a particular kind of intimacy between researchers and participants in order to find the participants' lived experience, while the settings might be highly private in nature (Gall et al., 1996). Therefore, the researcher tried to find a good balance between intimacy between she and the participants and a distance that secures the participants' privacy during observation and informal conversation with them.

The research notification was sent to NSD to make sure that the research would not violate any ethical issues and to gain permission to execute the research. At last, the research became officially accepted to be conducted, after the authority checked through the research plans. The accepted research notification is in Appendix E. The researcher, however, had a discussion with NSD about the informed consent from parents of children with ADHD. The researcher originally thought informed consent from both teachers and parents of students with ADHD were required. However, most of the schools that the researcher offered to participate in this research were hesitant to collect the consent form from parents of the students with ADHD. This is because the direct object of the observation study is not

students but teachers, and therefore, they thought it is not necessary to ask parents to sign informed consent. The researcher asked an opinion about this issue to NSD, and got an answer that the consent from their parents is necessary to secure their right to make a choice about their children. Since characteristics and behavior of children with ADHD would be explained in the research paper, it was important to make sure that the parents have access to the information of the research before the conduction. NSD mentioned that the consent from parents does not need to be written form and verbal consent is acceptable since the students with ADHD are not the focus of this research. For these reasons, the researcher asked the schools and teachers who participated in this research to inform about the research to the parents of the students with ADHD and get their consent verbally, instead of asking them to sign a written consent which potentially could be perceived to be more serious.

# 4 Results

Many interesting and unique practices of teachers were found by data collection, and the findings are explained in this chapter. Firstly, the chapter presents the description of the teachers, the students and the classrooms observed to show the overview of the participants and the research-settings before describing teachers' practices. After the description of research-settings, reinforcement and punishment strategies used by the teachers are described in detail. The chapter ends with the description of the teachers' environmental strategies to prevent behavioral problems of the students with ADHD.

## 4.1 Description of samples

The data was collected from seven teachers in three different public elementary schools. All were female except for one male teacher, and their years of teaching experience ranged from five to 29 years. The age of the students was between six and nine years old, and they are mostly male except for one female student. I have given numbers from 1 to 7 to each teacher for protection of personal information. The short summary of each teacher's information is in the Table 2 below.

Table 2: Information about the seven teachers

	Teacher 1	Teacher 2	Teacher 3	Teacher 4	Teacher 5	Teacher 6	Teacher 7
<i>Gender</i>	Female	Female	Male	Female	Female	Female	Female
<i>Length of work</i>	29 years	5 years	25 years	8 years	8 years	9 years	12 years
<i>Gender of the student with ADHD</i>	Female	Male	Male	Male	Male	Male	Male
<i>Age of the student</i>	2 <sup>nd</sup> grade	3 <sup>rd</sup> grade	1 <sup>st</sup> grade	2 <sup>nd</sup> grade	1 <sup>st</sup> grade	2 <sup>nd</sup> grade	3 <sup>rd</sup> grade
<i>Length of teaching the student</i>	1.5 years	1.5 years	3 months	7 months	7 months	7 months	3 years (but not every day)
<i>Experience of teaching other students with ADHD</i>	1 student for 2 years	1 student for 6 months	1 student for 1 year	1 student for 2 years	1 student for 1 year	1 student for 1 year	
<i>Experience of getting guidance of teaching children with ADHD</i>	A course for special needs education	No courses	Several courses and classes for special needs education	No courses but advice from special class teacher	Several courses and classes for special needs education	No courses but advice from another teacher	

Most of the information in section 4.1 is collected from the questionnaire and the pre-observation meetings with each teacher, but some information is from the observation in the classroom. Three subjects are described in this section; basic information about each teacher, basic information about each student with ADHD in the teachers' classroom, and how each classroom were observed.

#### **4.1.1 Teacher 1**

Teacher 1 was a female teacher who had worked in several public elementary schools for a total of 29 years. She had taught the children with ADHD in her classroom for one and a half years when the research was conducted. She also has experience teaching another student with ADHD for two years and took a course for special needs education that a municipality conducts.

The student with ADHD in her classroom was female. Her class consisted of eight to nine years-old's students, and the student with ADHD was nine years old when the research was conducted. The size of the classroom was approximately 35 students. It is also noteworthy that the school was preparing for the upcoming annual school festival and had an irregular curriculum.

The researcher observed the classroom for two weeks. The researcher observed and recorded data from the morning until students left the classroom, including morning and end-of-day meeting, short breaks, and lunch time. The teacher wanted the researcher to join in the class as much as possible. Therefore, the researcher participated in the class most of the time by helping other students when they had trouble or questions, by chatting and playing during break, and by helping with some other duties such as preparing tools for class.

#### **4.1.2 Teacher 2**

Teacher 2 was a female teacher who has worked in the elementary school for five years. She has taught the child with ADHD in her classroom for one and a half years when the research was conducted. She also has experience teaching an eight years old student with ADHD for half a year but has never had an education or taken a course toward specializing in ADHD.



The student with ADHD in her classroom was male. The classroom consisted of nine to ten years-old students, and the student with ADHD was nine years old when the research was conducted. The size of the classroom was approximately 25 students.

The researcher observed the classroom for two weeks. The teacher also wanted the researcher to participate in the class as much as possible. The researcher, therefore, observed and recorded data from the morning until students left the classroom, including morning and end-of-day meeting and short breaks. The researcher participated in the class most of the time by helping other students when they had trouble or questions, by chatting and playing during break, and by helping with some other duties such as preparing tools for class.

### **4.1.3 Teacher 3**

Teacher 3 was a male teacher who has worked in public elementary schools for 25 years. He has taught the child with ADHD in his classroom for only three months when the research was conducted, but he has experience teaching another student with ADHD for 1 year. He took several courses for special needs education that the municipality and schools conduct. The courses were mostly about characteristics of children with ADHD and what kind of difficulties they have. His class was originally managed by another teacher and he is the deputy headmaster of the school, but the original teacher got mothers leave which is why he took over the class.

The student with ADHD in his classroom was male. His class was first grade, which consisted of six to seven years-old students. The size of the classroom was approximately 30 students.

The researcher observed the classroom for two weeks but did not observe for whole days. The researcher observed morning and end-of-day meeting, lunch break and several classes. This is because the researcher went to some other classrooms for observation in the same school. The researcher participated in the class most of the time by helping other students when they had trouble or questions, by chatting and playing during break, and by helping with some other duties such as preparing tools for class.

#### **4.1.4 Teacher 4**

Teacher 4 was a female teacher who has worked in public elementary schools for around eight years. She has taught the child with ADHD in her classroom for seven months when the research was conducted. She has not taken courses or training to teach students with ADHD, but gotten advice from teachers of special classes, which was to give instructions very precisely. She also has experience teaching a student with possible ADHD for two years. She gets observation and feedback from the headmaster on a regular basis because it is the school's policy.

The student with ADHD in his classroom was male. His class was second grade, which consisted of seven to eight years-old students. The size of the classroom was approximately 30 students.

The researcher observed the classroom for 1 week in total but only some classes per day, following the observation schedule that the headmaster assigned. The researcher did not participate in the class but only observed the class from the back of the classroom.

#### **4.1.5 Teacher 5**

Teacher 5 was a female teacher who has worked in public elementary schools for eight years. She has taught the child with ADHD in her classroom for seven months when the research was conducted. She has taken courses and seminars about education for students with ADHD. She also has experience teaching another student with possible ADHD for one year. She gets observation and feedback from the headmaster on a regular basis because it is the school's policy.

The student with ADHD in her classroom was male. His class was first grade, which consisted of six to seven years-old students. The size of the classroom was approximately 30 students.

The researcher observed the classroom for one week in total but only some classes per day, following the observation schedule that the headmaster assigned. The researcher did not participate in the class that much but mainly observed the class.

#### **4.1.6 Teacher 6**

Teacher 6 was a female teacher who has worked in public elementary schools for nine years. She has taught the child with ADHD in her classroom for seven months when the research was conducted. She also has experience teaching another student with ADHD for one year. She has not taken courses or training to teach students with ADHD, but got some advice based on research from her colleague who is familiar with students with special educational needs. The advice was to understand that the children with ADHD have difficulties both in learning and in social life, and to focus on what they can do rather than what they cannot do. The teacher especially tried to praise the child with ADHD in front of others if he could do something, and to stop problematic behavior no matter what if it went beyond acceptable level. She gets observation and feedback from the headmaster on a regular basis because it is the school's policy.

The student with ADHD in her classroom was male. Her class was second grade and consisted of seven to eight years-old students. The size of the classroom was approximately 30 students.

The researcher observed the classroom for one week in total but only some classes per day, as following the observation schedule that the headmaster assigned. The researcher did not participate in the class but only observed the class from the back of the classroom.

#### **4.1.7 Teacher 7**

Teacher 7 was a female teacher who has worked in the elementary schools for 12 years. She is a specialized teacher in music. The reason why her case is mentioned in this research even though she is not the main teacher is that some behavioral problems of a student with ADHD could be observed during her class, and some of her approach towards the behavioral problems could be categorized in reinforcement or punishment. Also, the main teacher was not present in the music class, which gives the main teacher's role to the specialized teacher during her class.

The student with ADHD in her classroom was male. The classroom consisted of nine to ten years-old students, and the student with ADHD was nine years old when the research was conducted. The size of the classroom was approximately 25 students. The teacher mentioned

that she believes children with ADHD are diverse and unique as individuals and approaches for them should also be flexible, depending on their situations and characteristics.

The researcher observed her class 3 times, when the class had her specialized subject. The researcher sometimes participated in the class by helping other students when they have trouble or questions, but recorded data most of the time.

#### **4.1.8 Teachers' perceptions on behavioral problems of students with ADHD**

The teachers answered the specific behavioral problems of their students with ADHD that they especially care about in the preceding questionnaire. This section summarizes their perceptions on behavioral problems of their students with ADHD. This section does not mention whose answers they were for the reason of confidentiality and privacy of the students.

The problematic behavior of students with ADHD that the teachers cared about most was their impulsiveness. Some of them answered that their students with ADHD often talk, ask and answer to the teacher without raising their hands and getting permission to speak. Some teachers said it is not only to the teachers but also to other students that the students with ADHD start to talk or take action during class. Other teachers said that their students with ADHD sometimes stand or walk during the class because of some distraction in the classroom.

Some teachers answered they were especially wary of the problematic behavior of the students when they entered their panic or emotional state. The teachers mentioned that their students with ADHD sometimes cannot control their anger and they try to harm things around them or keep blaming other students. Other teachers pointed out that when the students with ADHD get excited, it is difficult for them to mind the class and follow the pace of others.

There were also some teachers who wrote that they were concern about the restless behavior of their students with ADHD. Restless behavior is for example not being able to stand or sit still during classes.

Impulsiveness during class and behavioral problems related to uncontrolled emotion were the most mentioned issues. Moreover, there were some more behavioral problems that some of the teachers pointed out specifically. One of the teachers mentioned that the student with ADHD became demotivated relatively easily when he cannot see tasks as achievable. Another teacher mentioned that the teacher's student with ADHD feel exhausted and start to sleep during class even though she does not want to. It was also mentioned that some students with ADHD show restless behavior such as not being able to stand or sit still during class.

## **4.2 Strategies used by the teachers**

Several educational approaches for children with ADHD were observed during the research. Reinforcement strategies used by the teachers in this research focused especially on the following: verbal praise, behavioral contract and token economy system. Punishment strategies that were most used by the teachers during this research were the following: time-out, response cost, selectively ignoring, behavioral contract, redoing failed activity, halting the lecture and sarcastic questions. Tendencies found in each of the reinforcement and punishment strategies and how the teachers used different strategies are described in the section 4.3 and 4.4.

Furthermore, there were also some strategies that could not be categorized in reinforcement or punishment, which were the placement of students with ADHD in the classroom, a timer as educational tool and other objects to make classes easier for students with ADHD. Those strategies are described as environmental strategies in the section 4.5.

## **4.3 Reinforcement and Punishment**

During the observation, seven main punishment strategies were observed, comparative to three main reinforcement strategies. There were more variations in punishment strategies than reinforcement strategies for behavior of students with ADHD. However, most of the teachers in this research used reinforcement more often than punishment strategies.

In addition to this, the reinforcement strategies were especially used individually for children with ADHD. Many times that the teachers praised or gave token to students with ADHD for their appropriate behavior, they often did so in person. On the other hand, the punishment strategies were used mainly by taking advantage of the class. The teachers punished

misbehavior of the students with ADHD usually in front of the class or used collective responsibility.

## **4.4 Use of reinforcement strategies**

In the previous two sections, reinforcement and punishment strategies for behavior of students with ADHD found during the observation were described as a whole. In this section, each reinforcement strategy found during the observation is explained in detail to show how it was used by the teachers.

### **4.4.1 Verbal praise**

Verbal praise is the strategy that was used the most by the teachers during this research. In fact, almost all teachers used this strategy for the children with ADHD when they showed appropriate behavior.

When the teachers of this research used verbal praise to children with ADHD, they usually specified what the appropriate behavior was and why the student with ADHD was praised. As an example, teacher 3 specified what the usual behavioral problem of his student with ADHD is and how he managed to improve his behavior when the student finally answered the question without screaming, saying “you usually speak too loud and get scolded for it, but today, you managed to be careful to speak with a low voice, didn’t you?”.

The teachers also gave verbal praise immediately after their students with ADHD showed appropriate behavior, or even during them showing pleasant behavior. For example, teacher 2’s student with ADHD were sometimes distracted by other things when he was supposed to do tasks in technical arts class. But once he started to focus on his tasks, the teacher quickly came to him and said “you are great, you are doing (your task) on your own” while he is showing proper behavior and before he might start being distracted again.

The teachers also tried to find as many parts of the student with ADHD to praise as possible. For example, when teacher 6’s student with ADHD could not play a keyboard harmonica until the end of music, the teacher praised the student for the part that he could play for the first time. Teacher 6 also answered on the questionnaire that she tries to find positive points of students with ADHD as much as possible and praise them.

These were some commonalities between the teachers observed. However, there were differences in the way they used verbal praise between the teachers with shorter teaching experiences and the teachers with longer teaching experiences. The teachers with shorter teaching experiences (teacher 2, teacher 4, teacher 5 and teacher 6) gave simple and basic verbal praise. For example, teacher 5 praised her student with ADHD for doing tasks quickly by saying “you are so fast!” or “you did a great job!”. Also, when she praised a group of students or entire class for ideal behavior, such as preparing for the next class without being told by the teacher, she simply said “it is great that you prepared for the next class without being told to so”.

On the other hand, the teachers with longer teaching experiences (teacher 1 and teacher 3) gave verbal praise in more unique ways. Teacher 1 often gave verbal reinforcement to a certain group of the classroom who showed good behavior so that other students including the student with ADHD will follow the group. For example, when students hand out their homework to the teacher, the classroom became a bit noisy, and the teacher said, “those who submit their homework quietly is very good”. Other students including the student with ADHD stopped talking and submitted their homework quietly so that they would also be able to get verbal praise. Teacher 3 intentionally praised the student with ADHD in front of the entire class when the student overcame his usual behavioral problems. For instance, the student is usually slow to prepare for the class compared with others, but when the student managed to prepare for the class very quickly, the teacher said “Today, a nice thing happened. <The name of the student> prepared for the class very quickly. He was even faster than me”.

#### **4.4.2 Behavioral contract**

The teachers of the research did not use written behavioral contract but made behavioral contract verbally with their students with ADHD. The verbal contract contained the behavioral goal of the students with ADHD and conditions that they get depending on the results of their behavior. In this meaning, this strategy the teachers used can be called behavioral contract even though it is in verbal form.

The teachers made relatively small, short-term and temporary behavioral goal of the students with ADHD rather than long-term and consistent behavioral goals. For example, when her student with ADHD said “I want to talk (with my friends and teacher) now” during class,

teacher 4 suggested “since it is during class, you cannot. How about talking in 30 minutes? Is it alright for you?”. The student consent to her suggestion by nodding and kept quiet for rest of the class. This kind of contract is once at each situation rather than consistent over time. There were some exceptional cases where the same behavioral contract was made several times between the teachers and the students with ADHD, but they seemed to be the new contracts in new situations, rather than reviewing the previous contract.

Many of the teachers took confirmation from the students with ADHD or let them consider the behavioral goals with the teachers when they used behavioral contract. However, the center of the decision of the behavioral contract was still not the students but the teachers. Therefore, the procedure of making behavioral contract was not to support the students’ self-decision and independence but rather to negotiate and convince the students. There were even some moments when teachers gave the behavioral condition that the teachers decided for their student with ADHD and the student had to follow the contract.

These are some examples of common usages of behavioral contract among the teachers, but the teachers used behavioral contract in different situations. Teacher 2 and teacher 6 usually used behavioral contract in the case that their students with ADHD did not have the motivation to do something that they were supposed to do. For example, when the student with ADHD did not make artwork but started to play with the paper instead, teacher 2 came over and said, “if you draw lines here, it is done for today. Would you do that?” to set a condition that the student will do his work partially to get a break. When the student with ADHD in teacher 6’s class was delayed in his progress of playing keyboard harmonica in the music class, and lost his motivation to practice, teacher 6 made a condition for the student, such as that he can be done practicing once he is done playing the song four times.

While teacher 2 and teacher 6 used behavioral contract when their students with ADHD lost their motivation to do something, teacher 4 used behavioral contract when her student with ADHD entered his panic state. When the student got mad about another student for breaking a promise and he ran away from the classroom, the teacher came to him and said, “Can you come back to the classroom (small behavioral goal) if I will tell him (the other student) that he should not have broken his promise? (the condition that the teacher gave)”. The student agreed to the contract that the teacher showed, and came back to the classroom, after a while, for the exchange of the promise that the teacher made.



### **4.4.3 Token economy system**

Token economy system was not the most used strategy by the teachers during this research, but some teachers used it for the improvement of behavior of students including those with ADHD. Among the seven teachers, three of them especially used this strategy.

As for the usage of token economy, the teachers used it very systematically, as they used it every day at the same time in the same way. In teacher 3 and 5's classroom, students who did their homework get a stamp on their everyday notebook as a reward. Teacher 1 went around the classroom and gave marks on students' everyday notebook once the students have written down the next day's schedule and homework. She also gave marks on task sheets of each if they practice mathematics at home and pass a small test. This was especially attractive for her student with ADHD, who was proud of the number of marks on her sheets and showed it to others.

The teachers also applied this token system to the entire classroom, not only to the children with ADHD. In their classroom, everyone had equal opportunities to get tokens for the achievement of the same tasks, regardless of having special needs or not. Most of the students, including those with ADHD, actively participated in the activities and tasks in order to get the tokens as a result.

However, the classrooms did not prepare the big token for the collected small tokens. The token system in these classrooms were only to keep getting small tokens and did not have the prepared systems to give big tokens as a result of getting certain amounts of small tokens. Therefore, the reward that students including those with ADHD could get was feeling of achievement of each small token.

## **4.5 Use of punishment strategies**

Same as the reinforcement strategies, each punishment strategy found during the observation is described thoroughly in this section. In order to ensure no harm for the teachers, some practices are explained without specifying whose practices they were.

### 4.5.1 Time-out

Time-out was not the strategy that many teachers used, but some of the teachers used or tried to use this strategy a lot. Some teachers answered on the questionnaire and informal conversation during the observation that they often use time-out for the behavioral problems of the student with ADHD. Another teacher had classroom contract in which all students face the possibility going to the time-out zone if they misbehave, as the teacher said during observation “you knew that you would have to go here (time-out zone) if you did something bad”.

The teachers used time-out for the different behavioral problems of the children with ADHD and for different purposes. Some teachers suggested to go to separated places whenever their student with ADHD got upset and his emotion and aggression might become a danger in the classroom. Teacher 2’s intention to send the student to a separate space was to give him time and space to calm down, as she said, “let’s go outside of the classroom so that you can calm down”, several times during the observation when her student with ADHD got upset. Teacher 7 also suggested her student with ADHD to go to a separate space when he showed his aggressive emotions. For instance, when the student ADHD got into his panic state and he himself might become a danger in the classroom, teacher 7 gave a condition, “If you cannot calm down, will you go to the main teacher’s office?”. In both cases, the student kept coping with his emotional and behavioral problems for a while but finally settled down.

While teacher 2 and teacher 7 used time-out to let the student calm down, another teacher used the strategy as an “ultimate strategy” to terminate the misbehavior of her student with ADHD. She sent the student to the time-out zone only after she pointed out several behavioral problems of the student. She said that she would send the student to the time-out zone if the student would show behavioral problems one more time. The student’s problematic behavior was such as laughing loud or joking around during class, which are not so harmful for other students. When the student with ADHD did not stop his problematic behavior even after the final warning, the teacher sent the student to time-out zone.

Furthermore, there were some practices in which some teachers told their students to go out of the classroom in a harsh way regardless of the students’ intention. In almost all the cases where the teachers suggested time-out to their student with ADHD, the students rejected to go to the time-out zone. The teachers, however, kept telling the students that they needed

time and space to settle down. One of the teachers also answered in the questionnaire that “whenever I judge that the student with ADHD makes trouble for the other students, I consistently tell the student to go to a separate space until the student calms down regardless of the students’ wish”.

As for the placement of the time-out zone, one of the teachers placed it right outside of the front door. Therefore, the student was standing at the hallway where only the teacher can see. Because of this location, other students did not influence the student’s behavior during time-out by for example making fun of the student or giving the student attention. The teacher opened the door so that the student could listen to the class during time-out.

It was when the class got to a certain phase that one teacher let the student with ADHD come back to the class. The teacher assigned other tasks to other students, and then came to the student with ADHD who was standing at the time-out zone to talk with. The teacher explained to the student personally why the teacher sent the student there, and let the student go back to the student’s own seat, saying “do not come here again”.

#### **4.5.2 Response cost**

Response cost is one of the least used strategies during this research. One of the teachers, however, used response cost more than the token economy system, which is interesting to mention. The teacher used typical response cost system for students’ misbehavior during classes. If students misbehave and interrupt classroom management, the students get a point. When they reached three points total in a class, the students must leave the classroom.

All the students in the class, including the one with ADHD, understood the system, which implies that the teacher had used this strategy several times previously in the class. The usage of this strategy was also shared with other teachers of specialized subject and used in the class even when this main teacher was absent. However, the strategy was used in a random manner during observation since the teacher used this strategy only sometimes and there was no consistency in the timing when she used this strategy for behavioral problems of students.

### 4.5.3 Selectively ignoring

Some of the teachers in this research selectively ignored behavioral problems of children with ADHD to avoid intensifying their behavioral problems. One of the teacher used this strategy a lot when the student with ADHD started to speak out during classes without raising his hand or getting permission from the teacher. For instance, when the teacher asked for the answer of a math problem to the class and the student said “I know it! It is really easy!” out loud, while other students raised their hands to wait for the teacher’s permission to answer. The teacher ignored the student with ADHD and gave permission to another student to answer. Teacher 7 also selectively ignored sometimes when a student with ADHD showed relatively small misbehavior. For example, when the class sang together or when teacher 7 talked, the student with ADHD got angry because of other students’ attitude to him and started to make small noise with his recorder or his own voice to show his anger. Teacher 7 glimpsed the student several times when these behavioral problems occurred but did not give attention to him.

The teachers above used this strategy for different purposes. The first teacher did not give attention to the student with ADHD as long as the student did not raise his hand or get permission to speak by the teacher. Therefore, the teacher’s purpose of using this strategy was to make the student notice that it is needed to raise his hand when the student wants to speak. Teacher 7, on the other hand, used this strategy when the behavior of the student with ADHD was neither something intense nor influential for classroom management and other students.

In addition to the usage of the strategy, the teachers reacted to behavioral problems of the students with ADHD differently after using it. The first teacher responded to the student with ADHD very quickly when the student raised his hand to say something or to ask a question. As a result, the teacher differentiated her reactions in the case that the student spoke out in a random manner and the case that the student raised his hand before he started to talk. Teacher 7, on the other hand, reacted to the behavioral problems of her student with ADHD when ignoring did not have effect on them and the student continued to make noise. She verbally scolded the student once she noticed that the student did not stop his misbehavior, and the student discontinued his misbehaviors.

#### **4.5.4 Behavioral contract**

Behavioral contract as a punishment strategy was not used so much by the teachers of this research but could be found in some classrooms. One of the teachers especially used behavioral contract as a punishment strategy rather than reinforcement strategy, while other teachers used it as reinforcement.

The teacher used the behavioral contract to the student with ADHD when the student gave up something that the student was supposed to do and when the student fell asleep during the class. For instance, when the student refused to practice gymnastic with a bar, the teacher said, “You will lose your break time if you do not practice”. The student eventually followed the teacher’s instruction not to lose the break time. It was same with the case when the student fell asleep during classes. The teacher woke the student up and said, “You will lose your break time if you sleep here now”.

Same as the teachers who used behavioral contract as reinforcement, the teacher made relatively short-term and temporal behavioral goal of the students with ADHD. The teacher made up the behavioral contract at each moment when the student with ADHD showed behavioral problems, rather than keeping specific behavioral contracts in a long term consistently.

When the teacher made the behavioral contract, the teacher did not let the student with ADHD to decide behavioral goals and conditions or get agreement from the student. Instead, the teacher decided the content of the behavioral contract and the student had to follow it. The student with ADHD did not seem to like the contracts, saying “eh (the sound of complaint in Japanese)”. The student eventually followed the teachers’ contract but showed the same problematic behavior afterwards.

#### **4.5.5 Redoing failed activities**

Redoing failed activities as a teaching strategy is to make students redo activities that they failed because of their behavioral problems. With this strategy, students with ADHD can practice appropriate behavior, in addition to being made aware of their behavioral problems. Not all teachers used this strategy during this research, but some of the teachers used it a lot during the observation period, and thus it is worthy to describe how they implemented this strategy in the classroom.

For example, whenever a group of students, including the one with ADHD, were not doing certain movements quietly and quickly enough, one of the teachers said, “Will you all do this again (from the beginning)?”. Although the teacher did not actually make the students do the activities from the beginning, the teacher warned the students by suggesting having to redo the activities again. The students, including those with ADHD usually became quiet and started to do what they were supposed to do quickly.

Another teacher made all students redo the greeting if they could not do it properly at first. In a usual Japanese classroom, students are supposed to stand up calmly to greet together at very start of the morning meeting. Especially the student with ADHD often made disturbing noises when he stood up, and the teacher made everyone sit down again to do the greeting from the beginning. The way the teacher told the students to do it from the start was not harsh but was rather like a suggestion even though the strategy itself is categorized as punishment. The student with ADHD usually did the greeting properly at the second time.

Both of the teachers used this strategy as collective responsibility for behavioral problems of students with ADHD. If the teachers made only the children who failed a certain activity retry it, the focus could be on their practice of appropriate behavior. However, the teachers made (or warned to make) the entire class redo activities that only the students with ADHD (or a part of the class including the students with ADHD) did not manage to execute properly, instead of making only the student with ADHD redo the activities. In this sense, the purpose of the strategy seemed to be making the children with ADHD feel guilty for their inappropriate behavior.

#### **4.5.6 Halting the lecture**

Halting the lecture is a strategy to pause the lecture temporarily when a student shows behavioral problems. Teachers usually keep pausing the lecture until the student stop his or her behavioral problems, and resume the lecture again once the student stopped the behavioral problems. This way, the teachers could give responsibility to and pressure on the students with ADHD to continue the class and make the students feel that they cause problems for others because of their behavioral problems. Some of the teachers paused class many times when their students with ADHD showed behavioral problems.

Teacher 3 and teacher 5 used this strategy, mentioning the specific behavioral problems of focus. For example, when her student with ADHD got tired or bored during the class and their sitting posture became improper, teacher 3 paused the class, saying “I will wait (pause the class) until everyone sit with a good posture”. The student stopped lying on his desk and sat with a proper posture in order to terminate the pausing time. Teacher 5 said the specific number of students for halting the lecture when there were several who showed problematic behavior. When some students including one with ADHD played with their pencils during class, the teacher said “I will start explaining once everyone stops playing with their pencils and put them on their desk. There are still 5 people who have not put their pencils on their desk”. The students including the one with ADHD stopped playing to terminate the pausing time.

While teacher 3 and teacher 5 mentioned the specific behavioral problems as the cause of halting the lecture, another teacher did not mention the focus behavioral problems when she used this strategy. Most of the time, the teacher suddenly stopped talking when the student was speaking during the class without the teachers’ permission. When the student started to speak out of order, the teacher did not look at the student or tell the student to be quiet, but just kept quiet until the student stopped speaking. The teacher started to talk right after the student terminated the disturbing behavior. It was obvious for everyone including the student with ADHD that the teacher waited for the student with ADHD to stop talking and the class was paused because of the student’s behavioral problem.

This strategy included the entire class’s collective responsibility for the behavioral problems of the students with ADHD, same as redoing failed activities. The teachers did not mention the specific students who caused the suspension of lecture, but it was obvious that the behavioral problems of the students with ADHD caused the situation.

#### **4.5.7 Sarcastic question**

Sarcastic question was one of the strategies that the teachers of this research used most. Some teachers intentionally asked questions to students with ADHD in front of the entire class when they were not focusing on the class. This thesis will call this strategy as *sarcastic question* since the teachers knew that the students would not be able to answer the question but still asked, making them realize that they did not focus on the class. Among the teachers of this research, some teachers used this strategy a lot.

One of the teachers often asked questions related to the class to the student with ADHD and made the student answer when the student was clearly not focusing on the class. The student often lost focus by playing with tools, thinking about other things and drawing on the study desk. The teacher asked questions related to the class to the student on purpose and waited until the student answered something. The student was usually unable to answer the questions because the student did not listen to the lecture. After a pretty long silence in which the class waited for the student to say something, the teacher said “you cannot understand the lecture if you do not listen to the lecture” and started the lecture again. The student focused on the class afterwards for a while.

Another teacher often asked whether the student with ADHD had done what all the students were supposed to do in front of the class when the student was clearly doing something else. For example, when the student was supposed to write his own name and date on a task paper but looked outside of the window and not having done any writing, the teacher asked “hey <the student’s name>, have you written your name and date already?”. The student did not directly answer the teacher, but started to write hastily.

## **4.6 Environmental strategies to prevent behavioral problems**

There were also some strategies that cannot be categorized as reinforcement or punishment. While reinforcement strategies and punishment strategies respond to behavior that students with ADHD have already shown, some other strategies were used to prevent their behavioral problems or to guide them to show appropriate behavior. This thesis will call these strategies as environmental strategies since the strategies make the environment to learn appropriate behavior before they show behavioral problems. Six different environmental actions to meet behavioral problems of students with ADHD were found through the observation.

Firstly, placement of the students with ADHD was important for the classroom management for the teachers. All the teachers except for one teacher placed students with ADHD in the front line of the classroom. Teachers could reach the students with ADHD as quickly as possible especially when the students showed behavioral problems during classes. Teacher 1 mentioned in the informal conversation outside of the observation, that the placement of her student with ADHD is very important for classroom management and she always place the



student in the front line. In teacher 3's class, he changed the placement of the entire class during observation term, but he did not change the position of his student with ADHD who had sat in the front line.

Secondly, teacher 3 and teacher 4 used a timer a lot when they told students to do something. Teacher 3 used the timer after every morning meeting to tell his students to finish preparing for the next class within a certain time. Teacher 4 used the timer during the preparation for class like teacher 3 did, but she also used it during class when students did their tasks. Students did not get any reward or punishment for the time they used to complete their tasks, but the students including those with ADHD tried to finish what they were supposed to do in time.

The previous strategy used an object, timer, and there was one more strategy that used another object. Teacher 4 used a magnet and procedure board to show in which stage of the process of the class they were at any given time. She used a board with writing "review (of the last class)", "new (explanation of new chapter)", "yourself (thinking by yourself)", "everyone (sharing in the class or group)" and "summary", and a magnet to place on the procedures to visualize what the class is doing now and what the next tasks will be.

Peer support is also one of the strategies that teachers used for management of classroom with students with ADHD. Peer support is to enlist peers to support children with ADHD for teacher's economy of time (Kirk et al., 2011; U.S. Department of Education, 2008). Teacher 1, teacher 3 and teacher 5 used this strategy. All the teachers did not enlist specific students to help the specific students with ADHD, but they used a system where students who could finished tasks earliest get right to help out the teachers or other students. For example, teacher 1 and teacher 5 often enlisted students who finished some tasks during class to help teacher by delivering stuff like papers and notebooks to students. Teacher 3 often said "those who finished preparing to go home help others who has not finished preparing, please". Because they did not enlist specific students to support peers, the students with ADHD were not only helped by other students, but also helped other students.

Some of the teachers of this research offered special support or privilege for students with ADHD to prevent them from becoming frustrated with their tasks. Especially teacher 2, teacher 4 and teacher 7 used this strategy. For instance, teacher 2 allowed her student with ADHD not to participate in group activities or to skip his tasks after he had trouble with other

students and tried to calm down. She always made the student try a certain task or activity first, and if the student said he cannot do it, she allowed him to idle while other students continued with their assignment. Teacher 4 always helped her student with ADHD first to do his tasks during classes after explained the assignment. Since he usually started to complain and call the teacher if he did not understand the tasks, it seemed helpful for the teacher's classroom management to give extra hints to the student with ADHD first. After her student with ADHD had been in his panic state and started to calm down, teacher 7 helped him to tidy up his belongings even though other students were supposed to tidy up by themselves.

Finally, taking items away as a teaching strategy was found in this research. For instance, teacher 3 often took away items from the student with ADHD if he touched or played with them at an inappropriate time. When the teacher is talking in front of the class, students are supposed to look at and listen to the teacher. Sometimes the student with ADHD played with some of his items, such as a tape and glue, while teacher 3 was talking. The teacher took away those items, saying "I will keep it until the meeting (the class) will be finished". Some might consider this strategy as punishment since the teacher removed pleasant stimuli, tools that the child was playing with. However, the main purpose of this strategy seen in this research was to get rid of distractions from the students with ADHD, rather than to punish their misbehavior. Therefore, the strategy was categorized as an environmental strategy.

# **5 Discussion and Conclusion**

This chapter discusses the findings of this research, in accordance with the sequence of results shown in the previous chapter. First of all, strategies for behavioral problems of students with ADHD used by the teachers in this research are discussed. Second of all, reinforcement and punishment strategies used by the teachers are discussed as a whole. Finally, the use of each strategy in the categories of reinforcement, punishment and environmental strategy is discussed.

## **5.1 Strategies used by teachers**

Teachers in this research used a variety of strategies to deal with behavioral problems of children with ADHD. Among them, the observation study found that 10 strategies (three reinforcement strategies and seven punishment strategies) were the main strategies used by the teachers. This finding implies that the teachers in the research contrived diverse teaching strategies to approach behavioral problems of students with ADHD at the same time managing a regular classroom.

Many of the strategies found in this research were already mentioned or recommended in the past research, but three of them were not found in papers and books read as literature review. These three strategies were redoing failed activities, halting lecture and sarcastic question, and all of them are punishment strategies towards behavioral problems of students with ADHD. The reason why these punishment strategies were not found in the literature review might be because punishment strategies are generally not recommended to be used. Using punishment runs the risk of containing ethical problems because the strategy often causes agony for the children (Muramoto & Sonoyama, 2008).

## **5.2 Reinforcement and punishment**

More variations in punishment strategies than in reinforcement strategies for behavior of students with ADHD were found in this research. It can be said that this result corresponds with the findings in the past research that Japanese schools have approached behavioral problems by punishment rather than reinforcement (Kishino & Muto, 2005; Muramoto & Sonoyama, 2008). However, most of the teachers in this research used reinforcement more

often than punishment strategies to behavior of students with ADHD. This may implies that the teachers generally prefer to use reinforcement strategies than punishment strategies for behavior of students with ADHD, but they may have less knowledge in various reinforcement strategies than punishment strategies.

It was also found that the reinforcement strategies were often used individually between the teacher and the students with ADHD. This personal reinforcement is effective to relay positive feedback for the appropriate behavior of students with ADHD, but if the teachers would praise the students with ADHD in front of the classmates, the notice from others that the students were praised might function as a positive stimulus for the students with ADHD. On the other hand, punishment was often used in front of the entire class. This way gives the students feeling of embarrassment and strengths the negative stimulus for the students with ADHD. The teachers also used collective responsibility for the misbehavior of the students with ADHD, which means that other students got responsibility for the misbehavior of the students with ADHD. This makes the students with ADHD feel guilty for their misbehavior, and it might also affect the relationship between the students with ADHD and their peers negatively. It would be reasonable to recommend that teachers should use reinforcement strategies in front of other peers.

As described in Chapter 2, both reinforcement and punishment have different positive points discussed by psychologists and professionals in educational fields. However, the characteristics of positive points of reinforcement and punishment are different from each other. The positive points of reinforcement discussed were mostly about the child's learning of appropriate behavior, while the positive points of punishment were for teachers' classroom management. For example, reinforcement produces the changes in students' attitudes that will shape their behavior for a long term (U.S. Department of Education, 2008). On the other hand, punishment can reduce behavioral problems immediately from the classroom with a rapid suppression on students' inappropriate behavior and teachers find them desirable in order to control the classroom (Maag, 2001). It can be said that using reinforcement as much as possible is important for students with ADHD to learn appropriate behavior. For teachers' classroom management, punishment might be more effective, but if teachers want to focus on the behavioral improvement of students with ADHD, it is important not to rely on punishment.

## **5.3 Reinforcement strategies**

Several reinforcement strategies in the observation were found and how teachers used those strategies were in Chapter 4. This section will discuss the usage of the reinforcement strategies found in the observation, separating into three sections; effective ways that teachers used the strategies, points to be improved, diverse practices among different teachers.

Although there were some room to be improved in the usage of reinforcement, the teachers used reinforcement strategies in similar ways that psychologists and educational specialists recommended, as a rule. Many of them also used the strategies in diverse and unique ways.

### **5.3.1 Effective ways that teachers used the strategies**

U.S. Department of Education (2008) recommends teachers specify desirable behavior when they verbally praise children with ADHD, while past research found that teachers tend not to clearly specify desirable behavior when they praise children with ADHD (Arcia et al., 2000). However, the teachers in this research specified what appropriate behavior was and why the students with ADHD were praised when they gave verbal praise to the students, as recommended. This result is different from the past research about verbal praise. It would be easier for the students with ADHD to generalize their appropriate behavior if the teachers explain what the students did well and how they are supposed to behave in the future.

It is recommended to give praise to children with ADHD immediately when they show appropriate behavior, considering inattentive characteristics of children with ADHD and their nature of preferring immediate rewards (van Meel et al., 2011). The teachers in this research successfully met this condition by praising, giving rewards and reacting to them immediately when they showed appropriate behavior. This immediateness enlarges the effectiveness of reinforcement strategies because, as shown above, children with ADHD tend to prefer being praised immediately. If the teachers extended to give praise to appropriate behavior of students, students might be disappointed for not getting expected praise, or they might forget what appropriate behavior they showed. Therefore, the teachers in this research used verbal praise in an ideal way.

According to Arcia et al. (2000), teachers are typically not consistent enough when using the token economy, and this diminishes its effectiveness. However, the teachers who used token

economy system in this research succeeded to use the strategy systematically and coherently. They used the strategy for everyday routine tasks, which were coherent for every student. Only in the case that they let students who could prepare for the next class help teachers by delivering notebooks or other students to prepare, the strategy was not systematized but randomly made at that point.

It is also important that the strategy is applied to the entire classroom, in order to ensure children's equal participation that enhances the value of the rewards (Arcia et al., 2000). The teachers in this research managed to use the token economy system in this manner, as well. The marking system for everyday routine tasks and the right to help the teachers and other students were given equally to both children with ADHD and those without ADHD. The equal opportunity to get reward enhanced its value.

### **5.3.2 Points to be improved**

As DuPaul et al. (2011) suggested, the rules in behavioral contract should firstly be explained and reviewed frequently over time. However, the teachers in this research made and used the behavioral contract mostly once as each situation arose rather than using it consistently in the long run. It might be confusing for students with ADHD if new contracts emerge from one to next, especially taking it into consideration that children with ADHD may be inattentive and easily forget rules. Focusing on the biggest behavioral problems, making small number of behavioral contracts for the behavioral problems and using them frequently over an extended period would probably be easier for students with ADHD to follow. In addition, it would be helpful to make the rules visual in the classroom or on the "behavioral contract paper". By writing the behavioral rules, the rule become consistent and can be followed up frequently because the rules are always in visual sight of the students with ADHD.

It was suggested to assist students with ADHD to make the behavioral contract mainly by themselves for their self-management and self-encouragement. Many of the teachers in this research, however, convinced the students to consent to a contract defined by the teacher rather than helping them to decide the contract independently. It might be difficult to give the students full responsibility on their own behavioral contract, but it would be helpful for students' self-management skill and self-encouragement to let them make the contract. This attitude of making behavioral contract can be explained as "classroom agreements" with the students instead of classroom rules that teachers decide.

It was recommended that teachers prepare a big token for a certain number of small tokens that students already got for their appropriate behavior (Hoy et al., 2008). On the contrary, the teachers of the research did not systemize big tokens for collected small tokens. This means that the only reward that students could get was small tokens and the tokens did not have any changes. This might be quite boring for students with ADHD for the sake of their strong tendency to seek new rewards (van Meel et al., 2011). Therefore, preparing big tokens for collected small tokens as a system would work better when teachers use token economy system for the improvement of behavior of students with ADHD.

### **5.3.3 Diverse practices among different teachers**

The teachers with longer teaching experiences did not just give a simple word of praise, but took advantage of the entire group or class, compared to the teachers with shorter teaching experiences when they praised students with ADHD. This might be because the teachers learned the way to use the environmental factors in behavioral intervention for children with ADHD through their experience and career. This is very effective for classroom management, because the teachers can address the behavior of both students with ADHD and other students in the classroom.

The teachers used a behavioral contract for children with ADHD in different situations. While some teachers used the strategy when their students with ADHD entered their panic state, other teachers used it when their students with ADHD lost their motivation to do something. In both cases, the students stopped their behavioral problems and showed more appropriate behavior. Therefore, it can be said that this strategy might be useful in different situations and for different types of behavioral problems of students with ADHD.

## **5.4 Punishment strategies**

As discussed above, reinforcement strategy is better for the life-long learning of behavior and attitude of students with ADHD than punishment strategy. However, there are some arguments that punishment strategy is effective to manage a classroom with diverse students for teachers, and using punishment partially is effective to keep children behaving appropriately (Saitoh, 2009). Therefore, it is reasonable to discuss and consider effective ways to use punishment strategies. Same as with the reinforcement, this section will discuss the usage of the punishment strategies, dividing into the same three sections as before;

effective ways that teachers used the strategies, points to be improved, diverse practices among different teachers.

As same with the reinforcement strategies, the teachers used some punishment strategies in similar ways that psychologists and educational specialists recommended. However, there were many points to be improved when teachers use the punishment strategies. Using punishment strategies for students with ADHD might be challenging for teachers because punishment strategies often contain ethical problems that will be discussed in this section.

#### **5.4.1 Effective ways that teachers used the strategies**

DuPaul et al. (2011) argue that the entire class should be cooperative to time-out when teachers use it for a certain student. The observed classrooms were cooperative when the teachers used time-out for children with ADHD in a sense that the teachers had a sort of “contract of time-out” for all the classmates where they ensured that all students not only students with ADHD have the possibility to be sent to time-out zone if they misbehave. This secured the fairness between students in the classrooms. The teachers also made the cooperative environment towards time-out by placing the time-out zone outside of other peers’ visual field. By doing this, the students with ADHD who were sent to the time-out zone did not get extra attention or “praise” from other students and made the most effect of the strategy.

It is asserted that ignoring should be applied when children’s behavior is unintentional, unlikely to recur or intended only to gain the attention from teachers or their classmates, and the behavior does not disrupt classroom management (U.S. Department of Education, 2008). The way that the teachers of this research selectively ignored the behavior of students with ADHD met these conditions. Teacher 4 ignored her student with ADHD only when he started to speak randomly during class to get attention from the teacher and other students. Teacher 7 ignored behavioral problems of her student with ADHD when the behavioral problems were not too intense to interrupt the classroom management and other students’ learning. Ignoring is effective when it is applied selectively in these ways because intervention in other forms will gain more value.



### **5.4.2 Points to be improved**

Although Kirk et al. (2011) recommend the cooperation of supporting teachers when using the time-out strategy, the lacks of teaching assistants and professional within special needs education make it difficult to have multiple-teacher system in Japan (Otsuka & Ohishi, 2007). Therefore, it is difficult to apply so-called “Think-Time strategy” (Kirk et al., 2011), where supporting teachers assist children in the time-out zone to review inappropriate behavior and what they need to do when returning the classroom. In the situation where the teachers have to manage classroom alone and use time-out to let the student with ADHD calm down, the teachers may assign tasks to other students in the classroom while they talk with the student with ADHD in the time-out zone. Some teachers in this research assigned other tasks to other students while the teachers talked to the students with ADHD who were staying in the time-out zone. This might be a solution to complement the single-teacher classroom situation when time-out is used.

Kirk et al. (2011) insist that children should be able to come back from the time-out zone when they feel they are ready to focus on the class. The way that the teacher let them come back to the classroom, however, was different from this recommendation. The teacher in this research kept the students with ADHD until the class entered in the next phase. This means that the time-out period was not depending on the students’ condition but on the classroom or teachers’ condition. This practice shifts the purpose of time-out from letting the child calm down and review their behavior at the separated place to removing the disruption from the classroom. If teachers would like to use time-out, the focus of the strategy should be the student with ADHD and his/her learning of self-management of behavior rather than the order of the classroom.

Same with the token economy system, response cost is most effective with coherent manners (Arcia et al., 2000). The teacher of this research, nevertheless, used this strategy randomly. Even though students were familiar with the system and clearly know what they refrain from doing in order to avoid getting marks or other reprimands, they could not anticipate when this system would be applied. It might be recommended informing the class about the application of the strategy beforehand, or to systemize when to apply this strategy. In this way, students, including those with ADHD, could expect when this strategy will be applied and prevent their behavioral problems by themselves.

It is recommended to let children with ADHD decide the contract by themselves in order for them to feel in control over their behavioral problems (Hoy et al., 2008). The teacher in this research, however, made up the behavioral contract on her own and her student with ADHD only followed the contract. It may be recommended to let a student have direction on his/her own behavioral contract, or at least to get confirmation on the contract to encourage his/her self-management and self-monitoring.

It was recommended in past research to explain rules and behavioral goals in the behavioral contract at first and to review them constantly in the long term (DuPaul et al., 2014; DuPaul et al., 2011). However, the teacher in this research made up the behavioral contract once for each behavioral problem. This might be very distracting and confusing for children with ADHD since the different contracts might potentially be in play at the same time and the rules are constantly changing. It would be easier for students with ADHD to follow the behavioral contract if the contract focuses on some specific behavioral problems and is reviewed constantly over time.

As for redoing failed activities and halting lecture, the teachers took advantage of the feeling of guilty of the students with ADHD by using collective responsibility for their behavioral problems. This way of using the strategy might be ethically problematic. This is because the students with ADHD got social pressure and harm for the fact that other students had to redo activities or wait for the lecture as a consequence of their behavioral problems. It would be ethically better to redo the failed activities personally if teachers would want students with ADHD to practice appropriate behavior. In the case of halting lecture, we can learn from a teacher's practice of not mentioning the name but the number of students who cause the suspension of lecture, which avoids direct focus from other students.

In the usage of the sarcastic question, the teachers took the advantage of the students' feeling of embarrassment. The teachers intentionally asked questions to students with ADHD in front of the class although they knew that the students were not focusing on the class or that the students would not be able to answer the question. This way of using the strategy might be, again, ethically problematic. It is quite embarrassing to be specifically asked a question which one is unable to answer in front of other students or to for it to be publicly announced that they did not manage to focus on the class. It is quite reasonable to recommend that teachers should ask those questions personally instead of doing so in front of the entire class

to embarrass the students. Even if teachers personally ask the students questions related to the class, they can understand that they are supposed to focus on the class.

### **5.4.3 Diverse practices among different teachers**

Kirk et al. (2011) insist that time-out should be used as a positive tool to let children settle down and regain control of themselves. Some of the teachers used time-out for this purpose by clearly saying that the students need time and space to calm down. On the other hand, there were some cases where time-out was used as an ultimate strategy to terminate misbehavior of the student with ADHD or it worked as pure punishment as a result that teachers forced the students with ADHD to go to the time-out zone. If teachers would like to use time-out, it is very important to mind that the purpose of the strategy should be learning of students with ADHD, not for the convenience of classroom management. Time-out should be used as a chance for students with ADHD to learn self-control of their behavior.

After selectively ignoring, the teachers reacted to behavior of students with ADHD in different ways. While one teacher responded to the student with ADHD very quickly when he stopped his behavioral problems and showed appropriate behavior, another teacher reacted to the behavioral problems of the student with ADHD when he did not stop his problematic behavior. The former teacher managed to let the child with ADHD notice what his inappropriate behavior was and how he should behave by differentiating her reaction to the student's appropriate and inappropriate behavior. The latter teacher, however, might strengthened behavioral problems of her student with ADHD by showing attention to his inappropriate behavior after a certain length of ignoring. When teachers selectively ignore the behavioral problems of students with ADHD, it can be recommended not to show attention to their behavioral problems consistently and differentiate the reaction once the student stops his/her inappropriate behavior and show appropriate behavior.

Many of the teachers of this research halted the lecture as a punishment strategy for behavioral problems of students with ADHD. The teachers used this strategy in order to give the students with ADHD who misbehaved during class responsibility for interrupting the class by making them feel guilty. However, none of the teachers mentioned specific name of the students who did not behave properly. The way the teachers suspended their class informed what the inappropriate behavior was and only the students who showed the

inappropriate behavior would be aware that they are responsible for the suspension of the class.

As for halting the lecture, the teachers in this research used the strategy in different ways, as well. Some of the teachers used this strategy, mentioning the behavioral problems that causes suspension of the lecture, while others did not mention them but stayed silent until the students with ADHD stopped their behavioral problems. As discussed in the previous section of different strategies, it would be better to clarify what is the inappropriate behavior as focus of the strategy. This way, students with ADHD could understand what their problematic behavior is and prevent their future behavioral problems.

## **5.5 Environmental strategies**

Placement of students with ADHD played an important role for classroom management. Almost all the teachers of this research placed the seat for students with ADHD in the front line, which made it possible for them to interact with the students closely and sometimes personally if needed. Furthermore, teachers could give reactions both in reinforcing and punitive ways to behavior of students with ADHD as quickly as possible in this placement. The calculated placement of students with ADHD in the classroom seemed effective for behavioral interventions to the students, and as a result, to classroom management.

The usage of a timer as a behavioral management tool also seemed as an effective way to approach appropriate behavior of students including those with ADHD. Even though the students will not get any reward or punishment as a result of time management, they tried to finish their tasks within the time they were given. Subjectively, the students seemed to enjoy doing it as if they are doing a game. This strategy seemed especially effective because the teachers used it with the combination of systematic and flexible usage. They gave a certain time for fixed everyday tasks, while they changed the lengths of the time depending on the difficulty or the amount of tasks. This combination of routine and uniqueness seemed to make the students with ADHD happily engage in this behavioral intervention.

Some educational psychologists recommend giving visible and precise instructions to students with ADHD, and provide a clear schedule of activities (DuPaul et al., 2014). This is because tasks without visual attention may make children with ADHD bored (U.S. Department of Education, 2008). The usage of a magnet and procedure board seen in this

research suits these recommended ways to instruct. This visible instructional strategy let students clearly understand which procedure the class is at and what they are supposed to do right now, at the same time they can expect what will happen and what they will need to do next.

Peer support was used by the teachers in this research differently from what psychologists recommended. While recommended peer support for children with ADHD is to enlist specific peers to support children with ADHD, the teachers in this research gave chance to students with ADHD to help others as well, not just being helped by others. The experience of helping others could develop the self-esteem of students with ADHD, and the chance of social participation. In this meaning, it can be said that the teachers in this research used this strategy very efficiently.

The strategy that teachers offered special support or privilege to the students with ADHD was especially effective to support the students. Complicated tasks may cause the students with ADHD to lose focus and some modifications specifically for students with ADHD are needed to achieve some tasks (Hoy et al., 2008). The teachers of this research successfully introduced their special support, such as allowing them to skip some tasks and always giving help first. The teachers prevented students with ADHD to lose their focus and assisted them to achieve their tasks by using this strategy.

Finally, the observation study found a strategy of taking items away when a student with ADHD played with the items at the inappropriate time. Removing the destructive stimuli from students with ADHD would be effective to prevent them to miss teachers' instructions and let them focus on classes. However, physically taking those items away might be considered ethically incorrect since the items are the students' belongings. Possible solution might be asking the students to put the items away from them by themselves. In this way, students would get the feeling of self-controlling over their behavior at the same time getting rid of distractive stimuli from their learning environment.

## **5.6 Conclusion**

It was found that the teachers who participated in this research used 10 interventional strategies for the behavioral improvement of students with ADHD. This finding shows that the teachers contrived teaching strategies to intervene with the behavioral problems of students with ADHD at the same time managing a regular classroom.

Most of the teachers used reinforcement strategies more often than punishment strategies. However, more variations of punishment strategies than reinforcement strategies were found. This may imply that the teachers generally prefer to use reinforcement strategies rather than punishment strategies for behavior of students with ADHD, but they may have less knowledge of various reinforcement strategies. Furthermore, the teachers tended to use punishment to the students with ADHD in front of the class, while they often used reinforcement personally to the students. It would be recommended to use the reinforcement in front of the class, as well.

As for the use of reinforcement strategies for behavioral improvement of students with ADHD, a lot of unique and diverse practices were observed, and many of the practices seemed to be similar to the recommendations by psychologists and professionals in the educational field among different teachers. Many other teachers would be able to learn from these educational practices of the teacher in this research.

Some effective practices in the use of punishment strategies were also observed, but there were many points to be discussed and improved. This might be because punishment strategies often contain ethical problems, which makes it challenging for teachers to use the strategies in an effective way for the behavioral improvement of students with ADHD.

## **5.7 Strengths and limitations of research**

This research was planned and conducted with full effort, and as a result, gained some benefits. There is, however, some limitations of research to be considered, as well. In this section, strengths and limitations of the research is objectively described.

### 5.7.1 Strengths

This research has some benefits as a result of qualitative approach and other contextual factors. The first advantage of the research is its in-depth understanding. This research does not deal with data as numbers but with detailed analysis and description of each case. Furthermore, the researcher experienced some intimacy with the participants in the observation study. This also allowed to gain a deeper understanding on the interventions of teachers, through communication outside of the observation and the teachers' practices under the trustful relationship with the observer. This in-depth approach for the research made it possible to show more detailed situations around the strategies found in the research, and to understand each strategy with contextual factors behind them.

The second strength is the research was conducted in multiple environments. Not only one or two teachers but seven teachers were observed in total. The teachers were diverse in their length of teaching experience, gender, and educational background, which made it possible to observe multiple possible teaching strategies. These many observations gave more perspectives on teaching strategies and richer research results.

It was also one of the strengths of this research that the researcher had more than one research methods. Using multiple approaches in a research is effective to assess the accuracy of findings as well as convince readers of that accuracy (Gall et al., 1996). This research used not only observation but also a questionnaire to complement the data analysis of the findings through observation. There were also pre-observational meetings with the teachers where the researcher could gain information about students, schools, and the classroom beforehand. All of these findings made it possible to analyze data more thoroughly.

Another strength of this research is that the researcher had had contextual and cultural knowledge of Japanese schools before the research was conducted. The researcher has experienced Japanese elementary school as a student and Japanese educational systems as a previous public after-school teacher. Therefore, the researcher could look at research data with deeper cultural perspectives and widen the possibility of data analysis.

Finally, using the internationally well-developed psychological theory was also one of the strengths of this research. Behaviorism and Skinner's theoretical approaches to human behavior are often referred in educational and psychological fields (Cline & Frederickson,

2009; Hoy et al., 2008; Kirk et al., 2011). Based on these well-developed theories, it was possible to theorize and authorize the results and discussions on the results of this research.

### **5.7.2 Limitations**

One of the disadvantages of qualitative research is that one cannot generalize the findings in the research (Gall et al., 1996). Since qualitative research focuses on each case, it allows uniqueness of samples and findings. However, the deep focus of observation study on each case makes it difficult to generalize the results and findings in an universal context.

Since qualitative research is depending on the researchers' subjective view and interpretation of phenomena, the researcher might bring the bias to the study. The observation study focused on objective understanding of teachers' educational practice rather than their subjective view. The researcher tried to compliment this limitation as much as possible by conducting another research methodology, questionnaire, and by having informal conversation with the teachers outside of observation. However, the readers have to keep in mind that the research contains the researcher's subjective understanding of the teachers' and students' reactions.

Thirdly, translation of language from Japanese to English can be one of the considered limitation of this research. All exchange of words and communications between teachers and students, and questionnaire were in Japanese because the research was conducted in Japanese elementary schools, and therefore, the researcher had to translate all of the interactions to English. There might be some information that was lost through this process.

Another limitation of this research might be that the researcher's presence in the classroom might affect results of observation. The researcher tried not to communicate with teachers and students when the behavioral problems of students with ADHD occurred so that she would not affect their behavior and attitude. However, her presence in the classroom itself might affect behavior of students with ADHD and teachers' reactions to it.

And finally, conditions of each case were not exactly alike. For example, some schools allowed the researcher to be in the classroom from morning until the children left school, while some schools requested the researcher to be in the classroom only for a couple of hours per day. The extent of the researcher's engagement in the classroom was also slightly different in each class. The researcher described the different situations of each case in this



paper and generalization is not the purpose of this research, but it is one of the weaknesses of this research.

## **5.8 Impact practice**

Teachers would know what kind of educational theory their behavioral interventions for pupils with ADHD are on, after reading this research results. Regardless of their preceding knowledge on behavioral interventions for children with ADHD, many teachers use some sorts of educational practices to manage classroom including students with ADHD. They can rethink, through this research and results, whether their interventions are based on reinforcement, punishment or environmental strategies. This can be a chance for them to be confident in their behavioral intervention or to shift to other interventions, based on their theoretical thoughts.

In addition to the theoretical background of the behavioral interventions, teachers could learn what the utmost way of using each behavioral intervention for children with ADHD is. The thesis has discussed what kind of ways and factors can enhance the effect of each behavioral intervention. Regardless of which interventions teachers choose, they can consider what the best way to use the interventions might be.

## **5.9 Further research**

This research focused on what kind of teaching strategies teachers use for children with ADHD and how they use the strategies from the perspective of reinforcement and punishment. The focus was on teachers' perspectives, but not on the perspectives of children with ADHD. Therefore, research about teaching strategies for children with ADHD from the perspective of the children would be needed in the future.

For example, it would be helpful for teachers to understand how those strategies effect the behaviors of children with ADHD and if they are effective or not. This study can be completed mainly by observation. Researchers might record what kind of strategies were used based on this research, but especially focus on how children with ADHD reacted and how their behavior changed or not changed.

It is also helpful for teachers to know how children with ADHD feel about the teaching strategies. It can be studied by doing questionnaire or interview to children with ADHD. Researchers might show specific examples of each teaching strategy and ask how the children with ADHD felt when they experienced it or when they assume that they experienced. Observational study in classrooms might also be helpful for a deeper understanding of each strategy and the situations where the strategy was used.

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# Appendices

## Appendix A: Information letter and consent form in English

### **Request for participation in research project**

#### **"Teachers' Behavioral Intervention for Children with ADHD in Regular Classroom"**

##### **Background and Purpose**

Individuals with attention-deficit hyperactivity disorder (ADHD) are at risk for behavioral difficulties, because of their hyperactive, impulsive and inattentive symptoms. This might lead to social, academic and emotional challenges, and therefore, children with ADHD often need behavioral support and treatments. Problematic behavior of a child also may influence other students' learning and behavior in a classroom. Therefore, behavioral intervention is crucial for teacher's classroom management, as well. For these reasons, more research on behavioral intervention for children with ADHD in real settings is crucial.

To gain more knowledge, I will do a study investigating teachers' use of behavioral interventions for children with ADHD in regular classrooms. The goal of this study is to find how teachers instruct children with ADHD to meet their behavioral needs. This research is a master research at Department of Special Needs Education at University of Oslo in Norway.

Samples are selected with the following criteria; 1) teachers in regular classroom in elementary school. 2) The classroom has a child who was diagnosed with ADHD. 3) The age of the child is between six and eight years old, which is either the first or the second year of elementary school. 4) Teachers have experienced to teach children with ADHD at least six months.

##### **What does participation in the project imply?**

This research will be conducted mainly by observation in the classroom. I will observe how the teacher instruct children with ADHD to meet their behavioral needs. Other types of instruction, such as academic intervention, and communication with other students that does not affect behavior of a student with ADHD will not be a focus. This is an observation in a natural classroom-setting, and therefore, participating teachers are not required to conduct certain strategies but instruct students including those with ADHD as usual. Data collection will be done by writing notes. This research does not include recording or shooting by electronic devices.

Before observation studies, participants will firstly be asked to answer a small questionnaire about basic information, such as participants' age, length of work service, length of teaching a child with ADHD. I will also visit the classroom 2-5 times during the data collection. I might also be in the classroom without recording at first, so the teachers and students will feel comfortable for the research. The number of visits and time will be decided

in collaboration with the teacher. (For example, I might visit classroom several times in a day, or once each day for several days.)

#### **What will happen to the information about you?**

All personal data will be treated confidentially. Personal data that can identify individuals, such as name, place of the school and other detail information, will not be recorded. Instead, numbers will be placed in each note and questionnaire so that only me and my supervisor will know which data is related to which sample. Written notes, questionnaires and consent forms will be filed and brought back to Norway for analysis and writing. Raw data will be stored separately in a safe at the University of Oslo, and scanned information will be stored in password-protected server at the University of Oslo. No one other than I can access the scanned documents and raw data.

Participating teachers and students will not be recognizable in the publication. No personal information will be written in this research paper. This is international research, and therefore, the publication will be in English, not in Japanese. If you are interested in the result, however, I will send a brief summary of the research in Japanese to you.

The project is scheduled for completion by spring 2018, and personal data will be anonymized and deleted by 15<sup>th</sup> of June.

#### **Voluntary participation**

It is voluntary to participate in the project, and you can at any time choose to withdraw your consent without stating any reason. If you decide to withdraw, all your personal data will be made anonymous.

If you would like to participate, you need to sign the informed consent below and also collect informed consent from parents of the child with ADHD. Please send an e-mail to the researcher once you prepare your consent letter and the one from the parents. The researcher will pick up the forms directly at the school. If you have any questions concerning the project, please contact Michiru Tamura (080-5440-7489, michiru.tamura@gmail.com) or Anett Kaale (supervisor) (anett.kaale@isp.uio.no).

The study has been notified to the Data Protection Official for Research, NSD - Norwegian Centre for Research Data.

Kind regards,

Michiru Tamura  
Master student at Department of Special Needs Education,  
Faculty of Educational Science, University of Oslo

## **Consent for participation in the study**

“Teachers’ Behavioral Intervention for Children with ADHD in Regular Classroom”

I have received information about the study and consent that I will participate in the study.

Name of school

Head-Teacher

Name

Email

Phone number

Teacher

Name

Email

Phone number

-----  
(Signed by participant, date)

Please fill in this form, and collect the consent form for parents. I will pick up both consent forms directly at the school.



## Appendix B: Information letter and consent form in Japanese

### 研究事業への参加要請

#### 『普通学級における、教師による ADHD 児への行動的介入』

##### 研究の背景と目的

注意欠陥多動性障害（ADHD）のある個人は、彼らの多動性、衝動性及び不注意といった特徴のために、行動的困難を有する危険性があります。行動的困難は、社会的、学問的および感情的な困難につながる可能性があるため、ADHD 児はしばしば、行動面での支援と指導を必要としています。また生徒の問題行動は、教室内の他の生徒の学習と行動にも影響を与える可能性があります。したがって、行動的介入は先生の教室管理の為にも重要です。これらの理由から、実際の教育現場における、ADHD 児への行動的介入に関する更なる研究が重要であると言えます。

本調査は、普通学級において先生が ADHD 児にどのような行動的介入を行っているかについて、より多くの知見を得ることを目的として実施されます。またこの研究は、ノルウェー国立オスロ大学特別支援教育研究科における修士研究です。

##### 本研究事業の内容

この研究は主に教室での観察によって行われます。ADHD 児の行動改善のため、先生がどのような指導を行っているのかを観察します。単なる学習指導や、ADHD 児の行動に影響を与えない他生徒との会話などは、観察の対象ではありません。自然な教室環境で観察を行うため、本研究事業に参加していただく先生は、特別な教授法を行っていただく必要は無く、ADHD 児を含めた生徒たちを普段通り指導していただきます。また、私は手書きのメモを用いて記録をし、電子機器を用いた録音や撮影などは致しません。

研究の対象となるのは、次の基準に見合う先生です。1. 小学校の普通学級を受け持つ教師。2. その教室に ADHD の診断を受けた生徒がいる。3. その教師は ADHD 児への指導を、少なくとも六ヶ月行っている。

先生には事前に、年齢や勤続年数、ADHD 児の指導年数などの、基本情報に関する小アンケートに答えていただきます。また私は、2～5 回に亘って教室を訪問致します。先生と生徒たちが研究に慣れて安心できるよう、初めは記録をせずに教室にすることがあります。教室への訪問回数や観察時間の配分は、先生とご相談し決定致します。（例：1 日に数回の訪問、もしくは 1 日一回の訪問を数日間、など）

### 個人情報の取り扱い

全ての個人情報は守られます。氏名や学校の所在地、その他の詳細情報など、個人を特定できる情報は記録されません。代わりに、私とオスロ大学の担当教授のみが、どの資料がどの参加者と関連しているか分かるよう、観察メモとアンケートには番号が振られます。観察メモやアンケート、同意書等の原資料は、分析と論文執筆の為に、オスロ大学の保管庫に別々に保管され、スキャンされた資料はオスロ大学のパスワードで保護されたサーバーに保存されます。私以外はそれら資料にアクセスすることはできません。

参加する先生と生徒は、論文の発表によって特定されることはありません。いかなる個人情報もこの研究論文では書かれませんが、これは国際的な研究であるため、日本語ではなく英語で発表されますが、研究結果にご興味がありましたら、日本語での研究概要を送付致します。

本研究事業は、2018年春までの完成を予定しており、いかなる個人情報も匿名化され、保存された全ての資料は同年6月15日までに破棄されます。

### 任意の参加

本研究事業への参加は任意であり、いつでも参加への同意を撤回することができます。その際、撤回の理由を述べていただく必要はございません。撤回をする場合、全ての個人情報は破棄されます。

研究事業への参加にご承諾いただけるようでしたら、下記の同意書にご署名ください。本研究事業に関するご質問は、田村三千瑠（080-5440-7489, michiru.tamura@gmail.com）または Anett Kaale (担当教授) (anett.kaale@isp.uio.no) にお問い合わせください。

この研究は、研究資料保護当局、ノルウェー研究資料センター（NSD）から許可を得ています。

敬具

田村三千瑠  
オスロ大学 教育科学研究科 特別支援教育専攻 修士課程

## 本研究への参加の同意

『普通学級における、教師による ADHD 児への行動的介入』

私は本研究事業に関する情報を受け取り、研究への参加に同意します。

学校名

学校長

お名前

メールアドレス

電話番号

担任の先生

お名前

メールアドレス

電話番号

日付

-----

この同意書にご記入ください。調査者が同意書を引き取りに学校まで直接伺います。

## Appendix C: Questionnaire in English

### Precedent questionnaire

This is a small questionnaire before the observation study. The purpose of this questionnaire is to collect basic information of teachers related to the research for better analysis of the observation study. This questionnaire will be stored separately from other recordings to ensure confidentiality. Information here would be written in the research paper, but personal information will not be written to ensure privacy. It is voluntary to fill in each question, and you can choose not to fill in the questions without stating any reason.

---

#### Basic information

Your age	
Your length of work	
Grade of your class	

Question 1      How long have you taught your current class?

Question 2      Have you taught children with ADHD before?

→ If “yes” : How long did you teach those children?

Question 3      Have you gotten any guidance to teach children with ADHD?

→ If “yes” : Where or how did you get them?

→ What kind of guidance was it?

Question 4      What kind of specific behavior of children with ADHD you usually keep in mind? Please list up.

- 
- 
-

## Appendix D: Questionnaire in Japanese

### 先行アンケート

本アンケートは、観察研究に先行する小規模なアンケートです。この目的は、より良い観察分析のために、本研究に関する基本的な情報を集めることです。本アンケートは、機密性保護のために、他の記録とは別に保管されます。ここでの情報は、研究論文に書かれる場合もありますが、個人を特定する情報については、プライバシー保護のために書かれません。また、各質問への回答は任意ですので、回答を飛ばしても構いません。その際、回答をしない理由を述べる必要はありません。

#### 基本情報

回答者の名前	
回答者の勤続年数	
担任を受け持っている学年	

質問 1      どのくらいの期間、現在受け持っているクラスを指導していますか。

質問 2      以前、他の ADHD 児の担任を受け持ったことはありますか。

→『はい』と答えた方へ：どのくらいの期間、以前の ADHD 児を指導しましたか。

質問 3      ADHD 児の教育方法について、指導を受けたことがありますか。

→『はい』と答えた方へ：どこで、どのようにしてその指導を受けましたか。

→どのような指導でしたか。

質問 4      現在のクラスに在籍する ADHD 児の行動のうち、しばしば気にかけている行動（問題行動等）はありますか。もしあれば、下に列挙してください。

- ・
- ・
- ・

## Appendix E: Research notification accepted by NSD



### MELDESKJEMA

Meldeskjema (versjon 1.6) for forsknings- og studentprosjekt som medfører meldeplikt eller konsesjonsplikt (jf. personopplysningsloven og helseregisterloven med forskrifter).

1. Intro		
Samles det inn direkte personidentifiserende opplysninger?	Ja ● Nei ○	En person vil være direkte identifiserbar via navn, personnummer, eller andre personentydige kjennetegn.  Les mer om hva <a href="#">personopplysninger</a> er.
Hvis ja, hvilke?	<input checked="" type="checkbox"/> Navn <input type="checkbox"/> 11-sifret fødselsnummer <input type="checkbox"/> Adresse <input checked="" type="checkbox"/> E-post <input checked="" type="checkbox"/> Telefonnummer <input type="checkbox"/> Annet	NB! Selv om opplysningene skal anonymiseres i oppgave/rapport, må det krysses av dersom det skal innhentes/registreres personidentifiserende opplysninger i forbindelse med prosjektet.  Les mer om hva <a href="#">behandling av personopplysninger</a> innebærer.
Annet, spesifiser hvilke		
Skal direkte personidentifiserende opplysninger kobles til datamaterialet (koblingsnøkkel)?	Ja ● Nei ○	Merk at meldeplikten utløses selv om du ikke får tilgang til <a href="#">koblingsnøkkel</a> , slik fremgangsmåten ofte er når man benytter en <a href="#">databehandler</a> .
Samles det inn bakgrunnsopplysninger som kan identifisere enkeltpersoner (indirekte personidentifiserende opplysninger)?	Ja ● Nei ○	En person vil være <a href="#">indirekte identifiserbar</a> dersom det er mulig å identifisere vedkommende gjennom bakgrunnsopplysninger som for eksempel bostedskommune eller arbeidsplass/skole kombinert med opplysninger som alder, kjønn, yrke, diagnose, etc.
Hvis ja, hvilke	age, length of work (service), length of teaching a child with ADHD	NB! For at stemme skal regnes som personidentifiserende, må denne bli registrert i kombinasjon med andre opplysninger, slik at personer kan gjenkjennes.
Skal det registreres personopplysninger (direkte/indirekte/via IP-/epost adresse, etc.) ved hjelp av nettbaserte spørreskjema?	Ja ● Nei ○	Les mer om <a href="#">nettbaserte spørreskjema</a> .
Blir det registrert personopplysninger på digitale bilde- eller videoopptak?	Ja ○ Nei ●	Bilde/videoopptak av ansikter vil regnes som personidentifiserende.
Søkes det vurdering fra REK om hvorvidt prosjektet er omfattet av helseforskningsloven?	Ja ○ Nei ●	NB! Dersom REK (Regional Komité for medisinsk og helsefaglig forskningsetikk) har vurdert prosjektet som helseforskning, er det ikke nødvendig å sende inn meldeskjema til personvernombudet (NB! Gjelder ikke prosjekter som skal benytte data fra pseudonyme helseregistre).  <a href="#">Les mer.</a>  Dersom tilbakemelding fra REK ikke foreligger, anbefaler vi at du avventer videre utfylling til svar fra REK foreligger.
2. Prosjektittel		
Prosjektittel	Teachers' Behavioral Intervention for Children with ADHD in Regular Classroom	Oppgi prosjektets tittel. NB! Dette kan ikke være «Masteroppgave» eller liknende, navnet må beskrive prosjektets innhold.
3. Behandlingsansvarlig institusjon		
Institusjon	Universitetet i Oslo	Velg den institusjonen du er tilknyttet. Alle nivå må oppgis. Ved studentprosjekt er det studentens tilknytning som er avgjørende. Dersom institusjonen ikke finnes på listen, har den ikke avtale med NSD som personvernombud. Vennligst ta kontakt med institusjonen.  Les mer om <a href="#">behandlingsansvarlig institusjon</a> .
Avdeling/Fakultet	Det utdanningsvitenskapelige fakultet	
Institutt	Institutt for spesialpedagogikk	
4. Daglig ansvarlig (forsker, veileder, stipendiat)		

Fornavn	Anett	<p>Før opp navnet på den som har det daglige ansvaret for prosjektet. Veileder er vanligvis daglig ansvarlig ved studentprosjekt. Les mer om <a href="#">daglig ansvarlig</a>.</p> <p>Daglig ansvarlig og student må i utgangspunktet være tilknyttet samme institusjon. Dersom studenten har eksternt veileder, kan biveileder eller fagansvarlig ved studiestedet stå som daglig ansvarlig.</p> <p>Arbeidssted må være tilknyttet behandlingsansvarlig institusjon, f.eks. underavdeling, institutt etc.</p> <p>NB! Det er viktig at du oppgir en e-postadresse som brukes aktivt. Vennligst gi oss beskjed dersom den endres.</p>
Etternavn	Kaale	
Stilling	Associate Professor	
Telefon	+47	
Mobil	22856636	
E-post	anett.kaale@isp.uio.no	
Alternativ e-post	anett.kaale@isp.uio.no	
Arbeidssted	University of Oslo, Department of Special Needs Education	
Adresse (arb.)	Sem Sælands vei 7, Helga Engs hus	
Postnr./sted (arb.sted)	0371 Oslo	
<b>5. Student (master, bachelor)</b>		
Studentprosjekt	Ja • Nei ○	Dersom det er flere studenter som samarbeider om et prosjekt, skal det velges en kontaktperson som føres opp her. Øvrige studenter kan føres opp under pkt 10.
Fornavn	Michiru	
Etternavn	Tamura	
Telefon	+81	
Mobil	08054407489	
E-post	michiru.tamura@gmail.com	
Alternativ e-post	michirut@student.uv.uio.no	
Privatadresse	Koyanagi-cho 2-19-59, Fuchu-shi	
Postnr./sted (privatadr.)	183-0013, Tokyo	
Type oppgave	<ul style="list-style-type: none"> <li>• Masteroppgave</li> <li>○ Bacheloroppgave</li> <li>○ Semesteroppgave</li> <li>○ Annet</li> </ul>	
<b>6. Formålet med prosjektet</b>		
Formål	<p>The goal of this study is to find how teachers instruct children with ADHD to meet their behavioral needs. This study will be useful to investigate teachers' behavioral intervention for children with ADHD in real settings. Teachers' practices will be observed based on behaviorism's concepts; reinforcement and punishment. Main question is "How do teachers instruct children with ADHD to meet their behavioral needs in regular classroom?", and sub-questions are "What strategies teachers use to meet behavior of children with ADHD? Do teachers reinforce or punish behavior of children with ADHD? How teachers use reinforcement and punishment?".</p>	Redegjør kort for prosjektets formål, problemstilling, forsknings spørsmål e.l.
<b>7. Hvilke personer skal det innhentes personopplysninger om (utvalg)?</b>		
Kryss av for utvalg	<input type="checkbox"/> Barnehagebarn <input checked="" type="checkbox"/> Skoleelever <input type="checkbox"/> Pasienter <input type="checkbox"/> Brukere/klienter/kunder <input type="checkbox"/> Ansatte <input type="checkbox"/> Barnevernsbarn <input checked="" type="checkbox"/> Lærere <input type="checkbox"/> Helsepersonell <input type="checkbox"/> Asylsøkere <input type="checkbox"/> Andre	Les mer om forskjellige <a href="#">forskningstematikker</a> og <a href="#">utvalg</a> .

Beskriv utvalg/deltakere	Criteria of sampling are following; 1) Samples are teachers in regular classroom in public elementary school. 2) Indirect samples are children with ADHD. The classroom has a child who was diagnosed as ADHD. 3) The age of the child is between six and eight years old, which is either the first or the second year of elementary school. 4) Teachers have experienced to teach children with ADHD at least six months. Also, this research will be conducted in Japan.	Med utvalg menes dem som deltar i undersøkelsen eller dem det innhentes opplysninger om.
Rekruttering/trekking	The researcher (student) herself will recruit samples through social networks. The researcher used to work in the public after-school institution and have some connection with public elementary schools. However, the samples will never be teachers or children who the researcher knew before.	Beskriv hvordan utvalget trekkes eller rekrutteres og oppgi hvem som foretar den. Et utvalg kan rekrutteres gjennom f.eks. en bedrift, skole, idrettsmiljø eller eget nettverk, eller trekkes fra registre som f.eks. Folkeregisteret, SSB-registre, pasientregistre.
Førstegangskontakt	The researcher will firstly contact head-teachers of public elementary schools where students with ADHD attend regular classrooms. The researcher will ask the head-teachers to request classroom-teachers to participate in research in the classroom. And finally, the researcher will ask the classroom-teachers to get consent from parents of students with ADHD to join the research.	Beskriv hvordan førstegangskontakten opprettes og oppgi hvem som foretar den.  Les mer om førstegangskontakt og forskjellige utvalg på våre <a href="#">temasider</a> .
Alder på utvalget	<input checked="" type="checkbox"/> Barn (0-15 år) <input type="checkbox"/> Ungdom (16-17 år) <input checked="" type="checkbox"/> Voksne (over 18 år)	Les om forskning som involverer <a href="#">barn</a> på våre nettsider.
Omtrentlig antall personer som inngår i utvalget	Around 6 samples, including a pilot study.	
Samles det inn sensitive personopplysninger?	Ja • Nei ○	Les mer om <a href="#">sensitive opplysninger</a> .
Hvis ja, hvilke?	<input type="checkbox"/> Rasemessig eller etnisk bakgrunn, eller politisk, filosofisk eller religiøs oppfatning <input type="checkbox"/> At en person har vært mistenkt, siktet, tiltalt eller dømt for en straffbar handling <input checked="" type="checkbox"/> Helseforhold <input type="checkbox"/> Seksuelle forhold <input type="checkbox"/> Medlemskap i fagforeninger	
Inkluderes det myndige personer med redusert eller manglende samtykkekompetanse?	Ja ○ Nei •	Les mer om <a href="#">pasienter, brukere og personer med redusert eller manglende samtykkekompetanse</a> .
Samles det inn personopplysninger om personer som selv ikke deltar (tredjepersoner)?	Ja ○ Nei •	Med opplysninger om tredjeperson menes opplysninger som kan identifisere personer (direkte eller indirekte) som ikke inngår i utvalget. Eksempler på tredjeperson er kollega, elev, klient, familiemedlem, som identifiseres i datamaterialet. <a href="#">Les mer</a> .
<b>8. Metode for innsamling av personopplysninger</b>		
Kryss av for hvilke datainnsamlingsmetoder og datakilder som vil benyttes	<input checked="" type="checkbox"/> Papirbasert spørreskjema <input type="checkbox"/> Elektronisk spørreskjema <input type="checkbox"/> Personlig intervju <input type="checkbox"/> Gruppeintervju <input checked="" type="checkbox"/> Observasjon <input type="checkbox"/> Deltakende observasjon <input type="checkbox"/> Blogg/sosiale medier/internett <input type="checkbox"/> Psykologiske/pedagogiske tester <input type="checkbox"/> Medisinske undersøkelser/tester <input type="checkbox"/> Journaldata (medisinske journaler)	Personopplysninger kan innhentes direkte fra den registrerte f.eks. gjennom spørreskjema, intervju, tester, og/eller ulike journaler (f.eks. elevmapper, NAV, PPT, sykehus) og/eller registre (f.eks. Statistisk sentralbyrå, sentrale helseregistre).  NB! Dersom personopplysninger innhentes fra forskjellige personer (utvalg) og med forskjellige metoder, må dette spesifiseres i kommentar-boksen. Husk også å legge ved relevante vedlegg til alle utvalgs-gruppene og metodene som skal benyttes.  Les mer om <a href="#">registerstudier</a> . Dersom du skal anvende registerdata, må variabeliste lastes opp under pkt. 15  Les mer om <a href="#">forskningsmetoder</a> .
	<input type="checkbox"/> Registerdata	
	<input type="checkbox"/> Annen innsamlingsmetode	
Tilleggsopplysninger		
<b>9. Informasjon og samtykke</b>		



Oppgi hvordan utvalget/deltakerne informeres	<input checked="" type="checkbox"/> Skriftlig <input checked="" type="checkbox"/> Muntlig <input type="checkbox"/> Informeres ikke	<p>Dersom utvalget ikke skal informeres om behandlingen av personopplysninger må det begrunnes.</p> <p><a href="#">Les mer.</a>Vennligst send inn mal for skriftlig eller muntlig informasjon til deltakerne sammen med meldeskjema.</p> <p>Last ned en veiledende mal <a href="#">her</a>.</p> <p>Les om <a href="#">krav til informasjon og samtykke</a>.</p> <p>NB! Vedlegg lastes opp til sist i meldeskjemaet, se punkt 15 Vedlegg.</p>
Samtykker utvalget til deltakelse?	<input checked="" type="checkbox"/> Ja <input type="checkbox"/> Nei <input type="checkbox"/> Flere utvalg, ikke samtykke fra alle	<p>For at et samtykke til deltakelse i forskning skal være gyldig, må det være frivillig, uttrykkelig og <a href="#">informert</a>.</p> <p>Samtykke kan gis skriftlig, muntlig eller gjennom en aktiv handling. For eksempel vil et besvart spørreskjema være å regne som et aktivt samtykke.</p> <p>Dersom det ikke skal innhentes samtykke, må det begrunnes. <a href="#">Les mer</a>.</p>
Innhentes det samtykke fra foreldre for barn under 15 år?	Ja <input checked="" type="checkbox"/> Nei <input type="checkbox"/>	<p><a href="#">Les mer om forskning som involverer barn og samtykke fra unge</a>.</p>
Hvis nei, begrunn		
<b>10. Informasjonssikkerhet</b>		
Hvordan oppbevares navnelisten/ koblingsnøkkelen og hvem har tilgang til den?	Names will not be recorded, but instead, numbers will be placed in each note and questionnaire so that only the observer and her supervisor will know which data is related to which sample.	
Oppbevares direkte personidentifiserbare opplysninger på andre måter?	Ja <input checked="" type="checkbox"/> Nei <input type="checkbox"/>	
Spesifiser	Consent forms with identifiable information will be stored separately in a safe at University of Oslo, and scanned information will be stored in password-protected server in University of Oslo.	<p>NB! Som hovedregel bør ikke direkte personidentifiserende opplysninger registreres sammen med det øvrige datamaterialet. Vi anbefaler <a href="#">koblingsnøkkel</a>.</p>
Hvordan registreres og oppbevares personopplysningene?	<input checked="" type="checkbox"/> På server i virksomhetens nettverk <input type="checkbox"/> Fysisk isolert PC tilhørende virksomheten (dvs. ingen tilknytning til andre datamaskiner eller nettverk, interne eller eksterne) <input type="checkbox"/> Datamaskin i nettverkssystem tilknyttet Internett tilhørende virksomheten <input type="checkbox"/> Privat datamaskin <input type="checkbox"/> Videoopptak/fotografi <input type="checkbox"/> Lydopptak <input checked="" type="checkbox"/> Notater/papir <input type="checkbox"/> Mobile lagringsenheter (bærbar datamaskin, minnepenn, minnekort, cd, ekstern harddisk, mobiltelefon) <input type="checkbox"/> Annen registreringsmetode	<p>Merk av for hvilke hjelpemidler som benyttes for registrering og analyse av opplysninger.</p> <p>Sett flere kryss dersom opplysningene registreres på flere måter.</p> <p>Med «virksomhet» menes her behandlingsansvarlig institusjon.</p> <p>NB! Som hovedregel bør data som inneholder personopplysninger lagres på behandlingsansvarlig sin forskningsserver.</p> <p>Lagring på andre medier - som privat pc, mobiltelefon, minnepenne, server på annet arbeidssted - er mindre sikkert, og må derfor begrunnes. Slik lagring må avklares med behandlingsansvarlig institusjon, og personopplysningene bør krypteres.</p>
Annen registreringsmetode beskriv		
Hvordan er datamaterialet beskyttet mot at uvedkommende får innsyn?	Raw data will be kept in a safe at University of Oslo, and scanned information will be stored in password-protected server in University of Oslo. No one other than the observer can access to the server and raw data.	Er f.eks. datamaskintilgangen beskyttet med brukernavn og passord, står datamaskinen i et låsbart rom, og hvordan sikres bærbare enheter, utskrifter og opptak?
Samles opplysningene inn/behandles av en databehandler (ekstern aktør)?	Ja <input type="checkbox"/> Nei <input checked="" type="checkbox"/>	Dersom det benyttes eksterne til helt eller delvis å behandle personopplysninger, f.eks. Questback, transkriberingsassistent eller tolk, er dette å betrakte som en <a href="#">databehandler</a> . Slike oppdrag må kontraktreguleres.
Hvis ja, hvilken		
Overføres personopplysninger ved hjelp av e-post/Internett?	Ja <input type="checkbox"/> Nei <input checked="" type="checkbox"/>	F.eks. ved overføring av data til samarbeidspartner, databehandler m.m.
Hvis ja, beskriv?		<p>Dersom personopplysninger skal sendes via internett, bør de krypteres tilstrekkelig.</p> <p>Vi anbefaler ikke lagring av personopplysninger på nettskytjenester. Bruk av nettskytjenester må avklares med behandlingsansvarlig institusjon.</p> <p>Dersom nettskytjeneste benyttes, skal det inngås skriftlig databehandleravtale med leverandøren av tjenesten. <a href="#">Les mer</a>.</p>

Skal andre personer enn daglig ansvarlig/student ha tilgang til datamaterialet med personopplysninger?	Ja ● Nei ○	
Hvis ja, hvem (oppgi navn og arbeidssted)?	Supervisor	
Utleveres/deles personopplysninger med andre institusjoner eller land?	● Nei ○ Andre institusjoner ○ Institusjoner i andre land	F.eks. ved nasjonale samarbeidsprosjekter der personopplysninger utveksles eller ved internasjonale samarbeidsprosjekter der personopplysninger utveksles.
<b>11. Vurdering/godkjenning fra andre instanser</b>		
Søkes det om dispensasjon fra taushetsplikten for å få tilgang til data?	Ja ○ Nei ●	For å få tilgang til laushetsbelagte opplysninger fra f.eks. NAV, PPT, sykehus, må det søkes om <a href="#">dispensasjon fra taushetsplikten</a> . Dispensasjon søkes vanligvis fra aktuelt departement.
Hvis ja, hvilke		
Søkes det godkjenning fra andre instanser?	Ja ○ Nei ●	I noen forskningsprosjekter kan det være nødvendig å søke flere tillatelser. Søkes det om tillatelse til forskning i en virksomhet eller en skole? Les mer om <a href="#">andre godkjenninger</a> .
Hvis ja, hvilken		
<b>12. Periode for behandling av personopplysninger</b>		
Prosjektstart	24.07.2017	Prosjektstart Vennligst oppgi tidspunktet for når kontakt med utvalget skal gjøres/datainnsamlingen starter.
Planlagt dato for prosjektslutt	15.06.2018	Prosjektslutt: Vennligst oppgi tidspunktet for når datamaterialet enten skal anonymiseres/slettes, eller arkiveres i påvente av oppfølgingsstudier eller annet.
Skal personopplysninger publiseres (direkte eller indirekte)?	<input type="checkbox"/> Ja, direkte (navn e.l.) <input type="checkbox"/> Ja, indirekte (identifiserende bakgrunnsopplysninger) <input checked="" type="checkbox"/> Nei, publiseres anonymt	Les mer om <a href="#">direkte</a> og <a href="#">indirekte</a> personidentifiserende opplysninger. NB! Dersom personopplysninger skal publiseres, må det vanligvis innhentes eksplisitt samtykke til dette fra den enkelte, og deltakere bør gis anledning til å lese gjennom og godkjenne sitater.
Hva skal skje med datamaterialet ved prosjektslutt?	<input checked="" type="checkbox"/> Datamaterialet anonymiseres <input type="checkbox"/> Datamaterialet oppbevares med personidentifikasjon	NB! Her menes datamaterialet, ikke publikasjon. Selv om data publiseres med personidentifikasjon skal som regel øvrig data anonymiseres. Med anonymisering menes at datamaterialet bearbeides slik at det ikke lenger er mulig å føre opplysningene tilbake til enkeltpersoner. Les mer om <a href="#">anonymisering av data</a> .
<b>13. Finansiering</b>		
Hvordan finansieres prosjektet?	Personal student funding Student grant from Scandinavia-Japan Sasakawa Foundation Student grant from Yamaguchi Ikuei Shogakukai	Fylles ut ved eventuell ekstern finansiering (oppdragsforskning, annet).
<b>14. Tilleggsopplysninger</b>		
Tilleggsopplysninger		Dersom prosjektet er del av et prosjekt (eller skal ha data fra et prosjekt) som allerede har tilrådning fra personvernombudet og/eller konsesjon fra Datatilsynet, beskriv dette her og oppgi navn på prosjektleder, prosjektittel og/eller prosjektnummer.
<b>15. Vedlegg</b>		
Vedlegg	Antall vedlegg: 3. ● Information letter 2.pdf ● Information_letter.pdf ● Questionnaire.pdf	