

# Disruptive behavior in school

## *Wired up – the Relationship between Disruptive Behavior and New Technology*

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**Disruptive behavior in school – describing  
and exploring the relationship between  
disruptive behavior and new technology.**

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# Summary

## **Background:**

The thesis is part of the research project “Disruptive behavior in school,” led by professor Liv Duesund at the Department of Special Needs Education, University of Oslo. Professor Duesund is the supervisor of the thesis. It is a cooperation project between University of Oslo and University of California, Berkeley and compares the educational cultures of Norway and the United States (Duesund, 2013). The focus is on disruptive behavior, and in what ways behavior can vary in the two national contexts, as well as teacher variation in identifying behaviors as disruptive (Duesund, 2013). The aim of the thesis is to discuss the relationship between disruptive behavior, interpreted as off-task behavior, and new technology. The objectives of this research are twofold. First, to observe and identify the types of off-task behavior that students display while using and interacting with new technology. Second, a thorough discussion on the relationship between the two concepts. Fischer’s (1992) “user heuristic” framework is applied to contextualize the discussion in the thesis.

## **Research questions:**

The research aims to examine and discuss the following research questions:

*What characterizes the relationship between technology and disruptive behavior during class?*

A second question is generated to serve as guideline when the collecting the data:

*What kind of off-task and on-task behavior does the student display while using and interacting with technological devices in the classroom?*

## **Methodology:**

The study undertakes a qualitative case study approach, observing one student in an American middle school classroom. The data is collected through one semi-structured interview with the student (referred to as NN). Structured observations were made on five separate occasions. During the first observation, the class as a whole was observed, whereas the next four observations were focused on NN, lasting 15 minutes each.

## **Results and conclusions:**

The main focus in the thesis is disruptive behavior interpreted as off-task behavior; both passive and active (Hofer, 2007). Off-task behavior inhibits either learning or teaching.

Passive off-task behavior does not necessarily disturb other than the students himself, such as, daydreaming or apathy (Charles, 2011; Hofer, 2007), whereas active off-task behavior might be disruptive to the learning and teaching of other students and teachers, such as through talking out of turn, out of seat behavior, or annoying others (Charles, 2011; Hofer, 2007; Wheldall & Merrett, 1988). Moreover, the thesis focuses on off-task behavior when using and interacting with new technology, such as, computers, smart phones, and LCD-projectors. Technology is defined as a device, an activity, and as a know-how, as well as fitting the purpose of the classroom subject matter (MacKenzie & Wajcman, 1985; Ren, 2014). Off-task behavior in relation to the use of, and interaction with, technology is, therefore, defined as students not completing the required task given by the teacher (Colvin & Horner, 2010), and/or use the assigned tool for other purposes than the specified or intended purpose (Donovan, Green, & Hartley, 2010).

Of the categories generated from this research category 3 is definitely the most frequent category displayed by NN (active off task behavior in double interaction), and behavior that belongs in category 6 (on-task behavior in double interaction). The categories are theoretical in that they are not mutually exclusive.

The main conclusions from the research are that technology does not make students displaying disruptive acts. It is through the use of, and interaction with, technology that disruptive behavior occurs. The relationship between off-task behavior and new technology is dynamic, in that NN would display on-task and off-task behavior interchangeably. The relationship is also characterized by inconsistency, which implies that NN displays on-task and off-task behavior at the same time. A key finding is that not necessarily all of the off-task behaviors displayed are equally destructive to NN's learning. In some situations NN seems off-task regarding the task he is assigned, but on-task regarding the learning potential (Colvin & Horner, 2010; Hofer, 2007). Additionally, the context surrounding NN is pointed out as an important factor when outlining the relationship between disruptive behavior and technology. In a dynamic environment, the individual will often be affected by the context and vice versa (Corrie, 2002; Duesund, 1995). Constraints, possibilities, and unintended consequences when using and interacting with technology are part of this contextual argument.

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Sincerely,

Stine Solberg

Berkeley, May 2014

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# 1 Introduction

This chapter begins by presenting the background of the study; then the thesis itself is introduced, along with the rationale behind the themes. The motivation of the research is discussed and the research questions are identified. The chapter concludes with an overview of the thesis.

## 1.1 Background

This thesis is part of the research project “Disruptive behavior in school,” led by professor Liv Duesund at the Department of Special Needs Education at the University of Oslo. It is a cooperation project between University of Oslo and University of California, Berkeley and compares the educational cultures of Norway and the United States (Duesund, 2013). The general agenda of the project is to examine classroom situations that increase disruptive behavior, as well as what kind of disruptive behavior that occurs. Teachers’ strategies in meeting these behaviors during different classroom subjects are also to be examined during the project (Duesund, 2013). I am humble and honored to be accepted as a student in the project and thereby given the opportunity to write my thesis at UCB. Also, I want to acknowledge the teachers involved in this study as great contributors to my research, and the work they do within the school and the classroom.

Some of my first thoughts upon joining the research project “Disruptive behavior in school” were in the form of several questions; what is disruptive behavior? What kinds of disruptive behaviors are there? For whom is a behavior disruptive? What terms are associated with this phenomenon? After reviewing the relevant literature about disruptive behavior, it was clear that the concept of disruptive behavior is highly complex and there exists many terms to describe the phenomena. Throughout my studies in Special Needs Education at University of Oslo, I have read, heard about, and experienced disruptive behavior specifically during internships in the Norwegian school system. I have noticed that there are many ways to describe undesirable behavior that children display in classroom settings where learning is the main goal.

To gain deeper knowledge about disruptive behavior, I will focus on the use of new technology in classrooms. There are several reasons for this choice; one of which being an

academic one. During my visit to the University of Berkeley in 2011, I attended a course on “Sociology and Technology” which motivated me to explore how technology can be discussed and analyzed within a classroom setting. It also provoked questions such as: what kinds of technologies are used in schools? What are the social forces and interests in education, and who promotes them? What perspectives are relevant when speaking of technology in a context of special needs education, and disruptive behavior?

Before I went to UCB, I had several thoughts regarding the project and my thesis. Considering I wanted to write about disruptive behavior in relation to technology, it would be essential to actually observe different technological devices. Through experiences from internships in the Norwegian school system, I have seen extensive use of different technologies among students, such as, computers and smart phones. I was uncertain what I could expect to observe in American classrooms, considering access to, and use of, new technology. It would be challenging to describe and discuss the relationship between disruptive behavior and new technology if I could not observe technology at all. My thoughts around resolving this issue if it arose would be to discuss the digital divide, including access to different devices, and the know-how connected to the use of technology. Moreover, did I try to reflect upon my point of view regarding technology use in schools. I attempted to decide if my epistemology was of an enthusiast or a skeptic concerning the use of newer technology in school, and in what ways technology and disruptive behavior are connected. I figured this to be a challenging task, since there are extensive amounts of literature covering technology use in education, as well as disruptive behavior. The reason I aimed to reflect upon my perspectives, was to be more aware of my presuppositions regarding technology, as well as disruptive behavior.

The research methods consist of observations of an individual student at middle school level, and a semi-structured interview. Note that the term student is applied to a middle school student and not a student at university level.

## **1.2 Introduction**

Children that display disruptive behavior may be characterized as difficult. They often have a challenging time at home, in school, and in society as a whole (Befring & Duesund, 2012). Greene (2008) claims that children with different social, emotional, and behavioral

challenges are "... still poorly understood and treated in a way that is completely at odds with what is now known about how they came to be challenging in the first place" (p. xi). Disruptive behavior is, therefore, critical to address. Children that display disruptive behavior are part of a vulnerable group. The need to analyze, and clarify the various terms may be essential to discussing disruptive behavior in a respectful manner with language that promotes openness (Egelund, Jensen, & Sigsgaard, 2006). Moreover, there is a great body of research covering disruptive behavior in schools (Befring & Duesund, 2012; Cangelosi, 1988; Charles, 2011; Colvin & Horner, 2010; Egelund et al., 2006; Frude & Gault, 1984; Greene, 2008; Redl, 1975). Frude and Gault (1984) write that the media is publicizing disruption in school, which they argue is a poor and elusive measure. The need for clear criteria and definitions of disruptive acts are of interest (Frude & Gault, 1984). Frude (1984) claims that there is, not only, a state of chaos in schools, but also, there exists considerable concern regarding individual incidents, and that detailed analysis of these incidents may be valuable when speaking of intervention and prevention.

Technology has become an integrated part of our society and our daily lives (Veen & Vrakking, 2006). The use of new information and communication technologies as well as digital media has been expanding in education since the 1980s (Loveless & Williamson, 2013). Similar trends are also apparent in American households (Lee & Winzenried, 2009). The growing interdependence of technology in school systems requires careful consideration in behavioral studies of school children. Indeed, the integral role of technology in primary education has become a research area of its own.

Technology in education is more than just access and availability. When arguing why technology is of interest it is crucial to focus on the relationship between the concept of technology, and the concept of disruptive behavior. In reference to the use of different technologies in the American society, Harwood and Asal (2007) claim that "... no aspect of modern society has been left unchanged by our collective adoption of these digitalized technologies, including our educational system" (p. 2). One example of societal change might be the transformation in student's classroom behavior. Nworie and Haughton (2008) observe that "the nature of disruptions encountered by classrooms teachers is changing" (p. 52), and claim that disturbances caused by the use of technology in classrooms are different today than traditional disruptions such as chewing gum or taking naps. There are, indeed, new challenges related to disruptive behavior in classroom settings. Wehrli (2009) discusses how

cell phones, laptops, and other technologies can adversely affect teacher-student relationships. Wehrli (2009) notes great variance in teacher reactions to the use of technology by students – ranging from welcoming the technological objects to destroying a student’s cellphone.

Diversities in views regarding the use of technology in education are visible in early literature. For example, does Sharples (2002) suggest that technology might be disruptive to a carefully managed classroom environment. Whereas, Conole, de Laat, Dillon, and Darby (2008) indicates that students use technology to support learning, and the authors aim to present the students perception of technology. This divergence in research highlights the relevance and complexity of the relationship between technology and disruptive behavior in school. Certainly, the relationship between the two is not obvious as the literature review and ensuing research will reveal. MacKenzie and Wajcman (1985) write that social scientists often concentrate on the “effects” of technologies’, or “impact” of technological change. This thesis aims to bridge the apparent gap in knowledge that exists in the relationship between disruptive behavior and technology in classrooms by applying a “user heuristic” framework (Fischer, 1992). It might be essential that researchers and educators enhance their understanding of the role that technology plays in classroom learning. It is well known that disruptive behavior inhibits learning (Egelund et al., 2006; Levin & Nolan, 1996), therefore, a better understanding of role of technology as it relates to disruptive behavior warrants further exploration.

### **1.3 Research questions**

It is it intriguing to observe how students are using technology and the way they interact with it. As Harwood and Asal (2007) express; “Their use is the key” (p. 15), “their” being teachers and students. The classroom context is also an integral part to the students’ use of and interaction with technology. Accordingly, the purpose of the study is to examine and explore what characterizes the relationship between technology and disruptive behavior in a classroom. A premise is whether disruptive behaviors arise from the *interaction* with and use of technology. This thesis aims to present a new perspective on the relationship between disruptive behavior and technology, through the “user heuristic” framework (Fischer, 1992). To this end, it is necessary to identify the off-task behaviors that occur while students are using and interacting with classroom technology.

Based on the introduction, the following research questions are proposed and discussed:

*What characterizes the relationship between technology and disruptive behavior during class?*

The second research question serves as a guideline for the collection of data, and helps to examine the first research question in a more concrete manner:

*What kind of off-task and on-task behavior does the student display while using and interacting with technological devices in the classroom?*

Disruptive behavior is observed during data collection as off-task behavior, and the reasoning and discussion behind this choice is outlined in the literature review of the thesis. The scope of technology is explained in depth in section 2.2.1. The terms “interacting” with, and “use” of, are applied, instead of the “effects” of technology. The reasoning behind the selection of these terms is to highlight the fact that the use of technology among students is the main theme of concern. Students use a technology, but they also interact with it. The additional term of interaction is applied to emphasize, not only the interaction with the device, but also, the social interchange that may arise through the use of the device.

## **1.4 Overview of the thesis**

The thesis consists of five chapters. The first chapter presented the background and theme of the thesis, and introduced the research questions. In chapter two, the theoretical framework is developed with particular focus on the terms disruptive behavior and technology. In chapter three, the research design and methodology for data collection are outlined (semi-structured interview and observation). Also, the implementation of the study, the validity, reliability, and generalizability of the findings, as well as ethical considerations and issues, is discussed. In chapter four, the results are presented and analyzed within the theoretical framework, together with the implications of the research. Chapter five concludes and proposes further research.

## **2 Theoretical framework**

This chapter examines the theoretical framework and presents key terms applied in the research questions. In particular, the terms disruptive/off-task behavior and technology are explained. The terms disruptive behavior and technology are discussed separately, which might be contradictive to the fact that this thesis aims to describe the relationship between these two concepts. However, the terms are individually described for the sake of systematics. First, a theoretical overview of disruptive behavior and its implications, as well as characteristics of off-task behavior are outlined. Then, a definition of technology, as well as the “user heuristic” framework, is illustrated. The relevance of the “user heuristic” framework of technology as it relates to disruptive behavior is argued. Also, the relevant body of knowledge concerning technology in education is presented.

### **2.1 Disruptive behavior**

There is no simple way to define the term disruptive behavior. It is in itself complex and diverse, which may be due to the many ways of understanding the concept and the variety of terminologies applied to this phenomena (Befring & Duesund, 2012; Wheldall & Merrett, 1988). An early body of literature examined the significance of disruptive behavior in order to establish its implications of disruptive behavior in a classroom setting.

#### **2.1.1 The significance of disruptive behavior**

Egelund et al. (2006) ask an important question that may be important to clarify; if and why does it have to be calm and discipline in school? They contextualized this question in relation to learning. The authors write that students must have the opportunity to immerse themselves in the learning process. Sometimes, learning is a dynamic activity in which students move around and communicate with one another, whereas in other situations learning demands listening to the teacher or peers. Some times may even involve the student working solo. Regardless of the activity, unwelcomed disturbing elements, such as talking out of turn, moving around, or pushing peers should not be present (Egelund et al., 2006). Disruptive behavior, if ignored, can be a significant learning-inhibitor. In other words, the learning environment is, effected when a classroom is characterized by disruptive behavior (Levin & Nolan, 1996). The degree is decided by several factors, such as, type, frequency, and duration



(Levin & Nolan, 1996; Nordahl, Manger, Sørli, & Tveit, 2005). A considerable amount of time can be spent on handling this behavior, and research indicates that teachers spend as much as 30 to 80 percent of their time in addressing disciplinary problems (Walsh, 1983 in Levin & Nolan, 1996). It may be assumed that disruptive behavior is of significance to classroom learning and teaching for both the student displaying disruptive behavior and his or her peers, considering the effects disruptive behavior can have on the teaching and learning environment (Levin & Nolan, 1996). It may be noteworthy to examine the reasons behind a student's display of disruptive behavior, to emphasize the mutual influence the student and the classroom environment have on one another (Corrie, 2002). These reasons are outlined in the next section.

### **2.1.2 Reasons why students display disruptive behavior**

Befring and Duesund (2012) present fundamental features about the concept psychosocial problem behavior and write that problems with relations to others often has close connection to adolescence-related conditions, such as, a stressful home environment, neglect, lack of support, a negative focus in school, and lesser school performance. Children affected by these conditions have difficulties that imply turmoil, conflict, insecurity, punishment, and hopelessness (Befring & Duesund, 2012). Without intervention, these children might display disruptive behavior, which can increase in both severity and scope (Lane, Gresham, & O'Shaughnessy, 2002). The reactions from the environment can often result in a vicious cycle that may increase the child's display of disruptive behavior (Befring & Duesund, 2012).

Greene (2008) challenges explanations often used by caregivers, such as, attention seeking, manipulation, and mental illness, and instead, provides a list of skills that might be lagging in children that are perceived as challenging. This list includes difficulties with transitions, difficulties mustering energy to persist challenging tasks, difficulties with logical sequencing, difficulties handling multiple thoughts or ideas, and so on. For further reading, the reader is referred to Greene (2008). The key point is that the list does not contain any diagnosis, but focuses on skills the child might be lagging.

Redl (1975) discusses the meanings of disruptive behavior in a classroom. He claims that "before we can tackle the question of what 'causes' disruptive behavior, [he wants] the classroom teacher to be interested in another question: what does it *mean*?" (p. 572). The

author highlights the importance of knowing what is occurring in each individual student when a behavior is carried out, since students' perception of their behavior might also imply that the teacher will have to respond accordingly to stop the behavior displayed. Redl (1975) provides several examples to illustrate his point: boredom, waiting for help, normal reaction to mismanagement, misperception of adult's intent, sudden panic at the never ending skill attainment and goal attainment, disruptive behavior as revenge or accusation, pathology, spillover effects from preceding events, self-cure, testing the limits, escape from outer or inner commitments or tasks, and for fun (Redl, 1975). Overall, there are several reasons and meanings behind students' display of disruptive behavior. It is important to be aware of the different meanings behind the disruptive behavior displayed by the student in order to identify whether it is due to individual or contextual reasons, or both. Moreover, "there is also such a thing as behavior by adults toward children which becomes disruptive at points, insofar as it kills the youngster's chance to benefit from his life experience or that it tears up the child altogether" (Redl, 1975, p. 594). Redl (1975) clearly emphasizes the importance of the interaction between the child and the adults as to why disruptive behavior is displayed.

Frude and Gault (1984) discuss the social relativity of disruption, and write that two different teachers can perceive a students' behavior differently. Teachers have varying thresholds for labeling students' acts as abnormal. This subjectivity is an important aspect of relationship between students and the teacher in a classroom and helps explain the relevance of context when analyzing the term disruptive behavior (Frude & Gault, 1984). Disruptive behavior does not occur in a vacuum, but rather within a context (Corrie, 2002). Classrooms are dynamic environments in continuous transformation as a consequence of the wide array of human interactions (Corrie, 2002; Greene, 2008).

Disruptive behavior can be displayed in several ways. According to teachers, some types of behaviors are considered more troublesome than others. Earlier research indicates that disturbing others and talking out of turn are two classroom behaviors that teachers find most troublesome (Merrett & Wheldall, 1984 in Wheldall & Merrett, 1988). Wheldall and Merrett (1988) observed that teachers also consider non-attendance and disobedience problematic. The authors categorize the different behaviors as "talking out of turn" (TOOT) and "hindering other children" (HOC), followed by "out of seat behavior" (OOS).

### **2.1.3 Definitions and characteristics of disruptive behavior**

Definitions of disruptive behavior can differ in nature. Normative definitions are elaborated throughout the thesis, since they seem suitable to the subjectivity of the term disruptive behavior. Normative definitions can either be statistical, medical, or moral (Holst, 1978 in Aasen, Nordtug, Ertesvåg, & Leirvik, 2002). A *statistical* assessment of behavior implies that normal or expected behavior is within the average and ordinary, where there are continuous transitions from normal to abnormal. An issue with this type of definition is that it is difficult to determine how frequent a behavior has to occur to label it as normal. Furthermore, statistical definitions may exclude human characteristics that are difficult to quantify (Aasen et al., 2002).

When applying a *medical* assessment of behavior, one can speak of the divide between illness and health (Aasen et al., 2002). If teachers or others are to use medical assessment in pedagogical work, there has to be clear ethical reasons for doing so. In order to emphasize the focus on the act, rather than the child, expressions, such as, “displaying” or “showing” disruptive behavior are applied throughout the thesis. Therefore, a medical assessment of disruptive behavior is excluded from the definition given that medical diagnosis is beyond the scope of this research.

*Moral* assessments of behavior refer to what is right and wrong in a given social situation (Aasen et al., 2002). Behavioral acts are in moral assessments in accordance with certain morals, conducts, and laws. Moral assessments can occur on different levels – individuals judging other peoples’ behavior, or society using institutionalized judgments, such as laws enforced in courtrooms (Aasen et al., 2002). Values, norms, and attitudes are important aspects of moral assessments of behavior. Values are guiding principles that regulate our lives, whereas norms are more concrete in nature – certain actions that are expected from people in a society. Classroom rules regarding the use of computers or cellphones in classrooms, for instance, can be considered concrete norms.

There are, however, problematic conditions associated with moral assessment of behavior. It can be challenging to determine what the consensus regarding the correct or morally right behavior is (Aasen et al., 2002). How great of a consensus does a statement have to gain to be defined as a norm? Moreover, normative statements are situational in nature, meaning that

time, place, characteristics about the individual, such as age, working status, everyday life, will affect the way different types of behaviors are assessed. Also, asymmetry in power may exist when an individual is morally assessing someone else. Behavioral assessments may be more influential in regulating behavior when preformed by people in power positions than by others not in these positions. Lastly, there can be a divergence between what people say and what they actually do (Aasen et al., 2002). The individual's self-assessment of behavior is also influenced by the way other people assess his or her behavior. There is, therefore, a differentiation between personal and perceived expectations to behavior (Aasen et al., 2002).

Behavior, however, is an ambiguous term. Charles (2011) writes that "behavior refers to the totality of what people do" (p. 13). Behavior can have several meanings and include a wide array of actions in everyday life. However, a main concern in education often revolves around learning certain skills of both academic and interpersonal art, and behavior that might decrease the chance of this occurring (Charles, 2011). Teachers set out rules to separate acceptable behavior from unacceptable behavior. It can be referred to as misbehavior when these rules are violated or have influenced others' learning and well-being. Charles (2011) defines misbehavior as inappropriate behavior in relation to the setting or situation it occurs in. He presents thirteen types of student misbehavior that are either intentional or because of thoughtlessness, and interferes with teaching and learning, threatens or intimidates others, and surpasses standards of moral, ethical or legal behavior in society (Charles, 2011).

The types of misbehavior vary from less serious to more serious behavior, including *inattention* such as daydreaming or thinking about irrelevant things, *apathy*, as not caring or sulking, *needless talk* during instructional lessons, *moving around* the classroom without permission, *annoying others*, such as teasing or calling names, and *disruption*, such as shouting, laughing, or use vulgar language (Charles, 2011, p. 15). Furthermore, this list includes *lying*, *stealing* others belongings, *cheating*, *sexual harassment*, *fighting*, *damage* to school property, and *defying authority* (Charles, 2011). Even though Charles (2011) refers to the term misbehavior, his categories are to some extent applied in the thesis and interpreted as disruptive behavior, in regards to both the student and the environment. Considering his definition suggests that misbehavior interferes with learning, disruptive behavior does not necessarily only disrupt or interfere with the learning of peers or teachers, but also the individual student.

Furthermore, Levin and Nolan (1996) define disruptive behavior in terms of behavior that disturbs and interferes with classroom teaching and other students' learning, and that can be psychologically or physically unsafe or destroy property. The teachers may also be the discipline problem according to this definition, for example, due to ineffective classroom procedures or inappropriate teaching (Levin & Nolan, 1996).

Disruptive behavior can, in other words, be of both verbal and physical character.

Furthermore, disruptive behavior can be placed on a spectrum from inattention and small chatter to vandalism and fighting. It is, therefore, important to consider duration, frequency, intensity, scope, and intention when placing disruptive behavior on a continuum (Nordahl et al., 2005). The behavior does not only affect the student that is displaying disruptive behavior, but also the learning environment, the teacher, and classmates. It is important to point out that misbehavior, or disruptive behavior, to use the term referred to in the thesis, includes the student being disruptive to himself, for example, by being inattentive or showing apathy, as well as disruptive to teachers or peers, through, for instance, needless talking or moving around the classroom.

Charles' (2011) definition seems to have a normative aspect to it, as misbehavior in his view surpasses standards of moral, ethical, or legal behavior in society. As noted earlier, teachers have different thresholds in meeting disruptive behavior. Some teachers accept disruptive behavior to a greater extent than others (Frude & Gault, 1984). In the thesis, the definition of disruptive behavior is based on the definition used in the project "Disruptive behavior in schools." Disruptive behavior will, consequently, be defined as behavior varying from mild disruptive behavior to more serious or severe disruptive behavior (Nordahl et al., 2005). However, violent behavior will not be a part of this definition. The definition of disruptive behavior can, on the other hand, include everything from TOOT, HOC and OOS (Wheldall & Merrett, 1988), as well as Charles' (2011) list of behaviors. Considering that disruptive behavior is defined on a continuum, one can argue that it may be of statistical, medical, and normative character, depending on how one limits the term. It is apparent from the term clarification sections that disruptive behavior is a broad phenomenon, and it is beyond the scope of the thesis to cover all forms of disruptive behavior. One way to limit the term disruptive behavior is to discuss it as off-task behavior.

#### **2.1.4 Disruptive behavior interpreted as off-task behavior**

In the context of classroom behavior, a task is defined as “any direction or activity requested by teachers requiring responses from students” (Colvin & Horner, 2010, p. 25). For example, if the teacher asks the students to make a PowerPoint on the computer during English class, the steps involved in the task are to go to the computer, open the PowerPoint program, and create a presentation related to the specified subject. The students who engage in these steps are considered on-task. In other situations, students may use the computer to play games or check their Facebook page. Such activities, unrelated to a teacher’s prescribed assignment, are considered to be off-task behavior. Donovan et al. (2010) present a definition of off-task behavior specific to technology-based instruction as “the use of assigned technology tools (computers) for purposes other than intended or specified for the learning activity (such as surfing the Internet for movie information or e-mailing friends when the assigned use is word processing)” (p. 426). To be considered on-task the student has to use the technology for the specific task the teacher has assigned.

Colvin and Horner (2010) define off-task behavior as “any behavior in which the teacher’s directions are not followed and are not connected with engagement in and completion of the required tasks” (p. 26). On-task behavior is defined as students following the teacher’s directions and engaging in the classroom activities that are specified by the teacher. The student engages in a learning activity over an allocated period of time (Cangelosi, 1988).

When a student shifts from on-task (following teachers’ instructions and engaging in activities related to learning) to off-task behavior, where such activities cease, it can be interpreted as misbehavior from the teacher’s point of view (Hofer, 2007). Hofer (2007) claims that “from a learning perspective, all activities not directed toward learning can be viewed as off-task behavior” (p. 28). According to Hofer (2007), off-task behavior can be active or passive. Active off-task behavior often disturbs other students in the classroom, since it is most likely that the behavior disturbs teaching. On the other hand, passive off-task behavior, such as daydreaming or concealed activities that are not meant to be carried out during class, does not disturb anyone other than the student himself (Hofer, 2007). However, both active and passive off-task behavior can be considered as disruptive behavior, in that the behavior breaches classroom rules (Charles, 2011).

There have to be certain conditions present for students to be on-task. The students have to possess the necessary skills, and be given explicit instructions regarding the task. The time-frame for task completion must also be appropriate, and regular monitoring by the teacher is necessary to ensure students remain on-task (Colvin & Horner, 2010). The importance of skills is consistent with the definition of disruptive behavior presented above, as an important condition when discussing why disruptive behavior occurs (Greene, 2008).

Colvin and Horner (2010) find that off-task behavior is common in classrooms today and if left unchecked, it may escalate to more serious disruptive behavior. Off-task behavior can, therefore, be interpreted as a milder or less severe form of disruptive behavior. The authors' interpretation of off-task is in accordance with the previous definition of disruptive behavior, since it excludes violent behavior. This is not to say that off-task behavior cannot be of violent or more serious character. Hitting a peer, for example, can be considered both violent and off-task. In this thesis, however, is off-task behavior discussed as a milder form of disruptive behavior. The characteristics of disruptive behavior, such as breaching classroom rules, behavior that interferes with the learning of the individual student or his peers, teaching, or is considered inappropriate in relation to the setting or situation it occurs in (Charles, 2011; Levin & Nolan, 1996), are, therefore, also considered off-task behavior. Some aspects of the definition and characteristics of disruptive behavior are recognized when defining off-task behavior. The term off-task behavior is applied because it limits disruptive behavior to situations in which the student is supposed to carry out a specific task. Moreover, off-task behavior might be more easily detected by the researcher when focusing on assignments involving specific technological devices.

Disruptive behavior is limited to off-task behavior, either active or passive. Another important operationalization is that the teacher or peers do not necessarily have to be aware of the off-task behavior, especially the passive off-task behavior. Even if the teacher is aware of the behavior, he or she might continue the classroom teaching (Levin & Nolan, 1996). For example, a student who is daydreaming may go unnoticed by the teacher, or the behavior might simply be ignored since it may not be considered as overtly disruptive. Indeed, other more apparent behaviors, such as talking out of turn, might also be ignored by the teacher.

## 2.2 Technology

### 2.2.1 Definition of new technology

MacKenzie and Wajcman (1985) ascribe the term technology three different layers of meaning. At the first, and most basic level, technology is referred to as a physical object, such as, computers or vacuum cleaners. The authors call this the “hardware” definition of technology (MacKenzie & Wajcman, 1985). Second, technology refers to human activities, since technology “forms part of a set of human activities” (MacKenzie & Wajcman, 1985, p. 3). A computer, for example, is useless without its programs and programmers. Lastly, technology refers to knowledge, and to what people are doing with the technology. The use of a technology requires knowledge. This last meaning of technology is challenging to capture in words as it may be visual and tactile, not only verbal or mathematical (Ferguson, 1977 in MacKenzie & Wajcman, 1985). A definition of technology involves tools, human activity, and the know-how. A definition of *newer* technology, which is the focus of this thesis, should consider these aspects of technology when analyzing and discussing the relationship between new technology, and disruptive behavior.

As pointed out in the introduction, when presenting the purpose of the thesis, the *students’* use of technology is the key (Greene, 2008). The focus is, consequently, on newer technology that is likely to be present in a classroom, since this is the context in which the technology is being used. According to Gray, Thomas, and Lewis (2010) newer technology can include everything from computers, whiteboards, digital cameras, and networks. Cellphones and smart phones may be present too (Madden, Lenhart, Duggan, Cortesi, & Gasser, 2013). Teenagers tend to view technology as electrified machines, and not as, for example, chalkboards and books. “Lower” or pre-digital technologies, such as, black board, paper, and pens are excluded from the definition of technology (Harwood & Asal, 2007; Selwyn, 2011a). Considering that the students are interacting with newer technology in school it might be essential to include an educational definition of technology, to specify the context in which the students and the technology interact. An educational definition of technology emphasizes pedagogical or learning uses that the technology serves (Ren, 2014). An educational technology definition “acknowledges the principle that uses and training for use should fit the specific purpose” (Ren, 2014, p. viii). Considering disruptive behavior breaches rules, norms, and standards, it can be considered disruptive to use new technology for other



activities else than the subject matter or assigned task, as emphasized in the section regarding off-task behavior.

Teenagers tend to think of technology in terms of the activity that it enables (Oblinger & Oblinger, 2005b). This is consistent with the previous definition of technology as both a material device and as an activity (MacKenzie & Wajcman, 1985; Wartofsky, 1992). Teenagers do not seem to focus too much on the “hardware” definition of technology, but rather on the practical use of technology (their interactions with it). For them, technology is defined as access to equipment and devices that allows information and communication, as well as technology customized so that it is adapted to their needs (Oblinger & Oblinger, 2005b; Roberts, 2005). Customization – the ability to accommodate individual needs and preferences – is, in other words, of importance when defining technology (Collins & Halverson, 2009). What technology is considered to be by teens is, therefore, essential to consider when defining technology in this thesis (Oblinger & Oblinger, 2005b).

The term new technology is referred to, in the thesis, as digital in the way that it can be used to produce, manipulate, store, and communicate information, and includes everything from laptops, PC’s, whiteboards, mobile phones, smart phones, radio, mp3 players, and the Internet (Gray et al., 2010; Madden, Lenhart, Duggan, Cortesi, & Gasser, 2013; Selwyn, 2011a). Technology is also defined as a device, an activity, and as know-how. When looking back on some of the important conditions for students being on-task in section 2.1.4, the know-how of technology seems especially important when using technology for school related tasks. Tasks may include taking computer tests, display a PowerPoint presentation, using the LCD-projector, and other assignments that students have to perform in the classroom. When using technology in school, the students may not have sufficient digital literacy to use it in relation to the subject matter, but they may be good at using applications for games and communication purposes. It is a stylized fact that off-task behavior may result from a lack of digital literacy, however, the level of such literacy is unobservable and, thus, beyond the scope of this research. Once the definition is established, a framework is needed to contextualize the concepts of “use,” and “interact” with technology. The framework is presented in the next section of the thesis.

### **2.2.2 The “user heuristic” framework**

There are several approaches one can undertake in relation to technology (MacKenzie & Wajcman, 1985). MacKenzie and Wajcman (1985) write that social scientists often concentrate on the “effects” of technologies’, or “impact” of technological change. A theory that had great influence among social scientist is technological determinism. Technological determinism holds that changes in technology causes changes in society, which implies that technology in itself is an independent factor that comes from the outside of society (MacKenzie & Wajcman, 1985). This thesis rests on the premise that people manipulate, rather than being manipulated (Harwood & Asal, 2007). Technologies are developed in accordance with existing rules and rational procedures, as well as institutional histories, technical possibilities, and popular desires (Fischer, 1992). They are not enforced upon passive humans.

Technology is, therefore, not an autonomous or external force that impacts social life, nor a symptom of a deeper culture logic (Fischer, 1992). This thesis is in the spirit of Harwood and Asal (2007) and bases its arguments on Fischer’s (1992) “user heuristic” – the incorporation of the end users into technology. It is the consumers that choose, employ, and experience a technology. The “user heuristic” perspective is needed to understand social implications of technology (Cowan, 1983 in Fischer, 1992). This angle is an extension of social constructivism in which emphasis is put on human agency and intentionality among end users. People are not impacted by technology from the outside, as asserted by deterministic views on technology, neither are they “manipulated” by a cultural Geist (Fischer, 1992). Social and cultural conditions largely determine people’s choices of, for example, entertainment or family visitation. These conditions can also limit people’s choices, considering that the choices are made within constraints, such as income, and costs. Information, skills, and rules, be they formal or informal, will also function as constrains when choosing ends. Furthermore, people will choose within the constraints enacted by the distribution system of the technology; if the school does not have computers, the students cannot use them. In short, “... the consequences of a technology are, initially and most simply, the ends that users seek” (Fischer, 1992, p. 18).

There may also be second and third order consequences, in which individuals make choices and experience the resulting unintended consequences. For example, Nworie and Haughton

(2008) observe that students often use technology for purposes other than the intended ones, such as computer games, web surfing, and "... other personal projects" (p. 52).

The collective use of technology is also of interest, and even less controllable. When everyone has a cellphone, *you* need a cellphone. An optional device can, in other words, become necessary (Fischer, 1992). Technology can be, not only, a tool for the user, but also a structure that imposes constraints to the individuals despite the individuals' choices. One can decide to not watch television, but still be surrounded by television in popular culture, and politics.

At either level of analysis, individual or structural, the center of the process is the purposeful user employing, rejecting, or modifying technologies to his or her ends, but doing so within circumstances that may in some instances be so constraining as to leave little choice at all (Fischer, 1992, p. 19).

In summary can technological devices and systems be both "socially shaped and socially shaping" (Loveless & Williamson, 2013, p. 6).

The "user heuristic" framework is presented is to avoid a deterministic and symptomatic approach to technology. Selwyn (2011b) claims that deterministically thinking about technology "...is misleadingly reductive in its analysis – obscuring or even ignoring altogether the complexities of social action and change" (p. 83). The consequence of deterministic thinking could lead researchers of educational technology to simply examine factors that may obstruct technological progress (Selwyn, 2011b). In a classroom setting this would ultimately imply teachers only being able to implement the technology they are presented with into the best use possible, since a deterministic argument leaves little room for social agency and deviation. Gender, race, social class, identity, and power are also issues that are ignored from a deterministic point of view, which are all important aspects of educational technology (Selwyn, 2011b).

Harwood and Asal (2007) apply the "user heuristic" framework in an educational setting. They claim that the individual heuristic is an appropriate model since it emphasizes the utilization by students and teachers, as well as taking into account the context surrounding them. The use of this framework does not devalue other perspectives presented. However,

when aiming to describe and explore students' use of and interaction with technology in an educational setting, a contextual and broad perspective on technology use may seem more suitable.

### **2.2.3 The relevance of a “user heuristic” framework to disruptive behavior**

In order to analyze the relationship between technology and disruptive behavior, a framework is needed that takes into account both terms simultaneously. To this end, a technological “user heuristic” framework may be useful, not only, to discuss off-task behavior, but also, to examine a student's actions, interaction with peers and teachers, as well as the use of technology – all within the classroom context. The heuristic framework takes into account both the technology part, as well as the behavioral part of the thesis, considering technology is both socially shaped and socially shaping (Loveless & Williamson, 2013). In the behavioral categories that are presented in section 4.2.1 the term single interaction is applied when the student is only interacting with technology and not with other people such as teachers and peers. When the student is using and interacting with both peers and teacher, and technology, the term double interaction is applied. What does the term interaction imply in a classroom setting? This is briefly discussed in the next section.

### **2.2.4 Definition of interaction**

Interaction between humans and technology can be considered different than interaction among humans. Kraut et.al. (1990) divide interpersonal interaction into four types. The first type is scheduled interaction, where both parties plan the interaction (in McCarthy & Meidel, 1999). The second type is intended interaction, which implies that the interaction is planned by one party who seeks out another party. The third type of interaction is unplanned interaction regarding a planned topic of discussion. The last type of interaction is spontaneous interaction, where an unplanned interaction takes place regarding an unplanned topic (Kraut et.al, 1990 in McCarthy & Meidel, 1999). The different types of interaction are not discussed separately in the thesis. However, they are presented to suggest that there might also be room for no interaction at all. Interaction according to Kraut et.al (1991) implies that there is a plan of interaction by either party or both. In the context of this thesis, single interaction implies that the student is not planning to interact with anyone in the classroom when using and interacting with the technology.

The way individuals interact with technology and its implications necessitate explanation. Larssen, Robertson, and Edwards (2006) write about the bodily aspects of interaction with technology from a phenomenological perspective. They claim that human interaction with technology is primarily visual, and somewhat tactile and auditory. However, the interaction is more than just physical interactions with technology. For example, if students close their eyes, cover their ears, and shut their mouths, the interactive dimensions seem to collapse (Larssen et al., 2006). In the thesis this collapse is discussed as breach in interaction with technology, and possibly peers and the teacher. When a breach in interaction occurs, the students are purposefully, or not, not interacting with the technological device, and/or the other people in the classroom. Examples of a breach in interaction are presented in section 4.3.5.

### **2.2.5 Review of literature on classroom technology**

There is a comprehensive body of earlier literature regarding technology use in school addressing different perspectives, as well as a variety of technological devices. A selection of this literature is outlined in the following paragraphs, focusing on literature concerning newer handheld technology and computers. Important conditions and barriers when implementing and using technology in education is also outlined. The “user heuristic” framework has, to some extent, guided the selection of literature, to be able to refer to the most relevant aspects of existing literature.

#### **Access and use**

In a survey conducted and reported by Gray et al. (2010), it is evident that 97 percent of teachers in American public schools have one or more computers located in the classroom every day, whereas 93 percent have Internet access. In their research, the authors defined technology as “information technology such as computers, devices that can be attached to computers (e.g., LCD projector, interactive whiteboard, digital camera), networks (e.g., Internet, local networks), and computer software” (Gray et al., 2010, p. 2). According to the teachers responding in the survey, 40 percent of the students use computers often during the instructional time, whereas 29 percent of the students use it sometimes. These numbers may indicate that access to newer technology is relatively high in American public schools. At the same time, does research suggest that the current ratio in the United States school system is circa five students per computer, whereas it is nine students per computer in urban districts

(Collins & Halverson, 2009). When considering access in schools, there is more than just the presence of, for example, computers that needs to be considered (Harwood & Asal, 2007). The physical placement of the technology, its software, and access to the Internet, are also of importance when discussing access to technology (Harwood & Asal, 2007).

### **Teachers' beliefs and perceptions**

Technology in education is more than just access and physical placement. Kim, Kim, Lee, Spector, and DeMeester (2013) write about teachers' beliefs in relation to technology integration practices in schools. The researchers found that teachers' beliefs regarding the nature of knowledge and learning, as well as beliefs regarding effectiveness of teaching, were related to their practices of technology integration (Kim et al., 2013). Even when teachers know how to use the technology their pedagogical beliefs about current practices may still hinder effective implementation of technology in their teaching (Ertmer, 2005). One can argue that teachers' beliefs can be an important condition regarding technology implementation and use in classrooms. Teachers' technological literacy and skills are also of interest (Harwood & Asal, 2007). When wanting to facilitate technology integration it may be of importance to include these aspects (Kim et al., 2013).

### **School policies and classroom rules**

School policies and rules regarding technology may be crucial to consider when wanting to ensure an effective learning environment (Obringer & Coffey, 2007), Classroom rules formalize teachers' expectations regarding student behavior (Charles, 2011). The rules should be explicitly explained and stated to the students, as well as rehearsed regularly (Colvin, 2002). It can, however, be challenging to enforce these policies and rules (Domitrek & Raby, 2008). The policies often vary from school to school – different teachers, administrators, and classrooms often enforce the rules differently. Inconsistencies among teachers seem to exist since some students more than others are allowed to use, for example, cellphones, during class (Domitrek & Raby, 2008). This could be due to their achievement during classroom hours. So called “troublemakers”, on the other hand, experience getting their devices confiscated more often (Domitrek & Raby, 2008).

### **Students' perceptions and use of technology**

Today's generations of children and youths have grown up with technology. They are exposed to technology, such as computers and cellphones, from a very young age (Oblinger

& Oblinger, 2005b). Students claim that they use technology as a tool to connect with others, as well as a tool for effective learning. Overall, they describe technology as an integrated part of their daily lives (Oblinger & Oblinger, 2005b). To obtain new information and to learn more and better is the most common response given by teenagers when asked what they use the Internet for (Oblinger & Oblinger, 2005b). Today's children use technology to learn in a multitude of ways, and approach tasks in a hands-on fashion (McNeely, 2005).

Conole et al. (2008) write about technology from the students' point of view, and their use, and experience with technologies, using survey, audio logs, and interviews. The authors argue that technologies have a profound impact on the way students learn (Conole et al., 2008). This research was conducted using students at university level as informants. The research may, nonetheless, be fruitful to discuss related to middle school students as well, considering that the access to newer technology is relatively high among teens as well, as well as in American public school classrooms (Gray et al., 2010; Madden et al., 2013).

Conole et al. (2008) found that students use technology, both computers and mobile devices, to seeking information, handling the information, communicating, preparing for assignments, and for integrated learning (Conole et al., 2008). The students used the web to a great extent to gather information to achieve an understanding of concepts. The use of several strategies was inherent in that the students applied different technologies to complete their assignments, e.g. word processing and mini-disk players (Conole et al., 2008). The students in the research expressed that they sometimes had difficulties evaluating the credibility of the sources they found (Conole et al., 2008). Students were, however, positive regarding the communicative possibilities when using mobile technologies, but some students found it disruptive to their studying when being interrupted, for example, by a phone call.

It may be crucial to take into account the student perspectives regarding technology use in education and in classrooms, considering the differences in perspectives that may exist between and among the students, and the school administration/teachers (Conole et al., 2008; Oblinger & Oblinger, 2005a).

### **Possible downsides when using technology in education; what are the downfalls and what is lost?**

Kruse (2013) discusses the possible downsides using handheld new technology in education. He writes that he is not opposed to using new technology in classrooms, but he claims that it

is necessary to raise concerns with respect to the use of it in education. The author points out that students use pocket devices to access information, but that reflection and deduction from contextual clues regarding the information might be compromised. The access must not replace wisdom, according to Kruse (2013). The importance of wisdom point is also promoted by Bromley (1998). The author claims that access to information does not equal knowledge. The knowledge has to be organized and "... shaped by intelligence, gathered toward some end" (Bromley, 1998, p. 14).

Another concern regarding technology use revolves around what technology cannot do. First of all, mobile technologies do not increase face-to-face interaction, but rather the contrary, according to Kruse (2013). Face to face interaction is crucial when wanting to maintain students' communication skills. Mobile technology does not necessarily contribute to that. When students interact with digital mediums, they must also continue to interact with real objects. This is due to the characteristics of real objects; that they are concrete in nature, and that they contribute to children's overall development (Kruse, 2013). Additionally, the role of the teacher is important in that they need to be critical concerning what technologies they use in their instruction, a point that is often ignored in the discussion regarding educational technology (Kruse, 2013). This argument is consistent with former literature that highlights that there are things that technology cannot teach students, such as obeying adults in authority (Collins & Halverson, 2009). Therefore, the teachers' role is valuable in that they challenge and encourage students in a way that computers cannot do (Collins & Halverson, 2009).

Classroom management can, at times, be challenged when teachers use technology during instruction (Collins & Halverson, 2009). When few students work at the computers it might cause discipline problems, according to Collins and Halverson (2009). The teacher must be comfortable letting students work in smaller groups during classroom lecture. Also, space problems concerning the technology, as well as time related challenges, can contribute to a noisier and less controllable classroom environment (Collins & Halverson, 2009). This is an interesting argument, but it is not in accordance with the framework presented earlier. The authors' argument seems slightly deterministic, saying computers causes difficult management problems.

Kruse (2013) and Sauers (2013) discuss whether pocket assistive technologies provide mainly benefits or distractions in schools. Sauers (2013) claims that there exists fear and



distrust in the majority of educators regarding technologies' role in increasing student distractions and misbehavior. Students' distractions are the primary concern among educators, according to Sauers (2013). This claim is also supported by Collins and Halverson (2009) who argue that the traditional classroom teacher is uncomfortable with new subversive technologies. Especially cellphones and video games appear to be the largest contributor to students' distractions. Sauers (2013) points out that this claim does not seem to be founded in empirical research, as well as failing to take into account the status of student engagement in classrooms today. A pocket device, such as an iPhone, does not cause student distraction. Learning can even become more engaging with the help of technology, since learning can be more closely related to what students want to learn. The students can, in other words, become more engaged and drawn to learning (Collins & Halverson, 2009).

## **3 Methodology**

To examine the research questions, a qualitative case study approach is applied. The data is collected through systematic observations and semi-structured interview. This is in accordance with the requirements that the project “Disruptive behavior in School” has concerning methodology. In the following sections, qualitative research, case study design, systematic observation, semi-structured interview, the analysis approach, as well as implementation of the study, are outlined. Also, this study’s validity, reliability, and generalizability is accounted for, as well as the study’s delimitations. Then, a presentation of the ethical considerations of the study is deliberated.

### **3.1 Qualitative research**

This study applies a qualitative methodology. There are several reasons for this. First of all, as the thesis is a part of the research project “Disruptive behavior in schools,” qualitative research was decided to be the main approach for the participants in the project. However, because of the important characteristics of qualitative research, it is probably the best way to examine the research questions. According to Corbin and Strauss (2008) qualitative research is characterized by curiosity, as well as creativity and imagination. Qualitative research also includes the researcher’s ability to recognize diversity at the same time as regularity, while being willing to take risks, live in ambiguity, and work through potential challenges in the field. An acceptance of one self as the research instrument is also essential in qualitative research (Corbin & Strauss, 2008). These are all essential aspects of qualitative research that served as guidelines and reminders when the research was conducted.

Yin (2011) presents five important features in qualitative research. These include studying peoples’ lives in the real world, representing their views and perspectives, while describing the contextual conditions where these people live. Furthermore, is qualitative research contributing to already existing or emerging concepts to explain behavior, as well as using a multitude of sources and evidence (Yin, 2011). The aim of qualitative research is not necessarily to generalize the results, but to describe and depict the real world from the participants’ point of view.

Considering the main purpose of this study is to discuss what characterizes the relationship between disruptive behavior and technology, a qualitative approach seems as the most fruitful approach to choose, considering the elusiveness of the word “relationship”. The aim is to draw out the essence of complex phenomenon and relationships (Befring, 2002). To adhere to a qualitative methodology, a case study approach is applied.

## **3.2 Research design – a case study approach**

Case study research is an in-depth study of a phenomena (Gall, Gall, & Borg, 2007). The aim is to better understand contexts, communities, and individuals (Hamilton & Corbett-Whittier, 2013). According to Hamilton and Corbett-Whittier (2013) can a case study be regarded a method, methodology, or a research design. The authors argue that case study as an approach to research, “... aims to capture the complexity of relationships, beliefs and attitudes within a bounded unit” (p. 10). This is the foundation of the case study in this research.

In a case study, the phenomenon of interest is studied in its real life context and reflects the participants’ perspectives on the phenomenon (Gall et al., 2007). The data is collected over a longer period of time, and usually presented in words, images, or physical objects (Gall et al., 2007). Case studies involve fieldwork. Therefore, researchers conduct the research in the natural setting of the study participants. The real-life context is according to Yin (2013) an important aspect in a case study. This is due to the importance of the participants’ perspectives when shedding light on the phenomenon of interest. In this study, it is not new technology or disruptive behavior per se that is the phenomenon of interest, but the relationship between these two complex concepts. As the phenomenon is clarified, the case is to be selected for more in-depth study. According to Gall et al. (2007) “a case is a particular instance of the phenomenon” (p. 447). The case in this research is a classroom in an American middle school. Furthermore, the unit of analysis is one student within this classroom. The student was chosen based on purposeful sampling (see section 4.1).

One of the purposes of a case study is to contribute to greater knowledge about a phenomenon, which can include a process, event, person, or other elements of interest (Gall et al., 2007). There can be several purposes to a case study – describing, explaining, or evaluating (Gall et al., 2007). When the purpose is description, the researcher is aiming to portray and conceptualize a phenomenon. Thick descriptions, context, as well as meanings

and intentions, should be described as detailed as possible. In explanation case studies the researcher looks for patterns, and whether or not one type of variation in a case study is related to another observed variation (Gall et al., 2007). Evaluative case studies aim to make evaluative judgments. The purpose of this case study is twofold; the aim is to apply a descriptive case study approach, through describing, and conceptualizing the relationship between technology and disruptive behavior. In addition, the study is of exploratory character since the purpose is to discover what is happening (Hamilton & Corbett-Whittier, 2013). To be in accordance with the research question “what characterizes the relationship between disruptive behavior and new technology”, it is argued that this case study is both descriptive and exploratory in nature, considering that the purpose is to both describe and explore this relationship. In this study, the data was collected through systematic observations and semi-structured interview. These methods are outlined in the next sections of the thesis.

### **3.3 Observation**

Observation as a method is a systematic collection of data about the physical and social world as it appears to us through our senses (Vedeler, 2000). Observation involves reflection and a search for meaning about the information we collect through observation. These impressions are then interpreted. Observation can be of both systematic and unsystematic character (Damsgaard, 2003; Vedeler, 2000). When performing systematic observation, the researcher is consciously attempting to acquire information about a phenomenon, a situation, or a problem by using different types of methods, whereas the unsystematic observation is less structured and less concentrated. In this research, systematic observations were conducted.

It is crucial to distinguish between observation and interpretation when conducting observations, as a way of providing as objective descriptions as possible (Damsgaard, 2003; Good & Brophy, 2003). Objective descriptions imply that the descriptions are accurate, and that the researchers are conscious about their own perceptions and presumptions (Good & Brophy, 2003). These aspects are related to thick descriptions in case study designs, as discussed above. The term objective is, however, slippery, because it is premised on the need to discuss how objective one can be when conducting observations in a field setting. In qualitative research one is more concerned that the researchers are aware of their perspectives, a term Kvale (1997) refers to as “prerequisite awareness”, rather than objectivity. In chapter one, presuppositions and thoughts regarding this thesis are outlined.

The presuppositions are, indeed, an important part of prerequisite awareness, since they state what the researcher already know. Given the qualitative approach it is, certainly, necessary to outline the way prerequisite awareness was taken into account to ensure validity of the study. Validity is discussed in section 3.7.1.

There are several benefits when using systematic observation as a data collection method. Observation is an important tool when describing children in everyday situations (Vedeler, 2000). Observation is valuable because it is a direct method that can provide information about incidents, relationships, and situations. The researcher is in a position to notice aspects about everyday life that can otherwise be ignored by others (Gjøsund & Huseby, 2005; Vedeler, 2000). Using observation can also decrease the chance of self-reporting biases that are more common when conducting interviews, especially on sensitive topics (Gall et al., 2007; Gjøsund & Huseby, 2005). Moreover, does observation provide correct and precise information if performed correctly. To obtain reliable data using observation, it is, however, important to observe over a longer period of time, especially when the aim is to gain insight on behavior (Gall et al., 2007). These benefits were all important aspects that were considered when generating the research questions and examining them.

At the same time, it is crucial to be aware of the downsides using observation. The most common sources of errors are biases associated to the observer (Gjøsund & Huseby, 2005). These aspects are considered in depth in section 3.7.1.

### **3.4 Semi-structured qualitative interview**

Semi-structured interview entails that the researcher has prepared a script that to some extent structures the course of the interview (Kvale & Brinkmann, 2009). A qualitative semi-structured interview aims to obtain qualitative knowledge concerning the informants' life world through the informants' precise and specific descriptions of situations and actions (Kvale & Brinkmann, 2009). The interview in this research aimed to obtain the students' view on disruptive behavior in the classroom environment. The interview addressed certain themes, which implies some direction regarding the questions asked. An interview guide designed by the members of the project "Disruptive behavior in school" was used in this research (see appendix 3). The questions there were focused on why the student displayed

disruptive acts and on his perception of his actions, as well as the teachers' perception of his actions.

An important aspect to be aware of when conducting qualitative interviews is the asymmetry in power between the researcher and the informant (Kvale & Brinkmann, 2009). The researcher possesses scientific knowledge that the student does not necessarily have. The researcher is also the one who initiates and defines the interview situation, through determining the topic, and deciding what questions to follow up with. The interview is a one-way dialogue regarding an agenda that, to some extent, is hidden from the informant (Kvale & Brinkmann, 2009). Before conducting the interview, steps were taken to be as prepared as possible. This was to ensure a comfortable situation for the informant/student. The interview guide was practiced on several peers. A literature review on interview as a method was also conducted. Awareness of the power relations, as well as the interview process – from designing the interview guide, to transcribing and analyzing data – were an important part of the preparations. Skills, sensitivity, and knowledge are all important components to discern, since the interviewer is considered the main research instrument when conducting an interview (Kvale & Brinkmann, 2009).

As a final note, it is important to point out that there might be several aspects concerning preparations, conduction, and analysis of the interview that are not accounted for in this section. The interview is applied as a supplementary method to increase the validity of the observations (see section 3.7.1). For this reason, there is no elaboration on interview as a method in this thesis.

### **3.5 Analysis – a hermeneutic approach**

To understand and use the results from the data collection, the researcher has to process the data by sorting and systematize the collected material (Olsson, Sørensen, & Bureid, 2003). A hermeneutic approach to the analysis is applied in this thesis. Hermeneutics stems from the Greek *hermeneuein*,” which means, “to interpret”. Originally, hermeneutics referred to interpretation of sacred texts (Gall et al., 2007; Kvale, 1996). The modern hermeneutics aim to interpret and understand the way human life and existence is reflected in both written and spoken language (Olsson et al., 2003). This can include documents, social customs, and essentially anything that can be “read” (Gall et al., 2007, p. 520). There exist several forms of

hermeneutic traditions, but this thesis is applying a productive hermeneutic approach when analyzing the results. The productive hermeneutic approach maintains that the interpreter, or researcher, cannot avoid their preconceptions. Neither can the researcher truly understand or empathize with the experience of others (Patterson & Williams, 2002). In the productive approach, the researcher will play an important role in creating interpretations through the process of analysis.

A central term in hermeneutics is the hermeneutic circle (Gall et al., 2007). When interpreting and analyzing hermeneutically there is a "... continuous back-and-forth process between parts and the whole" (Kvale & Brinkmann, 2009, p. 210), which involves gradually aiming to gain a deeper understanding of the phenomenon of interest. The researcher switches between interpreting parts of the text and the text as a whole (Gall et al., 2007; Kvale, 1996). The hermeneutic circle is applied when analyzing the findings in this research. The text consists of the observational notes, as well as field notes. After each observation, the notes were read and electronically transcribed onto the computer, before they were interpreted. As the text expanded after each observation, readings through parts of the text were conducted. After the data collection was finalized several readings of the text as a whole were completed. The analysis and discussion of the results changed as the readings proceeded between different segments of the written text.

Although a hermeneutic approach seems as an appropriate angle to analysis in this thesis, there are some downfalls to be aware of. First of all, as with interviews, observational notes are generated by the researcher, and not a finished text (Kvale, 1996). The researcher is, consequently, both the creator and the interpreter of the text. Moreover, there might be additional words, gestures, and implicit references expressed in the actual lived situation than the text reveals (Kvale, 1996). To minimize the impact of these two aspects, field notes and observational notes were written before, during, and after, conducting the observations. Lastly, transcribed texts, such as interviews and observational notes, contain "noise", in that they often are vague, repetitious, and diffuse (Kvale, 1996). The observational notes were carefully read before transcribed electronically, as well as discussed with members of the project, to avoid vague and repetitious language.

## **3.6 Implementation of the study**

In this study, systematic and non-participatory observations, as well as one semi-structured qualitative interview, were conducted. The implementations of these methods are outlined in the next sections.

### **3.6.1 Observations**

The empirical knowledge in the research derives from five separate observations, conducted on five separate days, in the same classroom subject. The observations took place at different times throughout the duration of the subject. When observing, the role was of a complete observer, which means that the researcher is remaining independent from the field setting (Gall et al., 2007). This role is opposed to observers being complete participants, where one acquires genuine membership during the research period. The students and teachers may have been affected by the presence of a researcher; even though non-participatory observations were carried out. However, the researcher aimed to engage in steps that minimized the impact of the researchers' presence. The observer effect is elaborated on in the section regarding validity (see section 3.7.1).

Before conducting the observations, two hours were spent in the classroom to get familiarized with the students and the classroom setting, and to familiarize the students with the presence of a researcher. At arrival, the teacher made a short introduction of the researcher. A couple of students asked questions, and some of them asked what the researchers' name is. The first observation lasted for one hour. During this observation, the class as a whole was observed. The aim was to record as much as possible of occurrences in the classroom: teacher teaching; types of interactions between teacher and students; types of interactions among the students; and disruptive behaviors. The second observation was conducted in the beginning of lecture, lasting for 15 minutes. The observation, like the others, was focused on one specific student (referred to as NN). The third observation lasted for 15 minutes and took place in the middle of lecture. The fourth observation lasted for 15 minutes at took place at the end of lecture. Finally, the fifth observation, lasted for 15 minutes, and was conducted when NN was having an individual one-on-one reading session with the teacher in the learning center. The learning center is a space within the school where students in need of individualized instruction interact with teachers more closely than in a regular classroom. The observational results are presented in chapter four. The two hours spent in the



classroom prior to the observations are not presented and discussed in this thesis, as they are not part of the structured observations.

An observation form designed by the members of the research group “Disruptive behavior in School” (see appendix 2) was used when observing. All the observations were written down as detailed as possible. The data were transcribed electronically right after each observation was conducted.

### **3.6.2 Interview**

An eight-minutes-and-thirteen-seconds interview with the student was carried out after the last observation at the same venue where the observation took place. Before the interview was conducted, the teacher in the learning center made an introduction of the researcher to NN. NN was asked about his willingness to be interviewed for a school project. The researcher introduced herself as a student from Norway. NN was told that the researcher wants a student perspective on different situations and behaviors that occur in the classroom. NN was ensured that his answers would not be discussed with his teacher, and that there would be no mention of his name or the schools name in the report. NN consented to getting the interview recorded. NN was given the chance to ask questions before the interview proceeded. The teacher in the learning center was present during the interview, in case NN needed a translator.

The interview was recorded using the tape recorder application on an iPhone. No notes were taken throughout the interview to avoid distracting the student. NN was perceived as a polite boy, who tried his best in answering the questions. The researcher attempted to make occasional eye contact, but NN mainly looked down or to his sides while moving in his chair. At times, it was difficult to understand what NN is saying, maybe due to mumbling or pronunciation of certain words. The indistinct words may have affected the transcription of the interview as it was transcribed onto the computer. At this stage, the researcher prepared the material for analysis. It is important to note that transcribing is part of the interpretation process. Furthermore, it is essential to be explicit about how the transcriptions were recorded (Kvale & Brinkmann, 2009). Due to the researcher’s lack of experience, the transcriptions may have been affected. The transcribing process may have been limited. In the transcription,

the exact words of the student and the interviewer are recorded. The transcription and the actual recording are available to members of the research group.

### **3.7 Validity, reliability and generalizability**

In the following sections the terms validity, reliability, and generalizability are described in a theoretical manner. A discussion about the validity of the research is outlined through deliberating what measures that were taken to reduce bias when conducting the research. There will also be a discussion regarding the delimitations of the research.

Validity and reliability are crucial to ensure quality and rigor in qualitative research (Gall et al., 2007). An important aspect of validity is if the research conditions are close to real life (Payne & Payne, 2004). Reliability encompasses other researchers applying the exact same procedures and methods and arriving at the similar results as the first researcher (Boudah, 2011; Gall et al., 2007; Payne & Payne, 2004).

#### **3.7.1 Validity**

Validity is the capacity of research techniques to align with the characteristics of the concepts at hand (Payne & Payne, 2004). Research techniques and instruments involve ideas and concepts, techniques of data collection, and analysis approaches that researchers apply to examine their research questions (Payne & Payne, 2004). A valid study does what it is claiming to do (Boudah, 2011). The credibility of the researcher, as well as methods and findings, are of great importance to the credibility of the research; the truth value of the study (Boudah, 2011). In the following paragraphs, the measures that were taken to increase the validity of the findings through decreasing biases related to the research are deliberated.

##### **a) The physical and psychological condition of the researcher**

When collecting the data, the physical and psychological condition of the researcher is of importance. Gjørund and Huseby (2005) claim that the physical and psychological condition of the observer can effect what the observer detects while observing. Different conditions can bring about different results; whether the observer is hungry, sick, or tired. The researcher aimed to be as aware and rested as possible when conducting the observations, to decrease biases relating to this aspect of observing.

b) Awareness of the researchers' biases and researchers' credibility:

There are different biases that the researcher might encounter when conducting observation research:

- 1) The first impression of people plays an important role when observing, considering humans have a tendency to remember first impressions very well (Gjørund & Huseby, 2005). First impressions are often an important source of information about the subjects being studied, but it is crucial not to suppress other signals and impressions during the observations to come.
- 2) Researchers have a tendency of remembering the last observations and impressions more clearly, and put more emphasize on these (Gjørund & Huseby, 2005).
- 3) Self-fulfilling prophecies, meaning that researchers are looking to confirm assumptions they had before collecting data, is also a bias to pay attention to (Gjørund & Huseby, 2005). Moreover, is positive evaluation of the subjects' one studies a common error; the researcher attributes features and performance to the informants as more positive than they really are.
- 4) The center effect, meaning that the researcher presents the observations around the mean, is also an error to be aware of (Gjørund & Huseby, 2005).

A literature review on observation was conducted before the observations were carried out, to be more aware of pitfalls like this. Furthermore, observation training was completed before carrying out the observations. Observation training is an important preparation before conducting observation research, considering the researcher is the main instrument (Boudah, 2011; Vedeler, 2000). A member of the research group provided observational training to the master students in the project before the observations were carried out in the classroom, to ensure familiarity with the observation form that is used by all the members of the research group. Using a standard form that has already been applied by other participants of the research project can be an advantage. Reliability and validity may be increased since the form has been developed, edited, and improved several times. The transcribed observation document is available to members of the research group.

It is, however, also of importance to acknowledge the sources of error presented above, and to continuously reflect upon these during the course of study (Gjørund & Huseby, 2005). Accordingly, frequent meetings with, and feedback from supervisor and other members of the research group, were essential to keep an open mind before conducting the observations,

and throughout the research period. During three workshops with the research group, the observations collected in the research, as well as dilemmas regarding the results, were discussed.

Prerequisite awareness is regarded an important issue to address in qualitative research (Kvale, 1997). There are several biases connected to the observer that can decrease validity. Presuppositions about the phenomena of interest, such as those mentioned in the introduction, are one of them. The workshops and supervision facilitated awareness concerning the researcher's prerequisite awareness. These dialogues contributed to the articulation of what was actually observed. As a result, the actual observations may have, to a greater extent, been distinguished from the interpretation when transcribing the data. The importance of awareness rather than objectivity regarding biases connected to the researcher is, in other words, of importance to increase validity.

As a more introductory part of the preparations before conducting research, a completion of theoretical, methodological courses during the bachelor degree in Special Needs Education, were completed. The course *Educational research, methods and statistics, SPED4010* was completed at master level. These courses dealt with, among other themes, several methods and procedures applicable when conducting research, among them observation and interview.

An understanding of methods and analysis, as well as awareness of researcher biases, are important when assessing a researcher's credibility, and through that, the validity of the study (Boudah, 2011). For this reason, the conceptual framework – “the user heuristic” – is explicitly described to increase the validity of this study (Boudah, 2011). A reflection upon personal biases and professional information regarding the phenomena studied was also executed throughout the study. It is to be acknowledged that, although, far from fully trained, the practical experience from the Norwegian school system, as well as a theoretical understanding of the methodology used, may have contributed to decreasing biases and thereby increasing validity.

### c) Observer effect

When observing, there might be biases related to other aspects than the researcher. The observer might affect the students observed (Gall et al., 2007). Students may experience curiosity when an observer enters the classroom, and this might result in non-representative

observational data. The individual in focus may also be influenced by the observers intentions, which according to Gall et al. (2007) is an issue of more serious character.

To avoid the students being too distracted or curious when the observations were carried out, the teacher introduced the researcher before the data collection started. The aim was to accustom the students to the presence of a researcher, and provide them with an opportunity to ask questions. The students did not seem to take notice while the observations were carried out, considering they did not approach in any way during any of the observations, or make any verbal contact. Also, the teachers were told what days the observations would be conducted, to make sure it was a suitable time for them, insofar that they would not be surprised by the presence of a researcher. They too did not seem to notice the presence of a researcher. Only at one point in the middle of the first observation, did a substitute teacher approach, asking if he was doing a good job. This was not paid attention to; the teacher was given a reassuring smile.

#### d) The use of several methods

The use of semi-structured interview with the informant may also have increased the validity in this study. Observation only provides a partial picture of the reality one observes (Vedeler, 2000). The interviews supplemented the observational data, and, thereby, strengthened the validity of the observation. The informant (NN) was given the opportunity to elaborate on his display of several behaviors from his point of view during the interview. NN's information about his life world can, therefore, validate the interpretations based on the observations.

#### e) Acquiring knowledge about the case and single unit

Vedeler (2000) underlines that observation only can provide a partial picture of the behavior or reality one observes. In-depth knowledge of the context is, consequently, essential. To obtain an impression of the school environment and the classroom dynamics, the middle school was visited two times before the observations were conducted. However, it is important to acknowledge that these two visits do not necessarily provide in-depth knowledge about the classroom or school as a whole. Nevertheless, the knowledge gained after the visits, provided an impression of the school, as well as some information about the unit of analysis in this research. The overall level of validity is challenging to obtain, but the researchers' aim has been to be as trustworthy and transparent as possible throughout the study.

### **3.7.2 Reliability**

Payne and Payne (2004) write that:

Reliability is that property of a measuring device for social phenomena (particularly in the quantitative methods tradition) which yields consistent measurements when the phenomena are stable, regardless of who uses it, provided the basic conditions remain the same (p. 195).

The instrument, or the measurement, is, in consequence, of importance to reliability. The same applies to the stability of the phenomena of interest. In this research, it is challenging to obtain high reliability since the phenomena of interest is fluid, rather than stable. Qualitative research assumes that social action is complex and not repetitive or stable in its nature (Payne & Payne, 2004). In this research, disruptive behaviors displayed by one student in a dynamic classroom context are prone to change, considering that they are social concepts. Reliability is, subsequently, more or less impossible.

Furthermore, in qualitative research, when using observation and interview as methods, the researcher is the main “instrument”. The researcher being the instrument is also a threat to reliability, in that the collection of data, results, analysis, and conclusions are of the researcher, and in that sense subjective. To deal with the issues of reliability, there are some strategies that can be implemented – namely, keeping records, and documenting the process of analysis (Boudah, 2011). In this study, records were kept in observation forms and field notes written while collecting data. The implementations of the study, the case unit, the school, and the subject matter, have also been described in detail (see section 3.6 and section 4.1). These steps may increase reliability in that the research process is more transparent. However, a full replication of this study is not possible.

### **3.7.3 Generalizability**

Generalizability involves applying the research results from a sample to a population. The sample consists of a large number of units (Gall et al., 2007). Since the sample of this study can be considered very small (one student in an American middle school), it is not possible to generalize the findings to the population. Generalizability is, however, not the aim of this study. The purpose is to describe and explore the relationship between disruptive behavior

and technology regarding one student, and to add to already existing literature in the field. Gall et al. (2007) claim that the term applicability rather than generalizability is a more appropriate term in qualitative research. Purposeful sampling (described in section 4.1) can strengthen a study's applicability, in that this type of sampling increases the probability that the findings may be applicable in other cases that represents the phenomenon being studied.

### **3.8 Delimitations**

The empirical findings of this study derive from five observations of one student (NN) conducted at one junior middle school. The sample size is small and therefore considered delimitation to the study, especially regarding generalizability. However, case studies aim to describe phenomena and concepts in depth (Gall et al., 2007). A more important delimitation is the low number of observations. The empirical knowledge is scarce, considering only five observations lasting for 15 minutes each were carried out. Hence, the results are not fronted as universal truths. Another limitation in this study is concerned around the discussion of on-task behavior. The focus in this thesis is mainly limited to a discussion off-task behavior. On-task behavior may also be considered disruptive, such as, a student shouting out an answer to a teacher's question without raising his hand (Hofer, 2007). Potential aspects of disruptions due to on-task behaviors are not elaborated extensively in this thesis.

### **3.9 Ethical considerations**

When conducting educational research, there are certain ethical considerations that should be taken into account. The Code of Ethics published by the American Educational Research Association (AERA) addresses principles and rules concerning research in the field of education. These principles and rules are the starting point from which ethical considerations are discussed (AERA, 2011).

The ethical standards published by AERA (2011) are comprehensive. The most relevant standards for this research are selected. Avoiding harm was a first priority. In this study, children in a junior middle school were observed. Using children as informants or study subjects involve certain ethical considerations beyond the requirements of respect for human dignity, integrity, freedom, and participation (AERA, 2011; NESH, 2006). These considerations highlight that children have special requirements regarding protection in accordance with their age and needs (NESH, 2006; Vedeler, 2000). The information provided

about the project and its consequences was, accordingly, adapted to the informant's age. The informant's anonymity was also ensured throughout the project; when writing and presenting the thesis. Neither the student's name nor the name of the school is disclosed in the thesis. The student is, for this reason, referred to as NN throughout the thesis. This is in accordance with the requirement of confidentiality (AERA, 2011).

The researcher should be aware that revealing too much information regarding the project might bias the subject's behavior during observations, and answers during the interview. The researcher is, however, obligated to disclose honest information to the subject, regarding the objectives of the research (AERA, 2011; Vedeler, 2000). In accord with the requirement of informed and free consent; the subject should never feel any pressure to participate in the research. Moreover, there should be no risks of hazard or stress to the individual (AERA, 2011; NESH, 2006). Informed and free consent was collected from the student's parents using a parent consent form (see appendix 1). The parents were also informed that participation by the student may be withdrawn at any time during the research period. Types of procedures, potential risks and benefits of the study, confidentiality, and anonymity were assured in the parent consent form as outlined in AERA (2011). In this research, the teacher got the parents' consent verbally, since the parents needed to receive the research information from the parent consent form in Spanish.

The school district in the city where the research was conducted, granted the necessary permission and selected the school in order to observe and conduct interviews. The application is not included in the appendix due to privacy issues concerning the location of observations. The project, "Disruptive behavior in school," is already approved by the Norwegian Social Science Data Service (NSD), that have confirmed that this study is accommodating their ethical considerations as long as parent consent is obtained.

Regarding the written report and the presentation of the results and analysis, there are some important ethical considerations regarding the veracity and transparency of the results and conclusions. Veracity and transparency include reporting the findings fully without excluding relevant data (AERA, 2011). Steps were taken to describe the research design, methods, pre-conceptions, and assumptions as concrete as possible in light of AERAs (2011) ethical code.



The previous chapters aimed to present the theoretical framework and methodology applied in this thesis. The next chapter is discussing the research questions presented in the introduction, starting with a case description, before proceeding with examining the first research question; “What kind of off-task and on-task behavior does the student display while using and interacting with technological devices in the classroom?”

# 4 Results and discussion

This chapter presents the results of the research and examines the implications of the findings. Firstly, a case description of the student, the school, and the subjects that the observations were conducted in, are outlined. Secondly, the first research question is examined in a descriptive manner: *What kind of off-task and on-task behavior does the student display while using and interacting with technological devices in the classroom?* Thirdly, the aim is to examine the second research question: *What characterizes the relationship between disruptive behavior and new technology in the classroom?*

## 4.1 Case description

When conducting qualitative research, the sampling techniques are more flexible than that of a quantitative sampling. The informant and case unit is often selected based on purposeful sampling (Gall et al., 2007). This research is based on a single-case study design. The unit of analysis is a single individual. Purposeful sampling aims to select cases that are information rich and maintains the purpose of the study (Gall et al., 2007). The purpose is not to achieve population validity, but rather to achieve a deeper understanding of the selected individual. There are several types of purposeful sampling. One can choose an extreme or deviant case, hence, special or unusual cases. In the case of intensity sampling, one selects individuals that exhibit the phenomenon intensely, but not extremely. There is also typical case sampling, maximum variation sampling, stratified purposeful sampling, homogenous sampling, and random purposeful sampling (Gall et al., 2007). Deciding whom the student is considering age, gender, strengths, and weaknesses as an individual and as a student, as well as his or her orientation towards school, classmates, and the teacher, might be of crucial importance when selecting a student for a case study (Good & Brophy, 2003). The student in this research was chosen based on intensity sampling; the phenomenon (displayed disruptive behavior, as well as use of, and interaction with technology) is manifested intensely, according to the student's teacher.

**The student:** In this research, the student was selected in cooperation with the teacher in the learning center and the supervisor. The individual of interest is a 12-year-old boy attending 7<sup>th</sup> grade at the middle school. According to the teacher in the learning center, he is a child

with several challenges, both emotionally and academically. When talking about NN the teacher says this:

*“He is like a mosquito”.*

The student is originally from another continent, and Spanish is his first language. He has difficulties speaking English. He, therefore, attends language classes 7,5 hours a week. He does not have an individualized education plan (IEP), but the teacher in the learning center says he should have one because of his difficulties. She suspects he has Attention Deficit Hyperactivity Disorder (ADHD). The teacher in the learning center claims that NN constantly needs stimulation, and that the constant need for stimulation is the reason why he is interested in spending time on the computer. NN experienced an earthquake when he was around eight years old. The teacher says that he has two well-functioning older siblings attending high school. According to the teacher in the learning center, NN would be a student of interest regarding displayed disruptive behavior. Also, he is interacting with technology in several of his classes, and it would be possible to observe NN in interaction with technology.

**The school:** The school is a junior middle school in the United States. It houses around 900 students, and are one of the largest middle schools in the area. The student body is diverse, in that there are several demographic groups represented at the school. Some important values the school fronts are equality, academic excellence, community action, nonviolence, respect for self and others, and leadership based on democratic principles. The school has access to a variety of facilities, such as a kitchen with a kitchen garden, soccer field, baseball field, park, and several school buildings. The teacher in the learning center disclosed that every classroom in the school have access to computers and LCD-projectors in their classrooms, as well as in their respective learning centers according to grade level.

**Subjects in which the observations took place:** Observations were conducted in the English Language Development (ELD) class for the first four observations. In this classroom, none of the students speak English as their first language. There are at least eleven different nationalities represented in this classroom. Most of the students are Spanish speaking. The teacher focuses on teaching the students English through reading, writing, and practicing grammar. A female teacher normally led the class, but during the first observation there was a male substitute replacing the female teacher. Note that the individuals' genders are mentioned

to distinguish between the teachers and not the genders. The female teacher said she had been working as a teacher in the ELD classroom for around seven years. In the classroom, the students were placed in groups of four with desks grouped together.

There were four computers placed along one side of the classroom. In the middle of the classroom there was one LCD projector with an associated screen above the blackboard. There was also an older television in the back of the classroom, as well as a landline phone placed by a desk in the back. It is from this location in the classroom that most of the observations were carried out. The female teacher informed the researcher that they have access to Chromebook, a personal computer with Internet connection, and several applications. According to the teacher, the students mainly use the Chromebook for reading, and reading exercises.

During the first observation, observations of the class as a whole were conducted, lasting one hour (09.45 to 10.20). The male substitute led the class. The students were told to read individually for 20 minutes. After 20 minutes, the students were given a grammar sheet to work with, before reading their answers out loud after completing the tasks. The students then watched a movie they started watching in a previous lesson. It was a movie made for entertainment, and not part of the subject matter. The students were placed randomly in the classroom as they watched the movie.

During the next three observations, the female classroom teacher gave the lectures. In the second observation, lasting for 15 minutes in the beginning of class, the teacher worked with the LCD-projector and a MacBook to display a grammar task for later. The students worked on a draft regarding their favorite role model. In the third observation, lasting for 15 minutes in the middle of class lecture, the students continued working on their drafts, but with one-to-one individual writing coaches. NN spent most of the observation with a female coach in a room a few doors down from the classroom. During the fourth observation, lasting for 15 minutes at the end of class, the students worked in groups discussing different dilemmas, before continuing with grammar tasks. During the last, and extra, observation that was conducted for 15 minutes in the learning center with a female teacher, NN read a book, as well as completing a quiz on the computer.

## **4.2 Research question 1: What kind of off-task and on-task behavior does the student display while using and interacting with technological devices in the classroom?**

The aim of this research question is to identify different types of off-task and on-task behaviors that occur when NN is using and interacting with technology, and through this be able to examine the relationship between new technology and disruptive behavior. The theories presented in chapter two are used to guide the categories generated in the analysis and the observations. Several behavioral categories were generated based on the results of this research. These categories are presented in the next section.

### **4.2.1 Categories for off-task and on-task behaviors**

The behavioral categories that derived from the data collection are based on behavior observed while NN was using and interacting with new technology. The categories are presented and outlined in a descriptive manner, as well as applied to the observations. A descriptive outline of the findings is portrayed in the order they were conducted. Off-task behavior is both passive and active in its display (Hofer, 2007). The behavioral categories listed below are grounded in this distinction given previous research and the hermeneutic approach to analysis. The categories are, in other words, generated based on the observations collected in this research, as well as previous research presented in chapter two. However, these categories are not claimed as universal truths, but as one way to categorize the behavior displayed by NN. Additionally, the categories are theoretical in that they are systematic ways of classifying behaviors. The aim is to distinguish the categories for the sake of systematics. It should be kept in mind, however, that a theory cannot describe real life as real life is (Duesund, 1995). A theory is a construction, and a tool for analysis, rather than an absolute truth about reality. Besides, the categories are not mutually exclusive, as is discussed later.

In the research question, both off-task behavior, and on-task behavior are posed. To be able to discuss off-task behavior it may be crucial generate categories regarding on-task behavior too, to actually present a balanced analysis of the findings. The categories regarding on-task behavior are generated to compare situations in which NN is off-task, and to why that is.

**Category 1:** *Active off-task behavior in interaction with technology: single interaction:*

Active off-task behavior is defined as behavior that disturbs others while the student is not following teachers' directions or engages in completion of the required task (Colvin & Horner, 2010; Hofer, 2007). In relation to technology it also implied that the technology is being used for other activities than intended or specified for the learning activity (Donovan et al., 2010). Furthermore, this category focuses on situations when the student is only using and interacting with technology and not interacting with other students or the teacher, hence, the term single interaction. The behavior can be interpreted as actively off-task in that the student physically or verbally disturbs other students or the teacher while interacting with the technology (Hofer, 2007). An active off-task double interaction might be the result of active off-task behavior in single interaction. To be systematic, however, the student in this category is not purposely interacting with the others in the classroom setting.

**Category 2:** *Passive off-task behavior in interaction with technology: single interaction:*

Passive off-task behavior is defined as not following teachers' directions or completion of the required task given by the teacher while using and interacting with technology, but in a way that does not disturb others, such as, daydreaming, apathy, or more or less hidden activities, e.g. browsing on the Internet (Charles, 2011; Colvin & Horner, 2010; Donovan et al., 2010; Hofer, 2007). In this category, the student is only using and interacting with technology and not purposefully interacting with other students or the teacher. The student is disturbing his own learning to a lesser or bigger extent, but not the learning or teaching of the students or the teacher.

**Category 3:** *Active off-task behavior in peer/teacher-student interaction and technology:*

*double interaction:* The student is using and interacting with technology and other students or the teacher at the same time, hence, a double interaction. The student is displaying active off-task behavior in that he is not focusing or completing the task at hand, and he is disturbing the learning of peers and/or the teacher while using and interacting with technology (Colvin & Horner, 2010; Hofer, 2007). In a double interaction, the use of technology might be on-task in that it is being used for the intended purpose, but that active disruptive behavior arises in the double interaction with the technology and other peers or the teacher, for example through verbal or physical interaction. However, the technology might also be used for other purposes than the intended (Donovan et al., 2010).

**Category 4:** *Passive off-task behavior in peer/teacher- student interaction and technology: double interaction:* The student is using and interacting with technology and other students or the teacher at the same time without completing the required task in a way that does not disturb other students or the teacher, for example, through hidden activities, daydreaming, and apathy (Charles, 2011; Colvin & Horner, 2010; Hofer, 2007). The student is displaying passive off-task behavior, meaning that he is not focusing or completing the task assigned to him, but without disturbing the interaction with peers or the teacher even though they are interacting with each other. In relation to technology it also implied that the technology is being used for other activities than intended or specified for the learning activity (Donovan et al., 2010).

**Category 5:** *On-task behavior in interaction with technology: single interaction:* The student is focusing on, engaging in, and completing the task assigned by the teacher, while using and interacting with technology, but not interacting with peers or the teacher. The student is using and interacting with the assigned tool for the intended and specified purpose (Donovan et al., 2010).

**Category 6:** *On-task behavior in peer/teacher-student interaction and technology: double interaction:* The student is focusing on, engaging in, and completing the task assigned by the teacher, while interacting with peers or the teacher, and technology in a way that is in accordance with the specified and intended purpose of the tool (Colvin & Horner, 2010; Donovan et al., 2010).

#### **4.2.2 Results from the first observation**

During the first observation the whole class was observed for one hour, from 08:50 to 10:20. A male substitute was leading the class. The students were supposed to individually read a book. The classroom was characterized by noise and a state of disorder for the first half an hour of the observation; mainly four students were walking around in the classroom, talking, throwing balls at each other, and laughing while the rest of the students either read, or had their books in front of them without reading. The state of disorder lasted till change of activity at 9:30. The paragraph below describes several types of disruptive behaviors discussed in the theoretical chapter of this thesis. Several students display it, such as out of seat behavior, walking around, using the computer without teacher approval (breaching

classroom rules), and verbal disruptive behavior. Therefore, both passive and active off-task behavior were displayed;

*8:45: When the bell rings in the beginning of the lesson, the teacher asks the students to find their books, sit down, and read for 20 minutes. Seventeen students are present in the classroom. Three students are talking while standing up before they sit down, whereas three students are using the computer. Four students, including NN are moving around in the classroom, singing and dancing. The substitute teacher lets the students know that they get two warnings each. NN is asked to sit down by his desk. He does not do this, and receives a warning in which he replies “yeeey”, while moving around in the classroom.*

To be in line with the research question and theme of the thesis, the researcher actively aimed to observe off-task/on-task behavior in relation to the use of, and interaction with, technology. During the observation, two phones rang during the lecture. The first ring was from the teachers’ phone. This is the way the students reacted to this:

*8:50: The teachers phone beeps, and the class reacts with laughter and talking at the same time, commenting on the incident. The teacher gives himself a warning while laughing.*

If the students’ behavior is to be placed into one of the behavioral categories, category 3, active off-task behavior in double interaction, seems as a plausible choice. The students responded (not necessarily in a “wrong” way) with active off-task behavior in that they laughed and talked, and thereby impeded teaching. It should, however, be emphasized that the teacher disturbed his own lecture first. Also, when the landline phone rang in the back of the classroom, NN ran to the back, picked it up, and said, “student speaking, room xxx”. This might be regarded as category 1 behavior, in that the student is interacting with technology while disturbing others, and not reading the book as he is supposed to. At the same time he is interacting with someone on the phone, so the behavior is also akin to category 3. This incident is discussed in section 4.2.9, since these sections mainly aims to present the findings and categorize them in a descriptive manner.

An incident was also observed where a student picked up his cellphone from his pocket, and told the teacher he had to make a phone call while sitting by his desk. The teacher approached him, and the student said the phone was off and he puts it back into his pocket



after about 30 seconds. After this incident, from 09:08, the classroom was relatively quiet. NN and another student had left the classroom in the meantime. The students in the classroom displayed a decreased amount of disruptive behavior.

An event was observed where it is plausible that the teacher contributed to active off-task behavior displayed by two students, in which the students responded to the teacher's interaction with technology;

*9:17: The teacher walks over to the computers (no students are sitting by the computers) and turns them off, one by one. A student reacts by saying, "that makes no sense", and another student says something that is inaudible to me.*

This might be characterized as category 3 behaviors. The students were indirectly interacting with technology in that they cared whether the computers were turned on or not, and they verbally expressed their dismay. At the same time, there was ongoing interaction with the teacher, and each other, hence a double interaction. A discussion surrounding this incident is outlined in section 4.2.9.

At 9:30 the class watched a movie they started watching in a previous lecture. It was a movie made for entertainment. The LCD-projector was used to display the movie. The students were spread randomly in the classroom while watching, and some students sat on desks or on the floor.

*9:38: The students are all watching the movie, whereas a couple of students are reading. Some of the students "hush" on each other. A student claps his hand to the music in the movie. Three students discuss the cars that they see in the movie.*

*9:40: All the students are quiet. Almost every student is watching the movie. A couple of students are lying down with their heads on their desk.*

*9:47: NN gets up and starts moving around the classroom from the front to the back. More students are moving in their seats. Some of the students discuss the main characters feelings in one of the scenes ("is she laughing", "no, she's crying"). When the main character kisses a man, several students laugh and a comment is made in Spanish. In one of*

*the scenes of the movie, a man hits another man. One student shouts out: “What the heck just happened?” continued by, “I feel so alive”. Some of the students laugh.*

It is challenging to categorize these three descriptions. The students were interacting with technology; the movie displayed through an LCD-projector. The on-task behavior that one is supposed to display while watching and interacting with a movie might involve being quiet, sitting still, and letting everyone concentrate on what is being said in the movie. At the same time, even though some of the behaviors (clapping, talking out loud) might be interpreted as category 3 behaviors, they may also be understood as category 6 behaviors. Clapping to the music can be considered a positive response when watching a film; it is a display of engagement and, therefore, might be interpreted as on-task. In a movie theatre it would probably be considered actively disturbing. Whether the behavior is considered off-task or on-task might depend on the dynamics of the classroom. In this specific classroom, it seemed as if some students appreciated commenting on the movie. The teacher did not visibly or verbally react either.

The students who laid with their heads down on the desks can be interpreted as belonging in category 2, in that they are not watching the movie (off-task), or interacting with peers or the teacher (single interaction with technology). Again, when lying with your head down, are you actually interacting with the technology? This aspect is discussed in section 4.2 where the aim is to examine the second research question.

### **4.2.3 Results from the second observation**

The second observation took place in the beginning of the ELD class (08:50 to 09:10) when the female classroom teacher was lecturing to the class. In this observation the focus was on NN and his interaction with peers/teacher and/or technology. The class was supposed to write a draft about their favorite role model. When the bell rang at the beginning of the lesson, NN had not showed up. The teacher disclosed that NN is often late when the researcher questioned his absence. NN showed up in the classroom five minutes late. During the whole observation NN left the classroom several times. At one point, the observation was paused for 5 minutes while waiting for NN to get back to the classroom. It turns out he had a wound on his finger that needed a new band-aid. When he got back to the classroom he was wearing

white rubber gloves. Even though the wound is taken care of NN still walked around the classroom;

*9:05: NN walks up to a peer and looks into his book while standing up. He shows his band-aid and gloves to two other students sitting in the same desk group. The teacher asks NN "do you remember what I told you to do?" NN walks around the classroom. At 09.07 NN once again leaves the classroom. The teacher says nothing.*

NN was seemingly walking around often, leaving the classroom repeatedly. It is plausible that something was occurring outside the classroom that was not discovered by the researcher. That might be considered a plausible explanation as to why the teacher did not react to NN constantly leaving the classroom. At the same time, NN was seen leaving the classroom in several of the observations conducted in this research, and there was not always an observable reaction from the teacher on these incidents. It is not possible to categorize these behaviors into the categories generated for this study, considering the categories are revolving around off-task behavior when interacting with technology. Nonetheless, the behavior NN displayed on an overall basis during this observation may be useful when analyzing the results, since NN's behavior and the context in general can be of interest to the analysis. One of these contextual aspects became evident when the teacher prepared a PowerPoint presentation using a MacBook and the LCD-projector. For the whole observation, the teacher was positioned with her back towards the same half of the class, while facing the rest of the class. The disruptive behavior displayed by the students behind her back while she used and interacted with the technology can be described like this;

*9:08: Just before the observation ends, and NN is still out of the classroom, several students begin throwing paper at each other behind the teachers back. Another student raises her head towards the students and smiles. Two other students get up and walk around for a few seconds. Another student lays his book down and looks around the classroom and at the students throwing paper.*

The classroom dynamics seemed to change while the teacher was interacting with the technology. The students in one half of the classroom appeared distracted from their task; some of the students engaged in active off-task behavior, whereas another student seemed distracted, and engaged in passive off-task behavior (looking up and smiling). It might be

worth exploring if this is due to the teachers' interaction with technology, and her being distracted in the interaction with the students.

#### **4.2.4 Results from the third observation**

During this observation NN was observed in the ELD class in the middle of the lecture (from 09:25 to 09:40). The class wrote drafts about their favorite role models. Half of the class worked with writing coaches in another room (including NN). The rest of the class was in the regular classroom writing on their drafts individually. NN worked with a female, middle-aged writing coach. There were eight other students in the classroom working individually with a coach each. They all talked quietly with each other. Throughout the observation, this classroom was characterized by calm, in that the students and coaches spoke in low voices. The students were placed in their seats. NN and his coach were seemingly discussing his draft, using pen and paper. They discussed the meaning of several words, but it was challenging to hear everything that was said since they were located a few meters away. Even though NN sat in his chair throughout the observation, he was constantly moving his arms and head. Even though he was moving he seemed on-task. There was one event observed where interaction with technology took place. Behavior that can be defined as category 6 behavior was displayed;

*9:27: NN leans back in his chair and then back towards the teacher. The coach brings out her smart phone from her pocket and shows something to NN on it. They look at the screen together. NN points at the screen and leans toward the smart phone, still sitting down. They look at the smart phone for about 4 minutes, and then the coach puts it next to her on the table where it stays for the rest of the observation.*

After this incident, NN wrote with pen on paper for about five minutes while talking to the coach. He was still moving his arms and head, but he stayed seated. An interpretation of this on-task behavior is discussed in section 4.2.9. At 9:38 NN left the classroom with the coach to go back to the regular classroom. For the last two minutes of the observation, more interaction with technology was observed;

*9:38: NN is back in the regular classroom. He is sitting down by one of the computers. He stands up in front of the computer with four other students and laugh loudly. Two more*

*students join them. They cover the computer screen by standing around it. The teacher is talking to a coach, when she then asks the students to sit down. NN is approached by a coach and asked if he is on track. NN turns around and says “I am not even lying, that’s my role model”, and turns the screen towards the teacher. The screen displays pictures of his role model, a sports player.*

What is interesting about this incident is that NN seems to be displaying category 3 behavior, but at the same time category 6 behavior. He was seemingly on-task and actively off-task at the same time. The interaction between NN and the coach and the teacher reveals aspects about their interaction pattern; NN seemed used to being approached, since he felt the need to say he was not lying.

#### **4.2.5 Results from the fourth observation**

Before the observation started the ELD class was outside the school taking a school picture for their yearbook. When they got back to the classroom the observation was conducted at the end of classroom lecture (from 09:52 to 10:07). The female teacher lectured the class. There was a substitute teacher present in the classroom. She was seated across from NN for the whole observation. The class discussed different dilemmas that can arise in life, before they worked on their grammar sheets. NN’s behavior during these 15 minutes was mainly actively off-task for the whole observation – he played with a stapler while seated by his desk, he ate his food loudly, before he started stapling his cereal box. Two peers seated in his group kept looking at him while the class was discussing different dilemmas. At one point, NN were displaying both on-task and off-task behaviors while he presented a dilemma to the class:

*9:57: The teacher asks NN to describe a dilemma. NN presents a dilemma sitting down at his chair (I could not understand what he was saying). The teacher asks him to say it one more time. NN presents the dilemma one more time. He then runs to the door, and makes a sound. The teacher calls NN. NN walks back and stands next to the teacher. It is difficult to understand what NN is saying, both due to peers talking and because of his accent. Some of the students are talking, and there is occasional shouting.*

When there was a change in activity (from discussing dilemmas) to working individually on their grammar sheets, NN started throwing a ball against the wall. After the change in activity, verbal noise and students moving around characterized the classroom dynamics. The

teacher used the LCD-projector to display the grammar sheets on the board. There was still occasional shouting in the classroom, and several students were involved. One student shouted out “what does the fox say”. NN sang “hatti hatti hatti ooo”, before he asked a student next to him “what does the fox say”, but he received no verbal response. While the teacher referred to the grammar sheets displayed on the screen, NN seemed to be engaging in both active and passive off-task behavior;

*10:02: NN looks underneath his desk while the teacher displays grammar sheets using the projector. NN looks towards the projector screen on occasion. He simultaneously plays with a ball, banging it underneath his desk. The teacher says, “stop”, in which NN responds, “what did I do?” He keeps pounding the ball under his desk. The teacher says “shhh”, and NN responds, “don’t shush me”. NN puts his legs on the desk and opens a book. A student says that it is hard to see the grammar sheet on the projector screen since the sun is reflected in the screen.*

NN seemed to be engaging in behavior related to category 3 and 2, in that he suddenly switched between active off-task behaviors in a double interaction to passive off-task single interaction behavior (when opening the book), but still occasionally looking up at the projector screen.

#### **4.2.6 Results from the fifth observation**

In the last observation, NN was observed in interaction with the teacher in the learning center. This observation was conducted because the teacher said they frequently use technology during these sessions. The observation was conducted from 09:07 to 09:23. NN read a book before he completed a quiz related to the text on one of the computers. There were four other students present in the learning center, all working individually. NN read out loud with the teacher in the learning center. At first NN said no to reading, but he did read when the teacher told him he had to complete a quiz on the computer after. NN’s interaction with the computer was both on-task and off-task:

*9:18: NN walks over to the computer to do a multiple-choice test. He lays sideways on the chair. The teacher leaves the room. NN immediately browses for pictures of his role model on the Internet. Another teacher present in the learning center (T2) tells him that “this is not the*

*test”, in which NN responds “I know”. He searches on another web page and says “It’s not there”. T2 verbally helps him locate the right web page. NN says “it’s magic” and laughs while turning towards T2 and the teacher who has returned. The teacher is standing by NN’s side, looking at the computer screen while he completes the quiz. NN looks at the screen. He turns around twice when a peer in the learning center says something. The teacher says to NN, “think before you choose one” (of the multiple-choice answers). NN chooses the correct answer and says to the teacher “told you” while he has his hands up in the air.*

The behavior displayed in this segment can be categorized as category 2 behavior (browsing for role models on the internet), before the behavior switches to category 5 and 6 (executing the actual task in double and single interaction). NN was on-task by himself for a while before the teachers approached him verbally, and he was then interacting with both the technology and the teacher(s). In hindsight, when interpreting the results, the behavior can also be placed in category 4, passive off-task behavior in a double interaction. It seemed as if NN completed the test as he was supposed to, but not reflecting around his multiple-choice answers. He did not disturb anyone else, but he was in an interaction with both technology and the teacher. It is plausible that it is in the interaction that passive off-task behavior in a double interaction might become active (category 3). The complexity of the context is prominent in this example (see discussion in section 4.2.9.).

#### **4.2.7 Results from the interview**

The semi-structured interview lasted for 8 minutes and 13 seconds. NN was asked why he is walking around, and he said that he has to get up because of a knee injury. When asked if there is a rule in class about getting up and walk around, NN confirmed that there is a rule. It seemed that NN was aware of the classroom rules regarding moving around, and the use of technology without asking the teacher first, but that the teacher sometimes reacts in an unpredictable manner. This is a segment of the transcript outlining this:

*NN: Like, for sub, like for sub (substitute teacher). Like for miss “teachers name”, uuuhm, usually uhohm, if we, today is Wednesday, we read a book and we aks them to if we can go to the test and they said yes we go, but “unintelligible wording” or you have to aks him can I go drink some water. But “miss teacher” sometimes she do that but sometimes she don’t. Cause, you know like, she is a nice teacher but she sometimes she got mad at*

*everybody. But she lets you waaalk, but not every time. If you gonna drink some water, she told you go drink some water and come back and sit down.*

In a question regarding the use of technology, NN said he uses the computer to take tests, to play computer games, and to search for people's names. NN confirmed that there is a rule regarding the use of computers. He said that the students have to ask the teacher before they use them. When NN said he plays computer games after lecture, he was asked why it would be okay, or not okay, to play during class. NN responded this;

*NN: Caaaause... If the teacher is teaching us something you not gonna like listen to her, just completely "unintelligible wording" playing video games that you're not gonna focus and you're not getting a, when do you have a test someday, you're not gonna know whats about, what is about, what is that test is about?*

It seemed that NN was saying that playing computer games during a lecture would distract him from learning the theme of the teacher's lesson. NN is in other words not only aware of the rules regarding computer use, but also what might be considered off-task behavior in a classroom.

#### **4.2.8 Summary of the results**

In this section a brief summary of the findings is presented, specifically focusing on the behavioral categories that were displayed the most. NN was observed displaying all six behavioral categories during the five observations. Again, these categories are meant to be theoretical, and they are not mutually exclusive. Category 3 is definitely the most frequently displayed category (active off task behavior in double interaction), and behavior that belong in category 6 (on-task behavior in double interaction). The behaviors in category 3 were more often displayed during classroom lectures when the teacher was either lecturing, or during the watching of the movie. Most of the on-task behaviors (category 5 and 6) observed were displayed when NN was monitored, and when he was in interaction with only one other teacher or coach. The classroom was generally characterized by verbal noise, as well as students moving around the classroom, especially during the first observation. The noise level in the classroom varied, but overall there seem to be some students that display talking out of turn (TOOT) and out of seat behaviors (OOS) more than others on a regular basis. At



the same time there are moments of quiet, especially, when the students work with writing coaches in a one-to-one fashion, or when they are watching the movie.

#### **4.2.9 Discussion**

The purpose of this section is to discuss the findings linked to the theoretical framework presented in chapter two, proceeding from a descriptive presentation to a discussion that is related to research in the field. To be able to discuss what kind of off-task behavior the student displays while using and interacting with technology, it is necessary to revisit the definition of disruptive behavior. Disruptive behavior can be defined as behavior that violates standards of moral, ethical and legal behavior. Several behaviors are included in the definition, such as, needless talk, moving around, annoying others, daydreaming, and inattention (Charles, 2011). Disruptive behavior also breaches and violates classroom rules, and interferes and disturbs the classroom teaching and learning (Levin & Nolan, 1996). Both NN and several other students in the classroom displayed these types of behaviors, when interacting with technology (watching a movie), but also during the reading session, teacher lecturing, and class discussions.

The categories generated in this research are discussed separately in a theoretical manner for the sake of systematics. The results indicate that there might be some overlapping between the categories. For example, when NN answered the landline phone (see results from section 4.2.2) it is discussed if the behaviors belong in category 1 or 3, in that he displays off-task behavior since he is supposed to be reading a book. At the same time, NN is not only disrupting his own learning, but also the learning of others by talking on the phone. The moment he disturbed the other students one can argue that a double interaction occurred. It was, however, not necessarily an intended or planned interaction. When the landline phone rang, a potential for disruption of learning and teaching might have occurred, since the students and the teacher switched their attention from the reading assignment towards the phone. NN can, therefore, be considered on-task too, in that he stopped the phone from ringing. NN is polite when picking up the phone. He might also find it fun, interesting, exciting, or helpful to pick up the phone. He is off-task, but at the same time was a response necessary in order to stop the phone from ringing. The categories will, in other words, not always cover every behavior displayed. The interaction between technology and off-task behavior is fairly clear, since NN is not completing the task assigned by the teacher (read a

book), but not entirely clear-cut. It might be necessary to consider what other skills than purely academic ones he displayed; what may he have learned from picking up the phone. When discussing the categories in hindsight, placing the behavior in an on-task category might also be considered appropriate. The behavior, however, though possibly on-task, may have disrupted the other students in their reading, and hence, disturbed the learning of the other students (Levin & Nolan, 1996). This example is discussed more in-depth in section 4.3.2.

Disruptive behavior is discussed and interpreted as off-task behavior in this thesis. Off-task behavior, both passive and active, was displayed by NN during the observations. Off-task behavior implies that the student is not completing or engaging in the required task given by the teacher (Colvin & Horner, 2010), and engages in activities that are not directed towards learning (Hofer, 2007). Off-task behavior in relation to the use of and interaction with technology entails that the technology is being used for purposes other than the specified or intended purpose (Donovan et al., 2010). NN mainly displayed active off-task behavior when he was interacting with other students, and on-task behavior when he was interacting with the teacher or coach in a one to one situation. Some of the important conditions for a student to stay on-task, such as necessary skills, that students understand what the teacher wants them to do, and that the teacher continuously monitors the students, seemed to be of importance to NN (Colvin & Horner, 2010; Greene, 2008). When assigning the behaviors displayed into categories, it might be essential to look at some of the important conditions for staying on-task.

First of all, it seemed as if NN mastered the tool, the technology, at hand, especially the computer, which is the tool he used the most throughout the observations. He knew how to use and interact with the computer for school related tasks, such as using an Internet search engine to browse for role models, and to take a test. On the other hand, according to NN, he also masters the use of technology when performing non-academic tasks, such as, playing computer games. The know-how of technology is, in other words, present, which is an important aspect when using and interacting with technology (Fischer, 1992; MacKenzie & Wajcman, 1985). NN seems to have the basic necessary skills to stay on-task when interacting with the computer, at least for the duration of the observations conducted in this research.

Second, it appears that NN is staying on-task when the teacher closely monitors him. This is also an important condition for staying on-task (Colvin & Horner, 2010). However, NN did use technology for purposes other than the intended use (hence off-task behavior), both in single interaction with technology (searching for role models when he was supposed to take a test), and in double interaction (when watching a movie with peers while moving around, or yelling out comments). At the same time, disruptive behavior can be placed on a continuum from mild to severe, depending on frequency, scope, and intensity (Nordahl et al., 2005). Not all of the off-task behaviors displayed by NN, neither passive nor active, were necessarily equally disruptive or destructive to his learning. For example, when interacting with the movie he was on-task in the way that his reactions were related to the movie. At the same time, he might have disturbed other students, and thereby be considered actively off-task. Again, the type of behavior displayed is challenging to capture within the categories. Disruptive behavior is a dynamic phenomenon and can be displayed in several ways (Colvin & Horner, 2010). At times, on-task and off-task behavior seem to be displayed at the same time.

Since off-task behavior is defined as not engaging in, or completing, the task assigned by the teacher (Colvin & Horner, 2010), or all behavior not directed towards learning (Hofer, 2007), the acknowledgment of the continuum is of even greater importance. Indeed, when browsing for role models online when he was supposed to take a test (see results from section 4.2.6), he was not necessarily off-task regarding learning potential in the situation. He was, however, off-task regarding what the teacher set him out to do. One can, for this reason, argue that NN was on-task in that his activity with technology was directed towards learning, but that it was off-task in that the activity was not “approved” by the teacher. Classrooms are not static entities, but dynamic spaces (Corrie, 2002). A strict definition of on-task or off-task behavior is, consequently, challenging, if not impossible. A theory cannot describe real life as real life is – it is a construction, and a tool for analyzing (Duesund, 1995). Subsequently, the categories generated in this research are theoretical, in that they are intended as a foundation for discussing what kind of on-task and off-task behavior that are displayed when NN is interacting with technology.

During the same observation, when NN was in the learning center, he also appeared to engage in passive off-task behavior in double interaction while completing the test related to the book he just read. According to Kruse (2013), the use of deduction and reflection from

contextual clues can be compromised when using technology. NN did not necessarily reflect upon his answers while interacting with the computer. On the other hand, it can be asked if the content of the test was adapted to NN? Teenagers tend to view and use technology in terms of activities that helps them achieve certain goals, such as communicating with friends or family, entertainment, and information seeking (Conole et al., 2008; Oblinger & Oblinger, 2005b). NN was completing a test based on a book he refused to read in the first place (see observation results section 4.2.6). When NN browsed for role models online instead of completing the quiz related to the book, one could deduce that the technology was the right tool for the task, since NN seemed interested in using the computer. One can, however, ask if the content of the quiz was right for NN? The ability to accommodate and customize to individual needs and preferences, is an important part of the definition of technology (Collins & Halverson, 2009). NN's reaction displayed as both active and passive off-task behavior in double interaction might be a reaction to the teacher's mismanagement in that specific situation (Redl, 1975) due to lack of adapted learning content. The importance of adapted learning content is discussed more in-depth in section 4.6.2 (practical implications of the research).

Another interesting finding regarding the teacher's role, is when the students reacted to the teacher turning off the computer, and when the teacher's cellphone rang during a classroom lecture (see observation results in section 4.2.2). As Redl (1975), and Levin and Nolan (1996) point out, the teacher might contribute to students' off-task behavior through inappropriate teaching or ineffective classroom procedures. It does not make the student behavior less disruptive in the classroom environment, but teachers' use of, and interaction with, technologies can certainly be considered an important condition as to why students display off-task behavior. Another example from the observations substantiate the argument regarding the importance of the teacher; when the teacher was interacting with the LCD-projector (see observation results section 4.2.3), there was a noticeable increase in disruptive behavior displayed by the students behind her back – walking around, throwing paper, and such. The categories generated for this research is separated into single and double interaction. It seems that, indeed, the interaction between the teacher and the students are of importance to disruptive behavior. It appears that the interaction with technology became a distraction to the teacher while she was using the technological device. These examples are discussed in more depth in the next section, when the second research question is examined: “What characterizes the relationship between disruptive behavior and technology in class?”

## **4.3 Research question 2: What characterizes the relationship between disruptive behavior and technology in class?**

This section examines the interaction between disruptive behavior and new technologies in classrooms through the observations of NN. The first section of the discussion explains in what ways, it is possible to interact with technology, considering that technology may be viewed as a “dead object” (Duesund, 23.08.2012, Being in the world and skillful coping). The arguments are centered on the way disruptive behaviors arise through interaction with technology, and not because of an external “impact” of technology (Fischer, 1992).

Moreover, the relationship is characterized by on contextual conditions, such as the teachers’ perception and use of technology as an instructional tool, as well as respective school policies and classroom rules. Contextual conditions might serve as constraints or possibilities to the individual student. The consequence as it relates to disruptive behavior is noteworthy.

Humans are often influenced by conditions in their environment (Corrie, 2002; Duesund, 1995). Additionally, unintended consequences due to use and interaction with technology are discussed.

### **4.3.1 Interaction in the classroom**

The term “interaction” with technology is chosen in this thesis, mainly to avoid a “deterministic language”, such as “effect” or “impact”. Deterministic arguments rest on a notion that technology has an external impact on an individual, which may result in a social change (Fischer, 1992). The term interaction raises a natural question: how can students and teachers interact with technology, considering it may be viewed as a dead object? What makes a computer a computer, and what makes a cellphone a cellphone? Larssen et al. (2006) find that interaction with technology may be in a visual, tactile, and auditory manner. In a “user heuristic” framework, a student interacts with an object when he utilizes it (Fischer, 1992; Harwood & Asal, 2007). A computer is just a hardware device until someone turns it on and uses it for a specific purpose; in other words, when an activity is being carried out. The aspect of activity is an important part of the definition of technology (MacKenzie & Wajcman, 1985). When NN is using a technological device, he is interacting with it through performing an activity. The use of a technology through the activity it enables, characterizes the interaction, whether it be auditory, visual, or tactile. This is a basic premise to the

discussion of the relationship between disruptive behavior and technology. If one cannot interact with technology, it would not be possible to discuss this relationship either.

### **4.3.2 Disruptive behavior and interaction with technology**

What are the implications of applying a “user heuristic” framework when discussing disruptive behavior in relation to technology? Indeed, it is necessary to look at the type of disruptive behavior that occurs in the use of and interaction with technology. Next, these findings are applied to discuss what characterizes this relationship.

The behavior that NN displayed while using technology could change from one minute to the next, for example when NN was watching the movie (see results from chapter 4.2.2). The constant change in behavioral categories displayed by NN through interaction with technology can be characterized as dynamic. The aspect of dynamic is concerned around how much time span there is between different behaviors.

The context is an important consideration to disruptive behavior, especially in determining the causes of students’ actions (Befring & Duesund, 2012; Corrie, 2002; Frude & Gault, 1984; Redl, 1975). Disruptive behavior and the use of technology are, indeed, conditioned on the context surrounding the students. During observation five (details in section 4.2.2), while students were watching a movie, NN’s behavior, as well as that of his peers, changed within minutes; from quietly watching the movie while seated (on-task), to displaying behavior, such as, screaming, walking around, and jumping (off-task).

*10:04: A student walks up to the computer and sits there before he walks back to his seat. The movie shows a scene of a fight between two men. NN gets up and screams, “come on boy” while he claps. He repeats this three times. He then sits back down on a desk.*

*10:11: S4 and another student get up and walk around. NN is leaning on the desk while standing on his feet. Then he gets up and starts jumping and laughing at something that happens in the movie.*

Between 10:04 and 10:11, NN and the other students watched the movie. Most of the students had their eyes directed to the projector-screen. At 10:11, a student suddenly starts moving around. This has already been pointed out as one of the classroom behaviors that

teachers find most troublesome, according to Wheldall and Merrett (1988), since it can be considered a disruptive act in a classroom setting. NN, who has been watching the movie and displayed on-task behavior in a single interaction with technology, suddenly leans over a desk while he is still standing up. He then began clapping and screaming, a behavior that is challenging to categorize as either active off-task or on-task. Nevertheless, his behavior had changed within seconds; from passive off-task (lying down), to a behavior that may be considered either active off-task, or on-task. The relationship is, therefore, characterized as dynamic, in that the displayed behavior while interacting with technology is fast changing.

Disruptive behavior is a subjective phenomenon (Frude & Gault, 1984). Also, interpretations of disruptive behavior rest on a normative definition, in that values and norms are important aspects when deciding whether a behavior is considered disruptive or not (Aasen et al., 2002). The subjectivity regarding disruptive behavior is important given, the dynamic relationship between technology and disruptive behavior. Both the students' and the teachers' perceptions of what is regarded as disruptive behavior when using and interacting with technology must be considered in order to determine the nature of the behavior. There was no reaction from the substitute teacher when the students displayed behavior that in another context may have been considered as disruptive. One possibility is that getting engaged while watching a movie is not considered disruptive to the learning. Part of the definition of disruptive behavior includes inappropriate behavior in relation to the setting or situation it occurs in (Charles, 2011). Without any observable reactions from others in a classroom characterized by verbal and physical noise, the behavior displayed may not have been considered disruptive, since the behavior was seemingly not perceived as inappropriate in the classroom setting in that specific moment.

During the research, another characteristic of the relationship between disruptive behavior and technology that was observed can, therefore, be labeled as inconsistent. Namely, NN was observed behaving on-task and off-task at the same time. During observation five (details in section 4.2.4, after NN returns from working with the writing coach), NN and his peers display both active off-task behavior, and on-task behavior. NN browsed online for his role model as he was supposed to do, however, he did so while laughing loudly with his peers, to the point of attracting the teacher's attention. The on-task behavior (browsing on line for role models) was coupled with a double off-task behavior of disruptive laughter with peers.

NN interacted with the computer to achieve the assignment of identifying a role model. In this regard, he was on-task. At the same time, the other students' interaction with NN and the computer may be considered off-task, hence the inconsistent characteristic. The event is also an example of double interaction. The activity the students executed was directed to learning (Hofer, 2007). NN also followed the teacher's instruction (Colvin & Horner, 2010), as well as using the computer for the intended purpose (Donovan et al., 2010). It may seem evident that NN's behavior is more on-task than off-task. Even though NN was clearly accomplishing the task, he did so while being disruptive, and actively off-task. The behavior was certainly interfering and disturbing the teaching (Levin & Nolan, 1996), since the teacher verbally reacted to the students' behavior.

It seems plausible that the behaviors displayed by NN were both on-task and actively off-task. A possible interpretation as to why the active off-task behavior occurred might be the double interaction NN engaged in with his peers. It may seem as the off-task behavior (laughter) did arise in interaction with peers, where both NN and the other students were interacting with the computer in front of them. This example underscores the fact that disruptive behavior does not occur in a vacuum (Corrie, 2002). Context – interaction of students with one another, therefore, may contribute to an escalation of disruptive behavior. In conclusion technology in itself is not the cause of disruptive behavior. It is rather the activity and interaction of students with one another and with the technology may promote disruptive behavior. It may have been that NN's interaction with technology would have appeared different if he had only interacted with it alone.

Moreover, the teachers' reaction to the incident is of interest as to why the behavior seemed inconsistent. Indeed, it is the subjective reaction of the teacher that labels the behavior as disruptive. Moreover, the teacher's reaction leads to the second order disruption of the other students, such as, denying that they are being off-task.

The previous example underlines the off-task behavior displayed by NN in double interaction. NN also displayed off-task behavior in single interaction. When NN answered the landline phone in the back of the classroom (see results from section 4.2.2) he seemed to be in a single interaction with the technological device at first, displaying off-task behavior in single interaction (since he was supposed to read a book). The teacher seemed to interpret his behavior as active off-task behavior, in that he took the phone away from NN while he was



talking. The task the students were assigned by the teacher was precise (reading a book individually). Although, precise instructions are important for students to stay on-task (Colvin & Horner, 2010), unanticipated events may sometimes occur. Teachers should adapt accordingly and try to recognize the student's disposition to the act. When the phone rang, it might have seemed logic for NN to switch task (answer the phone in order to stop it from ringing), even though this was not the assigned task. When the teacher took the phone from NN, he may have been deprived of the opportunity to learn something while being off-task; that is developing social skills (e.g. being polite, responsive, etc.), and making relevant learning experiences that are not necessarily considered an explicit part of classroom learning. Since this was still considered active off-task behavior, the teacher, who might have prevented the exploitation of learning potential, stopped the action carried out by NN. The inconsistent relationship between disruptive behaviors and the use and interaction with new technology may have been created as a result of the teacher's reaction. However, there have to be rules regarding the use of technology in a classroom. If not, every student might find it correct to run towards the landline phone to pick it up whenever it rings. The importance of rules and their implementation is discussed in-depth in section 4.3.3.

An interesting question that rises given the dynamic and inconsistent nature of the relationship between disruptive behavior and technology is: When does passive off-task behavior turn into active off-task behavior? Considering NN seemed to be on-task and off-task at the same time, his behavior could also shift between passive off-task and active off-task (Hofer, 2007). It can be argued that NN is passively off-task when he is actively off-task, since he disturbs both the learning of himself, the learning of others, and teaching. However, the shifts from passive off-task to active off-task behavior seem to occur during double interaction. The importance of context is implied given the significance of peers and teacher reactions to off-task behavior. The fact that technology is both socially shaped and socially shaping seems prominent in the classroom context (Loveless & Williamson, 2013).

The apparent inconsistent relationship between technology and disruptive behavior may also be due to the ad-hoc category selection by the researcher. Generating the most suitable categories, which are strictly mutually exclusive, is a challenging task. Indeed, there may be a level of overlap among these. The categories in this research were created in order to discuss the relationship between disruptive behavior and technology in a theoretical manner. The

implications of these findings regarding the dynamic and inconsistent nature of the relationship are further discussed in section 4.6.

### **4.3.3 Constraints and possibilities in the classroom context**

The relationship between disruptive behavior seems to be dynamic and inconsistent in that the behavior displayed can change quickly when using and interacting with technology, and that NN can display both on-task and off-task behavior at the same time. This aspect of the relationship provoked to question why that is. In this section, a discussion on constraints and possibilities in the classroom context that may contribute to this these aspects of the relationship is outlined. In compliance with the “user heuristic” framework, constraints and possibilities in the environment will have an influence on the way technology is being used and interacted with (Fischer, 1992).

#### **Access to technology**

In the ELD classroom there was access to computers, Chromebooks, LCD-projector, television, and a landline phone. Also, one student’s cellphone was visible; however, the teacher disclosed that most students in the ELD classroom had access to their own cellphones. In regards to computers, a ratio of one for every five students is consistent with the overall ratio in the American public school system (Collins & Halverson, 2009). Access to technological devices in the classroom is, therefore, plentiful. The core argument of the thesis, however, is that technology does not *do* anything to us; it is the utilization and interaction that affects the way students apply technology. Nevertheless, access to the technological devices is an important condition, since it is an imperative predictor of the way technology can be applied (Harwood & Asal, 2007). Moreover, the physical location of the technology is also critical to its usage (Harwood & Asal, 2007). Although, it is a necessary condition, access alone does not translate into proper utilization.

The fact that all the classrooms in the observed middle school were equipped with computers and a LCD-projector facilitates the use and interaction with technology. Harwood and Asal (2007) observe that students have quasi access to computers in, for example, computer labs. The availability of technological devices by schools may function as a constraint for students that may hinder schoolwork (Fischer, 1992). In the ELD classroom, despite the availability of computers and other devices, there is still limiting availability due to the ratio (one computer

for five students). There were also inconsistencies in utilization of the devices. For example, the tasks given by the teacher were not performed by every student – a computer quiz was assigned to some students, but not others. The rationale for this selectivity is unknown to the researcher. One plausible explanation could be that of the individual learning needs of certain students.

### **Classroom rules**

The results from the observations indicate that the use of, and interaction with, technology and disruptive behavior is susceptible influence by, conditions in the environment. One condition, for example, can consist of rules imposed by the teacher. An important assessment is whether or not these rules contribute to off-task or on-task behavior when a student is interacting with technology.

In the ELD classroom, the students had to ask for permission from the teacher before using the computer, unless a computer task was already assigned (see results from the interview in section 4.2.7). Teachers implement rules to separate acceptable from unacceptable behavior to substantiate students' learning and skills (Charles, 2011). Without rules, a classroom would most likely be characterized by disorder. Rules are not necessarily absolute but rather contextual. Still, it is possible for students to distinguish between different social rules and acts (Helwig & Turiel, 2010). A key aspect regarding classroom rules as either constraints or possibilities are inconsistencies within and between teachers when enforcing the rules regarding technology use. There were inconsistencies observed in the enforcement of rules by teachers. Domitrek and Raby (2008) find that teachers enforce rules regarding the use of technology differently. The following segment from the observations is an example of the substitute teacher ignoring a students' use of the computer, hence, not enforcing the rule regarding teacher permission. The students are supposed to read a book of their own choice while seated by their desks:

*08:55: NN goes to a computer where S1 sits. NN receives several verbal inquiries by the teacher to sit down. Another student (S2) receives the same request. S1 is moving around the classroom, speaking in Spanish. The teacher does not comment.*

The student on the computer receives no inquires, whereas NN and S2 do so. According to NN, the reactions of the female classroom teacher could also inconsistent; on some occasions

she would tell students to stop using the computers and return to the task at hand, an other times she would not comment (see results from the interview section 4.2.7).

Different teachers have different thresholds for labeling students or their behavior as disruptive (Frude & Gault, 1984). Results from the interview and the observations indicate that different teachers reacted differently to NN's off-task behavior. For example, when NN answers the landline phone in the classroom, the substitute takes the device away from him. When NN goes straight to the computer, he is instructed to sit down and read his book. The substitute seems to enforce these rules by restricting the use of computers for anything other than teacher assigned tasks.

During the first observation, the substitute does not react to the three students using the computers without permission (they were supposed to read individually). This is a segment from the observational notes, where seventeen students are present in the classroom:

*09:00: There are three students at the computer. I count ten students looking down in their books as they are reading. SI is moving around the classroom, and picks up his book now and then. He talks to NN in Spanish who is at the group of desks next to his where 2 out of 3 students are reading. The teacher is in the front of the classroom by the blackboard. He sighs loudly and puts his hands on his hip.*

Later in the lecture, the teacher reacts differently and to a student who is breaching the rule of no cellphones in the classroom (see observation results section 4.2.2). It seems plausible that the ways teachers enforce classroom rules (interpreted as constraints in the environment) may increase or decrease disruptive behavior displayed by the students that are interacting with technology. When the teacher does not enforce the rule of denying the students access to the computer when they are supposed to be reading, disruptive behavior in the classroom escalated. On the other hand, when the teacher approached the student by walking towards him, the student quickly put his phone back to his pocket. It can be assumed that rules regarding the use of technology in the classroom are necessary constraints to maintain a quiet classroom, but the rules have to be clear and unambiguous, as well as implemented in a predictable manner (Colvin, 2002). Also, it might be of importance that the teachers enforce the rules in a similar manner.

### **Does the technology fit the purpose?**

Another aspect that can function as a constraint or possibility in the classroom context, is whether or not the technology fit the purpose of the subject matter, as well the activity that is supposed to be carried out in interaction with the technological device (Ren, 2014). The visual, auditory, and tactile characteristics of the device, might function as constraints to the activity the students are carrying out. When the teacher used the projector to display grammar tasks (see section 4.2.5), a student complained that it was difficult to see the screen, due to the reflection of the sunlight. At this point of the observation, NN was displaying active off-task behavior first and, thereafter, passive off-task behavior in double interaction. One explanation may be due to the difficulty in seeing the grammar tasks displayed on the screen. It seems that NN is occasionally looking at the screen, but then he stops and reads a book instead. The teacher's purpose behind using the projector was to display the grammar task to all the students in the classroom, but it was visually challenging for some students.

In this example, the technology seems to fit the intended purpose. The activity that was supposed to be carried out in interaction with the device, namely to discuss the content of the sheet displayed on the projector screen, seemed difficult for some students to accomplish. The interaction with the technology is constrained due to challenges in carrying out the activity. In a "user heuristic" framework, can one discuss higher order unintended consequences beyond the first order intended consequence (Fischer, 1992). A second-order consequence in this example might be off-task behavior, whereas a third-order consequence can be decreased learning for NN in that specific situation.

There are also examples of situations when the technology seemed to fit the purpose of the subject matter, and the activity that the technology enables. While working with a one-to-one writing coach (see results in section 4.2.4), NN was constantly moving in his chair until the coach retrieved a smart phone from her pocket. NN leaned towards the phone while pointing at it. There was clearly a change in behavior. NN seemed more engaged when there was a double interaction; between him, the coach, and the smart phone. It can be argued that, by large, NN prefers to use, and interact with technology. The learning center teacher statement; that NN needs continuously visual stimuli, substantiates this argument. Technological devices can, according to Sauers (2013), engage students. Technology enables hands-on activity (McNeely, 2005), as well as possibilities for adaptation to individual needs and preferences (Collins & Halverson, 2009). Newer technology such as smart phones and

computers can provide a potential for adapted learning, in which may decrease disruptive behavior. However, it is not computers or LCD-projectors that engage, but rather the activity that students carry out in the interaction with the device that engages. As Oblinger and Oblinger (2005b) claim; “They (teenagers) crave interactivity” (p. 2.7). Interactivity is, as the word imply, an interaction, not a student’s passive response to a medium. Engagement does not necessarily imply that disruptive behavior does not occur. In this situation, however, NN became more engaged in the task during and after interacting with the technological device.

The device has to fit the purpose to serve as a possibility for learning, rather than a constraint that restricts the user. The technology fit, however, it is decided by the use and interaction with technology. Technological devices are both socially shaped and socially shaping (Loveless & Williamson, 2013). This argument implies that the users (students and teachers) in a classroom setting are social actors that both shape and are shaped by the use of technology within constraints and possibilities imposed by the environment.

#### **4.3.4 Unintended consequences**

In a “user heuristic” framework, unintended consequences are another aspect that may be prominent in the use of and interaction with technology (Fischer, 1992). This section discusses whether or not disruptive behavior can be viewed as an unintended consequence during the use and interaction of students and teachers with technology.

Research indicates that teachers have different perceptions of technology regarding utilization in teaching (Kim et al., 2013). Teachers’ perceptions and use of technology are essential contextual conditions for technology implementation in education. Observation alone cannot reveal a teacher’s perception regarding student interaction with technology; however, it is possible to observe the extent of teacher’s use and interaction with classroom technology. A noteworthy observation was when the teacher used the LCD-projector and computer to prepare a PowerPoint presentation she was to present later (see results in section 4.2.3). While the teacher was interacting with the technology, there was an escalation of disruptive behavior displayed by the students behind her back – throwing of paper and walking around. In a “user heuristic” framework, the escalation of disruptive behavior may be seen as an unintended consequence of the teachers’ interaction with technology. Classroom management can, at times, be challenged when using technology during

instruction, and disruptive behavior may, therefore, go unnoticed (Collins & Halverson, 2009; Levin & Nolan, 1996). The teacher did obviously not intentionally use technology to increase disruptive behavior. Nevertheless, her interaction with the technology took her attention away from the students for a certain amount of time. There are certain matters a technology cannot teach students, among them obeying adults in authority (Collins & Halverson, 2009). A second-order consequence of the teachers' interaction might have been distraction, resulting in a third-order consequence, namely, decreased ability to approach the students' disruptive behavior. Indeed, there was a reshaping of classroom dynamics (Corrie, 2002) through the students interaction with one another, as well as the teacher's interaction with technology.

An additional observation that substantiates the argument that disruptive behavior is an unintended consequence of teacher utilization of technology stems from the first observation conducted (see section 4.2.2). The substitute teacher started turning off the computers in the classroom, to which two students objected, displaying their dismay. What did the teacher want to accomplish by turning off the computers? Was he sending a signal to the students that they could not use the computers anymore? Did he observe students looking distractedly at the computer screens? The motivation of the teacher's actions is unknown. The students reacted according to category 3 – active disruptive behavior in double interaction. This unintended consequence may have led to a decrease in learning potential. Unintended consequences are clearly an important characteristic in the relationship between disruptive behavior and technology.

#### **4.3.5 Disruptive behavior due to breach in interactions**

The next argument revolves around what is referred to as breach in interactions, a term introduced in section 2.2.4. Larssen et al. (2006) claim that if students close their eyes, cover their ears and shut their mouths, the interactive dimensions in interaction with technology seem to collapse resulting in breach of interaction. Breach in interactions is defined as students intentionally or otherwise, displaying behavior, such as, ignoring or avoiding the technology. NN and other students were at times observed avoiding the interaction with technology. For example, when the students were watching the movie (see results from section 4.2.2) several of them laid with their heads down on their desks. Also, results from the fourth observation (section 4.2.5) indicate a breach in interaction; when NN is supposed

to look at the LCD-projector screen, but instead reads a book, displaying passive off-task behavior. In a “user heuristic” framework, technology is still present, even if one decides not to use or interact with it (Fischer, 1992). Breach in interaction implies that the students decide not to interact with the technology. This spiked curiosity to why that is. There are several ways to discuss breach of interaction; did NN want to escape the task? Was he bored, or did he not understand what to do?

According to Redl (1975), and Greene (2008), there are many reasons to why students display disruptive behavior – lagging necessary skills, boredom, waiting for help, testing limits, and so on. NN might have been trying to avoid interacting with technology, hence breaching the interaction, for several reasons. Ødegård (2011) claims that disruptive behavior might be contagious. For instance, NN’s behavior may contribute to other students’ disruptive behavior, which can impair the quality of learning and teaching in the classroom. When the students started walking around the classroom while the movie was still on, and NN lied with his head down, several students were also displaying the same behavior. This behavior might have occurred due to the elevated noise level that arose in the classroom. There was no point in interacting with the movie since students could not hear it. In other words, peers might have interfered with their concentration, and immersion in the movie was no longer possible (Egelund et al., 2006). When some students engaged in active off-task behavior while the movie was being displayed, it was contagious in the way that several other students started displaying off-task behavior; both active and passive, respectively.

Breach in interaction with technology, whether intentional or not, can therefore lead to disruptive behavior. However, breach in interaction can also stem from disruptive behavior. The students may have entered a viscous cycle (Befring & Duesund, 2012), in which the contagious nature of disruptive behavior is apparent (Ødegård, 2011). It seems that the breach in interactions is characterized by passive off-task behavior, rather than active off-task behavior. When NN lies down, he is not only, breaching the interaction with technology, but also, with other people in the classroom. This is unless he gets a reaction from the teacher or peers. When he receives reactions, passive off-task behavior results in active off-task behavior in double interaction (see discussion section 4.2.9).



## **4.4 Summary of significant findings**

Firstly, the relationship between off-task behavior and new technology is dynamic – NN displays on-task and off-task behavior interchangeably. Secondly, the relationship is characterized by inconsistency – NN displays on-task and off-task behavior at the same time. A key finding in the research is the fact that not all of the off-task behaviors displayed by NN are equally destructive to his learning. In some situations NN seems off-task regarding the task he is supposed to complete, but on-task regarding the learning potential in the situation (Colvin & Horner, 2010; Hofer, 2007). Additionally, the context surrounding NN is determined to be an important factor in outlining the relationship between disruptive behavior and technology. In a dynamic classroom environment, the individual will often be affected by the context and vice versa (Corrie, 2002; Duesund, 1995). Constraints, possibilities, and unintended consequences when using and interacting with technology are part of the contextual arguments. Access, rules regarding the use of technology, and whether or not the technology fits the purpose, are also all essential considerations. Breach in interactions when using technology is identified, specifically focusing on the possibility for disruptive behavior being contagious in a classroom environment (Ødegård, 2011).

The relationship between new technology and disruptive behavior is characterized by a variety of characteristics, mainly involving interaction, context, and, individual use. Disruptive behavior is displayed and occurs in the interaction with technology, and not due to its mere existence. The previous argument is probably one of the main characteristics of the relationship; since it implies that the individual (NN) is an active participant in the classroom environment, choosing in the ways to use technology, but doing so within certain constraints in a classroom context. In interaction with technology, NN is, indeed, socially shaped and socially shaping (Loveless & Williamson, 2013).

## **4.5 Possible consequences for NN**

A noteworthy observation is that NN, not only, displays disruptive behavior in interaction with technology, but also, when not interacting with technology. During all of the observations, NN walks around the classroom, talks to peers, and moves in his chair. What are the consequences of displaying disruptive behavior, both in single interaction, and double interaction, when using technology, and not using technology? First, and foremost, can the learning potential be inhibited (Egelund et al., 2006). Not only is NN's learning inhibited and

disturbed, the learning of peers might be affected too. One of the school's main tasks is to contribute to students' social and academic learning (Charles, 2011). If this learning is inhibited from early age, it can affect NN's future life in academia, as well as his relations to other people.

If school is not engaging enough, NN might seek out other activities outside of the classroom. The observation results indicate that NN sometimes arrives late to class or does not show up at all (see section 4.2.3). Missing out on academic and social learning may, consequently, affect his life after middle school, into high school, and as an adult. Middle school and high school are not only ladders to college; they are crucial arenas for socializing and overall development. Also, students who display disruptive behavior have a higher risk of long-term problems – drop out of school, problems adjusting as adults, and delinquency (Kazdin, 1987; Loeber & Farrington, 1998 in Lane et al., 2002).

NN's behavior when interacting with technology seemed both on-task and off-task, and sometimes both at the same time. Knowledge in the use of technology, is arguably, of importance to the future of today's children, in that their computer and information literacy might be crucial to their future jobs (Harwood & Asal, 2007; MacKenzie & Wajcman, 1985). NN's use of, and interaction with technology is, hence, of significance to his future. The use and interaction with technology has to fit the purpose of the subject matter, in ways that decrease disruptive/off-task behavior.

These are all possible consequences for NN if nothing is changed. Without intervention there might be an increase in disruptive behavior over time (Lane et al., 2002). Considering there are a variety of possible consequences for NN's learning, social life, and future, several theoretical, as well as practical implications are proposed in the following section.

## **4.6 Implications of the study**

Overall, the knowledge derived from the research, underlines the fact that the relationship between technology and disruptive behavior is an ambiguous phenomena. The research has focused on the relationship of these two phenomena, hence, posing the question why the examination of this relationship is crucial. More importantly, it begs the following questions, which are discussed on two levels, i.e. theoretical and practical implications of the research:

What are the implications of these results in education and special needs education? In what ways can the results be applied in education?

#### **4.6.1 Theoretical implications – a way of thinking about disruptive behavior and technology**

The research aims to examine the characteristics in the relationship between disruptive behavior and technology, by applying a “user heuristic” approach. It is, hence, important to clarify why the heuristic framework is appropriate to investigate this relationship. In general, the heuristic approach opposes the widely accepted idea that technology has an impact on the user. More specifically, the approach argues that technology is not an external force that influences passive populations or users. The consequences of a technology are instead the ends that users seek (Fischer, 1992). The “user heuristic”, therefore, contradicts the standpoint of technological determinism. What the “user heuristic” approach rather aims to do is to consolidate, and shift the focus towards the interaction between the user and technology. Consequently, it disproves a classical cause-effect relation, and simultaneously emphasizes a rather mutually constitutive one. The relationship between student and technology is characterized by interaction in which the user consciously makes use of the device. Hence, in a classroom, the student (e.g. NN) is not merely socially shaped through using the technology, but also socially shaping (Loveless & Williamson, 2013). Certainly, the technology itself enables the student to approach tasks differently, performing activities – representing the socially shaped element. At the same time, however, the conscious use is also socially shaping.

Off-task behavior may become apparent in the classroom when the students are using and interacting with technology. On-task behavior is also evident in this interaction. The theoretical implications premise the need to investigate potential barriers to learning when using and interacting with technology. Investigating barriers is not synonymous with examining factors that may obstruct technological progress as in a deterministic view. The focus is rather to examine the use, and thereby, social agency and deviation applied by users (Selwyn, 2011b), that may, or may not, contribute to off-task behavior being displayed in a classroom. The main concern in education often revolves around learning students’ skills of both academic and interpersonal art (Charles, 2011). The implications, and maybe even benefits, of applying a “user heuristic” perspective, are that learning and interaction is the

focal point. It is through interaction, either with the technology, namely a single interaction, or interaction between students and teachers, or both, namely double interaction, that learning occurs. The implications of the framework are, therefore, that the dynamics of a classroom context are taken into account. On a theoretical level, the thesis may provide a precise, realistic, and alternative perspective on the relationship between disruptive behavior and technology, especially in the specific classroom observed.

#### **4.6.2 Practical implications - Strategies for decreasing disruptive behavior in double and single interaction**

On the background of the empirical findings, several practical implications may be of importance. The practical implications are discussed in relation to NN and the observations made of him. The implications are not necessarily universal or generalizable. However, generalizability is not the aim of this research. Some of the implications are substantiated by research, as well as the findings presented in the thesis; they might to some extent be applicable in other situations, when other students and teachers using and interacting with technology (Gall et al., 2007).

It is clear from the results that the role of the teacher is critical. Consistency among teachers regarding classroom rules is essential in order for students to know what is considered on-task and off-task behavior (Colvin & Horner, 2010; Domitrek & Raby, 2008). Consistency revolves around the rules being clear and unambiguous, as well as implemented in a predictable manner (Colvin, 2002). Also, it might be of importance that the teachers enforce the rules in a similar way. The role of the teacher is also important regarding use of technology in instruction (Kim et al., 2013). The teachers' know-how and activity in use of, and interaction with technology is critical to address as to why students display disruptive behavior. Teacher awareness regarding what technological device they use during instruction, as well to why they use it is an important implication of this study.

Furthermore, the results of this research do, indeed, imply a need for student individualization, not only of the technological device, but also content, and relevance of the content. One important condition for staying on-task is to possess the necessary skills and know-how when using and interacting with technology (Colvin & Horner, 2010; MacKenzie & Wajcman, 1985). An implication of skills is that, not only does the technology have to fit

the purpose of the subject matter (Ren, 2014), the content and relevance must also be individualized to the student (Veen & Vrakking, 2006). NN was observed displaying more off-task behavior when the content he was interacting with when using technology was of less interest to him, for example, when completing the test after reading a book he did not want to read in the first place (see observation results section 4.2.6). In other situations, such as when watching a movie, NN seemed engaged by the content, and more or less on-task (see observation results section 4.2.2).

According to Collins and Halverson (2009), and Sauers (2013), technology can actually be helpful in engaging students to follow through with their given tasks. The technological device has to be appropriate for the activity that is supposed to be carried out (Ren, 2014). However, the content is also of relevance. In what ways can we judge adequacy respectively relevance of learning contents? Ideally, the use of technology is individualized in the sense that the content is relevant to the individual student's preferences, as well as the interaction with technology is beneficial in completing the task. There is, however, a thin line between what content is relevant for students and what the educational system determines as necessary, and hence, able to provide, due to constraints in the environment (e.g. school policies, educational reforms).

One way to adapt the content to NN is through individualized material. He can, for example, read about themes related to his field of interest. It is relatively clear from the observations that NN was interested in looking at pictures of his role model. An idea might be that he reads content related to this role model. It is, however, not only the content that has to be regarded appropriate; methods of instruction should be relevant as well (Veen & Vrakking, 2006). NN seemed to display less off-task behavior during one-to-one instruction, while interacting with technology (see for example results from section 4.2.4, where NN is looking at a smart phone with the writing coach). Teacher monitoring, to a certain extent, might contribute to a decrease in disruptive behavior displayed by NN. When "to a certain extent" is pointed out, it is due to the importance self-direction (Veen & Vrakking, 2006). Teacher does not have the sole responsibility for NN being on-task in a classroom; NN also has a responsibility himself. Through probing and coaching, the teacher can contribute to NN staying on-task, but the final learning trajectory is up to the student himself.

Immersion is important for the learning process (Egelund et al., 2006). When students are not immersed in the learning process due to a variety of disruptive behaviors displayed, learning can be inhibited. There might be many ways for NN to experience immersion in the learning process, both in single and double interaction. A basic premise for immersion in learning might be the dynamics of the classroom. Achieving a calm classroom environment may be an important priority in this sense.

## 5 Summary and conclusion

The thesis consists of five chapters. In chapter one, the introduction to the thesis was presented, outlining the background of the thesis, along with the rationale of the themes. In chapter two, the theoretical framework was outlined and discussed, defining the terms disruptive behavior and off-task behavior, in addition to defining technology, and presenting the “user heuristic” framework. In this part, a “user heuristic” perspective on technology and disruptive behavior was argued. In chapter three, the methodology of this research was outlined, accounting for the research design, the methods (observation and interview), the hermeneutic analysis, implementation of the study, delimitations, as well as ethical considerations. In chapter four, the results were presented and discussed. In this chapter, a summary and a conclusion regarding the research are outlined.

This thesis is written as a part of the project “Disruptive behavior in school”, and the aim is to compare classroom behavior in schools in America and Norway (Duesund, 2013). The main focus in this thesis has been on disruptive behavior interpreted as off-task behavior; both passive and active (Hofer, 2007). The off-task behavior is inhibiting either learning or teaching. Passive off-task behavior does not necessarily disturb other than the students himself, such as, daydreaming, or apathy (Charles, 2011; Hofer, 2007), whereas active off-task behavior might be disruptive to the learning and teaching of other students and teachers, such as through talking out of turn, out of seat behavior, or annoying others (Charles, 2011; Hofer, 2007; Wheldall & Merrett, 1988).

This thesis focused on off-task behavior when using and interacting with new technology, such as computers, cellphones, smart phones, and LCD-projectors. Technology is defined as both a device, an activity, and as know-how, as well as fitting the purpose of the classroom subject matter (MacKenzie & Wajcman, 1985; Ren, 2014). Off-task behavior in relation to the use and interaction with technology is, therefore, characterized by students not completing the required task given by the teacher (Colvin & Horner, 2010), or use the assigned tool for other purposes than intended (Donovan et al., 2010). Moreover, the interaction is characterized by passive off-task behavior or active off-task behavior in either double or single interaction. A “user heuristic” perspective is applied to discuss disruptive behavior in interaction with technology. In this perspective, students’ use and interaction with

the technology is key (Fischer, 1992; Harwood & Asal, 2007), and technology is viewed as socially shaped and socially shaping (Loveless & Williamson, 2013).

Of the categories generated from the research category 3 is definitely the most frequent category displayed by NN (active off task behavior in double interaction), and behavior that belongs in category 6 (on-task behavior in double interaction). The categories are theoretical in that they are dynamic and inconsistent in a real life setting, and, therefore, not mutually exclusive.

This study applies a qualitative case study approach observing a single unit of analysis (NN). The sample in this research is, as a result, considered small. The conclusions in the thesis might be applicable more than generalizable (Gall et al., 2007). Disruptive behavior in itself is a complex phenomenon, and discussing the phenomena in relation to technology increase the complexity. There are no perfect answers to the ways students and teacher can best decrease disruptive behavior when using and interacting with technology. However, by taking into account both the theoretical and practical implications offered in this thesis, one may be provided a tool for thinking about technology and behavior. The ways teachers and students perceive disruptive behavior and technology, and their perspectives and reasoning for doing what they do when using the computer, is of importance. A “user heuristic” framework applied in the thesis might be helpful when depicting the relationship between the two phenomenon. The thesis does not propose replacing traditional forms of teaching and instruction, but rather to present a perspective technology as a supplement to traditional teaching methods and ways of engaging students (Ramaley & Zia, 2005). However, the engagement when using technology will depend on the interaction, the activity the students and teachers carry out in this interaction, the type of technological device, and the accessibility in the classroom.

The emphasis in this thesis is on displayed behavior, rather than individual characteristics of the student. Focusing on the displayed behavior does not imply that individual characteristics are of no importance. There are many meanings behind, and reasons for, a student’s display of disruptive behavior (Greene, 2008; Redl, 1975). NN’s behavior might occur due to his traumatic experience (earthquake), due to ADHD, or other individual characteristics. It is, however, beyond the scope of the thesis to account for these. Besides, the aim of the thesis is



to describe behavior that occurred by using observation, and not necessarily discuss individual aspects that may or may not contribute to disruptive behavior being displayed.

The primary goal of this this descriptive and exploratory study was to extend our understanding of the relationship between technology and disruptive behavior. In light of the limited sample size – one student in one school setting, and the limited number of observations, the focus was placed on off task behavior through interactions with classroom technology. Results indicate that the relationship is complex, dynamic, and inconsistent. Off task behavior was seen as both active and passive setting; both of which may or may inhibit learning to a greater or lesser extent. Other factors such as the classroom environment, teacher perceptions and the role of peers can play an important role in disruptive behavior. The importance of context, and interactions within the context, are of critical importance to how the use of, and interaction with technology appears. The main conclusions from this research are that technology does not make students disruptive or displaying disruptive acts. It is in the use and interaction with technology that disruptive behavior occurs. Also, not all of the off-task behaviors displayed are equally destructive to a students learning, in that the activity carried out when utilizing technology is directed towards learning, but not towards the task the teacher set the student out to accomplish (Colvin & Horner, 2010; Hofer, 2007).

## **5.1 Final considerations and suggestions for further research**

The results of this research motivate several sub topics that are derivations of the study. Given the limited size of this research, it would be valuable to extend the number of observations to a wider sample, in order to substantiate the findings. Applying other methods would also be of interest to substantiate the results. One sub topic of interest is the digital divide. The digital divide does not only entail access to certain technological devices, but also peoples' ability to make use of the devices, and engage in practices that are meaningful in a specific cultural context (Harwood & Asal, 2007). Considering every country has its own digital divide (Harwood & Asal, 2007), it could be of interest to find out what these differences entail, and thereby compare them.

It would also be of interest to educational research to investigate to what extent lagging skills are of importance when students use and interact with technology. What kinds of skills are

essential when using and interacting with new technology, and in what ways are these linked to disruptive behavior displayed by students? Additionally, it could be of interest to examine in what ways, and to what extent, are the teachers' skills are of importance when using and interacting with technology, in relation to disruptive behavior.

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# Appendices

Appendix 1 – parent consent form

Department of Special Needs Education  
UNIVERSITY OF OSLO, NORWAY

## **PARENT CONSENT TO PARTICIPATE IN RESEARCH** for the research project “Disruptive Behavior in School”

### **WHAT IS THIS STUDY ABOUT?**

Your child is invited to take part in research to evaluate disruptive behavior in primary and middle schools and how it affects the student, classmates, teachers and learning environment. This research project is a collaboration project between University of Oslo, Norway and University of California, Berkeley, USA. This particular study will focus on the relationship between new technology and disruptive behavior and use theories regarding technology when analyzing disruptive behavior. The research project is led by Professor Liv Duesund, Ph.D, Department of Special Needs Education, University of Oslo. Stine Solberg, a graduate student from University of Oslo, will conduct this particular study.

### **PROCEDURES: WHAT INFORMATION WILL BE COLLECTED?**

The research project will collect observational data from the students participating in the study. The observations will take place on five different occasions, last 15 minutes and happen during a total span of one month in the spring 2014. The researcher will write down what she perceives happens during the observations and will not engage the students in the classroom in any way. She will take every means necessary to minimize the impact her observations may have on the students in the classroom. Also, the researcher will conduct one interview with the student after the last observation, lasting between 10 and 15 minutes, if the student agrees to this.

Participation in the research project is voluntary. Whether or not you give permission for your child to take place in the study will have no bearing on his/her standing or grades at school.

### **CONFIDENTIALITY OF RECORDS: HOW WILL OUR INFORMATION BE KEPT PRIVATE?**

When collecting the observational data there will be no mention of name, school or city the data is collected from. Any identifying information obtained will not be revealed or shared in any way. If information from this study is published or presented at school or scientific meetings, names and other personal information will not be used.

### **BENEFITS: WHAT ARE THE BENEFITS FROM BEING IN THE STUDY?**

There are no direct benefits to you or your child from participating in this research. However, the data collected from this research will hopefully provide valuable information about disruptive behavior and new technology and how to best meet the needs of the student, which could influence educational research and in turn equip future teachers with better tools for meeting the needs of every student.

### **VOLUNTEERING TO BE A PARTICIPANT**

The participation of your child is voluntary. You can refuse to have your child entered in the research and you can discontinue the participation at any time.

### **QUESTIONS/CONCERNS**

If you have any questions about the research, you may contact Stine Solberg, the graduate student conducting the observations at telephone: 510 646-3019 or e-mail: [stinesolberg87@hotmail.com](mailto:stinesolberg87@hotmail.com), or e-mail Liv Duesund, Project Director of the study at telephone: 510 378-8827 or e-mail: [liv.duesund@isp.uio.no](mailto:liv.duesund@isp.uio.no). If you wish to speak with someone other than the researchers about the study concerns or your child's rights as a research subject, feel free to contact the Office for the Protection of Human Subjects (OPHS) at (510) 642-7461 or by e-mail: [cphs@berkeley.edu](mailto:cphs@berkeley.edu)

***If you prefer that your child do NOT participate in the research project, you will need to return a signed copy of this letter to your child's teacher by 4<sup>th</sup> of March.***

If you have any questions or concerns, please call.  
We truly appreciate your child's participation.

Sincerely  
Stine Solberg  
510 646-3019  
[stinesolberg87@hotmail.com](mailto:stinesolberg87@hotmail.com)

Sign and return this page to \_\_\_\_\_ by 4<sup>th</sup> of March if you do not want your child to be included in the research project.

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Please do NOT include my child in this project.

-----  
Signature

-----  
Print name

Date

-----  
Child's name

-----  
Age/grade

**OBSERVATION REPORT 2<sup>ND</sup> YEAR OF MASTERS DEGREE 2014:  
GUIDELINES FOR OBSERVATION: DISRUPTIVE BEHAVIOR IN SCHOOL**

**Focus area:** Students' experience of disruptive behavior in school, i.e. behavior that appear disturbing to the pupil/child him/herself, to fellow pupils/other children and/or to teacher/educator.

**How and when to conduct observations:**

- The researcher/student should attend two days of classroom teaching PRIOR to observing to familiarize her/himself with the class/group.
- **1<sup>st</sup> observation:** Focus on the class/group as a whole lasting for classroom hour.
- **2<sup>nd</sup> observation:** Individual observation of the selected student, lasting for 15 minutes in the beginning of class/group session.
- **3<sup>rd</sup> observation:** Individual observation of the selected student, lasting for 15 minutes in the middle of/during class/group session.
- **4<sup>th</sup> observation:** Individual observation of the selected student, lasting for 15 minutes at the end of class/group session.
- The researcher/student has to provide the correct time for when observation starts and ends.

**What to focus on during the first observation, the whole class/group:**

Describe what happens during class/group session in one hour. During the observation of the class hour, record as much as you can of what occurs: teacher teaching; types of interactions between teacher and students; types of interactions among the students; disruptive behaviors.

This may include:

- The classroom dynamics, both academically and socially
- Describe any disruptive behavior
- Focus on interaction between the student, peers and teacher
- Record teaching methods
- What is going on and who is doing what?

After your observations characterize the teaching methods used: e.g., mainly lecture, mainly student participation, combination of the two, extent of group discussion among students (entire class, smaller groups).

**What to focus on during the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> observation:**

An individual observation of disruptive behavior of one single student/child in the group session lasting for 15 minutes each.

Describe what happens during class/group session during 15 minutes.

- Record two types of behaviors on the part of the targeted student: disruptive actions and non-disruptive actions (e.g., responses in teaching and learning contexts; cooperative behaviors)
- Be sure to record actual behaviors and any verbal utterances by the student and any verbal interactions with others. If others react to the disruptive behavior, even if it is not directed at the target student, record their behaviors and utterances.
- Record whether the disruptive student reacts to the responses from others and how.
- Behavioral descriptions alone (e.g., student put his head down on the desk) should mean that nothing was said. But do record any reactions from others if they occur.

Other relevant aspects:

- Record the actual disruptive behavior (db) and describe it thoroughly; for example was it a verbal uttering, a physical movement, did it disturb others or the student him/herself etc.
- Describe any interactions with other students and teacher around the db act.
- What happened just before the db act?
- What happened just after the db act?
- How did peers and teacher respond to the db act?
- If and how did the student displaying the db act react to the response from others?

After your observations characterize the teaching methods used: e.g., mainly lecture, mainly student participation, combination of the two, extent of group discussion among students (entire class, smaller groups).

**Instructions for what to do after each observation:**

- Write down any questions/comments you might have to your observations and interpretations.
- Reflect upon your recorded observations for the purpose of, if needed, making improvements for your next observation.

**Interpretation during and after observations:**

- It is important to distinguish between descriptions and interpretations.
- In the interpretations the researcher/student must try to assess whether the behavior described can be understood as disruptive behavior.
- Interpretation guidelines:

In recording of observations describe behaviors and interactions and do not interpret. After each observation reflect upon the recorded observation. The actual interpretations of the observations would ideally be based on a coding scheme with systematic categories. If possible, classify the disruptive actions as involving (a) moral interactions (e.g., hitting, insults, taking another's property, statements about harm, fairness); (b) violations of classroom rules or procedures (e.g., not using teacher's title, sitting in a certain way, standing when not supposed to).

<b>Date of the 1st observation:</b>	<b>Type of institution: (school/preschool)</b>	<b>Grade/age group:</b>	<b>Subject/activity:</b>
<b>Number of pupils/children in class/group:</b>	<b>Observation starts at:</b>	<b>Observation ends at:</b>	<b>Total time elapsed:</b>

<b>Description:</b>	<b>Interpretation:</b>

**Questions you may have to what is described and interpreted:**



<b>Date of the 2nd observation:</b>	<b>Type of institution: (school/preschool)</b>	<b>Grade/age group:</b>	<b>Subject/activity:</b>
<b>Number of pupils/children in class/group:</b>	<b>Observation starts at:</b>	<b>Observation ends at:</b>	<b>Total time elapsed:</b>

<b>Description:</b>	<b>Interpretation:</b>

**Questions you may have to what is described and interpreted:**

<b>Date of the 3rd observation:</b>	<b>Type of institution: (school/preschool)</b>	<b>Grade/age group:</b>	<b>Subject/activity:</b>
<b>Number of pupils/children in class/group:</b>	<b>Observation starts at:</b>	<b>Observation ends at:</b>	<b>Total time elapsed:</b>

<b>Description:</b>	<b>Interpretation:</b>

**Questions you may have to what is described and interpreted:**

<b>Date of the 4th observation:</b>	<b>Type of institution: (school/preschool)</b>	<b>Grade/age group:</b>	<b>Subject/activity:</b>
<b>Number of pupils/children in class/group:</b>	<b>Observation starts at:</b>	<b>Observation ends at:</b>	<b>Total time elapsed:</b>

<b>Description:</b>	<b>Interpretation:</b>

**Questions you may have to what is described and interpreted:**

<b>Date of the 5th observation:</b>	<b>Type of institution: (school/preschool)</b>	<b>Grade/age group:</b>	<b>Subject/activity:</b>
<b>Number of pupils/children in class/group:</b>	<b>Observation starts at:</b>	<b>Observation ends at:</b>	<b>Total time elapsed:</b>

<b>Description:</b>	<b>Interpretation:</b>

**Questions you may have to what is described and interpreted:**

### Appendix 3 – Interview guide

Interviews are to be conducted after the fourth observation. Choose a set of disruptive behaviors for the interview. The number will depend on how many occurred and the amount of time available for the interview.

For each act, first briefly describe what occurred in neutral terms.

Questions:

1. Why did you do (the act); what led you to act this way?  
Probes: Were you trying to get the teacher to do something?  
Were you trying to get other students to do something?
2. Do you think it is OK or not OK for a student to do (the act)? Why or why not?  
If not OK, why do you think you did this even though it is not OK?
3. Is there a rule in the class about this type of behavior?  
If yes: What is the rule?  
Is it a good rule? Why or why not?  
If not a good rule: Do you think the rule should be changed? Why or why not?
4. What does the teacher think about your (act)? Why does she/he think so?  
Do you think the teacher is right or wrong to think that way?