

Cyberbullying at schools: A longitudinal research project

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1 Introduction

Today, most of everyday life is permeated by information and communication technologies (ICTs). This trend is true especially for children, adolescents, and young adults who grew up with digital media (see *Dehm/Storll* 2010) and form the group of so-called Digital Natives (*Prensky* 2001). However, new (digital) opportunities also confront young users with new forms of content-related and social challenges that can lead to risky or, in some cases, even deviant (online) behavior. Sexual harassment, unwanted exposure to pornography, and experiences of cyberbullying are some of the risks associated with adolescents' Internet use (*Livingstone et al.* 2011). Public and scientific awareness of cyberbullying has increased noticeably in recent years. Cyberbullying is defined as "an aggressive, intentional act carried out by a group or individual, using electronic forms of contact, repeatedly and over time against a victim who cannot easily defend him or herself" (*Smith et al.* 2008, p. 376). Researchers often fear more severe consequences for victims than inflicted by conventional bullying, because the specific technical attributes of cyberbullying enable anonymous forms of perpetration that can reach a nearly unlimited (media) audience (e.g. *Heirman/Walrave* 2008). Given these worries, there appears an urgent need to clarify which conditions and (social) constellations in particular support cyberbullying behavior.

Although cyberbullying is not restricted to children and adolescents, much of the research focuses on this young group, especially high school students. For a number of reasons, this target group is particularly relevant when analyzing perpetration and victimization via the Internet. By definition (see *Smith et al.* 2008), all cyberbullying actions require the use of ICTs – in most cases, the use of the Internet. Compared to older adults, Digital Natives are not only more media literate but also more intensively integrate ICTs into their everyday behavior. Additionally, aggressive or deviant behavior often appears or arises during adolescence due to developmental problems. Inappropriate coping with these developmental problems can result in the disruption of personality development, as well as in problematic internal and external behavior (*Hurrelmann* 2005, p. 160). Moreover, cyberbullying always happens between at least two individuals in what constitutes a socio-structural component inherent in every bullying act. Although the technical features of the Internet principally enable a diffusion of the bullying contents to a nearly unlimited

audience (*Heirman/Walrave 2008; Slonje/Smith/Frisen 2012*), cyberbullying often arises in stable contexts in which the participants know each other (*Slonje/Smith/Frisen 2013*). In this case, electronic means are used only as a channel and not as an amplifier directed at the broader digital world. Except for family, school and classes are the most stable social contexts in adolescents' life. They not only spend most of their time in school but also find a large portion of their social contacts in this setting.

In previous studies, a psychological, individual-based perspective was the predominant approach to analyzing cyberbullying behavior. The literature on conventional bullying in school, however, suggests that the socio-structural character of the phenomenon should also be considered. Group-based aspects, such as the social hierarchy and different forms of peer pressure, could be relevant factors of influence.

Therefore, through a large research project, we intend to expand the previous individual-based findings with a socio-structural perspective and a longitudinal design that enables identification of the dynamics and developmental traces of adolescents' cyberbullying behavior. In this paper, we explain the basics of this research project and present the first descriptive results.

2 The current research project

The current project is aimed at advancing basic research in the context of cyberbullying. Therefore, we analyze the phenomenon, specifically its influencing factors, patterns, and (longitudinal) effects on adolescents. We expand previous research on cyberbullying behavior with three important innovations:

First, a multi-level design has been implemented. To gain a holistic view, we have considered not only the personal attributes influencing cyberbullying behavior but also the structural and systematic factors. For the present project, the school context was chosen as the relevant setting for the investigation. Within the German school system, all students are assigned to particular school classes. These fixed social groups are characterized by numerous attributes, such as the inherent class climate, the actual behavior of students, and perceptions of the class' teachers. Moreover, different aspects of the schools themselves (e.g., level of education) could also be relevant to individual behavior. We, therefore, expand the predominant, individualistic view of cyberbullying research to address these contextual levels of influence.

Moreover, the socio-structural character of cyberbullying should be treated not only on its different (formal) levels of influence but also in a more content-oriented manner: In addition to ego-centered variables, this study applied social network analysis to explore the reconstruction of social structures. This method enabled analyzing whether individuals' cyberbullying behavior is also influenced by social position and vice versa. In addition, we modeled different aspects of peer influence on individual behavior. Along with classmates' attitudes and behaviors, we measured the influence of (close) friends.

Finally, previous research on cyberbullying behavior is generally limited to cross-sectional data. Consequently, there are no empirical findings about the behavioral stability, long-term risk factors, or consequences of cyberbullying on adolescents' personal and social life. To fill this gap, we are conducting a three-wave panel survey of students and

teachers integrating the innovations described earlier. This longitudinal perspective is employed in order to identify traces and dynamics of the cyberbullying process in school.

The project has been funded by the German Research Foundation (DFG) for 36 months and runs until September 2015. Research is conducted in cooperation of the Universities of Münster and Hohenheim. In the following section, details of the sample and the cyberbullying instrument used are described.

3 Method

3.1 Participants

We recruited participants from 33 schools representing the three tracks of education in Germany: lower (*Hauptschule*, 10 schools), middle (*Realschule*, 10 schools), and higher education (*Gymnasium*, 13 schools). Ministerial and parental consent was obtained for all participants before administering the survey. For the first wave of the study, 5,656 students filled out a questionnaire during lessons in school. The participants were 50.3 percent female with an average age of 13.9 (SD = 1.3). They came from 303 classes: 46 from the lower track (15.2%), 105 from the middle (34.7%), and 152 from the higher (50.1%). The classes had an average size of 15 participating students (SD = 5.6), with a maximum of 26.

3.2 Measuring cyberbullying behavior

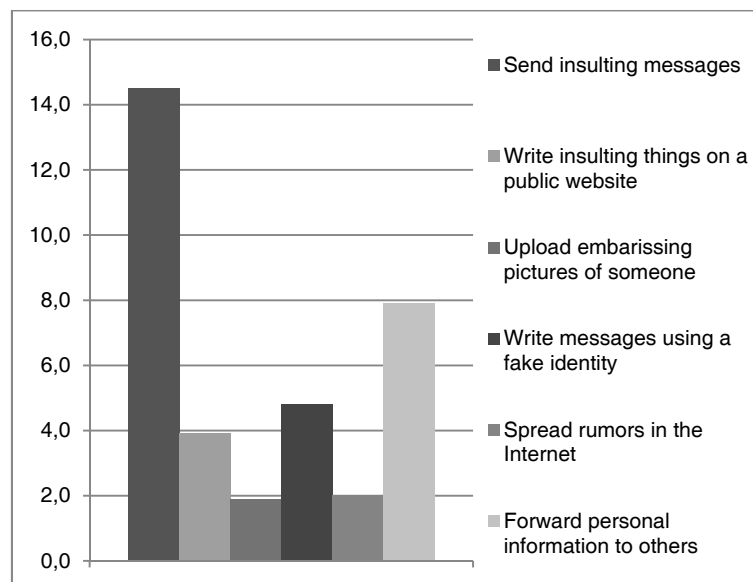
Previous studies either used a definition- or behavior-based measure of cyberbullying (e.g. *Sawyer/Bradshaw/O'Brennan* 2008). The former was often found to be problematic in terms of social desirability, while questions about concrete behavior tend to generate higher prevalence estimations (*Sawyer/Bradshaw/O'Brennan* 2008). Therefore, for the present project, we used both methods: First, we introduced brief definitions of bullying and cyberbullying, including behavioral examples. Next, the actual cyberbullying behavior was measured based on its variants. We asked students about 11 behaviors or experiences over the past 12 months. Students rated their answers on a frequency scale—0 (“never”), 1 (“once”), 2 (“occasionally”), and 3 (“often”). Through this approach, we could fulfill the definitional criteria of repetition put forth by *Smith* et al. (2008, see the introduction). Six items referred to the perpetration of cyberbullying, and five to forms of victimization. A student who answered at least one of the six perpetrator items with the response of “occasionally” or “often” was classified as a perpetrator. The same procedure was employed for the victim category. A student who indeed scored as both a perpetrator and a victim was categorized as a perpetrator/victim.

4 First results

4.1 Cyberbullying prevalence

To analyze the diffusion of cyberbullying within our sample, we first looked at the behavioral items. Sending insulting messages was the method most commonly used to harm another person, followed by forwarding personal information to others (see Figure 1). Altogether, 21.8 percent of students agreed with at least one of the perpetrator items.

Fig. 1: Agreement with perpetrator items (at least agreed “occasionally”)



Receiving insulting messages (12.6%) was also the form of cyberbullying most commonly experienced by victims, followed by having personal information forwarded (8.0%), rumors being spread on the Internet (7.3%), receiving messages from a person with a fake identity (6.5%), and having embarrassing pictures or videos of oneself uploaded (3.3%). Of the participants, 22.5 percent said they had been victimized in one of these ways.

Constructing behavioral roles based on behaviors of perpetration and victimization, we identified three categories: bullies who have not been cyberbullied themselves in the past 12 months ($N = 627$; 11.1%), victims who have not have bullied someone else during the past year ($N = 602$; 11.7%), and perpetrator/victims who experienced both behaviors within this time frame ($N = 660$; 10.6%). One third of students ($N = 1889$; 33.4%) had been involved with cyberbullying within the last year.

4.2 Cyberbullying and sociodemographic aspects

We found interesting differences in cyberbullying behavior among socio-demographic groups (see Table 1). Male students were most often categorized as perpetrator/victims (11.8% versus female: 9.4%; $X^2 = 4.0$; $p < .05$) or pure victims (12.6% versus female: 10.9%; $X^2 = 8.8$; $p < .01$), while there were no gender differences among perpetrators. In addition, older students were generally more often involved in cyberbullying. Adolescents who exclusively or also cyberbullied others, in particular, were most often found in the oldest age group of age 16 and above (P: 14.2%; P/V: 18.3%). Among all three cyberbullying groups, the percentage of affected students was slightly positively correlated with their age (P: $r = .09$, $p < .01$; P/V: $r = .12$, $p < .01$; V: $r = .05$, $p < .01$). Finally, regarding students' education, we identified significant differences only among adolescents who had already experienced both perpetration and victimization. Significantly more perpetrator/victims were found in lower-track schools (20.7%) than in middle- (11.6%) and higher-track schools (8.5%). The same was true for the victims of cyberbullying.

Tab. 1: Cyberbullying behavior by socio-demographic groups

	All	Sex		Age			School Type		
		♂	♀	11–13	14–15	16+	LE	ME	HE
Perpetrator (P)	11.1	11.2	11.0	8.1	12.9	14.2	11.9	11.1	10.9
Perpetrator/ Victim (P/V)	10.6	11.8	9.4	7.2	12.3	18.3	20.7	11.6	8.5
Victim (V)	11.7	12.6	10.9	10.6	11.5	16.6	14.2	11.2	11.5

LE = Lower education, ME = Middle education, HE = Higher education. Significant differences were identified for the following variables: P: age 11–13 and 14–15, 11–13 and 16+; P/V: all differences; V: gender; age 11–13 and 16+, 14–15 and 16+, school type LE and ME, LE and HE.

5 Conclusion and Outlook

In this paper, we presented the first results of the research project “Cyberbullying at Schools”. Using a comprehensive survey study, we showed that cyberbullying is a widespread phenomenon among German students. One-third of participants had already been involved in cyberbullying during the last year. Although the data were not representative of all German students, the selected 33 schools in the Southwest included different types of education level and a variety of other criteria, such as urban and rural settings. The descriptive findings further revealed some interesting hints about the diffusion of cyberbullying behavior within different socio-demographic groups. Male students were most often found in the groups that had been victimized via the Internet. This finding seems to conflict with previous results that found male adolescents more likely to be perpetrators (Dehue/Bolman/Völlink 2008; Li 2006; Smith et al. 2008) and female adolescents to be cybervictims (Dehue/Bolman/Völlink 2008; Smith et al. 2008). In general, involvement in cyberbullying was higher among older students, perhaps due to the higher and often more self-contained Internet use usually practiced by older age groups (see Medienpädagogischer Forschungsverbund Südwest 2012). Finally, we found a clearly higher prevalence

of perpetrator/victims in lower-track schools, while pure perpetrators and victims did not differ by school type. Lower-track schools, therefore, seem to be characterized by a climate in which cyberbullying is accepted as a typical behavioral response. A student who bullies other students can expect the victims to seek revenge. It is assumed that these behavioral patterns are barely interrupted and foster a general climate of aggression in these schools.

It must be kept in mind that these first findings are only descriptive and need to be confirmed in more comprehensive studies which, for example, also control for students' Internet use and competence. As mentioned, these aspects of media use might be an alternative explanation for the relationship between age and cyberbullying. Therefore, we will next apply a multilevel analysis to the cross-sectional data to handle the hierarchical structure of the (school) data. In addition, socio-structural predictors, such as social position and aspects of peer influence, will be covered in more complex investigations. In the next two years, we will collect longitudinal data to identify long-term risk factors and the resulting consequences for adolescents' life to better understand the phenomenon. In the long term, these results will help to develop appropriate prevention and intervention strategies that meet the criteria needed to fight cyberbullying at schools.

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