

Tackling Cyberbullying: Review of Empirical Evidence Regarding Successful Responses by Students, Parents, and Schools

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A summary of current knowledge on successful responses to cyberbullying differentiating between three different response domains: reducing risks, combatting the problem, and buffering negative impact. A systematic literature search yielded thirty-six relevant studies, most of which report findings regarding general prevention strategies (e.g., anti-bullying policies or cybersafety strategies) and the use of coping strategies such as seeking support, responding (retaliation or confronting), technical solutions, and avoidant and emotion-focussed strategies. Whilst a few studies report perceived success, very few measure the success of the strategies in relation to risks and outcomes. There is a clear lack of evidence concerning successful responses.

Cyberbullying is generally considered to be bullying using technology such as the Internet and mobile phones (Menesini et al. 2012; Smith, Mahdavi, Carvalho, Fisher, Russel, and Tippett 2008). Cyberbullying takes a number of forms, such as sending insulting, rude or threatening messages, spreading rumours, revealing personal information, publishing embarrassing pictures, or exclusion from online communication. Recent studies have demonstrated that there is a significant conceptual and practical overlap between traditional bullying and cyberbullying, such that most young people who are cyberbullied also tend to be bullied by traditional face-to-face methods (Cross et al. 2009; Dooley, Pyzalski, and Cross 2009; Gradinger, Strohmeier, and Spiel 2009; Riebel, Jaeger, and Fischer 2009; Sourander et al. 2010).

Despite this overlap, cyberbullying differs from traditional bullying in several ways. First, a single upload of humiliating visual material to the internet is tantamount to repetition as the content can be permanent and available to a wide audience (Heirman and Walrave 2008). Second, power imbalance in cyberbullying can be expressed through (a) technological knowledge, (b) anonymity, (c) limited option of escape. Specifically, a perpetrator dominates a victim through greater knowledge of use of the internet and mobile phones and through the victim's limited possibilities of defence (not necessarily knowing the bully). Moreover, unlike traditional bullying, cyberbullying is not limited in time and space (Heirman and Walrave 2008; Smith et al. 2008; Vandebosch and Van Cleemput 2008).

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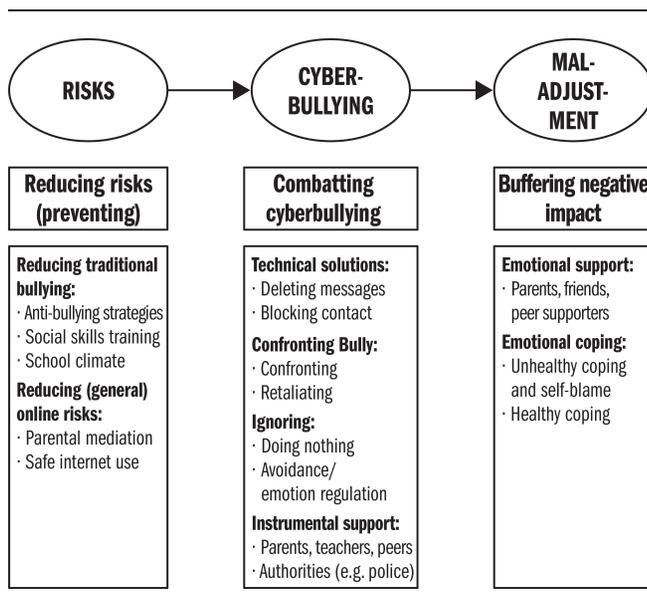
ratings, and/or preparation of the report: Monika Finsterwald, Alena Cerna, Hana Machackova, Katja Machmutow, Ursina Rumetsch.

Despite its overlap with traditional bullying, being a victim of cyberbullying has been identified as an additional risk factor for the development of depressive symptoms (Perren, Dooley, Shaw, and Cross 2010; Gradinger, Strohmeier, and Spiel 2009; Juvonen and Gross 2008) and of psychosomatic symptoms like headaches, abdominal pain and sleeplessness (Sourander et al. 2010). Moreover, adolescent victims of cyberbullying also engage in other types of problematic behaviour, such as increased alcohol consumption, a tendency to smoke and poor school grades (Mitchell, Ybarra, and Finkelhor 2007). Aggressors are at increased risk for school problems, conduct disorders, and substance use (Hinduja and Patchin 2008; Sourander et al. 2010). In sum, cyberbullying emerges as a significant concern for families, schools, and social and healthcare professionals. The present literature review summarizes current knowledge on responses to cyberbullying.

1. Responses to Cyberbullying

In the present review, responses to cyberbullying are conceptualized as reactions to this problem on the part of students, parents and schools. We differentiate between the following domains: reducing risks, combatting the problem, and buffering the negative impact (see Figure 1).

Figure 1: Conceptualization of responses to cyberbullying



First, from a preventive perspective, students, parents and schools may try to handle the emerging problem of cyberbullying by reducing known risks. As cyberbullying is strongly associated with traditional bullying (Cross et al. 2009; Dooley, Pyzalski, and Cross 2009; Gradinger, Strohmeier, and Spiel 2009; Riebel, Jaeger, and Fischer 2009), we may assume that taking action against traditional bullying and associated risk factors through such interventions as whole-school approaches and policies, social skills training, or improvement of the school climate could also reduce the risk of cyberbullying. As cyberbullying occurs via internet or mobile phone, it is also associated with general online risks such as risky online contacts or viewing inappropriate content (Livingstone, Haddon, Görzig, and Olafsson 2011). Therefore, parental mediation or internet safety measures might also be effective in reducing cyberbullying.

Secondly, when cyberbullying occurs, a different set of actions to combat these negative behaviours may be used by students, parents or schools. These responses include technical solutions (e.g., blocking contact), confronting the bully (e.g., constructive contacting or retaliation), ignoring (e.g., doing nothing, avoidant behaviour or emotion regulation) and instrumental support (e.g., asking someone else for help). As cyberbullying has negative consequences for victims such as depression or suicidal ideation (Gradinger, Strohmeier, and Spiel 2009; Juvonen and Gross 2008; Perren et al. 2010; Sourander et al. 2010), specific coping strategies might also be applied to enhance victims' well-being and buffer the negative impact: Victims themselves may try to cope emotionally with the problem; and parents, friends or peers may offer emotional and instrumental support.

The goal of the current review was to summarize the empirical database on successful responses to cyberbullying and identify what responses are successful. We conceptualized success in terms of (a) reducing cyberbullying risks (the *prevention* of cyberbullying), (b) *combatting* cyberbullying leading to stopping this problem, and (c) *buffering* its negative impact on victims.

2. Systematic Literature Search

A systematic literature search was conducted to identify relevant empirical studies. Relevant databases (PsychInfo, Pubmed, ERIC, SOCindex, Web of Science, etc) were systematically searched. Selected studies had to contain the keywords cyberbullying (or related terms), coping/re-sponses (or related terms), and youth/educational settings (or related terms).¹ Articles were rated for relevance in several steps and double-checked for inter-rater agreement. Publications up to September 2010 were included. Also included were findings from the EU Kids Online II study (initial findings published in October 2010, final publication in 2011).² The database search yielded 225 publications, which were rated regarding relevance and correspondence to inclusion criteria.

The following inclusion criteria were used (a) empirical studies on cyberbullying (new data and knowledge); (b) published papers only (scientific journals, book chapters, EU Kids Online report, dissertations, but excluding conference papers and posters); (c) parents, teachers (schools) or students/pupils responding to cyberbullying; (d) papers should include some measures of responses (listed in Figure 1); and (e) papers should address at least one of our predefined research questions (prevent, combat, buffer). Thirty-six articles were rated as being partly or highly relevant to our research question. All relevant papers were systematically analysed by seven different raters (mostly members of the current author team). The raters had to review methods (i.e. type of study, focus, sample, types of measures and their quality) and look for research evidence on the success of responses related to the domains, such as reducing cyberbullying risks, combatting cyberbullying, and buffering its negative impact. The raters were given a form with predefined responses to evaluate. Further, taking into consideration that the list of responses could not be exhaustive, the raters were asked to fill in the open-ended domain-related boxes with examined responses, including findings on the responses' success or otherwise (e.g.,

“Please provide the article’s results/conclusions/implications with regard to...”).

The current paper presents a selective narrative overview of the results of the systematic literature review, focussing on the question of measured *success* of responses.

3. Preventing Cyberbullying

This section first presents findings and suggestions for concrete measures to prevent cyberbullying.

3.1. Suggested Prevention Approaches

Based on general research findings on cyberbullying and the associated risks, several authors argue that we should draw upon experience from “face-to-face” bullying so as to prevent cyberbullying (Campbell 2005). In addition, the following preventative actions were suggested with emphasis on the whole school approach:

- Awareness-raising initiatives targeting teachers, parents and students in order to heighten awareness of cyberbullying and its risks and create a context for facilitating trust on the part of victims with regard to adult authorities (Campbell 2005; Juvonen and Gross 2008; Li 2007; Wright, Burnham, Inman, and Ogorchock 2009; Young, Young, and Fullwood 2007);
- School policies to respond to the challenge of cyberbullying and implement a range of preventive policies such as
 - the direct teaching of values education, empathy training and the use of stories and drama in the curriculum, along with direct teaching of “netiquette” (Campbell 2005; Dranoff 2008; Mason 2008; Stacey 2009), and last but not least to create an open line of communication between students and adults in school (Genz 2009);
 - the inclusion of social and curriculum programmes to motivate students towards taking action against cyberbullying (e.g., peer help programmes, buddy programmes, etc.) (Campbell 2005; Stacey 2009);

¹ A report describing details of the methodological approach (search terms, inclusion and exclusion criteria, etc.), the category system and complete tables with descriptive results can be obtained from the first author on request.

² EU Kids Online II is the largest (representative) study in Europe concerning this topic. It surveyed a sample of 25,142 children aged 9–16 years across twenty-five European countries (Livingstone et al. 2011).

- adult supervision, especially with regard to children's computer education and usage of technology (Campbell 2005; Rosen, Cheever and Carrier 2008) as well as education of parents concerning these matters (Stacey 2009).

The suggested prevention strategies emphasize the importance of both family and education/school (Smith et al. 2008) for preventing cyberbullying, while stressing the need to empower children and make them the key actors in deciding about, and implementing prevention strategies (Stacey 2009; Ybarra and Mitchell 2004; Young, Young, and Fullwood 2007). However, most of the studies described above drew their conclusions and suggested implications for prevention strategies from general empirical findings (at best).

3.2. Evidence Regarding Successful Coping Strategies to Prevent Cyberbullying

Although different strategies are recommended based on general research findings, only a few studies investigated the success of particular strategies in actually preventing cyberbullying. It has been suggested that peer support in the form of peer-intervention by student leaders in school may play a role in prevention of cyberbullying through creating bullying awareness in the school, developing leadership skills among students, developing bullying intervention practices and team-building initiatives in the student community, and encouraging students to intervene. DiBasilio (2008) showed that such peer intervention successfully led to a decline in cyberbullying, while students' understanding of bullying widened.

A second key category of prevention strategies reported in the literature focuses on parental supervision and parenting behaviour. As time spent online is considered as a risk factor for cyberbullying, parental restrictive mediation (which decreases the amount of time children spend online) was found to reduce cyberbullying risks (Livingstone et al. 2011; Rosen, Cheever, and Carrier 2008). Research has found that higher levels of parental warmth are negatively correlated with involvement in both traditional bullying and cyberbullying (Wang, Iannotti, and Nansel 2009). Conversely, a poor parent-child relationship, which may indicate insufficient parental supervision, has been found to be associated

with a higher risk of involvement in cyberbullying both as a perpetrator and as a victim (Ybarra and Mitchell 2004).

4. Combatting Cyberbullying and Buffering its Negative Impact

Besides the question concerning which strategies parents, schools and students can apply to prevent cyberbullying, research has also addressed the question about what victims of cyberbullying (or persons close to them) should do to cope with the problem. We will first outline what responses have been investigated and then present empirical evidence regarding their successfulness.

4.1. Responses to Ongoing Cyberbullying

In the reviewed studies research attention focussed predominantly on victims of cyberbullying and their responses to the problem. Victims report a range of coping strategies which can be classified as being problem-focussed or emotion-focussed (or mixed). According to coping theory (Lazarus and Folkman 1984), people tend to use problem-focussed coping when they believe that their own resources or critical aspects of the situation can potentially be changed, i.e. a person attempts to handle the stressful situation by tackling the problem that causes it. On the other hand, people use emotion-focussed coping when they believe that they can do little to change the stressful situation; here a person attempts to control their emotional response to the stressful situation by redefining or ignoring it or by focussing on the positive aspects of the situation.

Several types of coping strategies have been identified in relation to cyberbullying: reactions towards cyberbullies (retaliation, confronting), technical solutions (e.g., report abuse buttons, blocking the sender), supportive strategies (seeking support by adults, teachers, friends or external institutions), and avoidant and emotion-focussed strategies (e.g., ignoring). The next section gives an overview of the research on the use of coping strategies and their perceived successfulness in dealing with cyberbullying.

Reactions towards the bully. Confronting the bully is commonly reported by adolescents as an approach, where the victim knows the bully or is able to contact her or him (Arıcak et al. 2008; DiBasilio 2008; Stacey 2009). Students

consider retaliation a less constructive way of contacting the perpetrator. Hoff and Mitchell (2009), who asked students what they had done to stop cyberbullying, report that the answers mentioned active and physically retaliatory behaviour, especially among boys. Although the strategy of confronting the bully is often mentioned by those affected, this strategy has proven to be less helpful in retrospect (Price and Dalgleish 2010).

The assumption in some studies that online retaliation is more easily done, due to greater anonymity, and therefore occurs more often than “face-to-face contact”, was not confirmed. Juvonen and Gross (2008) found that, whereas 60 percent of the cybervictims defended themselves against the bully with traditional face-to-face methods, only 12 percent retaliated solely in cyberspace, and 28 percent used both traditional and online forms of retaliation.

Technical solutions. Specific cyberspace coping strategies, such as deleting or blocking threatening messages, are generally used and considered as being helpful (Aricak et al. 2008; Juvonen and Gross 2008; Kowalski, Limber, and Agatston 2008; Smith et al. 2008; Stacey 2009). Livingstone et al. (2011) report that the most popular technical coping strategies are blocking the person (46 percent), deleting nasty messages (41 percent), and stopping use of the internet (20 percent). Blocking was considered an effective strategy by study participants.

Using a mixed methodological approach, Price and Dalgleish (2010) found that blocking was the most widely used technical strategy; self-identified cybervictims considered this to be the most helpful online action taken. Technical solutions are often reported along with preventive strategies like banning websites and setting age-appropriate limits for using the computer and internet by parents (see also above; Kowalski, Limber, and Agatston 2008).

Support-seeking. Many students recommend asking parents for help in relation to a cyberbullying incident (Aricak et al. 2008; Smith et al. 2008; Stacey 2009; Topcu, Erdur-Baker, and Capa-Aydin 2008). However, some students recommend not consulting adults because they fear that they may lose privileges (e.g., having and using mobile phones

and internet access), and because they fear parents would simply advise them to ignore the situation or that they would not be able to help them as they are not accustomed to cyberspace (Hoff and Mitchell 2009; Kowalski, Limber, and Agatston 2008; Mishna, Saini, and Solomon 2009; Smith et al. 2008; Stacey 2009). In a web-based survey of 12–17-year olds, of whom most had experienced at least one cyberbullying incident in the last year, Juvonen and Gross (2008) found that 90 percent of the victims did not tell their parents about their experiences and 50 percent justified it with “I need to learn to deal with it myself”.

Students also have a rather negative and critical attitude to teachers’ support: many students consider telling a teacher or the school principal as rather ineffective (Aricak et al. 2008; DiBasilio 2008; Mishna, Saini, and Solomon 2009). Although 17 percent of students did report a cyberbullying incident to a teacher, in 70 percent of the cases the school did not react to it (Hoff and Mitchell 2009).

Asking for help from peers is a commonly used approach and is recommended (Aricak et al. 2008; DiBasilio 2008; Stacey 2009; Topcu, Erdur-Baker, and Capa-Aydin 2008), although prevalence rates vary widely. Price and Dalgleish (2010) report that Australian cybervictims consider “telling a friend” as the most helpful strategy. Livingstone et al. (2011) report that in terms of confiding in others, respondents were most likely to tell a friend (52 percent) or a parent (42 percent).

Avoidant and emotion-focussed strategies. In a study by Dehue, Bolman, and Vollink (2008) students reported that when they were victimised online they would usually “pretend to ignore it” (31 percent of victims) and/or “would ignore it” (30 percent). When asked how they coped with the problem, 36 percent of the respondents in the EU Kids Online II study reported that they tried to “fix the problem”, whereas 24 percent “hoped the problem would go away”, and 12 percent said that they “felt guilty” (Livingstone et al. 2011).

In sum, a range of coping strategies used by victims in relation to cyberbullying have been investigated. However, most of the studies investigated the use (and not the suc-

cess) of coping strategies among cybervictims, or in relation to hypothetical cyberbullying scenarios. For example the EU Kids Online II study showed that of those bullied online in the last 12 months (6 percent of participants), 85 percent reported being upset (Livingstone et al. 2011). However, the majority of victims (62 percent) “got over it straight away”. This finding led Livingstone et al. (2011) to conclude that children’s coping strategies were most likely effective, at least for those who do not continue to be upset. As this is a very general conclusion, we do not know what kind of coping strategies are “likely to be effective”.

4.2. Evidence Regarding Successful Responses

To investigate the success of responses, various methodological approaches have been applied, targeting different populations and using different study designs and assessment methods. From a purely methodological point of view, these approaches range from yielding no evidence (subjective evaluations) to a strong evidence base (experimental designs). In reviewing the selected studies, we have identified the following taxonomy of studies.

1. What do people, in general, think is effective?
2. Retrospective accounts of cybervictims regarding the success of chosen coping strategies.
3. Cross-sectional studies investigating associations between certain responses, cybervictimisation and victim’s well-being.
4. Longitudinal studies investigating whether certain responses or coping strategies are related to decreasing levels of cybervictimisation (combatting) or victim’s well-being (buffering).
5. Experimental studies investigating the impact of selected responses on changes in cybervictimisation and victim’s well-being.

Studies reporting on perceived success from a general perspective have already been described and are considered as yielding no real evidence.

Retrospective accounts of victims. Hensler-McGinnis (2008) examined the effect of coping on psychological trauma and impaired academic/career functioning following victimisation through cyberstalking. A sample of 452 college/university students aged between 18 and 43 years (female:

81.2 percent) participated in the research. Victimisation was found to be predictive of psychological trauma and impaired academic functioning. The following responses were rated by victims as being the most effective strategies decreasing the cyberstalking: “retaliating using electronic methods” (65.5 percent), “blocking my electronic accessibility” (63 percent), “limited disclosure of my personal information on the internet” (56.9 percent), and “decreased use of internet, cell phone etc.” (54 percent). Effective coping was characterised by limiting exposure and accessibility. Psychological trauma and academic/career functioning impairment were both found to be positively correlated to the number of coping strategies used by the victim, suggesting that these were victims who had tried many strategies but without success. Additionally, there was no evidence that resilient coping moderated the relationship between victimisation and trauma, or the relationship between victimisation and academic/career functioning.

Cross-sectional associations between coping strategies and cybervictimisation. Only one study reported on the relationship between different coping strategies and cyberbullying (Lodge and Frydenberg 2007). The results revealed that children with increased experience of cybervictimisation used more passive coping strategies, such as wishful thinking and mental distraction, compared to children with low levels of cybervictimisation. In general, children with an optimistic, relaxed and active mode of coping reported fewer cyberbullying experiences (Lodge and Frydenberg 2007). Results of this study yield first indications about what kind of coping strategies might be effective. However, as this was a cross-sectional study, we do not know whether any of the reported associations are causal.

Longitudinal associations between coping strategies and well-being. The study by Hay and Meldrum (2010) is one of the rare longitudinal studies on the topic; they measured the role of authoritative parenting and high self-control in buffering the negative impact of traditional bullying and cyberbullying. In a sample of 426 students aged between 10 and 21 years (female: 50 percent) they found that victimisation was associated with increased reporting of self-harm and suicidal ideation. Authoritative parenting and high levels of self-control moderated the negative impact of victi-

misation. The authors concluded that cognitive behavioural therapy could benefit vulnerable adolescents, by helping them to acknowledge their maladaptive coping and to change their behaviour. The longitudinal design advances our understanding of potential buffering effects. However, this study did not investigate specific coping strategies, but more general personal and parental characteristics that aimed to buffer the negative impact.

Experimental studies. The literature review yielded one intervention study investigating the impact of actions taken against cyberbullying. Chi and Frydenberg (2009) investigated the impact of two programmes (Best of Coping, BOC, and Cyber Savvy Teens, CST) on adolescents' psychological distress and ability to cope online. The BOC programme educates participants on general coping techniques such as decision-making whereas the CST programme was designed to increase adolescents' safety skills online, including coping strategies for cyberbullying. A sample of 50 adolescents (female: $n = 28$) aged 13 to 14 years was divided into three categories: a control group; a group with the CST programme; and a group with the BOC programme. Three coping styles (Productive Coping [P]; Non-productive Coping [N]; and Reference to Others [R]) and psychological distress were examined. Following the intervention, the CST group showed an increase in using the strategies "keep to self" (N) and "ignore the problem" (N), and a decrease in "focus on positive" (P) and "seek to belong" (P). However, a small increase in Productive Coping was identified. CST participants displayed increased willingness to report cyberharassment to teachers and parents post-intervention. The BOC group showed an increase in using "social action" (R), "physical recreation" (P), and "focus on solving the problem" (P) post-intervention, and a decrease in using "ignore the problem" (N), "wishful thinking" (N), and "worry" (N). The BOC group was also more likely to report cyberharassment to a trusted adult. An increase in Reference to Others (R) was identified after the intervention. Both groups showed a decrease in the use of Non-productive Coping (N). In terms of buffering negative effect, the authors concluded that both programmes reduced participants' anxiety and symptoms of depression.

5. Discussion

This systematic literature review identifies a number of studies which reported some empirical data on responses to cyberbullying. However, the conclusions which can be drawn are limited. We found very little empirical evidence concerning the success of responses. Despite this, the studies provided some insight into what students do to cope with cyberbullying. Most of the reported coping strategies are general problem-solving strategies such as looking for social support, trying to ignore or avoid the problem. Some are related to bullying (e.g., confronting the bully); others are specifically related to cyberbullying, such as the use of technological strategies. To reduce possible risk factors and to prevent cyberbullying, parental supervision, general anti-bullying or social skills development strategies, and education in cybersafety have been suggested.

In addition, many of the identified studies suffer from similar methodological limitations. Most of the studies used cross-sectional self-reports among adolescent samples. Responses including coping strategies were frequently only assessed with single items. Because of methodological shortcomings, the reactions of victims to cyberbullying did not reflect the context and ways they were victimised; more precisely there was a lack of studies on how victims responded to different forms of cyberbullying and to what extent the form of cyberbullying may relate to successful solutions. Moreover, there was a lack of theoretical background regarding selected coping strategies, their potential effects and underlying mechanisms. These issues are not new and are not specific to cyberbullying. For example Mc Guckin, Cummins, and Lewis (2010) emphasize similar issues as being of critical importance regarding research studies exploring traditional bully/victim problems.

Future studies utilising longitudinal approaches and methodologically sound intervention designs are required. Longitudinal studies should address the question of whether the use of specific coping strategies is more effective in combatting cyberbullying occurrences or in buffering the negative effects. In these studies, coping strategies should be investigated as potential mediators or moderators. For example, a recent study by Machmutow, Perren,

Sticca, and Alsaker (2012), which was published after the present literature review was conducted, shows that social support can buffer the negative impact of cybervictimization.

Intervention studies (preferably randomised controlled trials) should investigate the effectiveness of prevention strategies, either in relation to reducing risks or in relation to teaching specific response strategies for victims, bystanders, parents and teachers. Preliminary results of the Finish anti-bullying programme KiVa (Kiusaamista Vastaan, “against bullying”), whose findings, again, were published after compilation of studies for the literature review, suggest that prevention strategies targeting traditional bullying are able to reduce cyberbullying (Salmivalli, Kärnä, and Poski-

parta 2011). Conversely, another recently published longitudinal study about the effect of “netiquette” on the reduction of cyberbullying found no significant relationship between these two variables (Kumazaki, Suzuki, Katsura, Sakamoto, and Kashibuchi 2011). This indicates that more intervention studies are needed to understand which measures are successful in reducing cyberbullying risks.

Our review only included studies published up to September 2010. As there are a number of studies currently being carried out, and there may be relevant papers under review, we might soon expect more empirical evidence regarding the success of coping strategies. Only then can we seriously recommend guidelines and coping strategies to students, parents, and schools.

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