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Cyberbullying and Its Forms in Pupils in the Slovak Republic

Abstract

Cyberbullying is a behaviour of ever increasing occurrence. Methods of cyberbullying vary, from less serious to very serious forms. The aim of the research was to find out what forms pupils in the Slovak Republic use to perpetrate cyberaggression and through what forms they are victimized. The research was conducted on a sample of 696 pupils of elementary and secondary schools, using the research tool Cyberbullying and Online Aggression Survey Instrument (2010). It was proved that the simplest form of cyberbullying is gross insults posted on the Internet and the most difficult form is creation of websites and videos to cause emotional injury.

Keywords: *cyberbullying, typology of cyberbullying, forms of cyberbullying, cyberaggressor, cybervictim*

Introduction

Internet lack of inhibition, propensity for negative forms of behaviour, lack of interest and attention, possibility to contact people anywhere and at any time- these are only a few factors paving the way for cyberbullying. During the recent 10 years cyberbullying has become a serious social problem among youth worldwide. Cyberbullying via media is a relatively new phenomenon and researchers need more empirical research in this field. The study intends to point out to the forms of cyberbullying used by pupils (and on pupils) of elementary and secondary schools in the Slovak Republic.

1. Terminology of Cyberbullying

Cyberbullying occurs on the basis of real relations among persons and provides space for bullying to continue offline. The issue of cyberbullying is dealt with by several scholars, scientists and researchers (B. Belsey, 2004; P. Smith, 2006; P. Aftab, 2006; H. Vandebosch, 2006, P. Agatston, 2007; J.J. Myers, 2011; S. Hinduja, J.W. Patchin, 2009, 2012; R.M. Kowalski, 2012).

At present there is no term for cyberbullying adopted by consensus. Formally, this socio-pathological behaviour is defined as cyberbullying, but from the point of view of cultural, language and individual differences, the name differs (English cyberbullying, German cybermobbing, online bullying, electronic bullying, etc.).

According to P. Agatston (2007), cyberbullying is a form of emotional attack (also referred to as relational aggression, i.e., a covert type of aggression causing damage of relationships and social exclusion) causing emotions of fear, isolation and humiliation in victims. S. Hinduja and J.W. Patchin (2009) define cyberbullying as wilful and repeated harm inflicted through the use of computers and other electronic devices. The authors admit that their definition is not perfect and could be supplemented by "*repeated harm inflicted by the use of cell phones*" (S. Hinduja and J.W. Patchin, 2012, p. 33). As the authors add, cyberbullying victims are twice as likely to attempt suicide compared to youth who did not experience cyberbullying.

In connection with the use of information-communication technologies in the process of cyberbullying, the authors´ definition explicitly specifies repeated aggressive attacks using computers, mobile phones and other electronic devices. Cyberbullying as a term is not recognized worldwide. In their 2012 research into cyberbullying, Microsoft used the term online bullying, which extends bullying by repeated behaviour on the Internet and in text messages intended to tease, demean or harass someone technically less skilled (Microsoft, 2012). Building on the above premises, analysis of the terms *cyber* and *online* as the basic platform comes to the fore. The prefix *cyber* relates to a computer or computer virtual network, where online communication takes place. The term *online* denotes the state in which the equipment capable of control or communication with a computer is activated and prepared for operation. The term online refers not only to a computer, but to any devices capable of communication with a computer, thus also mobile phones. On the basis of this, the term online bullying can be considered more complex, since it involves negative behaviour via computers and compatible devices. Nevertheless, we prefer cyberbullying as the most widely used term in the world (cf. Hollá, K., 2013).

According to H. Vandebosch and K. Cleemput (2008), it is necessary to develop a clear definition of cyberbullying, which is congruent with the perceptions of pupils, because insufficient conceptual clearness may lead to situations where the scientists and respondents perceive the phenomenon differently. Based on the analysis of the definitions, we explicate cyberbullying as *aggressive behaviour including harassment, threats, stalking, humiliation and other negative behaviour of a child or adolescent towards a victim or victims, through repeated attacks via computer, mobile phone and other electronic devices, the content of which causes emotional injury* (Hollá, K., 2013, p. 17).

1.1. Typology of Cyberbullying

There are various methods of cyberbullying perpetrated by children and adolescents. New technologies provide a platform for the ways of bullying, teasing and bothering victims. Knowing how an online attack can be made gives room to caution in the process of online communication. N. Willard (2007) compiled a comprehensive classification of online attacks:
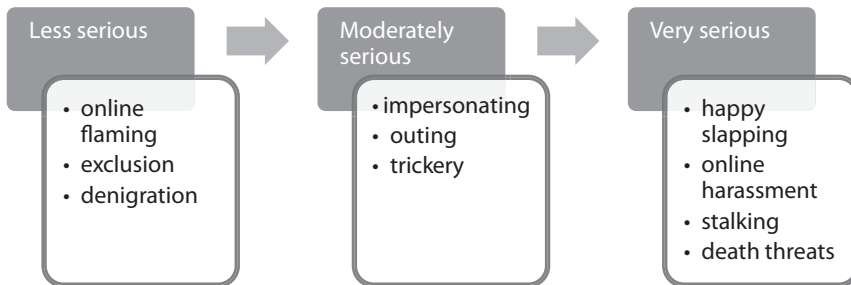
- *online flaming* – attacks via electronic messages in social discussion groups, with insulting and vulgar contents;
- *online harassment* – frequent and repeated sending of impertinent and offensive messages;
- *denigration* – spreading derogatory statements, fabrications and gossip about the victim;
- *impersonating* – insulting messages seemingly coming from the victim, this in the effort to get that person in trouble or to threaten or damage that person's reputation and relationships;
- *outing* – posting and spreading intimate and embarrassing information, images and videos via the Internet and mobile technologies;
- *trickery* – tricking the victim into disclosing secrets and personal information as well as potentially embarrassing information;
- *exclusion* – exclusion from online groups, chat-rooms, rejection of online communication;
- *stalking* – abusing online communication to harass and intimidate chosen users.

The above forms of cyberbullying are identical, having, however, their own specifics. Harassment and stalking are two related forms. The former is an online attack perpetrated by a child or adolescent, in difference from stalking which usually occurs among adults. The difference between harassment and stalking lies also in the number of contacts (contacts made) between the harassed and the harassing

individual. While harassment is one incident, cyberstalking is characterized by several incidents (Hollá, K., 2013). In terms of the nature of attacks, cyberbullying can be perpetrated by direct attacks or indirect attacks, i.e. by mediated attacks causing social isolation and exclusion. Direct attacks include online provocation, harassment, denigration, impersonation, disclosure, social exclusion. The process of cyberbullying involves the attacker or attackers directly. Another method is mediated attacks, where the aggressor acts in the role of instigator and has the "dirty job" done by others.

Cyberbullying also includes behaviours that may be categorized from less serious up to very serious by their impact on the victim. Inspired by S. Hinduja and J.W. Patchin (2009, p. 164), we propose the following distribution of cyberbullying behaviours:

Picture 1. Categorization of Cyberbullying Forms
(according to Hinduja, S., Patchin, J.W., 2009, p. 164)

Less serious	Moderately serious	Very serious
• online flaming • exclusion • denigration	• impersonating • outing • trickery	• happy slapping • online harassment • stalking • death threats

Online attacks with insulting and vulgar contents may be included in the less serious cyberbullying behaviour. Repeated neglect, no response to Chat Room messages, exclusion from an online group and from friends may also be included in less the serious behaviour.

The category of moderately serious behaviour includes theft of identity, user names, passports, dates of birth and personal data. Their abuse may take the form of cyberbullying (e.g., impersonation when a person insidiously obtains passwords of the chosen victim and sends unbecoming, offensive and often even threatening messages to others in the chosen victim's name); they are frequently connected with frauds. In the Slovak Republic, identity theft is not a crime, but specific behaviours are a part of prosecution. Moderately serious behaviour includes forwarding unbecoming and embarrassing images, photographs and videos. This consequently leads to disclosure of secrets and disparagement of the person displayed.

Spreading information, rumours and denigration via the Internet and electronic devices are the last manifestations of online attacks in this category.

Physical threats and assaults typical of happy slapping are serious cyberbullying behaviours. Online stalking includes repeated and unreasonable monitoring of the victim via the Internet, harassing and controlling text messages, instant messages, calls, etc., while the victim fears for his/her life. Death threats via the Internet also cause the victim physical and emotional injury. In combination with other online attacks and individual personality and social determinants, this cyberbullying form can cause suicidal behaviour in the victim.

2. Research

2.1. Research Object and Research Questions

The research object was forms of cyberbullying, perpetrated by cyberaggressors and experienced by cybervictims. The aim of empirical research was to find out which forms are used by pupils for perpetration of cyberaggression and by which forms they are victimized. The following research questions were posed referring to the main aim:

- What is the difficulty of the cyberaggressor´s cyberbullying forms?
- What is the difficulty of the cyberbullying forms for the victim?
- What is the value of the latent variables: *cyberaggressor, cybervictim*?

2.2. Research Sample

696 pupils from 26 schools across the Slovak Republic participated in the research. The sample consisted of n = 302 (43.33%) boys and n = 394 (56.53%)

Picture 2. Numbers of Pupils by the Region
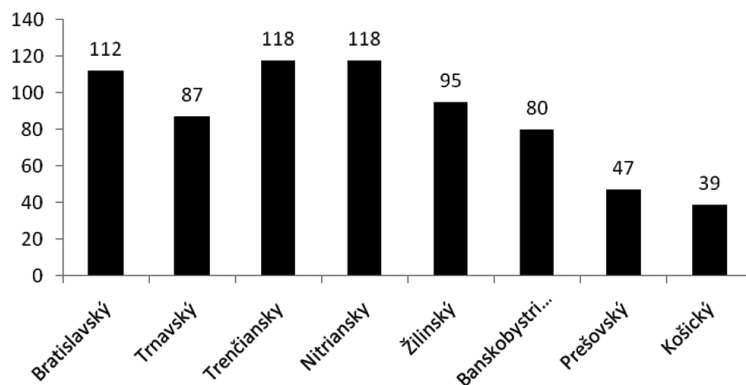
girls at the age of 11–18. The average age of the respondents was 15 (SD=2.04). The pupils participating in the research attended elementary schools (42%) and secondary schools (58%).

2.3. Research Methods and Methodology

The research was done using the research tool Cyberbullying and Online Aggression Survey Instrument (2010) by S. Hinduja and J.W. Patchin. The authors of the research tool gave their consent to the use of the questionnaire for the research in the Slovak Republic. The research was conducted in the school year 2012/2013 and involved 26 elementary and secondary schools across the Slovak Republic.

Cyberbullying and Online Aggression Survey Instrument (2010) is a tool mapping the occurrence of cyberbullying and online aggression forms from the point of view of the cyberaggressor and the cybervictim, using a Likert scale (0 – not at all, 1 – once, 2 – sometimes, 3 – often, 4 – every day). The tool was chosen deliberately and used as a pilot empirical investigation for subsequent standardization of the research tool in the Slovak Republic.

For statistical evaluation, the *Item Response Theory (IRT)* was used. The aim of IRT is to estimate the value of a latent variable on the basis of respondents' responses to items. In IRT, we were interested in the likelihood of the "correct" response to an item in dependence on the value of a latent variable reflecting the individual's abilities. Observed variables consisted of questionnaire items and responses to them. In a one-parameter logistic regression model (1-PL), the conditional probability of a correct response to the item *i* for the given level of the latent variable η_j is determined by the relation:

$$P(y_{ij} = 1 \mid \eta_j) = \frac{\exp(\beta_i + \eta_j)}{1 + \exp(\beta_i + \eta_j)}$$

where we assume that the responses to an item for the given level of the latent variable η_j are conditionally independent.

3. Research Results and their Interpretation

Partial aims were to estimate the difficulty of individual forms of cyberaggression for cyberaggressors and cybervictims. And also to estimate the value of latent variables (cyberaggressor, cybervictim) for each of the pupils, reflecting what their level of cyberaggression, or cybervictim was.

3.1. Difficulty of Cyberaggression from the Perspective of the cyberaggressor

The pupils were asked which of the given forms they used to cyberbully other persons:

- gross offences posted on the Internet
- gross and offensive photos posted on the Internet
- gross and offensive videos posted on the Internet
- creation of a gross and offensive website
- posting untrue information on the Internet
- threats of bodily harm via text messages
- threats of bodily harm via the Internet
- impersonating in the online environment and hurting others

Table 1 shows ten most frequently occurring response patterns. It shows that up to 68.2% of the pupils did not use any of the above cyberbullying forms and 31.8% of the pupils used at least one form of an online attack against others.

Table 1. Response Patterns for Cyberaggressors

Pattern	Frequency	Pattern	Frequency
00000000	475	11001000	9
10000000	70	01000000	8
10001000	18	10000001	6
11111111	17	10100000	4
11000000	13	10000010	4

From among the specific forms, 10.0% of the pupils used *gross offences on the Internet*. It is quite interesting that 2.4% of the pupils used all forms of online attacks to cyberbully others in cyberspace. It is the fourth most frequently used pattern!

The difficulty parameter of Table 2 items was estimated by the method of conditional maximum likelihood (CML).

Table 2. Estimation of the Difficulty Parameter of the Cyberaggression Forms for the 1-PL Model by the CML Method

Item	Parameter	Point estimate	Standard Deviation
Gross offences on the Internet	$-\beta_1$	-2.776	0.195
Gross and offensive photos on the Internet	$-\beta_2$	-0.592	0.184
Gross and offensive videos on the Internet	$-\beta_3$	0.603	0.230

Item	Parameter	Point estimate	Standard Deviation
Gross and offensive website	$-\beta 4$	1.522	0.287
Posting untrue information	$-\beta 5$	-0.508	0.186
Threats of bodily harm via text messages	$-\beta 6$	1.070	0.256
Threats of bodily harm via the Internet	$-\beta 7$	0.650	0.232
Impersonating	$-\beta 8$	0.032	0.204

The picture captures characteristic curves reflecting the probability of the use of the form considering the level and form of cyberaggression.

Picture 3. Characteristic Curves of the Cyberaggression Forms
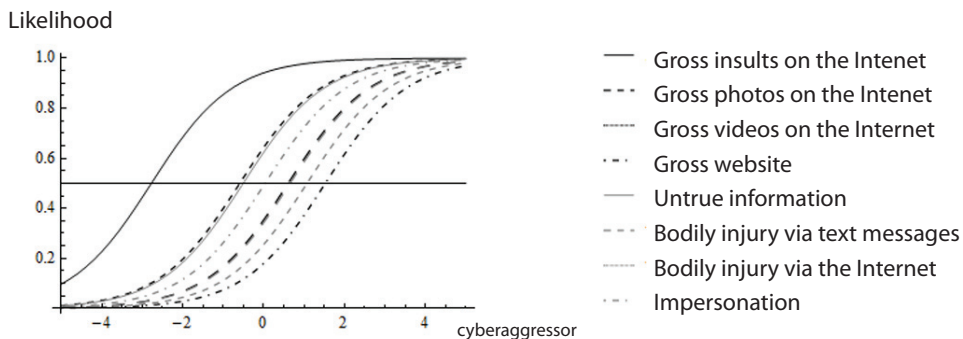
It shows that the form *gross offences on the Internet* is considerably of the least difficulty (-2.776). In the case of this form, there is 50% likelihood that it will be used even by a pupil with a relatively low level of cyberaggression. *Creation of a gross and offensive website* is of the greatest difficulty (1.522).

Values of the latent variable (cyberaggression) of pupils in 1-PL were estimated by the *WLE method (Warm´s Weighted Likelihood Estimates)*. The total score is the sum of positive responses to the items.

Table 3. Estimation of the Cyberaggressor Value

Total score	Person's parameter	Standard deviation
0	-3.963	1.860
1	-2.209	1.155
2	-1.187	0.931

Total score	Person's parameter	Standard deviation
3	-0.476	0.833
4	0.126	0.796
5	0.703	0.803
6	1.316	0.859
7	2.069	1.013
8	3.385	1.617

As seen in Table 3, 9 levels for cyberaggressors were obtained. Each level is characterized by a certain value. The levels are not in the same distance from each other! If persons with scores 1 and 2 are compared, the difference between them is 1. If comparing persons with scores 3 and 4, the difference is also 1. In the former case, the difference is more conspicuous (-2.209–(-1.187) =- 1.022) against (-0.476–0.126 =-0.602) considering the level of the latent variable. The above shows that there are up to 9 levels, types of aggressors, every aggressor displays a different type of attack using various forms. Differences between individual levels are not striking, nevertheless it is impossible not to identify a person using only one- relatively less serious – form as a cyberaggressor.

3.2. Difficulty of Cyberaggression Forms from the Perspective of the Victim

In the case of cybervictims, the same procedure was used as for cyberaggressors. We tried to find out through which cyberaggression forms pupils become victims of this socio-pathological behaviour.

Table 4. Response Patterns for Cybervictims

Pattern	Frequency	Pattern	Frequency
00000000	394	11111111	12
10000000	41	11000000	12
10001000	39	00000001	9
00001000	19	11001001	8
10001001	15	10001110	7

Most frequently (56.6% of the cases) the pupils did not become victims of cyberbullying. In 5.89% of the cases, the pupils became cyberbullying victims through only one form, reading *gross offenses on the Internet*, and in 5.60% of

the cases through the forms of *gross offenses on the Internet* and *posting untrue information on the Internet* at the same time. In 1.72% of the cases, all forms of cyberaggression were perpetrated on cybervictims.

Table 5. Estimation of the Item Difficulty Parameter for the 1-PL Model

Item	Parameter	Point estimate	Standard deviation
Gross offences on the Internet	-β1	-2.112	0.146
Gross and offensive photos on the Internet	-β2	-0.047	0.150
Gross and offensive videos on the Internet	-β3	1.541	0.222
Gross and offensive website	-β4	1.081	0.193
Posting untrue information	-β5	-1.392	0.137
Threats of bodily harm via text messages	-β6	0.776	0.178
Threats of bodily harm via the Internet	-β7	0.349	0.162
Impersonating	-β8	-0.197	0.147

The estimates of the difficulty parameter for each of the items in Table 5 show that the least difficult to become a cybervictim is through the form of *gross offences posted on the Internet* and through the form of *untrue online information*. The most difficult to become a victim of cyberbullying is through *gross and offensive videos posted on the Internet*.

**Picture 3.** Characteristic Curves of Cybervictim Forms
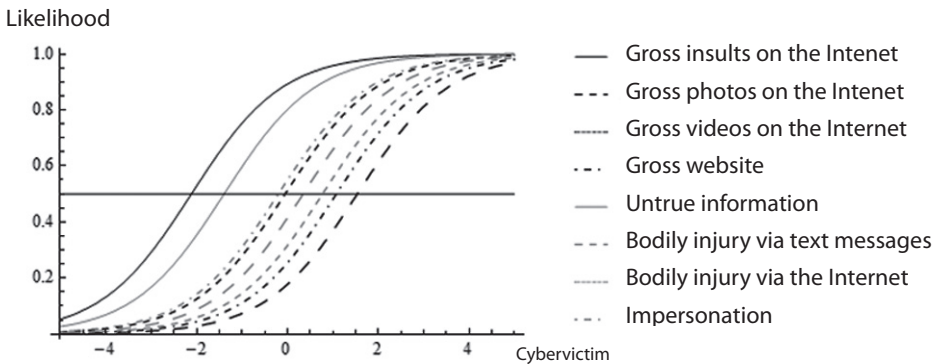
As with cyberaggressors, it showed that the form *gross offences on the Internet* is the least difficult (-2.112). The victims were attacked in the online environment also by other forms of relatively little difficulty: *untrue information posted on the*

Internet (-1.392) and *hurting in the online environment by a manipulated identity of a close person* (-0.197). However, the form *gross videos on the Internet* is of the greatest difficulty (1.541).

3.3. Estimation of Values of Latent Variables

There were two latent variables- cyberaggressor and cybervictim- for each of the pupils. On that basis, we investigated whether there was any dependence between them. To assess the degree of dependence, the asymmetric correlation coefficient- *Sommers´ D* was used. The value of *Sommers'D* in the case that the cybervictim was a dependent variable and the cyberaggressor was an independent variable, was **D = 0.409**. In the case that the cyberaggressor was a dependent variable and the cybervictim was an independent variable, **D = 0.312**. The relationship between the cyberaggressors and the cybervictims proved to be significantly asymmetric (cf. Picture 4).

Picture 4. Estimation of Dependence between the Cyberaggressor and the Cybervictim
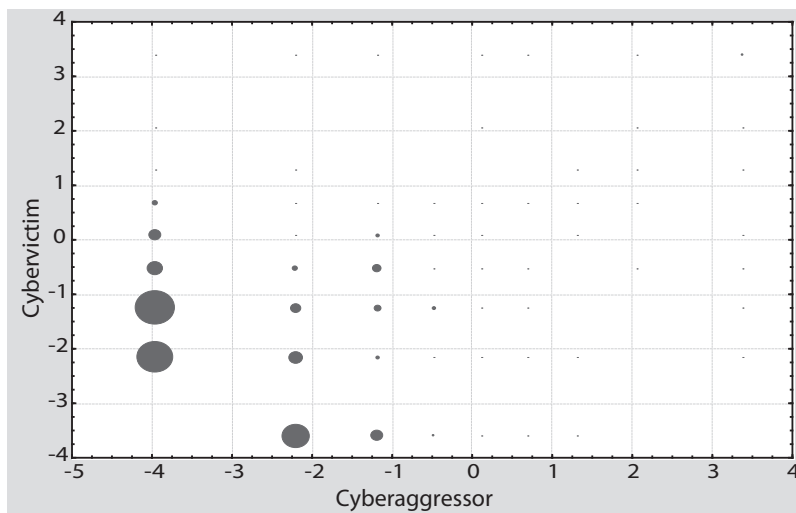
The size of the bubble shows the numerousness of pupils in the given category. The case where the pupils achieved the lowest scores in the cyberaggression and the cybervictim were excluded from the graph. The degree of dependence is not the same in both directions. A higher value of cyberaggression manifested itself by the cybervictim's higher value stronger that the cybervictim´s higher degree

manifests itself by a cyberaggression higher value. It can be stated from the above that the aggressor tends to be also a victim more than the victim tends to be a strong aggressor.

4. Discussion and Conclusions

The issue of cyberbullying is not new, but serious and not studied yet in the conditions of the Slovak Republic. The aim of the research was to find out what forms are used by pupils in cyberbullying and through what forms they become victims.

Methods of cyberbullying vary, from gross online offence through untrue information, creation of an offensive video, discriminating photo to death threats via technologies. 31.8% of the pupils in the research sample used at least one form of an online attack against others. From among the specified forms, *gross offences on the Internet* occurred most frequently. The most frequently used form by cyberaggressors is the form of gross and offensive language in cyberspace (-2.776). It is the simplest way of perpetrating online attacks. In consequence, there is 50% likelihood that it will be also used by a pupil with a relatively low level of cyberaggression.

Creation of a gross and offensive website is of the greatest difficulty (1.522). This is logical, due to the low availability of domains in the Slovak Republic, offered users free of charge. It is not common that elementary and secondary school pupils buy free domains.

Cyberbullying is a powerful weapon in the hands of attack perpetrators. At present, children increasingly become cybervictims, not only in the European, but also non-European context. The results of our research indicate 43.4% of cases where the pupils became victims of cyberbullying. The pupils became victims of cyberbullying by reading *gross offences on the Internet* in 5.89%. 5.60% of the cases were attacked in the form of offence and posted untrue information at the same time. All forms of cyberaggression were perpetrated on cybervictims in 1.72% of the cases. Again, it was proved that gross and offensive language in cyberspace is the simplest method of attack. Another of the least difficult forms is posting untrue online information. The most difficult to become a cybervictim is through the form of a *gross and offensive video on the Internet* (1.541).

The asymmetric relationship between cyberaggressors and cybervictims proved that the cyberaggressor more frequently becomes a strong victim of cyberbullying, contrary to the cybervictim who need not become an aggressor. If the cybervictim acts in the role of the aggressor, he/she uses less difficult forms for online attack.

The above findings lead to challenging questions which we plan to take up a standpoint to in future:

1. The most frequent and the least difficult form of cyberbullying among pupils aged 11–18 was impertinent and offensive language on the Internet:
   a. Would the same form show also with young people aged 18–20, or 20+?
   b. Are there statistically significant differences in terms of gender?
   c. Are there statistically significant differences in terms of school?
   d. Are there statistically significant differences in terms of region?
2. From the point of view of the cyberaggressor, the most difficult form of cyberbullying among pupils aged 11–18 is creation of a gross and offensive website:
   a. Would the same indicator show among older respondents?
   b. Is there a statistically significant difference (indicator) in terms of gender?
3. From the point of view of the cybervictim, the most difficult form of cyberbullying among pupils aged 11–18 is posting an offensive and disparaging video on the Internet:
   a. Would the same indicator show among older respondents?
   b. Are there statistically significant differences in terms of gender?

We have outlined some questions by means of which it is possible to analyze the issue of cyberbullying and its forms more deeply. The presented study, thus, becomes a stimulus for further theoretical research, methodology and educational practice.

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