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Selecting Content Analysis Approach in Social Networking Sites: What is the Best for Cyberbullying Studies?

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Abstract

Insight into students' behavior and interaction is essential when it comes to improving the development and implementation of educational policies. Content analysis is a staple method to study online communication. However, there seems to be no clear reference for researchers to decide which approach is suitable to address a particular purpose. So, this study aims to recommend the most suitable content analysis approach for SNS research. This study extracted relevant studies from open-access databases and analyzed the full-texts with NVivo 12. From a raw data collection of 120 texts, this study identified 19 approaches. This study recommends four approaches which are ideal to study cyberbullying among students in the higher education context, specifically on the types, styles, motives, and solutions of cyberbullying. First is Neuendorf's descriptive content analysis approach to study about the types. Second is Hijmans' rhetorical content analysis to study the styles. Third is Hsieh and Shannon's directed content analysis approach to study the motives. Fourth is Miles and Huberman's collaborative social content analysis to study the solutions. These four approaches have different focuses that seem to be the perfect match to study different aspects of online interaction on SNS, particularly in the context of cyberbullying.

Keywords

Content analysis, cyberbullying, social studies, social networking sites

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Introduction

Social studies have a long and expansive history of capturing researchers' curiosity on the 'why's and 'how's of human behavior in a large variety of contexts, ranging from a particular event in time to a certain type of interaction (Lune & Berg, 2017; Yasin & Mustafa, 2020). The context of this study focused on is the online interaction in higher education context as information and communication technology (ICT) integration during teaching practices is currently a highly relevant and urgent matter during the worldwide Covid-19 outbreak (Habibi et al., 2020). In understanding a certain phenomenon of interest, researchers use different methods to study them based on words (qualitative), numbers (quantitative), or a combination of both type of data (mixed). One method, in particular, is a highly flexible research analysis method (Hoffman et al., 2011), leading researchers to develop dozens of approaches to conduct the method. One of it is content analysis, which is a popular research method choice to study how people socialize, both in the unfiltered reality and in the fascinating cyberspace. One platform, in particular, known as social networking sites (SNS), allows people to interact through screens in real-time, making SNS one of the leading interests in the field of social studies. Therefore, there is a high curiosity from this study to identify and recommend the most suitable content analysis approach for studying student interaction in SNS, especially regarding cyberbullying or similar any other similar online activities.

Content analysis describes and identifies the relationships of message/content characteristics in a way that leads to a thorough understanding of how humans communicate (Neuendorf, 2017). Content analysis has been a standard research instrument of social studies since it was first used to analyze word frequency, though Berelson (1952) may have been the first to conceptualize the procedure as content analysis. This method's popularity has been attributed to its strength of reducing large volumes of qualitative data to enable researchers to achieve a variety of specific purposes (Bengtsson, 2016). Since content analysis is such a flexible research method, researchers seem to have different perspectives on content analysis. There are three camps of view regarding the content analysis. On the one hand, it is considered as a quantitative method, rigidly following the standards of a scientific method (Neuendorf, 2017). On the other hand, it is argued as a qualitative method, meaningfully interpreting the evident themes without involving statistics (Drisko & Maschi, 2016). Alternatively, it is defined as a mixed-method, with quantitative content analysis as the methodological basis and qualitative content analysis as the basis for the interpretative phase (Mayring, 2014). Despite the long-standing debate on what content analysis truly is, methods of content analysis continue to proliferate due to the rise of technology making corpora of data on forms of human communications, including on SNS, available to be studied. Even more so after the 1990s in which human interaction has been changing of dimension since the emergence of information communication technology (ICT) (Ellis et al., 2019). The year of 2002 introduced smartphones and its worldwide adoption was three times faster than the introduction of home telephones (Salehan & Negahban, 2013). Corpora of data on human interaction are increasing at an exponential rate, considering that people nowadays dominantly spend their time for

human interaction on a daily basis through keystrokes and screens than face-to-face in the outside world. Socialization can easily be done through text with typographic emoticons (e.g. stickers, emojis, gifs) being used to represent emotions and actions on social networking sites (SNS) (Kapoor et al., 2018). Consequently, social studies have begun to shift from conventional social interaction that takes place in real life to this era's social network interaction which occurs in the no longer fictional cyberspace (Gomez-Diago, 2016; Hamuddin et al., 2019). ICT has changed the way people meet, be friends, conduct business, etc. The advent of chat rooms and websites, in particular, allow more than two people to millions of humans around the globe to interact in the form of comments. Comments offer a new dimension in interaction because of its nature being asynchronous and instantly sh²⁰ple (Hamuddin et al., 2020; Thayalan & Shanthi, 2011). Inevitably, numbers and frequencies play a significant role in the quality of human interaction on cyberspace. For instance, one aggressive comment may cause emotional pain for the person targeted, but multiple aggressive comments from the same or multiple sources would most likely terrorize the person targeted. This type of interaction has been defined as cyberbullying by Bill Belsey in 1999, affecting 3 out of 4 children and students at a rate that has doubled from the first decade of the 21st century (Hinduja & Patchin, 2019). This is exacerbated by the fact that cyberbullying could be mediated by almost any type of ICT, such as electronic mails (emails), instant messaging, text messaging (SMS), chat rooms, web sites, and social networking sites (SNS) which include but not limited to Facebook, Instagram, Twitter, and Blog.

In the context of cyberbullying as part of online interaction, the fact that aggressive online comments are in the dozens to thousands in quantity means that content analysis which breaks down huge textual data may be one of the best methods to fully capture an understanding of cyberbullying. It is not th²¹im of this study to advocate content analysis as the perfect method because any and all research methods have their own strengths and weaknesses (Atieno, 2009; Choy, 2014). The same logic applies for the different approaches to content analysis method. Coping with existing studies on the methodology of content analysis, this study would like to explore and select the *correct* content analysis approach that would be the best one to use to study cyberbullying on SNS. Research in social studies, especially when it comes to the integration of social networking sites (SNS) into the curriculum, will inevitably proliferate, so it is important to find the most suitable approach to study the contents of any SNS activity. More specifically, this study would try to answer, "What is the most suitable content analysis method to explore certain things about cyberbullying among university students on SNS, e.g. types, styles, motives, and solutions against cyberbullying?"

Literature Review

At its heart, content analysis codes the targeted data and follows it with summarization and analysis. It is often used for systematic literature reviews, with the targeted data usually textual, with frequency counts being the most popular technique, and manifest contents being the most popular focus (Gaur & Kumar, 2018). For online activity research, far from being constricted to text, the data is usually multi-modal, involving text and non-text elements such

as visual and audio contents (Cheng et al., 2019). Tiggemann and Zaccardo (2018) conducted a content analysis on 600 Instagram images that were posted with a targeted hashtag, 'fitspiration'. Their aim is to analyze the image samples on how they display body shapes, and they coded the images based on largely two elements, the image and the quotation variables. Park et al. (2019) used a combination of descriptive and predictive content analysis on 708 Pinterest posts or pins, studying the visual characteristics and information richness of skin cancer posts to predict online users' engagement.

Content analysis of social media posts can also be used on data types other than texts and images. Previous studies using content analysis have noted that the method, when applied on social media messages or posts, could not infer whether the presumed concerning the effect that an image or message affected the viewer (Tiggemann & Zaccardo, 2018). But, this limitation can be overcome if the content analysis is applied to transcripts of interviews or focus groups (Graneheim et al., 2017). This is proven by Kruizinga et al. (2018), who used directed content analysis to extend their semi-structured interview model of spiritual care with cross-cultural perspectives drawn from interviews. Ngai et al. (2020) also analyzed the contents of 608 Covid-19 posts to develop an integrated framework that governments can use to engage the public regarding the pandemic. The study analyzed the samples' contents based on three main dimensions, i.e., content, message style, and interactive features, then coded them further based on more sub-dimensions. Their content analysis involves a significant variety of variables, including topics, narratives, multimedia, hashtags, likes, shares, comments, and links. Other studies used content analysis on more lengthy data, such as newspaper articles and reports. Shafiq & Kiran (2018) stated that they used content analysis on 62 editions of selected newspapers in the wake of a conflicting religious issue at the time. The study aimed to broadly find out how English and Urdu newspapers cover sensitive religious issue, and they were focused on counting the numbers of news stories and editorials and comparing them to see if newspapers in different languages proportionally covered the topic. Ramabu's (2020) content analysis involves 101 reports on child sexual abuse from five newspapers for two years. The study conducted a content analysis on the reports to determine the types of sexual abuse acts, the characteristics of the victims and perpetrators, the circumstances, the responses, the case statuses, and the prevention messages that they could find in the reports.

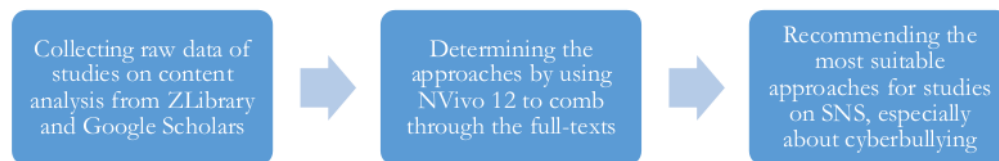
Reviewing the literature led the researchers to notice that previous studies are inconsistent when they describe their content analysis method. There seems to be no clear guidance or recommendation on why certain approaches of content analysis were used. Many seldom expand on how they specifically approach their data analysis methods, often only mentioning that they analyzed their data with content analysis. Some characterized it as either qualitative or quantitative content analysis (Godskesen et al., 2013). Some specified the type of content analysis approach that they used (Kruizinga et al., 2018; Shafiq & Kiran, 2018). Some studies were vague in describing their content analysis steps, such as one study which stated that their content analysis is quantitative and rhetorical in different sentences, yet did not clearly distinguish them (Shafiq & Kiran, 2018) and another study which mentioned that they used content analysis for the first phase of a study and then "a more detailed content analysis" for the next phase (Mahrt & Puschmann, 2014, p.10). Content analysis is a powerful tool for

researchers to stockpile and analyze multi-modal data, making it a valuable technique for social studies on online information dissemination and communication (Arafat et al., 2020; Kiran & Mahmood, 2019). Therefore, this study is interested in addressing this seeming research gap of an unclear guideline on all kinds of approaches to content analysis and which ones are the most suitable for specific purposes.

Methodology

This study intended to recommend the most proper content analysis approach for studies on cyberbullying on social networking sites (SNS). Logically, this study needed to identify the approaches to content analysis method that have been used until now.

Figure 1. Conceptual framework



Firstly, the researchers collected books and articles that discussed content analysis to discover all the different approaches to content analysis. It seems there are hundreds of content analysis approaches that have been developed over the years by researchers from different backgrounds. The problem lies in the limited access to review all the approaches, so this study collected data from Google Scholar and ZLibrary. This study referred to the studies indexed in Google Scholar because the repository enables researchers to access studies from various publishers. As not all studies indexed in Google Scholar can be downloaded, this study also chose to refer to ZLibrary because it also has an open access policy on books and studies that are downloadable with free of charge and comes in the form of complete files of the book or article. This study conducted library research as a natural qualitative approach, using the keyword “content analysis” to obtain the raw data for this study. In the end, the raw data retrieved on 25 December 2019 from both databases are 120 studies that have either explored or employed content analysis.

Secondly, this study analyzed the raw data of 120 studies to identify the approaches to content analysis from the most influential studies, indicated by the citation number according to Google Scholar. To ensure a complete perusal of the raw data collection, this study used the computer-assisted qualitative data analysis software (CAQDAS) known as NVivo, which enables researchers to easily manage data analysis and synthesis (Frey, 2018). Using the latest version, NVivo 12 software, this present study is can determine the content analysis approaches that have been proposed and developed to date. Thirdly, this study focused on one of the most common and problematic features of cyberspace interaction that has emerged as a major interest in the study of SNS, which is cyberbullying (Hamuddin et al., 2018).

Cyberbullying acts are visible on SNS through multimedia features, i.e. text, audio, and visual. So, this study tried to see if it is possible to determine the types, styles, motives, and solutions to cyberbullying by analyzing the content of cyberbullying among university/college-level students, as they are one of the least studied demographic in cyberbullying studies. When talking about cyberbullying, the aspects that researchers aim to analyze are: (1) the types of cyberbullying, which is evident in the content, (2) the styles of cyberbullying messages, which should be shown by the kind of language features are used, (3) the motives of cyberbullying, which might be indicated by certain words or phrases, and finally (4) the solutions to fight against cyberbullying, which would need to know the types, styles, and motives to be able to address them.

In the end, this study would recommend which content analysis approach is most suitable to study each of these four kinds of content. This study contributes to researchers who might be still confused or find it difficult to decide on which approach they should use to conduct their social studies. These recommended approaches may be used as methods for further study of researchers in the same field regarding any human-driven activities on SNS, particularly the aggressive online actions which are prevalent and problematic for SNS users of all demographics.

Findings

The raw data retrieved from ZLibrary and Google Scholars consist of 20 books and 100 articles exploring and employing content analysis (n = 120). As both databases have an open access policy, this study was able to download the complete files of the studies. The NVivo 12 software eases this study in exploring the contents of the collected studies and identified a variety of content analysis approaches. As the aim of this study is to recommend the most influential approaches to content analysis, this study narrowed down the data into six studies which are the most influential ones according to their citation number (Table 1).

Table 1. *The selected studies on content analysis*

Citation	Study	Author(s)
107868	Qualitative data analysis: An expanded sourcebook (1994)	Matthew B. Miles & Michael Huberman
24132	Three approaches to qualitative content analysis (2005)	Hsiu-Fang Hsieh & Sarah E. Shannon
11478	The Content Analysis Guidebook (2017)	Kimberly A. Neuendorf
6990	Qualitative content analysis (2004)	Philipp Mayring
345	Content Analysis (2016)	James Drisko & Tina Maschi
122	Logic for qualitative media content analysis: A typology (1996)	Ellen Hijmans

Table 1 shows the six selected studies on content analysis from the highest frequency of citation. The researchers uploaded the full-texts onto an NVivo project file to assist the content analysis. Word search functions available in the NVivo 12 software allows the researchers to quickly extract all passages of sentences and paragraphs within the full-texts, which contain the word 'approach'. Researchers combed through the automatic data extracts to exclude irrelevant passages. The extracts that actually refer to a content analysis approach are coded based on the approaches, and two researchers studied these extracts. Meanwhile, two other researchers read through the entire full-texts and manually highlighted and coded the approaches that they identified. Finally, the researchers discussed both findings to discuss, clarify, and understand all of the approaches that are identified. In the end, this study identified nineteen (19) approaches to this research method, as Table 2 illustrates.

Table 2. *Approaches to content analysis*

Authors	Type	Approach	Description
Miles & Huberman (1994)	Qualitative	1. Interpretative	Researcher, with their own understandings and as a member of a particular culture, treats social action and human activity as text, presuming that interviews, stories, photographs and others were created for the purpose of communication.
		2. Social Anthropological	Researcher, possessing special perspective on the population because the researcher has interacted with them for a considerable time, finds patterns across multiple sources (e.g. diaries, pictures, observations, interviews) to understand behavioral regularities of everyday life.
		3. Collaborative Social	Researcher, with subjects participating as to accomplish an action or change something in a given setting, considers the data as both feedback and information to generate a shared perspective of the situation or problem.
Hijmans (1996)	Qualitative	4. Rhetorical Analysis	Researcher questions how the message is presented visually or textually, focusing straightforwardly to the structural characteristics. It is a broadly stylistic analysis that pays attention to distinctive features, i.e. composition, form, metaphors, structure of argumentation/reasoning, and word choices.
		5. Narrative analysis	Researcher focuses on formal structure from the narrative perspective, which has a clearly marked beginning and ending of a story with characters, conflicts, and choices.
		6. Discourse analysis	Researcher dissects the wording and patterns of reasoning, with the semantics of language or sign used to discover the themes of communicator motives and ideology.

Table 2. *Continuation...*

		7.	Structuralist-semiotic analysis	Researcher is concerned with the deeper meaning of the message, aims at latent meanings and the signifying process through signs and symbols, and makes assertions on themes in culture and society.
		8.	Interpretative analysis	Researcher draws upon their own experiences as a resource and asks descriptive research questions to discover and form theory using theoretical sampling and comparative analysis in general.
Hsieh & Shannon (2005)	Qualitative	9.	Conventional	Researcher creates categories directly and inductively from the raw data.
		10.	Directed	Researcher creates desired categories from existing theories relevant to the research focus and immerses in the raw data to gather themes.
		11.	Summative	Researcher counts and compares existing words/phrases in raw data and extends to include latent meanings and themes.
Mayring (2014)	Mixed	12.	Qualitative	Researcher links a concrete research question with theory and justifies every step of the research, assigning categories to text as qualitative step and analyzing category frequencies as quantitative step.
Drisko & Maschi (2016)	Qualitative	13.	Basic	Focuses on manifest content and employs statistical analyses.
		14.	Interpretative	Focuses on both manifest and latent content, drawing on narrative analysis.
		15.	Qualitative	Focuses on both manifest and latent content, drawing on narrative analysis, doesn't involve any quantification.
Neuendorf (2017)	Quantitative	16.	Descriptive	Researcher measures all variables without trying to infer or predict the source or recipient.
		17.	Inferential	Researcher infers to the source of variables in interpersonal communication-type study and infers to the recipient in mass communication-type study.
		18.	Psychometric	Researcher provides clinical diagnosis based on a substantial amount of source's messages to infer a source's psychological characteristics.
		19.	Predictive	Researcher predicts some outcome or effect of the message under examination by measuring its key characteristics, necessitating the need for surveys or experimental methods.

The 19 approaches above all have different labels and descriptions, though they are less strict classification and more general labels that may overlap as researchers differ in their applications of content analysis. Although researchers historically disagree with the

methodological details, generally all three camps of view agree that content analysis involves at least three key steps, i.e. collecting data, categorizing data, and analyzing data. The methodological details differ depending on the question researchers try to answer. Therefore, different aspects of cyberbullying that will be examined in this study, i.e. types, styles, motives, and solutions, might fit with different approaches of content analysis.

Discussion

Content analysis on types of cyberbullying

Cyberbullying, in essence, is an action mediated by information communication technology (ICT) that makes the receiver feels a degree of negative emotion. However, this "action" actually comes in a variety of types depending on what is contained in the messages. The use of certain words or phrases used in a cyberbullying message might identify it to be one type of cyberbullying rather than another. For instance, '*have you heard about X lying?*' is distinct from '*X is lying, dude!*' in the way agency was indicated. The former example is a classic opening to spread a rumor, one of the most common types of cyberbullying. The italicized phrase frames the sentence as a question which leaves room for doubt and doesn't assign the source of the message responsibility for the information. Meanwhile, the latter is a direct statement coming from the source on the subject of someone else, so this example would be less of a rumour and more outing type of cyberbullying.

The examples above indicated that the type of cyberbullying could be determined by analyzing the text of the message itself. There seems to be no need to analyse the text further, such as the context, the intent of the source, or the effect on the receiver. Since it stays true to what the text says (manifest content) and relatively ignores what may be underneath the text (latent content), possible approaches of content analysis to study cyberbullying types are rhetorical (Hijmans, 1996), conventional (Hsieh & Shannon, 2005), directed (Hsieh & Shannon, 2005), qualitative (Mayring, 2014), basic (Drisko & Maschi, 2016), and descriptive (Neuendorf, 2017). Hijmans' rhetorical approach is a strictly objective analysis on the textual and visual characteristics of given content. It focused on how these different characteristics were chosen, presented, and organized in the message. Since it's quite broadly stylistic, the rhetorical approach may best be shelved for a different purpose. Considering that the aim here is only to determine what type of cyberbullying a particular message may be, Hsieh & Shannon's conventional or directed approach might be possible to be used. Both approaches have researchers create categories directly from the raw data that have been collected. The difference is that a directed approach pre-determined the coding based on an existing relevant theory, while the conventional approach specifically aims to describe a phenomenon because there is limited, if any, existing theory or relevant literature. Since there is actually a rich literature on the types of cyberbullying acts, the directed approach may be more preferable than the conventional approach. The directed approach lets researchers further describe a phenomenon as it is more structured than conventional approach and it accommodates

unknown or new variables that weren't possible to be put in a category with the initial coding by giving them a new code.

Mayring's qualitative approach is another possible content analysis approach to study cyberbullying types. This mixed-method resembles Hsieh & Shannon's directed approach as both make relevant theories to be the foundation for initial coding of content analysis. Both offer descriptive evidence based on frequency rankings that may support or not support the theory that the researchers used. In the context of SNS study, Mayring's approach has an edge as it always sees the raw data in a particular context of communication. With the qualitative approach, researchers would specify which messages on SNS relate to a particular type of cyberbullying, which is known from the list of themes that were already developed in advance from the theory. A couple of other approaches focusing on manifest content are Drisko & Maschi's basic approach and Neuendorf's descriptive approach. The difference between the two seems to be how they treat the variables of the content data. Drisko and Maschi's basic approach aims to use statistical analyses to understand the data, while Neuendorf's descriptive approach aims to understand all variables without trying to infer the reasons or the people behind the messages and not to predict the message's possible effects on the people who receive them. To study the types of cyberbullying or other similar SNS activity, there are three approaches researchers may use, namely qualitative (Mayring, 2014), basic (Drisko & Maschi, 2016), and descriptive (Neuendorf, 2017) content analysis approaches.

Content analysis on styles of cyberbullying

The styles of cyberbullying refer to what kind of representation is used to convey the message. Social networking site (SNS) users deliver what they intend to convey in different frames. They could use offensive words to attack the recipient, or they could merely use an emoticon that represents their anger, or a sticker representing their opinion of the recipient. Overall, the interaction between users is conveyed by three features of multimedia, namely text, typographic emoticons, and non-text. The first are text-based messages which consist of meaningful words. These words represent meanings, concepts, definitions, characteristics, metaphors, symbols, and description of things (Moss & Shank, 2002), and people are notoriously creative in deliberately presenting language features in certain ways to convey a certain or double meaning (Mellati et al., 2018; Thurlow & Mroczek, 2012). With words, a message could show what the source intends to do or think, though it could be by explicit means or implicit means depending on how SNS users play with words (Riffe et al., 2014).

Cyberbullying largely happens through words because almost all online platforms provide commenting features for users who only allow words and typographic emoticons (Jibril & Abdullah, 2013). Cyberbullying in particular also occurs rather often because SNS users engage more actively when making negative comments and elicit few replies for positive comments (Thelwall et al., 2012). The second is typographic emoticon-based messages, which include stickers, gifs, emojis, emoticons that may also feature text. These function as a representation of human facial expressions and gestures which are lacking in written text interaction (Amaghlobeli, 2012). Whether the message has words or not, using typographic

emoticons generally makes an online interaction seem more positive than negative (Filik et al., 2016; Teh et al., 2016). Typographic emoticons don't just infuse emotional touch to electronic communication visually, but also audibly with the advent of audio stickers. However, cyberbullying acts undoubtedly involve typographic emoticons, and the use of this multimedia feature does not make the message any less emotionally harmful. A recipient would feel the same hurt whether they receive 'you're nothing but trash' or 'you're nothing but [an emoji of faces].' The third is non-text-based messages, which include audio and visual content, the latter of which could be either still pictures or moving images/videos. Cyberbullying incidents using pictures and videos arguably make the most noises in the media, though they are least explored empirically compared to text because the resources to cyberbully via images and videos are rarer compared to the simple resources of words and symbols for cyberbullying via text and typographic emoticons.

Based on these three features, the content researchers need to analyse should consider the characteristics of text, the message cues of typographic emoticons, and the audiovisual signs of non-text-based messages. With the objective being styles of messages and not their meaning, possible approaches of content analysis to study it are rhetorical (Hijmans, 1996), narrative, (Hijmans, 1996), conventional (Hsieh & Shannon, 2005), directed (Hsieh & Shannon, 2005), basic (Drisko & Maschi, 2016), and descriptive (Neuendorf, 2017). Hijmans' rhetorical approach is one of the best choices as it takes a highly objective stance. It only focused on structural characteristics of a message, so this approach lets researchers analyse word choices, metaphors, sentence composition, including visual signs for non-text messages. Hsieh & Shannon's conventional and directed approaches are also suitable to generate the themes of styles since they both create categories from the raw data collection. Drisko and Maschi's basic approach codes the data in a way that lets researchers employ statistical analyses to make sense of the phenomenon, without considering possible meanings or motives behind the messages. In this way, it is similar to Neuendorf's descriptive approach, which doesn't try to predict the receiver or source of the messages. Unlike Hijmans' rhetorical approach, though, both of these approaches don't take into account of online interaction's "linguistic wordplay." Another feature of online interaction is the element of multiple feedbacks. A comment that received multiple replies becomes a "thread" which has a clear beginning and ending of the back to back replies. With such characteristics, researchers may use Hijmans' narrative approach, which focuses on the formal structure of messages from a narrative perspective. Therefore, the approaches recommended for the study of styles of cyberbullying and other similar online activities are rhetorical and narrative content analysis (Hijmans, 1996).

Content analysis on motives of cyberbullying

SNS users who commit cyberbullying acts have their own reasons to do so. For university students, in particular, their motives of cyberbullying are of interest because they generally do not have immaturity as the re²³ and should already be aware that cyberbullying is not a good act (Francisco et al., 2015). So, it is important to know why university students, who are already adults, engage in cyberbullying which harms another person. If researchers

focus on the text alone, they will find no specific phrase or word that hints to the motive of the source of this message. Most cyberbullying message neither explicitly state nor implicitly clue in the source's feeling as well. One example of cyberbullying message is 'take a swan dive off a roof.' The source of this message seems to convey a dislike toward the recipient, but they might as well have sent the message because they were already feeling angry and was merely lashing out online they were persuaded by someone else. To figure out cyberbullying motives, researchers need to see beyond the text to discover the reasons that lie behind cyberbullying acts. Latent content, therefore, would be crucial for researchers' consideration. There are many content analysis approaches that consider latent content, whether exclusively or along with manifest content. They include interpretative (Miles & Huberman, 1994), discourse (Hijmans, 1996), structuralist-semiotic (Hijmans, 1996), interpretative (Hijmans, 1996), directed (Hsieh & Shannon, 2005), interpretative (Drisko & Maschi, 2016), qualitative (Drisko & Maschi, 2016), inferential (Neuendorf, 2017), and psychometric (Neuendorf, 2017).

Miles and Huberman's interpretative approach sees the text as a collection of meaningful symbols representing human activity, and the way to understand it is by way of interpretation based on researchers' own experiences as they are also part of the community. For the specific purpose of determining the motives of cyberbullying a particular message may be, this approach might not be the best match because it lets researchers use pre-established codes based on their personal experiences, so any "external information" that wasn't predicted become very difficult to be acknowledged as a possible, entirely different style of cyberbullying act. On the other hand, Hijmans, discourse approach lets researchers dissect the wording of messages to establish patterns of reasoning. This approach discovers the themes of the sources' motives and even ideology based on the semantics of the language. However, discourse approach depends on seeing the consistency of the source's motives from a substantial amount of data on that one single source, so the use of this approach hinges on the raw data of individual sources being highly substantial. Echoing this approach is Hijmans' structuralist-semiotic approach which dives into the deeper meaning of messages based on signs and symbols of language. This approach discovers the themes of the sources' culture and perhaps positions in society. Unlike the discourse approach, the structuralist-semiotic approach doesn't require huge amounts of messages from one source, so it has an edge in terms of time spent to study cyberbullying motives. Although this approach does depend on researchers determining the cultural demographic of SNS users who engage in cyberbullying so that cultural interpretation would be possible to do. Provided the findings are rich in data, it is possible for researchers to conduct a comparative analysis and form a theory of the phenomenon. Hijmans' interpretative approach specifically enables researchers to analyze data based on researchers' own experiences, so this approach requires highly explicit coding rules to ensure that the content analysis process is clear because this approach makes the data serve to discover new findings. So, it is possible to find new kinds of cyberbullying motives with Hijmans' interpretative approach. Studying motives behind messages of online activity may require researchers to touch psychology or similar disciplines involved with human behaviour. There is one content analysis approach that lets researchers use an established theory as a foundation to create categories from the raw data, and it is known as Hsieh & Shannon's

directed approach. Drisko and Maschi's interpretative and qualitative approaches both focus on manifest and latent content, both draw on narrative analysis, though the latter approach doesn't involve any quantification. These approaches don't seem to touch on motives that lie beyond the text, though, so they may be set aside to study different research questions. Neuendorf's inferential and psychometric approaches both focus on investigating elements beyond the text. The focus of the inferential approach seems to depend on the type of study. If researchers aim to address psychological or interpersonal communication research questions, inferential approach infers to the source of the messages. If researchers aim to address mass communication research questions, inferential approach infers to the receiver of the messages. On the other hand, psychometric approach seems highly rooted in psychology as it aims to provide clinical diagnosis, inferring to the source's psychological characteristics based on a substantial amount of their messages. Both of these approaches are suitable to study cyberbullying motives because they have a great interest in going beyond the description of messages. There are many possible approaches to study cyberbullying motives, but the ones this study recommends to be used are structuralist-semiotic (Hijmans, 1996), interpretative (Hijmans, 1996), directed (Hsieh & Shannon, 2005), inferential (Neuendorf, 2017), and psychometric (Neuendorf, 2017).

Content analysis on solutions to cyberbullying

Cyberbullying as an SNS problem would not contain its own solutions if researcher only pays attention to what is contained in the message, whether manifest or latent. For example, it is unlikely to know or guess any *correct* solution to deal with the comment 'you're such a weirdo,' 'let's just kick X out of the group, God,' or any other type of cyberbullying messages. Any solutions recommended would need to be carried out at some point to see if the action changes the cyberbullying situation. This means that there is a need to gather data from people who try out the solutions so it would be possible to obtain a shared solution to a given problem. The likely content analysis approaches to study the solutions to cyberbullying maybe Miles and Huberman's collaborative social approach (Miles & Huberman, 1994), Hijman's interpretative approach (Hijmans, 1996), and Neuendorf's predictive approach (Neuendorf, 2017). Miles and Huberman's collaborative social approach lets researchers involve people to participate in accomplishing an action and give feedback to be the data for the study. It might take a substantial length of time to conduct and finish the study, so a different approach ⁴ that does not take as much time may be Hijmans' interpretative approach. This approach lets ⁵ researchers draw on their own experiences as a resource to comparatively analyse the data. Thus, an established theory as a solution to cyberbullying can be tested with the researcher as a competent observer. Neuendorf's predictive approach seems to be a combination of both previous approaches. It initially lets researchers predict the message's outcome or effect on the receiver and then requires surveys or experimental methods to test the researchers' predictions. With this approach, researchers can measure key characteristics of messages to answer their questions. However, this approach may take even longer for researchers to conduct and complete, whereas cyberbullying incidents are still on-going.

Therefore, out of the three possible approaches to study the solutions to cyberbullying, this study recommends the collaborative social content analysis approach because this approach simultaneously involves the participants to act and obtain data from the action.

Conclusions

To find the most suitable content analysis method to explore the types, styles, motives, and solutions against cyberbullying among university students on social networking sites (SNS), this study used NVivo 12 to analyse 120 studies on content analysis. From the 19 content analysis approaches found, this study determined that different approaches are suitable to be used to study different kinds of research aims in the context of cyberbullying among university students on SNS. The qualitative (Mayring, 2014), basic (Drisko & Maschi, 2016), and descriptive (Neuendorf, 2017) content analysis approaches can be used to study the types of cyberbullying. The rhetorical and narrative content analysis (Hijmans, 1996) can be used to study the styles of cyberbullying language. The structuralist-semiotic (Hijmans, 1996), interpretative (Hijmans, 1996), directed (Hsieh & Shannon, 2005), inferential (Neuendorf, 2017), and psychometric (Neuendorf, 2017) can be used to study the motives of cyberbullying. The predictive content analysis approach (Neuendorf, 2017) can be used to study the solutions that are suggested and implemented to deal with the social phenomenon of cyberbullying.

To enrich the literacy of every researcher who is focused on exploring online human behaviour and social phenomena on social networking sites, this study recommends four content analysis approaches to explore certain aspects of cyberbullying and other similar online interactive activities. First is a descriptive content analysis approach (Neuendorf, 2017) to study the types of cyberbullying because it focuses on the message without being concerned with possible meanings that are implicit. Second is rhetorical content analysis (Hijmans, 1996) to study the styles of cyberbullying because it reconstructs a message's textual and visual characteristics. Third is directed content analysis approach (Hsieh & Shannon, 2005) to study the motives of cyberbullying because it refers to a relevant, established theory to see what is beyond the text. Fourth is a collaborative social content analysis (Miles & Huberman, 1994) to study the solutions to cyberbullying because it allows researchers to gather a shared perspective on a solution to a given problem. These four approaches to content analysis each have different focuses that seems to be the perfect match to study different aspects of online interaction on SNS, particularly in the context of cyberbullying. Future studies can overcome the limitation of this study's nature as a content analysis by implementing and testing the recommended content analysis approaches.

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