

Pile humor and distress: can we detect what doctoral students experience through memes they laugh at?

Thai Binh An Nguyen

*University of Social Sciences and Humanities, Vietnam National University,
Hanoi, Vietnam*

Viet-Hung Dinh

*Department of Academic Affairs, University of Labour and Social Affairs, Hanoi,
Vietnam, and University of Education, Vietnam National University Hanoi,
Hanoi, Vietnam*

Thanh Thao Thi Phan

*Department of Reduvation Research Group, Thanh Do University,
Hanoi, Vietnam, and*

Hiep-Hung Pham

*Reduvation Research Group, Thanh Do University, Hanoi, Vietnam, and
University of Education, Vietnam National University Hanoi, Hanoi, Vietnam*

Received 21 September 2024

Revised 25 February 2025

4 April 2025

7 July 2025

Accepted 7 July 2025

Abstract

Purpose – This study aims to explore the stress experienced by doctoral students through the analysis of memes from a Facebook fan page. By identifying key themes within these memes, the research seeks to provide insights into the common stress faced by graduate students and how they are reflected in popular online content.

Design/methodology/approach – This study used qualitative content analysis to investigate how doctoral students express stress through internet memes. The data set comprised 98 memes sourced from High Impact PhD Memes on Facebook, focusing on a one-year period (2023).

Findings – The analysis revealed 12 recurring themes related to the stress experienced by doctoral students: accomplishment, knowledge and experience, economic issues, mental health, obsession, overwork, academic trap, procrastination, publishing process, relationships, reward and uncertainty. These memes reflect the various dimensions of doctoral life, including frustrations with expectations, the academic workload and the publishing process. The study discusses how these memes serve as a form of communication, reflecting the experiences and challenges faced by doctoral students in a humorous and satirical manner.

Originality/value – This study contributes to the emerging body of literature on memes and humour in doctoral education by examining how doctoral students use internet memes to reflect on their academic experience. By analyzing memes, the study uses a novel lens to understand how students express and share their academic challenges.

Keywords Doctoral students, Meme analysis, Content analysis, Academic humor

Paper type Research paper



Introduction

Post-graduate programs have seen a significant prevalence of mental health issues among doctoral students, a trend documented for more than 50 years (Dongen and J,

1988; El-Ghoroury *et al.*, 2012; Hudson and O'Regan, 1994; Kearns *et al.*, 2008; Street *et al.*, 1970). Two recent systematic reviews revealed that many mental health issues afflict doctoral students (Hazell *et al.*, 2020). According to a 2021 study, 24% of the 23,469 PhD students across 16 studies suffered from depression. A meta-analysis of nine studies, including 15,625 PhD students, revealed that 17% experienced anxiety (Satinsky *et al.*, 2021). In the 2020 study, the mental health problem prevalence among doctoral students fell between 36.3% and 55.9%; reportedly, one in three PhD candidates has a common mental illness (Hazell *et al.*, 2020).

The demands of doctoral programs place specific stresses on students, often exacerbated by a combination of challenges. Cho and Hayter (2021) identified key factors contributing to doctoral stress, including academic pressure, funding worries, personal challenges and a lack of support. Furthermore, long and non-standard working hours are highlighted as risk factors for occupational stress, burnout and work-life imbalance among academic staff (van Tienoven *et al.*, 2024). These stressors, compounded by the rigorous and unpredictable nature of academic work, can lead to severe consequences such as dropping out (Glorieux *et al.*, 2025), mental disorders (Dong *et al.*, 2024) and, in rare cases, suicidal ideation (Satinsky *et al.*, 2021) or even suicide (Clement *et al.*, 2024). Despite the well-documented mental health consequences of doctoral studies, some PhDers remain unaware of these risks (Acker and Haque, 2015).

As individuals uncertain about their futures enter the academic world, their lack of clarity may impede their ability to plan and execute research projects effectively, ultimately affecting their career prospects and contributions to their fields (Ballamingie and Johnson, 2014). Therefore, it is crucial to understand the specific stressors doctoral students face and what these reflect about the academic environment. Beasy *et al.* (2021) found that PhD students often experience shallow support, indicating an apathetic attitude from some supervisors. Similarly, Hoover and Lucas (2024) noted that the path to a PhD is fraught with challenges, including academic rejection, publication pressure and uncertainty about post-graduation prospects.

Addressing how doctoral students can overcome such stress, a systematic review indicated that mind-body-stress-reduction techniques, such as yoga and meditation, can effectively reduce perceived stress (Stillwell *et al.*, 2017). This aligns with Scheff's catharsis theory (2012), suggesting that physical activity can release stress. However, doctoral students often lack spare time and may resort to more convenient means of spreading and receiving empathy, such as social media (Maples, 2023; Noreen *et al.*, 2023). This is based on Ruggiero's uses and gratifications theory (Ruggiero, 2000), which posits that individuals actively choose media sources that meet their needs for social interaction and entertainment.

The objective of this study is to analyze memes as a medium for understanding the challenges faced by doctoral students. By examining the content, themes and contexts of memes shared within academic communities, this research seeks to identify common difficulties experienced by doctoral students in areas such as research, workload, mental health and social integration. Through this analysis, the study aims to provide insights into the emotional and psychological aspects of the doctoral journey, contributing to a deeper understanding of the support systems and coping strategies that can be beneficial to students during their academic pursuits.

Memes and doctoral education research

Research on doctoral memes has grown in recent years, showing how these digital messages reflect and shape the experiences of PhD students. In one of the earliest studies, Papapicco and Mininni (2020) looked at memes posted by doctoral students on Facebook and

Instagram. Their work showed that these memes often combined text and images to present core PhD stress points: heavy workloads, career uncertainty and mental health problems. They found that humor within memes allowed students to share difficult feelings in a less threatening way. By turning frustrations about deadlines or publishing into jokes, students felt they were part of a larger support network.

Building on that foundation, [Maples \(2023\)](#) focused on memes from “High Impact PhD Memes,” analyzing 208 images. Maples reported similar themes, such as imposter syndrome, problems with funding and tense relationships with advisors. While acknowledging the light tone of memes, the study stressed that they also mirror real pressures in doctoral life – like the strain to publish quickly or to secure post-PhD jobs. Maples argued that memes serve as coping tools, helping students handle their concerns through shared humor.

In a more recent study, [Thomson \(2024\)](#) examined memes from various platforms, proposing that these memes act as a form of “public pedagogy.” Rather than seeing them solely as jokes, Thomson suggested that memes transfer important but often unspoken lessons about PhD life, including how to deal with overwhelming workloads or the emotional toll of graduate research. By doing so, memes create a kind of community resource, giving both new and continuing PhD students a place to discuss and recognize common stressors.

Together, these works show that memes highlight key difficulties doctoral students face – such as limited funding, uncertain career paths and high mental strain – but do so in a humorous style. This blend of humor and stress creates spaces for shared support and informal learning. In our study, we build on these findings by focusing on memes collected during 2023. Although our data set only includes memes from this year, we examine whether earlier themes from previous research still appear and whether new concerns have emerged among doctoral students.

Internet memes

In qualitative interviews with PhD students, it was found that they commonly use social media tools to practice scholarly communication ([Zhu and Procter, 2015](#)). Memes, as described by [Mandiberg \(2012\)](#), [Milner \(Milner, 2012\)](#), and [Shifman \(Shifman, 2013a\)](#), are amateur media artifacts that reflect certain cultural information and can be remixed and transmitted online. Although memes are sometimes presented as seemingly innocuous jokes ([Mandiberg, 2012](#)), researchers have noted that their ironic and satirical messages can critique societal norms and influence public opinion ([Fubara, 2020](#); [Mortensen and Neumayer, 2021](#)).

Memes encompass not only images paired with text but also videos, catchphrases, current trends and other in-real-life taken pictures ([Johann and Bülow, 2019](#); [Shifman, 2013b](#)), creating a social phenomenon. Their comedic nature allows memes to effectively reveal hidden truths and offer commentary on societal issues, authority and personal experiences ([Meyer, 2021](#)). Memes allow for modification and remixing, which ensures their relevance in dynamic digital environments ([Shifman, 2013a](#)). Their unique structure, combining visual and textual elements, enables quick communication of ideas, making them ideal for the fast-paced nature of online spaces. As a result, memes have become a central form of communication, often functioning as speech acts ([Grundlingh, 2018](#)) and offering a form of expression ([Yoon, 2016](#)).

Despite the prevalence of memes shared on social media concerning doctoral student stress, there has been a lack of formal research systematically analyzing these memes as a means of stress expression. Previous studies have shown that doctoral students interact with

colleagues through social media platforms. This study aimed to explore the potential of stress expression through memes, a common social media element. The research objective was to examine how social media memes convey the concept of stress among doctoral students. To achieve this, a content analysis was conducted on memes related to doctoral student stress, identifying recurring categories and messages within these memes.

Materials and methods

Meme analysis

Meme analysis investigates themes, symbols and cultural references to better understand social and psychological phenomena, as well as public attitudes and collective behavior (Shifman, 2013a, 2013b). Previous studies have applied meme analysis to address diverse research questions across various contexts, including cultural critique (Mandiberg, 2012), political discourse (Mortensen and Neumayer, 2021), social media behavior (Shifman, 2013b), emotional coping (Papapicco and Mininni, 2020) and racial or ideological narratives (Yoon, 2016).

In this study, following Mayring (2000)'s approach, we first noted all emerging codes, then grouped them into broader categories and finally interpreted these findings. We based our research on the encryption theory of humor (Flamson and Barrett, 2008), which suggests that humor functions like a "secret code." The surface-level joke is not the only factor; the true humor arises from connecting the obvious meaning to a deeper shared understanding between speaker and listener. To minimize bias, our research team included researchers of different generations (undergraduate, graduate and senior) and from multiple fields (psychology and education). Motivated by a desire to support doctoral students' well-being, we aimed to understand stress factors and explore potential interventions.

Meme collection

We identified Facebook as a platform where users can freely search for and discuss visual memes. Among various Facebook pages, such as PhD Memes (PhD Memes, n.d.), PhD Motivation (PhD Motivation, n.d.) and The Frustrated Researchers (The Frustrated Researchers, 2025), we selected High impact PhD memes (High Impact PhD Memes, n.d.) because it has the highest number of followers (around three hundred thousand in 2024). We excluded its private group due to lower popularity. We then gathered memes posted over the past year (January–December 2023).

An undergraduate research assistant was tasked with downloading all memes posted by the page. After the initial download, they uploaded all selected memes to a shared workspace and checked for duplicates. We removed identical memes but kept those with the same image and different captions. Out of 108 total memes, 10 were irrelevant because they duplicated existing posts or were used as profile pictures by the page. That left us with 98 memes, which we placed into a working spreadsheet.

Coding process

Coding was conducted by three of the four authors under the guidance of a lead analyst experienced in qualitative research on social media. All of the coders are fluent in English, with one of them currently pursuing a PhD. Peter and Lauf (2002) note that coders with similar cultural and linguistic backgrounds can improve reliability. In our case, an undergraduate played a key role, as meme creation and adaptation are common in the emerging adult population (Winocur and Dussel, 2020). This individual reached a strong level of meme-analysis proficiency after coaching in a research training program (Pham, 2020), merging novice and experienced perspectives.

The three coders each began by independently analyzing a random set of 10 memes. They then met to agree on a common coding strategy and applied this to the rest of the data set. When individual coding was complete, the coders and the lead analyst met to resolve any discrepancies and combine their final codes. The spreadsheets were then merged for a comprehensive view of the entire data set, which we used to interpret the findings and calculate how often specific categories appeared.

Notably, coders examined both the textual captions and the visual elements of each meme to identify certain themes. We acknowledge that many memes can have multiple interpretations, which is a common feature of meme culture. In our analysis, we initially listed various keywords for each meme, then selected a primary keyword. All authors chose their respective main keywords, and then discussed them together to finalize the choice. For keywords that could not be agreed upon, we consulted the corresponding author (supervisor). Although this process took extra time, it allowed for more meaningful debate and reduced interpretive bias (Herbenick *et al.*, 2023). For example, deeper discussions were needed to interpret non-verbal cues, such as tone or facial expressions, or to figure out symbolic meanings in the meme's images.

Results and discussion

The data set included 98 visual memes in diverse contexts. These included Film/Movies and TV series (e.g. cartoons, sitcoms), games, social media products and in-real-life pictures turned into meme templates. Analyzing this collection (shown in Table 1), we identified several recurring themes related to doctoral student stress, with some derived from Maples (2023): (1) accomplishment, (2) knowledge and experience, (3) practical issues, (4) mental health, (5) obsession, (6) overwork, (7) academic trap, (8) procrastination, (9) publishing process, (10) relationships, (11) reward, (12) uncertainty, and (13) others.

Accomplishment

The memes under the Accomplishment category show two main problems that doctoral students often face, the gap between what they expect and the reality they encounter, and the emotional strain of competing with others.

Table 1. Memes by category

| Themes | Total (<i>n</i> = 98) | % |
|--------------------------|------------------------|------|
| Accomplishment | 4 | 4.08 |
| Knowledge and experience | 7 | 7.14 |
| Practical issues | 4 | 4.08 |
| Mental health | 6 | 6.12 |
| Obsession | 5 | 5.10 |
| Overwork | 3 | 3.06 |
| Academic trap | 9 | 9.18 |
| Procrastination | 14 | 14.3 |
| Publishing process | 17 | 17.3 |
| Relationships | 17 | 17.3 |
| Reward | 6 | 6.12 |
| Uncertainty | 4 | 4.08 |
| Uncategorized* | 2 | 2.04 |

Note(s): Uncategorized memes are those that did not fit clearly into any category but still reflected aspects of academic life

Source(s): Authors' own work

The gap between expectations and reality involves dealing with the disappointment when things do not go as planned. Doctoral students usually start with big dreams and clear goals, but the reality of research is often much more complicated and full of challenges (Batty *et al.*, 2020; Grover, 2007; Rullonga Monicah, 2020). One meme captured this well by contrasting the “expectations of a rich thesis” with the “assortment of realities in the actual work,” highlighting the disillusionment many students feel when faced with the messy and uncertain nature of research (www.facebook.com/share/p/1CiRXjHfYW/). The humor in such memes reflects how initial excitement can turn into frustration as progress remains slow despite hard work.

The second problem, the emotional strain of competition, mixes the stress of comparing themselves to their peers with the mental and emotional pressure this creates. Doctoral students often find themselves in environments where success is not just about personal achievement but also about doing better than others (Belavy *et al.*, 2020; Way *et al.*, 2019). This was illustrated in a meme where a student feels “out of place among peers when presenting a uniquely different dissertation,” capturing the anxiety of not fitting into dominant academic norms or expectations (www.facebook.com/share/p/169ceg6XLE/). While humorous, the meme reveals the underlying self-doubt and performance pressure students experience in competitive academic cultures.

Knowledge and experience

The memes under the Knowledge and Experience category highlight two major challenges faced by doctoral students, the struggle to master complex research methods and tools and the intense demands of their academic journey.

A common problem depicted in these memes is the difficulty doctoral students encounter when trying to learn new research methods and tools. For instance, the meme in which ChatGPT is questioned about whether it can write a thesis or publishable work better than a human, reflecting the insecurity doctoral students feel about their own academic capabilities, illustrates this well (www.facebook.com/share/p/1CM19pftBc/). These insecurities are especially pronounced when students face the challenge of producing high-quality academic work under pressure, often with limited guidance (Stockman, 2015; Tyndall *et al.*, 2021).

The second major issue centers on the intense demands of the doctoral journey. For example, a meme expressing skepticism about the quality of research papers published in certain journals (www.facebook.com/share/p/1CVuG3AXUv/) – particularly those perceived as less prestigious – highlights the pressure students feel to publish in high-impact outlets (Li and Horta, 2021; Landgrave, 2019). This pressure often leads doctoral students to rely heavily on their mentors’ guidance or, at times, resort to questionable tactics to meet these expectations (Mutongoza, 2023). This situation reflects the broader struggle to maintain academic standards while managing the overwhelming workload typical of a doctoral program.

Economic issues

The memes under the Practical Issues category highlight the struggles with career stability and the frustration with funding. A recurring theme in these memes is the difficulty doctoral students face in securing stable, well-paid employment. They depict the contrast between optimism for job stability after a PhD and the harsh reality of underpaid, temporary academic positions (www.facebook.com/share/p/1JoZULJRiA/). The expectation of a rewarding career often meets the disappointing reality of precarious, short-term contracts (Menard and Shinton, 2022). Another issue revolves around the financial and institutional challenges that complicate the doctoral journey (Johnson *et al.*, 2023). The meme where an advisor bluntly

tells a PhD candidate they will receive “zero percent” of the funding – despite writing a successful proposal – captures the common struggle of securing adequate research support (www.facebook.com/share/p/19wCo3SQ7i).

Together, these memes offer a candid portrayal of the practical issues that doctoral students face, particularly in terms of employment and funding. The humor in these memes provides a way to cope with these challenges, but it also underscores the serious systemic issues that need to be addressed to improve the doctoral experience and the career prospects of those who complete it.

Mental health

The collection of memes in the Mental Health category sheds light on the critical mental health challenges that doctoral students face. These memes portray the intense emotional strain and pervasive sense of isolation that accompany the academic journey (Cantor, 2020; Levecque *et al.*, 2017). The combination of determination, passion and anxiety depicted in one meme, featuring elements of academic research such as curiosity, resolve, fervor and stress combined, reveals the complex emotional landscape doctoral students navigate, where anxiety often dominates (www.facebook.com/share/p/15Q5PLyYMV/). This anxiety is not only about completing tasks but also about the uncertainty of the future, as humorously portrayed in the meme suggesting that “even worse days” follow the completion of a PhD (www.facebook.com/share/p/15Zvyjkyi/). This persistent anxiety, despite significant achievements, highlights how deeply embedded these mental health challenges are in the academic experience.

Obsession

The Obsession highlights the intense and often overwhelming fixation that doctoral students develop toward their research. This obsession becomes more than just a commitment to their academic work – it evolves into an all-consuming force that infiltrates every aspect of their lives (Stubb *et al.*, 2014).

Doctoral students’ obsession with their research is depicted as a constant mental burden, where thoughts about experiments, data and results occupy their minds even during moments meant for rest or relaxation. This is humorously shown in a meme where a student is haunted by the constant quest for statistical significance, even in their sleep, highlighting how academic anxiety can persist beyond working hours (www.facebook.com/share/p/1CGPt6tmnt/). The intensity of this focus can turn what might be routine academic tasks into sources of anxiety and stress, reflecting how deeply their work is embedded in their consciousness.

This obsession also extends into their social lives, where doctoral students find it difficult to disconnect from their academic responsibilities. A meme showing a student overly enthusiastic about sharing their research during a personal moment, like a date, captures how academic thinking invades casual conversations and relationships (www.facebook.com/share/p/1AhYapf2bM/). This singular focus can create a sense of isolation, as their social circles may struggle to relate to or understand the depth of their involvement in academic work. Moreover, the obsession with research alters the way doctoral students perceive the world around them. They begin to see everything through the lens of their academic pursuits, prioritizing their work above all else. This can lead to a situation where their identity becomes inseparable from their research, making it challenging to engage with non-academic aspects of life.

Overwork

The Overwork highlights the heavy workload many doctoral students face, especially in later stages of their programs. One meme titled “Last year PhD student” shows SpongeBob overwhelmed and juggling multiple tasks – data collection, writing, teaching and administrative work (www.facebook.com/share/p/15CcQr6kb3G/) – capturing the intense multitasking that defines final-year doctoral life (Van Tienoven *et al.*, 2024). This image suggests that doctoral candidates often deal with many responsibilities at once, requiring strict time management and causing both mental and physical strain.

Another meme compares “Day 1 of a new research project” with “Day 30,” using SpongeBob’s transformation from enthusiastic to exhausted to show how early optimism gives way to burnout as setbacks and deadlines accumulate (www.facebook.com/share/p/1B139LspWQ/). (Beasy *et al.*, 2021). The excitement of starting a project can turn into fatigue, reflecting the effects of overwork on motivation. Together, these memes underscore the persistent pressure in doctoral programs and show how prolonged stress can reduce students’ energy and morale.

This obsession also extends into their social lives, where doctoral students find it difficult to disconnect from their academic responsibilities. Conversations with family and friends, or even interactions in casual settings like a date, are often dominated by discussions about their research. This singular focus can create a sense of isolation, as their social circles may struggle to relate to or understand the depth of their involvement in academic work. Moreover, the obsession with research alters the way doctoral students perceive the world around them. They begin to see everything through the lens of their academic pursuits, prioritizing their work above all else. This can lead to a situation where their identity becomes inseparable from their research, making it challenging to engage with non-academic aspects of life.

Academic trap

The Academic Trap category reflects the overwhelming burden and the cyclical nature of challenges faced by early-career researchers, which often lead to exhaustion and a sense of entrapment within the academic system (The SSM ECR Subcommittee (2015) and Professor Simon Capewell (SSM President), 2017; Cilli *et al.*, 2023). These memes highlight several key aspects of this phenomenon.

The intense pressure placed on early-career researchers by the entire academic system is a recurring theme. One meme portrays early-career researchers burdened by the weight of the entire academic system, visually emphasizing the overwhelming expectations placed on them by institutions and the broader academic community (www.facebook.com/share/p/1NkmbivQFA/). This pressure can lead to physical and mental deterioration over time. The memes emphasized the disillusionment that often sets in as researchers progress through their careers. What starts as an exciting and promising journey quickly turns into a grueling marathon, where the joy of discovery is overshadowed by the relentless demands of publishing, securing funding and competing for positions. Another meme contrasts the fresh optimism of a new PhD student with the weariness of a veteran in their final year, underscoring how enthusiasm is gradually replaced by exhaustion and disillusionment (www.facebook.com/share/p/1GTVrXMzvx/).

The sense of entrapment is further reinforced by the idea that the challenges do not end with the completion of a PhD Postdoctoral positions, often underpaid and temporary, continue the cycle of pressure and uncertainty, leaving many researchers questioning their decision to pursue an academic career.

Procrastination

The Procrastination category captures the inner conflict doctoral students often face between their aspirations and the reality of their actions. The memes in this category illustrate the paradox of procrastination, where the intent to be productive is constantly thwarted by distractions, a lack of motivation or the sheer overwhelm of the task at hand (Steel, 2007).

In these memes, we see a recurring theme of avoidance, where students delay important tasks like writing a manuscript or meeting deadlines, opting instead to scroll through social media as deadlines loom – a behavior captured humorously in one meme (www.facebook.com/share/p/16cN8KXCtd/). This avoidance behavior is typically paired with a sense of guilt or self-awareness, as highlighted in another meme where the joy of summer is suddenly interrupted by the realization of looming academic deadlines (www.facebook.com/share/p/1AYwXHDGAY/). These depictions reflect the internal conflict many doctoral students face: a desire to rest or escape, constantly undercut by the pressure of unfinished work.

Publishing process

References to the Publishing Process reflect the significant role this plays in the lives of doctoral students. The challenges and emotional rollercoaster associated with publishing were a recurrent theme. Memes within this category highlighted various stages of the publication process, from the initial submission of a manuscript to the anticipation and anxiety of awaiting feedback. For instance, one meme depicts a frustrated character anxiously waiting for a journal response after submitting a research paper, capturing the uncertainty and stress experienced during the often prolonged review period (www.facebook.com/share/p/1BxDMhumLt/). In addition, the theme of rejection was a common motif, with several memes portraying the disappointment and frustration that accompany paper rejections. These memes often served as a coping mechanism, using humor to navigate the emotional toll of rejection, which is an almost inevitable part of academic publishing.

On the other hand, the joy and relief of having a manuscript accepted were also captured in the memes, albeit less frequently. These representations of success provided a contrast to the otherwise challenging portrayal of the publishing process, highlighting moments of triumph and validation that punctuate the often arduous journey of academic writing. Furthermore, issues of academic integrity, particularly plagiarism, were depicted in a meme showing accusations of dishonesty met with denial and suspicion, emphasizing the ethical dilemmas doctoral students may face while striving to contribute original work (www.facebook.com/share/p/1EMuV4u1Jy/).

Relationships

We also identified memes that depicted relationships among doctoral students, supervisors, postdocs and laboratory colleagues. One meme, featuring an image of Spider-Man, is captioned “My advisor avoiding me” and “Me needing advice,” humorously portraying the way advisors sometimes dodge students seeking guidance (www.facebook.com/share/p/1GFT46YV6v/). Another meme highlights how graduate students are often equally confused when trying to help each other, poking fun at lab coworkers who adopt a similar hands-off supervisory attitude (www.facebook.com/share/p/1CVNbXuxRw/). Yet another meme on behalf of postdocs said, “This zoo, this prison, this reality, whatever you want to call it. I can’t stand it any longer”, showing the hardness of doctoral life.

Reward

Many memes used the reward to show how precious relaxation is to doctoral students. For example, one meme referenced the notoriously challenging video game *Dark Souls* to metaphorically praise researchers for their perseverance and hard work, suggesting that only after such arduous efforts are they granted the opportunity to relax (www.facebook.com/share/p/1ESm33gVvN/). Similarly, another meme shows researchers eagerly jumping ahead to the coffee break at a conference, highlighting their craving for moments of rest amid the pressure to perform and network (www.facebook.com/share/p/1BwY3nNAsL/). Collectively, these memes highlight the pervasive culture of hard work and dedication within the doctoral community, where relaxation is often seen as a rare and hard-earned reward.

Uncertainty

Uncertainty among doctoral students is a result of their unsure feelings and their unoriented decision to engage in higher education. For instance, one meme uses the rhetorical question, “Why are we still doing the academic career?!” to deliver a dose of self-deprecating humor about the doubts and frustrations involved in pursuing a PhD (www.facebook.com/share/p/1BcrQUPUWZ/). Another meme shows a conflicted individual who, despite having no clear direction in life, humorously chooses the daunting path of a PhD program, capturing the pervasive confusion and lack of purpose many students feel (www.facebook.com/share/p/1Ai7J38LcU/). These memes collectively underscore the existential uncertainty that often accompanies the pursuit of a PhD, highlighting the internal conflicts and doubts that many students face.

Discussion

This study explored how doctoral students use internet memes to express the challenges they face (stress). Inspired by the encryption theory of humor, we analyzed memes as a way to share deeper messages (Flamson and Barrett, 2008). We looked for both the obvious content (explicit messages) and hidden meanings (implicit messages) in these memes. Did they reflect the realities of academic life, or were they a way to poke fun at the pressures and anxieties students experience? Using a qualitative content analysis, we identified 13 recurring themes, including (1) accomplishment, (2) knowledge and experience, (3) practical issues, (4) mental health, (5) obsession, (6) overwork, (7) academic trap, (8) procrastination, (9) publishing process, (10) relationships, (11) reward, (12) uncertainty, and (13) others.

Satirization of pressure and anxiety

Many of the memes we analyzed use satirical outlets for expressing doctoral struggles. These digital artifacts leverage humor, irony and sometimes exaggeration to highlight and critique the stresses derived from heavy workload, toxic supervisors or unhealthy working environment (Maples, 2023). By encapsulating complex emotions and stressful experiences into easily digestible and shareable content, memes provide a sense of communal understanding and solidarity among doctoral students. This satirization allows individuals to confront their anxieties in a less intimidating manner, fostering a sense of relief and catharsis. Moreover, memes highlight how PhD students collectively recognize and question the structures that contribute to high levels of stress (Papapicco and Mininni, 2020). Through this process, memes not only entertain but also contribute to the psychological well-being of individuals by offering a form of emotional release and social commentary.

Pile humor and distress

PhD memes can also be used to “Pile Humor and Distress” (a playful twist on PhD), which combines humor with the underlying tension and difficulty of academic life, especially for doctoral candidates. These memes frequently show doctoral students’ tough journeys, emphasizing their struggles with research, deadlines and the delicate balance of academic and personal life (Maples, 2023). Memes, by portraying these issues in a comical and exaggerated manner, generate a common narrative that connects with many in the academic community, offering a sense of solidarity and mutual understanding. This blend of humor and distress in memes allows for a dual function: it lightens the emotional load by making light of serious challenges and simultaneously acknowledges the real pressures faced by doctoral students. Humor acts as a coping mechanism, enabling students to momentarily escape the intense demands of their doctoral journey while also validating their experiences and feelings (Baysac, 2017). In this way, memes become a powerful tool for expressing and managing the complexities of academic stress, transforming distressing experiences into a source of collective amusement and resilience.

Memes as speech acts

Memes serve as speech acts for doctoral students, providing a unique and expressive vehicle for them to share their experiences, disappointments and achievements. As speech acts, memes go beyond mere entertainment; they perform specific functions such as expressing emotions, making statements and fostering a sense of community among those in similar academic situations (Grundlingh, 2018). By using humor, irony and visual elements, memes encapsulate the complex realities of graduate life, including the pressures of research, deadlines and academic expectations. This type of digital language enables doctoral students to express their emotions and ideas in a way that is both relevant and effective (Ayyaz *et al.*, 2022). Memes can also serve as a form of protest against the rigors of academia, a way to seek solidarity and empathy or simply a means to inject levity into the often intense and solitary journey of graduate studies.

Limitations

First, we might have identified more memes related to doctoral students’ challenges if we had reached more fanpages (e.g. The Frustrated Researchers), media platforms (e.g. Instagram, Twitter) or expanded the range of time. In addition, the coding process should have included (a) doctoral students or postdocs to accurately describe the actual experience. The focus on doctoral students rather than other groups of doctoral students (e.g. EdD, PsyD, postdoctoral researchers) may limit the generalizability of the findings. The scope of the studies narrowed down to stress might cause some misunderstanding; for example, doctoral students may perceive their experience as exclusively negative or believe that suffering is necessary to obtain a degree.

A key limitation also arises from the interpretive nature of meme analysis, where the meanings we derive may not fully align with the creators’ intentions. Tidy *et al.* (2024) highlight that meme-making as a research method involves an element of subjectivity, with the meaning of memes often varying depending on the viewer’s perspective. While this study offers interpretations based on what is expressed in the memes, it is important to recognize that the humor and satire used by creators may not always reflect the deeper or intended meanings. Later research could focus on examining how doctoral students react to these memes and to what extent they think memes accurately reflect their experiences.

Implications

Our findings have implications for doctoral education professionals. The memes in our sample reflect ideas about the challenges of academic life, including the gap between expectations and reality, the pressures of competition, mental health struggles, economic uncertainties and the pervasive issue of overwork. Doctoral education professionals may find it useful to incorporate these memes in workshops or seminars to spark discussions about realistic academic expectations, stress management and the emotional toll of academic competition. Professionals might use media literacy approaches (e.g. Tyndall *et al.*, 2021) to engage doctoral students in a critical appraisal of these digital expressions – exploring how humor is used to both cope with and subtly critique academic pressures, and assessing whether these representations may inadvertently normalize detrimental academic practices.

Doctoral educators also need to recognize the diverse and evolving ways in which doctoral students articulate their experiences, with memes being a significant example. Given the humorous yet insightful characteristics of these memes and their capacity to normalize and challenge difficult academic realities (Levecque *et al.*, 2017), they may serve as an engaging tool in academic programming. Alongside traditional teaching methods, media literacy initiatives can help students deconstruct the layered messages within these memes, fostering a deeper understanding of both their personal academic journeys and broader systemic issues. Educators could even encourage students to create their own memes that reflect healthy, constructive perspectives on the challenges of academic life. Subsequent research might examine how engaging with and creating memes influences doctoral students' perceptions and coping strategies regarding academic stress.

Conclusion

The increase in stress levels in postgraduate programs has become significant. This trend has been illustrated through memes, a social media product. This means of communication reflects many aspects of doctoral endurance and serves as not only amusement images but also speech acts. Memes play a unique role in disseminating knowledge about academia in general because they can contain specific messages that are only understandable by senders and receivers (Flamson and Barrett, 2008). Taken out of the social context, memes can also be used in further research and helping services to aid novel scholars.

References

- Acker, S. and Haque, E. (2015), "The struggle to make sense of doctoral study", *Higher Education Research and Development*, Vol. 34 No. 2, pp. 229-241, doi: [10.1080/07294360.2014.956699](https://doi.org/10.1080/07294360.2014.956699).
- Ayyaz, Q.-U.-A., Khursheed, S. and Aslam, S. (2022), "Psychological-distress effects of memes: a critical discourse analysis", *Global Language Review*, Vol. 7 No. 2, pp. 467-478, doi: [10.31703/glr.2022\(VII-II\).38](https://doi.org/10.31703/glr.2022(VII-II).38).
- Ballamingie, P. and Johnson, S. (2014), "The vulnerable researcher: some unanticipated challenges of doctoral fieldwork", *The Qualitative Report*, doi: [10.46743/2160-3715/2011.1084](https://doi.org/10.46743/2160-3715/2011.1084).
- Batty, C., Ellison, E., Owens, A. and Brien, D. (2020), "Mapping the emotional journey of the doctoral 'hero': challenges faced and breakthroughs made by creative arts and humanities candidates", *Arts and Humanities in Higher Education*, Vol. 19 No. 4, pp. 354-376, doi: [10.1177/1474022219844986](https://doi.org/10.1177/1474022219844986).
- Baysac, P.E.G. (2017), "Laughter in class: humorous memes in 21st century learning", *Journal of Social Sciences (COES&RJ-JSS)*, Vol. 6 No. 2, pp. 267-281, doi: [10.25255/jss.2017.6.2.267.281](https://doi.org/10.25255/jss.2017.6.2.267.281).

- Beasy, K., Emery, S. and Crawford, J. (2021), "Drowning in the shallows: an Australian study of the PhD experience of wellbeing", *Teaching in Higher Education*, Vol. 26 No. 4, pp. 602-618, doi: [10.1080/13562517.2019.1669014](https://doi.org/10.1080/13562517.2019.1669014).
- Belavy, D.L., Owen, P.J. and Livingston, P.M. (2020), "Do successful PhD outcomes reflect the research environment rather than academic ability?", *Plos One*, Vol. 15 No. 8, p. e0236327, doi: [10.1371/journal.pone.0236327](https://doi.org/10.1371/journal.pone.0236327).
- Cantor, G. (2020), "The loneliness of the long-distance (PhD) researcher", *Psychodynamic Practice*, Vol. 26 No. 1, pp. 56-67, doi: [10.1080/14753634.2019.1645805](https://doi.org/10.1080/14753634.2019.1645805).
- Cho, S. and Hayter, C.S. (2021), "Under pressure: a systematic review of stress and its impact among graduate students", *Science and Public Policy*, Vol. 47 No. 6, pp. 758-771, doi: [10.1093/scipol/scaa053](https://doi.org/10.1093/scipol/scaa053).
- Cilli, E., Ranieri, J., Guerra, F. and Di Giacomo, D. (2023), "Early career researchers and mental health: observational study of challenge and wellbeing", *Health Science Reports*, Vol. 6 No. 11, p. e1649, doi: [10.1002/hsr2.1649](https://doi.org/10.1002/hsr2.1649).
- Clement, D.N., Appleseth, H.S., Armstrong, C.M., Cole, A.B., Wingate, L.R. and Leffingwell, T.R. (2024), "Minoritized graduate student identity, well-being, and mental health risks for suicidality", *Journal of Diversity in Higher Education*, doi: [10.1037/dhe0000555](https://doi.org/10.1037/dhe0000555).
- Dong, J., He, Y., Jiang, F., Liu, Z., Ni, Y., Tang, Y., Luo, J., Zhang, Z. and Huang, Y. (2024), "Teacher-student relationships and mental disorders of undergraduate and graduate students in online education: a moderated mediation model of mobile phone addiction and hometown setting", *Computers in Human Behavior Reports*, Vol. 14, p. 100406, doi: [10.1016/j.chbr.2024.100406](https://doi.org/10.1016/j.chbr.2024.100406).
- Dongen, V. and J. C. (1988), "The life experience of the first-year doctoral student", *Nurse Educator*, Vol. 13 No. 5, p. 19.
- El-Ghoroury, N.H., Galper, D.I., Sawaqdeh, A. and Bufka, L.F. (2012), "Stress, coping, and barriers to wellness among psychology graduate students", *Training and Education in Professional Psychology*, Vol. 6 No. 2, pp. 122-134, doi: [10.1037/a0028768](https://doi.org/10.1037/a0028768).
- Flamson, T. and Barrett, H.C. (2008), "The encryption theory of humor: a knowledge-based mechanism of honest signaling", *Journal of Evolutionary Psychology*, Vol. 6 No. 4, pp. 261-281, doi: [10.1556/JEP.6.2008.4.2](https://doi.org/10.1556/JEP.6.2008.4.2).
- Fubara, S.J. (2020), "A pragmatic analysis of the discourse of humour and irony in selected memes on social media", *International Journal of Language and Literary Studies*, Vol. 2 No. 2, pp. 76-95, doi: [10.36892/ijlls.v2i2.281](https://doi.org/10.36892/ijlls.v2i2.281).
- Glorieux, A., Spruyt, B., Minnen, J. and Van Tienoven, T.P. (2025), "Calling it quits: a longitudinal study of factors associated with dropout among doctoral students", *Studies in Continuing Education*, Vol. 47 No. 1, pp. 155-173, doi: [10.1080/0158037X.2024.2314694](https://doi.org/10.1080/0158037X.2024.2314694).
- Grover, V. (2007), "Successfully navigating the stages of doctoral study", *International Journal of Doctoral Studies*, Vol. 2, pp. 9-21, doi: [10.28945/54](https://doi.org/10.28945/54).
- Grundlingh, L. (2018), "Memes as speech acts", *Social Semiotics*, Vol. 28 No. 2, pp. 147-168, doi: [10.1080/10350330.2017.1303020](https://doi.org/10.1080/10350330.2017.1303020).
- Hazell, C.M., Chapman, L., Valeix, S.F., Roberts, P., Niven, J.E. and Berry, C. (2020), "Understanding the mental health of doctoral researchers: a mixed methods systematic review with meta-analysis and meta-synthesis", *Systematic Reviews*, Vol. 9 No. 1, p. 197, doi: [10.1186/s13643-020-01443-1](https://doi.org/10.1186/s13643-020-01443-1).
- Herbenick, D., Guerra-Reyes, L., Patterson, C., Wilson, J., Rosenstock Gonzalez, Y.R., Voorheis, E., Whitcomb, M., Kump, R., Theis, E., Rothman, E.F., Nelson, K.M. and Maas, M.K. (2023), "#ChokeMeDaddy: a content analysis of memes related to choking/strangulation during sex", *Archives of Sexual Behavior*, Vol. 52 No. 3, pp. 1299-1315, doi: [10.1007/s10508-022-02502-5](https://doi.org/10.1007/s10508-022-02502-5).
- High impact PhD Memes (n.d.), *High Impact PhD Memes*, [Facebook page], Facebook, available at: www.facebook.com/MemingPhD

- Hoover, K.B. and Lucas, K.T. (2024), "Mentoring graduate students: a study on academic rejection, the pressure to publish, and career paths", *Journal of Criminal Justice Education*, Vol. 35 No. 1, pp. 195-217, doi: [10.1080/10511253.2023.2173792](https://doi.org/10.1080/10511253.2023.2173792).
- Hudson, S.A. and O'Regan, J. (1994), "Stress and the graduate psychology student", *Journal of Clinical Psychology*, Vol. 50 No. 6, pp. 973-977, doi: [10.1002/1097-4679\(199411\)50:6<973::AID-JCLP2270500623>3.0.CO;2-Q](https://doi.org/10.1002/1097-4679(199411)50:6<973::AID-JCLP2270500623>3.0.CO;2-Q).
- Johann, M. and Bülow, L. (2019), "One does not simply create a meme: conditions for the diffusion of internet memes", *International Journal of Communication*, Vol. 13, p. 23.
- Johnson, O., Marus, E., Adyanga, A.F. and Ayiga, N. (2023), "The experiences and challenges of doctoral education in public universities compared", *Journal of Social, Humanity, and Education*, Vol. 3 No. 3, pp. 237-252, doi: [10.35912/jshe.v3i3.1454](https://doi.org/10.35912/jshe.v3i3.1454).
- Kearns, H., Gardiner, M. and Marshall, K. (2008), "Innovation in PhD completion: the hardy shall succeed (and be happy!)", *Higher Education Research and Development*, Vol. 27 No. 1, pp. 77-89, doi: [10.1080/07294360701658781](https://doi.org/10.1080/07294360701658781).
- Landgrave, M. (2019), "Cooling publication fever in under-represented graduate students", *Nature Human Behaviour*, Vol. 3 No. 10, p. 1019, doi: [10.1038/s41562-019-0676-5](https://doi.org/10.1038/s41562-019-0676-5).
- Levecque, K., Anseel, F., De Beuckelaer, A., Van Der Heyden, J. and Gisle, L. (2017), "Work organization and mental health problems in PhD students", *Research Policy*, Vol. 46 No. 4, pp. 868-879, doi: [10.1016/j.respol.2017.02.008](https://doi.org/10.1016/j.respol.2017.02.008).
- Li, H. and Horta, H. (2021), "Factors influencing PhD students' intentions to pursue careers in the government and nonprofit sectors: evidence from a global survey", *Higher Education Research & Development*, Vol. 41 No. 6, pp. 1946-1961, doi: [10.1080/07294360.2021.1948975](https://doi.org/10.1080/07294360.2021.1948975).
- Mandiberg, M. (2012), *The Social Media Reader*, Nyu Press.
- Maples, G.W. (2023), "High impact, low mood: an analysis of graduate student attitudes and perceptions through PHD memes", *International Journal of Doctoral Studies*, Vol. 18, pp. 1-23, doi: [10.28945/5075](https://doi.org/10.28945/5075).
- Mayring, P. (2000), "Qualitative content analysis. Forum qualitative sozialforschung/forum", *Qualitative Social Research*, Vol. 1 No. 2, doi: [10.17169/FQS-1.2.1089](https://doi.org/10.17169/FQS-1.2.1089), (2000): Qualitative Methods in Various Disciplines I: Psychology.
- Menard, C.B. and Shinton, S. (2022), "The career paths of researchers in long-term employment on short-term contracts: case study from a UK university", *Plos One*, Vol. 17 No. 9, p. e0274486, doi: [10.1371/journal.pone.0274486](https://doi.org/10.1371/journal.pone.0274486).
- Meyer, M. (2021), "Thus spoke the internet: social media sociologists and the importance of memeing in making meaning", *Irish Journal of Sociology*, Vol. 29 No. 1, pp. 118-123, doi: [10.1177/0791603520947655](https://doi.org/10.1177/0791603520947655).
- Milner, R.M. (2012), "The world made meme: discourse and identity in participatory media", available at: <https://kuscholarworks.ku.edu/entities/publication/65c95a5f-c36c-4775-b7fc-a9bd8ee9886c>
- Mortensen, M. and Neumayer, C. (2021), "The playful politics of memes", *Information, Communication and Society*, Vol. 24 No. 16, pp. 2367-2377, doi: [10.1080/1369118X.2021.1979622](https://doi.org/10.1080/1369118X.2021.1979622).
- Mutongoza, B.H. (2023), "Pressured to perform: the negative consequences of the 'publish or perish' phenomenon among junior academics", *Scholarship of Teaching and Learning in the South*, Vol. 7 No. 2, pp. 46-62, doi: [10.36615/sotls.v7i2.301](https://doi.org/10.36615/sotls.v7i2.301).
- Noreen, R., Zafar, A., Waheed, T., Wasim, M., Ahad, A., Coelho, P.J. and Pires, I.M. (2023), *Unraveling the Inner World of PhD Scholars with Sentiment Analysis for Mental Health Prognosis*, Behaviour and Information Technology, pp. 1-13, doi: [10.1080/0144929X.2023.2289057](https://doi.org/10.1080/0144929X.2023.2289057).
- Papapicco, C. and Mininni, G. (2020), "Impact memes: PhDs HuMor(e)", *Multimedia Tools and Applications*, Vol. 79 No. 47-48, pp. 35973-35994, doi: [10.1007/s11042-020-09166-0](https://doi.org/10.1007/s11042-020-09166-0).

- Peter, J. and Lauf, E. (2002), "Reliability in cross-national content analysis", *Journalism and Mass Communication Quarterly*, Vol. 79 No. 4, pp. 815-832, doi: [10.1177/107769900207900404](https://doi.org/10.1177/107769900207900404).
- Pham, H. (2020), "Coaching early-career social sciences researchers to publish their first indexed publications: the research coach in social sciences program as a model", *Science Editing*, Vol. 7 No. 2, pp. 189-193, doi: [10.6087/kcse.216](https://doi.org/10.6087/kcse.216).
- PhD Memes (n.d.), *PhD Memes*, [Facebook page]. Facebook, available at: www.facebook.com/phdmemes (accessed 25 February 2025).
- PhD Motivation (n.d.), *PhD Motivation*, [Facebook page]. Facebook, available at: www.facebook.com/phdmemes (accessed 25 February 2025).
- Ruggiero, T.E. (2000), "Uses and gratifications theory in the 21st century", *Mass Communication and Society*, Vol. 3 No. 1, pp. 3-37, doi: [10.1207/S15327825MCS0301_02](https://doi.org/10.1207/S15327825MCS0301_02).
- Rullonga Monicah, K. (2020), "Lethargic research projects: student-supervisor's dilemmas in managing research projects", *Higher Education Research*, Vol. 5 No. 2, p. 37, doi: [10.11648/j.her.20200502.11](https://doi.org/10.11648/j.her.20200502.11).
- Satinsky, E.N., Kimura, T., Kiang, M.V., Abebe, R., Cunningham, S., Lee, H., Lin, X., Liu, C.H., Rudan, I., Sen, S., Tomlinson, M., Yaver, M. and Tsai, A.C. (2021), "Systematic review and meta-analysis of depression, anxiety, and suicidal ideation among ph.D. students", *Scientific Reports*, Vol. 11 No. 1, p. 14370, doi: [10.1038/s41598-021-93687-7](https://doi.org/10.1038/s41598-021-93687-7).
- Shifman, L. (2013a), "Memes in a digital world: reconciling with a conceptual troublemaker", *Journal of Computer-Mediated Communication*, Vol. 18 No. 3, pp. 362-377, doi: [10.1111/jcc4.12013](https://doi.org/10.1111/jcc4.12013).
- Shifman, L. (2013b), *Memes in Digital Culture*, MIT Press.
- Steel, P. (2007), "The nature of procrastination: a meta-analytic and theoretical review of quintessential self-regulatory failure", *Psychological Bulletin*, Vol. 133 No. 1, pp. 65-94, doi: [10.1037/0033-2909.133.1.65](https://doi.org/10.1037/0033-2909.133.1.65).
- Stillwell, S.B., Vermeesch, A.L. and Scott, J.G. (2017), "Interventions to reduce perceived stress among graduate students: a systematic review with implications for evidence-based practice", *Worldviews on Evidence-Based Nursing*, Vol. 14 No. 6, pp. 507-513, doi: [10.1111/wvn.12250](https://doi.org/10.1111/wvn.12250).
- Stockman, C. (2015), "Achieving a doctorate through mixed methods research", *Electronic Journal of Business Research Methods*, Vol. 13 No. 2, p. 2.
- Street, R.L., Singh, H. and Hale, P.N. (1970), "The evaluation of mental stress through the analysis of parotid fluid", *Human Factors: The Journal of the Human Factors and Ergonomics Society*, Vol. 12 No. 5, pp. 453-455, doi: [10.1177/001872087001200504](https://doi.org/10.1177/001872087001200504).
- Stubb, J., Pyhältö, K. and Lonka, K. (2014), "Conceptions of research: the doctoral student experience in three domains", *Studies in Higher Education*, Vol. 39 No. 2, pp. 251-264, doi: [10.1080/03075079.2011.651449](https://doi.org/10.1080/03075079.2011.651449).
- The Frustrated Researchers (2025), available at: www.facebook.com/TheFrustratedResearchers (accessed 25 February 2025).
- The SSM ECR Subcommittee (2015) and Professor Simon Capewell (SSM President) (2017), "Academic careers: what do early career researchers think? ", *Journal of Epidemiology and Community Health*, Vol. 71 No. 2, pp. 207-208, doi: [10.1136/jech-2016-207438](https://doi.org/10.1136/jech-2016-207438).
- Thomson, P. (2024), "Doctoral memes as public pedagogy? Or, heaven knows I'm miserable now", *Studies in Continuing Education*, pp. 1-19, doi: [10.1080/0158037X.2024.2417095](https://doi.org/10.1080/0158037X.2024.2417095).
- Tyndall, D.E., Flinchbaugh, K.B., Caswell, N.I. and Scott, E.S. (2021), "Troublesome knowledge for entry-level PhD nursing students: threshold concepts essential for the research-focused doctorate", *Journal of Professional Nursing*, Vol. 37 No. 3, pp. 572-577, doi: [10.1016/j.profnurs.2021.03.006](https://doi.org/10.1016/j.profnurs.2021.03.006).
- Van Tienoven, T.P., Glorieux, A., Minnen, J. and Spruyt, B. (2024), "Caught between academic calling and academic pressure? Working time characteristics, time pressure and time sovereignty predict

PhD students' research engagement", *Higher Education*, Vol. 87 No. 6, pp. 1885-1904, doi: [10.1007/s10734-023-01096-8](https://doi.org/10.1007/s10734-023-01096-8).

Way, S.F., Morgan, A.C., Larremore, D.B. and Clauset, A. (2019), "Productivity, prominence, and the effects of academic environment", *Proceedings of the National Academy of Sciences*, Vol. 116 No. 22, pp. 10729-10733, doi: [10.1073/pnas.1817431116](https://doi.org/10.1073/pnas.1817431116).

Winocur, R. and Dussel, I. (2020), "Memes production as parodic activism: inclusion and exclusion in young people's digital participation in Latin America", in Frau-Meigs, D. Kotilainen, S. Pathak-Shelat, M. Hoehsmann, M and Poyntz S.R (Eds), *The Handbook of Media Education Research*, 1st ed., Wiley, pp. 33-45, doi: [10.1002/9781119166900.ch2](https://doi.org/10.1002/9781119166900.ch2).

Yoon, I. (2016), "Why is it not just a joke? Analysis of internet memes associated with racism and hidden ideology of colorblindness", *Journal of Cultural Research in Art Education*, Vol. 33 No. 1, doi: [10.2458/jcrae.4898](https://doi.org/10.2458/jcrae.4898).

Zhu, Y. and Procter, R. (2015), "Use of blogs, Twitter and Facebook by UK PhD students for scholarly communication", *Observatorio (OBS*)*, Vol. 9 No. 2, doi: [10.15847/obsOBS922015842](https://doi.org/10.15847/obsOBS922015842).

Corresponding author

Hiep-Hung Pham can be contacted at: hiep@thanhdouni.edu.vn