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## Teachers' perceived stressors and stress from Instagram use

André Meyer<sup>a</sup> , Eric Richter<sup>b</sup> , Jeffrey P. Carpenter<sup>c</sup> , Dirk Richter<sup>a</sup>  and Sebastian Kempert<sup>a</sup> 

<sup>a</sup>University of Potsdam, Potsdam, Germany; <sup>b</sup>Catholic University Eichstätt-Ingolstadt, Eichstätt, Germany; <sup>c</sup>Elon University, Elon, North Carolina, USA

### ABSTRACT

Many teachers use social media for professional purposes, but the impact of these activities on their well-being is underexplored. In this study, we developed four scales to assess stressors from teachers' Instagram use and examined their relationship to Instagram-related stress among 304 teachers. Structural equation modeling revealed that information overload, social comparison, and procrastination are associated with teacher stress. Passive Instagram use (e.g. seeking information) was related to more social comparison and procrastination, while active use (e.g. sharing information) was associated with less social comparison. Our findings contribute to understanding potential side effects of teachers' job-related social media use. Moreover, this study adds quantitative insights into how social media affects teacher stress, informing educators and policymakers alike.

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### KEYWORDS

Social media; informal learning; professional development; well-being; technostress

Social media platforms facilitate digital networking among users who might not interact offline, enabling information exchange across geographic and professional boundaries (Carpenter et al., 2020; Greenhow et al., 2020). Indeed, many teachers use social media to build networks, share experiences and resources, pose questions, and discuss school-related issues (Aguilar et al., 2021; Carpenter et al., 2025; Miller et al., 2023; Richter et al., 2022). While such professional use supports collaboration and resource sharing, studies in media and communication psychology note potential downsides of intensive use, including social comparison, procrastination, and doom scrolling (Brooks & Califf, 2017; Buchanan et al., 2021; Ning & Inan, 2024). Despite their potential impact on teachers' well-being, professional perspectives, and longevity in the field, these negative dynamics remain underexplored in the context of teachers' social media use (Muskin, 2024; Puglia, 2025).

While prior research has examined teachers' activities on various social media platforms, little is known about how such activities relate to teachers' well-being. For this study, we focus on Instagram, the third most used platform globally (Statista, 2025). Instagram provides teachers with the opportunity to seek and share school-related resources (e.g. Richter et al., 2022), yet it remains relatively unexplored in educational research compared to Facebook and X/Twitter (Barrot, 2021; Ito, 2025). This study introduces a measurement instrument—grounded in a literature review and psychological models of stress—to assess stressors linked to teachers' professional use of Instagram. These stressors include (1) information overload, (2) poor information quality, (3) social comparison, and (4) procrastination. We evaluate the instrument's reliability and validity and explore how these stressors relate to teachers' overall perceptions of Instagram-related stress. We also examine how different types of Instagram use correlate with these stressors and general stress perceptions. Findings aim to deepen understanding of the implications of teachers' social media use.

**CONTACT** André Meyer  [andre.meyer@uni-potsdam.de](mailto:andre.meyer@uni-potsdam.de)  Department of Primary Education, University of Potsdam, Karl-Liebknecht-Strasse 24–25, 14476 Potsdam, Germany

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## **Social media platforms for self-directed and informal teacher professional learning**

Educators' social media use has been studied internationally, including in Australia, China, the US, and Germany (e.g. Chen et al., 2025; Richter et al., 2022; Willis et al., 2023; Xue & Churchill, 2022) as well as across various platforms like Facebook (e.g. Ito, 2025), Reddit (Na & Staudt Willet, 2024), and X/Twitter (Richter et al., 2024). Teachers can engage both passively—by consuming content and gathering instructional resources—and actively, by sharing materials, networking, or seeking peer support (Kelly & Antonio, 2016; Staudt Willet, 2024; Verduyn et al., 2020). Importantly, their engagement is not limited to professional purposes: teachers also use social media for entertainment, such as sharing or viewing humorous content on platforms like TikTok (Carpenter et al., 2024; Hartung et al., 2023). These varied practices provide access to ideas, professional communities, and opportunities for learning (Greenhow et al., 2023; Willis et al., 2023).

At the same time, social media use can expose teachers to considerable challenges. Ethical issues such as cyberviolence (Nagle, 2018), practical constraints like time and skill demands (Selwyn et al., 2017), and platform disruptions (Koutropoulos et al., 2024) complicate participation. Yet, despite growing attention to these barriers, the stressors associated with teachers' social media use remain insufficiently explored. Understanding how educators experience and cope with such strains is therefore a pressing concern and provides the focus of this study.

### **Teacher stress and social media stress**

Stress, a multidimensional construct widely studied in psychology and education (e.g. Kyriacou, 2001), is typically defined as an individual's response to perceived demands exceeding available resources, leading to physical, emotional, or psychological strain. Lazarus and Folkman (1984) transactional model emphasizes the interaction between environmental stressors and individual appraisal, where stress arises when a situation is perceived as taxing or threatening and coping resources are seen as insufficient. The model distinguishes between two phases of appraisal: a primary appraisal, in which individuals evaluate whether an environmental stimulus is potentially threatening or challenging, and a secondary appraisal, in which they assess whether they have sufficient resources to cope with the stimulus. *Teacher stress* refers to negative emotions—such as anger, anxiety, and frustration—triggered by specific job demands (Kyriacou, 1987, 2001). Common stressors include high workloads, classroom management, student behavior, and time pressure (Skaalvik & Skaalvik, 2016), as well as conflicts with colleagues, difficult parent interactions, and ineffective professional development (Klusmann et al., 2021; Schmidt et al., 2017).

The integration of digital technologies has introduced new stressors into teaching (Selwyn et al., 2017). Technostress—defined as the inability to cope with technology demands—includes stressors like constant connectivity and pressure to adapt to technological change, with potential psychological and physical symptoms (La Torre et al., 2019). On social media, teachers may face unique technostressors such as information overload, blurred work-life boundaries, and social comparison, which can lead to approval anxiety and dissatisfaction (Bucher et al., 2013). Frequent engagement may increase perceived responsibility to respond to professional communications, contributing to emotional exhaustion and burnout (La Torre et al., 2019; Selwyn et al., 2017).

Guided by Lazarus and Folkman (1984) model, we propose that platforms like Instagram present specific stimuli that function as stressors for teachers (Lazarus, 1991). Research on social media use across populations has documented a range of adverse outcomes—including social comparison, procrastination, misinformation exposure, and doom-scrolling—that undermine digital well-being and represent potential sources of technostress (e.g. Aïmeur et al., 2023; Buchanan et al., 2021; Faelens et al., 2021; Park et al., 2020). To identify the stressors most relevant to teachers' professional engagement, we reviewed studies from general, academic, and occupational contexts (e.g. Alblwi et al., 2021; Brooks & Califf, 2017; Carpenter & Harvey, 2019; Fox & Bird, 2017; Fu et al., 2020; Fyfield et al., 2021; Kim & Seo, 2015; Lee et al., 2025; Matthes et al., 2020; Rozgonjuk et al., 2018; Vraga & Tully, 2021). Across this literature, four stressors

consistently emerged as particularly salient for professional online engagement: information overload, perceived quality of information, social comparison, and procrastination. Concentrating on these stressors enables us to capture both domain-specific challenges and broader risks of social media use, thereby situating teachers' social media-related technostress within the wider field of digital well-being research and highlighting the need for strategies that support teacher well-being and professional growth (von der Embse et al., 2019; Wolfers & Utz, 2022).

### **Information overload**

There has been a substantial increase in the amount of school-related content shared on social media (Staudt Willet, 2019) and teachers must develop new skills to navigate such a sea of content (Meabon Bartow, 2014). Education-related information, resources, and ideas on social media include a broad range of topics and foci, including practice-oriented resources (Rosenberg et al., 2020), humorous or entertaining posts (Carpenter et al., 2024; Vizcaíno-Verdú & Abidin, 2023), and commercially-driven content aimed at promoting products (Carpenter et al., 2023). The surge in school-related content can mean that some teachers feel overwhelmed by the abundance of potentially relevant information and materials (Carpenter & Harvey, 2019; Curcio et al., 2024; Iredale et al., 2020; Wolfers & Utz, 2022). For example, a qualitative study by Carpenter and Harvey (2019) found that multiple participants felt overwhelmed at times by the sheer quantity of content shared *via* social media and opportunities to engage with others. Richter et al. (2022) found that teachers who spend significant time seeking school-related information on Instagram are less likely to report receiving informational support. Further research that was not specifically focused on teachers supports the link between social media use and psychological distress as it indicates associations of information overload with increased exhaustion, user fatigue, and symptoms of depression (Fu et al., 2020; Lee et al., 2016; Matthes et al., 2020).

### **Quality of information**

With so much school-related content on social media, content quality becomes increasingly diverse (Sawyer et al., 2019). Teachers may develop skepticism regarding such content. First, formal mechanisms to evaluate the quality of information are lacking, which can lead to generalized distrust of social media platforms (Aimeur et al., 2023; Park et al., 2020). Particularly, teachers may question the integrity of information when it is shared for self-promotion or commercial purposes (Azevedo, 2025; Carpenter & Harvey, 2019; Shelton & Archambault, 2019). Second, much of the content may be tailored to specific teaching contexts and lack generalizability to other environments.

Sawyer et al. (2019) evaluated mathematics teaching materials shared on Pinterest and found that only a small proportion were of high quality in terms of students' cognitive activation. Carpenter and Harvey (2019) reported findings of teachers encountering problematic social media content, such as posts that lacked appropriate disclosure of self-promotional or commercial relationships, and instances of poor conduct toward students. The inability to reliably evaluate content trustworthiness can lead to frustration and uncertainty, ultimately adding to the emotional burden of using Instagram (Curcio et al., 2024; Li & Wang, 2021; Willis et al., 2023).

### **Social comparison**

Social media platforms have emerged as environments where social comparison occurs (e.g. Meier & Johnson, 2022). On these platforms, individuals engage in processes of referencing themselves to others based on both qualitative information—such as the achievements, possessions, or lifestyle of others—and quantitative metrics, including the number of followers, likes, and comments (Krutka & Greenhalgh, 2023; Lee et al., 2025). Through these comparisons, other users may appear more active, innovative, motivated, and professionally committed (Carpenter & Harvey, 2019).

Instagram, in particular, is positioned to amplify the potential for social comparison due to its visual-centric design and emphasis on esthetics. Unlike text-heavy platforms, Instagram's focus on curated, polished images and videos often blurs the line between personal and professional identities, encouraging users to display an idealized version of their lives (Marwick, 2015). This visual emphasis and aspirational content can heighten upward social comparisons, as users are exposed to images of seemingly superior accomplishments, creativity, and lifestyles. These comparisons may reinforce perceptions of inadequacy, fueling stress (Carpenter et al., 2020; Kim et al., 2024).

Drawing on social comparison theory (Festinger, 1954), we assume that teachers who use social media for professional purposes may be vulnerable to experiencing upward social comparisons (Willis et al., 2023). Viewing the achievements, creativity, and expertise of their peers online may foster envy, ultimately contributing to stress related to social media use (Verduyn et al., 2020).

### ***Procrastination***

While a portion of the time individuals spend on social media may be purposeful and productive, for some people, some portion of it can constitute procrastination (e.g. Sümer & Büttner, 2022). That is, teachers may spend excessive time scrolling news feeds or similar, thereby delaying urgent tasks, such as personal or job-related duties. Based on a qualitative study on 16 participants, Alblwi et al. (2021) identified different types of procrastination: spending time on social media to avoid engaging in other activities, to distance themselves from struggles in the physical world, or to alter their mood positively. Further evidence indicates that individuals who show higher levels of procrastination report lower levels of well-being and motivation, and show lower academic performance (Kim & Seo, 2015; Krause & Freund, 2014).

Existing research not specifically focused on teachers provides substantial evidence suggesting that information overload, poor information quality, social comparison, and procrastination are stressors associated with social media use. However, limited knowledge exists about the potential downsides of teachers' professional social media use. Most studies in this area rely on qualitative designs with small sample sizes, often overlooking quantitative approaches that employ valid and reliable instruments. Given the growing trend of teachers turning to social media for professional purposes, this study seeks to address this gap.

### ***Teachers' Instagram use and their perception of stressors***

Created in 2010, Instagram is a photo- and short-form-video-sharing social networking service. Meta, the parent company that also owns Facebook and WhatsApp, acquired Instagram in 2012. As noted above, Instagram is currently the third most widely used social media platform in the world, with more than 2 billion monthly active users (Statista, 2025), and indications that half of US teens use the platform at least daily (Pew Research Center, 2025). Users access Instagram *via* an app or a feature-limited web interface, can edit content with built-in filters, post text that accompanies visuals, and geotag and organize content by searchable hashtags. Different formats such as posts, stories, reels, and direct messaging allow individuals to communicate with other users *via* Instagram in ways that vary in privacy, norms, and formality. For example, Instagram posts typically feature carefully curated and positive images, stories can be more informal and tend to be aimed at existing followers, and reels often seek to be creative and attract new followers (Hong et al., 2020; Menon, 2022), although caution around such generalizations is necessary given the diversity of Instagram uses (e.g. Kauffman et al., 2025).

There are signs of substantial Instagram uptake by teachers (Carpenter et al., 2020; Davis & Yi, 2022; Richter et al., 2022; Schroeder et al., 2024). Social media such as Instagram do not merely connect educators and provide neutral spaces in which they can share ideas; through their algorithms, features, and designs, platforms also affect the nature of the connections that

are made and the kinds of spaces that are cultivated (Friesen & Lowe, 2012; Oliveri & Carpenter, 2024; Poell et al., 2021). For instance, Instagram's visual nature arguably distinguishes it from social media that are relatively more text-focused (Leaver et al., 2020; Shane-Simpson et al., 2018) and may lead to educators using the platform in ways that differ from how they employ other social media (Carpenter et al., 2020, 2022; Shelton et al., 2022).

Instagram's design elements—such as algorithmically curated feeds, likes, and notifications—contribute to its high levels of daily engagement but also shape user experiences in ways that can be both beneficial and problematic (Shane-Simpson et al., 2018). For teachers, these features may support creative expression, inspiration, and professional networking (Greenhow et al., 2023), while at the same time amplifying stressors such as information overload, questionable information quality, social comparison, or pressure to maintain a professional image. These platform-specific affordances highlight the relevance of examining Instagram as a distinct environment for teacher stress and professional learning.

These patterns are consistent with broader research on social media use, which shows that different forms of engagement are differentially associated with stressors. Active use on Instagram appears related to fewer social comparisons, potentially mitigating stress, while passive use is linked to higher levels of social comparison, procrastination, and lower subjective well-being (Valkenburg et al., 2022; Verduyn et al., 2020). Passive users typically spend more time-consuming content from others, making them more prone to these stressors, whereas active users are less likely to do so (Sümer & Büttner, 2022; Valkenburg et al., 2022; Yoon et al., 2019). Based on these findings, we assume that the associations between teachers' social media use and perceived stressors may vary across different types of use (Valkenburg et al., 2022). Teachers who primarily engage passively—such as browsing Instagram without actively contributing—may be especially susceptible to information overload, uncritical consumption of content, social comparison, and procrastination (Carpenter & Harvey, 2019). Conversely, teachers who actively engage by sharing information or collaborating with peers may be more intentional in managing their use, enabling them to recognize and address stressors (Thorisdottir et al., 2019).

To advance research in this area, the present study moves beyond the traditional passive–active dichotomy of social media use (Valkenburg et al., 2022). We adopt a finer-grained categorization comprising information seeking, information sharing, and co-construction (Richter et al., 2022). By examining these specific types of digital interactions, we aim to better understand how they relate to teachers' perceptions of stressors.

### ***The present study***

This study investigates how teachers utilize Instagram for professional purposes, what stressors arise from Instagram use, and how different usage patterns relate to perceived stressors on Instagram. We focus on Instagram for several reasons: First, evidence indicates substantial educator activity on the platform (Carpenter et al., 2020; Newton & Williams, 2022; Richter et al., 2022; Shelton et al., 2022). Second, Instagram's design, functionality, and visual nature distinguish it from more text-centric platforms and may encourage unique patterns of use (Kim et al., 2024). While commonalities exist across platforms, Instagram's distinct affordances and constraints warrant closer examination. Despite the growing body of research on teachers' use of Instagram, little is known about how related stressors manifest and impact their professional well-being. To this end, we explore the following research questions:

RQ1: To what extent do teachers perceive stressors on Instagram?

RQ2: What is the relationship between stressors in teachers' use of Instagram and teachers' perceived stress?

RQ3: What is the relationship between stressors in teachers' use of Instagram and types of usage behavior?

Our work is theoretically grounded in Lazarus and Folkman (1984) transactional stress model, which conceptualizes stress as arising from the appraisal of environmental demands relative to available coping resources. From this perspective, Instagram can be understood as a digital environment that presents teachers with potential stressors—including information overload, perceived low quality of information, social comparison, and procrastination. Teachers who appraise these stimuli as taxing or threatening may consequently experience stress associated with Instagram use. In this study, we apply the transactional stress model as a heuristic framework to examine whether these potential stressors are indeed perceived as such by teachers when using Instagram. Accordingly, RQ1 is formulated in an exploratory manner, whereas RQ2 and RQ3 are confirmatory in nature and guide the development of the following hypotheses:

H1: Higher levels of perceived stressors are positively associated with higher levels of overall stress.

H2: Passive social media use is related to higher levels of perceived stressors.

H3: Active social media use is related to lower levels of perceived stressors.

## Methods

### Study design

We collected cross-sectional survey data from teachers in Germany who use Instagram for professional purposes. We reached out to 83 Instagram users with a professional background in education (e.g. teachers) who share school-related content and have a considerable following. We asked them to share a link to our online survey invitation with their followers. Twenty-four users read our request and six shared the survey invitation *via* their Instagram accounts. At the beginning of the survey, participants were asked whether they were currently employed as teachers in a school. Those who answered ‘no’ were excluded from completing the questionnaire (17%). This study was evaluated and approved by the ethics committee at the University of Potsdam.

### Sample

We collected a convenience sample of  $n=304$  elementary (39%) and secondary school teachers (61%) who use Instagram for professional purposes. Of the participants, 92% reported being female, 6% male, and 2% non-binary. The mean job experience was 6.7 years ( $SD=8.00$ ), and the mean experience using Instagram was 2.7 years ( $SD=1.97$ ). Twenty-five percent of participants reported using Instagram for professional purposes more than once a day, 51% used it several times a week, 15% several times per month, and 9% used it less frequently.

### Instruments

Based on an extensive literature review, we identified four aspects of social media use that may pose stressors to individual users: (1) an overload of school-related information being shared, (2) a perception of low-quality information being shared, (3) individuals’ (upward) social comparison with other users, and (4) procrastination from frequent Instagram use. We developed an instrument to measure information overload (5 items), poor quality of information (6 items), and social comparison on Instagram (5 items). We adapted a scale from Alblwi et al. (2021) to measure procrastination (4 items).

Information overload refers to teachers’ perception of a high amount of school-related information and material being shared on Instagram, which makes it difficult for individuals to navigate through the digital environment (e.g. “It’s difficult for me to keep track of the multitude of school-related information on Instagram.”; e.g. Carpenter & Harvey, 2019; Li & Wang, 2021).

Poor quality of information refers to teachers' perception of low-quality school-related information and material being shared by other users on Instagram (e.g. "I consider the quality of much school-related information on Instagram to be questionable."; Willis et al., 2023). Social comparison is defined as teachers' contrasting other users' professional practices to their own and perceiving them as being superior (e.g. "Most teachers I follow on Instagram seem better suited for the profession than I am."; Carpenter & Harvey, 2019; Lee et al., 2025). Items for procrastination were adapted from Alblwi et al. (2021) and denote teachers' Instagram use to avoid other activities (e.g. "I frequently open the Instagram app to avoid dealing with unpleasant things or difficult tasks"). We measured teachers' general perception of stress from Instagram use as an outcome variable (4 items) adapted from the technostress scales by Chou and Chou (2021) and Tarafdar et al. (2010) (e.g. "Spending a long time on Instagram for professional purposes makes me feel exhausted.").

In terms of teachers' Instagram use, we used three scales developed by Richter et al. (2022), which differentiate practices on social media into information seeking (3 items), information sharing (4 items), and co-construction with other users (3 items). All items were rated on a four-point Likert scale (1=do not agree at all; 4=agree completely) and are provided in Table 1. We selected a four-point scale, rather than the more common five-point format, to avoid a neutral

**Table 1.** Full list of items on stressors and stress used in the survey.

Construct
Types of Instagram use
Seeking information
Item a: I use Instagram to search for teaching-related information.
Item b: I am interested in discovering new content relevant to my profession.
Item c: I use Instagram to find subject-specific content shared by colleagues.
Sharing information
Item a: I share teaching materials on Instagram.
Item b: I use Instagram to post work-related content.
Item c: I share important work-related information with colleagues on Instagram.
Item d: I share subject-specific content on Instagram.
Co-construction
Item a: I collaborate with colleagues on Instagram to prepare lessons.
Item b: I work with colleagues on Instagram to develop concepts for new teaching projects.
Item c: I co-create teaching materials (e.g. worksheets) with colleagues on Instagram.
Stressors in Instagram
Information overload
Item b: Considering the abundance of school-related information on Instagram, sometimes I don't even know where to start searching.
Item c: There is so much school-related information on Instagram that I feel overwhelmed.
Item d: It's difficult to keep track of the multitude of school-related information on Instagram.
Item e: The amount of school-related information on Instagram feels unmanageable.
Poor quality of information
Item a: I think most school-related information shared on Instagram lacks quality.
Item c: I consider the quality of much school-related information on Instagram to be questionable.
Item d: I find that the quality of many school-related pieces of information on Instagram is inadequate.
Item f: I am generally skeptical of the quality of school-related content on Instagram.
Social comparison
Item b: When I see what other teachers do for school on Instagram, I feel bad.
Item c: Most teachers I follow on Instagram seem better suited for the profession than I am.
Item d: I feel like I'm doing everything wrong when I see what other teachers post about their work on Instagram.
Item e: Seeing other teachers' content on Instagram drains my motivation.
Procrastination
Item a: I frequently open the Instagram app to avoid dealing with unpleasant things or difficult tasks.
Item b: I frequently open the Instagram app to improve my mood.
Item c: I frequently open the Instagram app to escape from my stressful everyday life.
Item d: I frequently open the Instagram app even though I actually have other things to do.
General stress from Instagram use
Item a: Spending a long time on Instagram for professional purposes makes me feel exhausted.
Item b: Using Instagram for professional reasons over an extended period leaves me deeply frustrated.
Item c: I feel that using Instagram for professional purposes has too much influence on my personal life.
Item d: After prolonged use of Instagram for professional purposes, I feel drained.

midpoint option and thereby encourage more differentiated responses. Prior work suggests that this approach can increase variance in response patterns (Nadler et al., 2015).

Additionally, we collected data on teachers' job experience in years, years of experience in using Instagram, and frequency of Instagram use as covariates. While years of job experience and use of Instagram were treated as continuous variables, frequency of Instagram use varies between 1 = less than once a month, 2 = several times per month, 3 = several times per week, and 4 = several times per day.

### **Data analysis**

For investigating research question 1, we randomly split the sample in two halves. We used one subsample ( $n_1 = 152$ ) to conduct an exploratory factor analysis (EFA) in the IBM SPSS Statistics 29 software using all items on stressors in Instagram to evaluate how the observed variables could be linked to distinct factors. Following Carpenter's Carpenter (2018) guidelines for scale development, we applied principal axis factoring with Promax rotation. We determined the number of factors based on results from Cattell's scree test (Cattell, 1966), Horn's parallel analysis (PA) (Horn, 1965), and Velicer's minimum average partial (MAP) test (Velicer, 1976). We further used Kaiser-Meyer Olkin (KMO) values of  $\geq .60$ , Bartlett's test of sphericity  $p \leq .05$ , communalities  $\geq .40$ , factor loadings  $\geq .40$ , and avoided cross loadings  $\geq .30$  to determine the factor structure of our instrument.

To validate the factor structure suggested by EFA results and to evaluate the structure of all latent factors and their relationships to one another, we used the other subsample ( $n_2 = 152$ ) to conduct a confirmatory factor analysis (CFA) in the Mplus 8.3 software. In particular, we compared a four-factor-solution consisting of individual factors for all stressors with a single-factor-solution, in which all items load on a global factor. Model fit was evaluated using established cutoffs: RMSEA  $\leq .06$ , CFI  $\geq .95$ , and SRMR  $\leq .08$  (Chen et al., 2008; Hu & Bentler, 1999). Chi-square difference testing assessed whether the four-factor model provided a significantly better fit than the single-factor model. Additionally, we estimated McDonald's  $\omega$  to evaluate the internal consistency of all scales (Nájera Catalán, 2019).

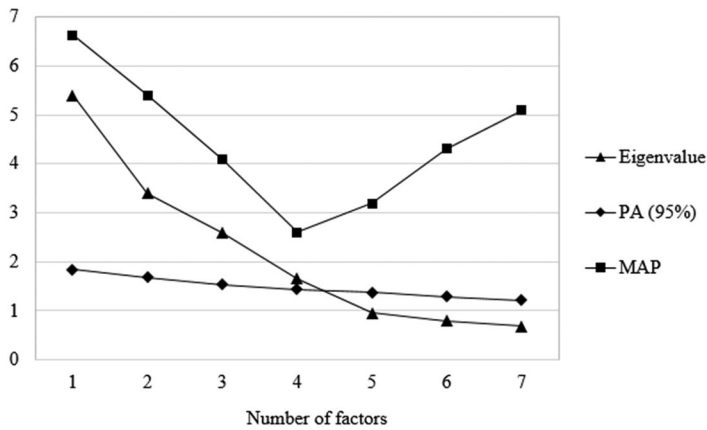
To address research questions 2 and 3, we applied structural equation modeling (SEM) to all observed variables to investigate multivariate relationships among latent factors. We regressed teachers' general perception of stress from Instagram use on information overload, poor quality of information, social comparison, and procrastination (RQ2). We also regressed these stressors on teachers' Instagram use (information seeking, information sharing, co-construction) to investigate differential relationships with teachers' social media use behavior (RQ3). To control for potential confounding effects, we included teachers' job experience, years of Instagram use, and frequency of Instagram use as covariates in the model.

### **Missing values**

On average, 1.2% of the data were missing. To assess the nature of the missing data, we performed Little's test for Missing Completely at Random (MCAR) using IBM SPSS Statistics (Little, 1988), which produced a non-significant result ( $\chi^2 = 483.87$ ,  $df = 446$ ,  $p > .05$ ), suggesting that the missing data could be considered MCAR. For the EFA, we applied listwise deletion, including only cases with complete data for all relevant variables. This decision ensured a consistent sample size and simplified the interpretation of factor structures, given the low percentage of missing data. In contrast, for the CFA and all subsequent analyses, we used the full information maximum likelihood (FIML) algorithm in Mplus 8.3 (Enders, 2017). This approach maximized the use of available data while maintaining robustness in the results.

## Findings

With regard to research question 1, we first found that stressors in Instagram use can be measured empirically. Results from Cattell’s scree test (Cattell, 1966), Horn’s parallel analysis (PA) (Horn, 1965), and Velicer’s minimum average partial (MAP) test (Velicer, 1976) concurrently indicate the existence of four distinct factors (Figure 1): information overload, poor quality of information, social comparison, and procrastination (see Table 2; Bartlett’s Test of Sphericity:  $p \leq .05$ ; Kaiser-Meyer-Olkin test of sampling adequacy  $\geq .60$ ; communalities  $\geq .40$ ; factor loadings  $\geq .40$ ; no cross-loadings; Carpenter, 2018). For model parsimony, we only used four items for modeling each of the stressors. We selected the observed variables based on the highest factor loadings. All scales showed good internal consistency (see Table 3;  $.81 \leq \text{McDonald’s } \omega \leq .90$ ).



**Figure 1.** Number of factors based on Exploratory Factor Analysis including scree test, Parallel Analysis, and Minimum Average Partial test.

Note: Eigenvalue=Eigenvalues based on EFA scree test; PA = 95% percentile Eigenvalues obtained from Parallel Analysis; MAP= average squared partial correlation from Minimum Average Partial test—multiplied by the factor 100 for better presentation

**Table 2.** Pattern coefficients from exploratory factor analysis (EFA) on stressors in Instagram use ( $n=152$ ).

	Factor 1	Factor 2	Factor 3	Factor 4	$h^2$
Information overload					
Item a	–	–	–	–	.17
Item b	<b>.70</b>	–	–	–	.59
Item c	<b>.76</b>	–	–	–	.75
Item d	<b>.89</b>	–	–	–	.73
Item e	<b>.93</b>	–	–	–	.75
Poor quality of information					
Item a	–	<b>.73</b>	–	–	.51
Item b	–	.54	–	–	.33
Item c	–	<b>.87</b>	–	–	.77
Item d	–	<b>.89</b>	–	–	.75
Item e	–	.55	–	–	.38
Item f	–	<b>.63</b>	–	–	.45
Social comparison					
Item a	–	–	.54	–	.47
Item b	–	–	<b>.82</b>	–	.77
Item c	–	–	<b>.73</b>	–	.53
Item d	–	–	<b>.91</b>	–	.73
Item e	–	–	<b>.76</b>	–	.57
Procrastination					
Item a	–	–	–	<b>.75</b>	.56
Item b	–	–	–	<b>.69</b>	.50
Item c	–	–	–	<b>.81</b>	.64
Item d	–	–	–	<b>.70</b>	.57

Note:  $h^2$  = communality, Factor loadings  $< .40$  are omitted, Coefficients in bold indicate items chosen for factor modeling.

Results from the CFA confirmed a four-factor solution as it showed good fit to the data (RMSEA = .058, CFI = .942, SRMR = .061), revealed sufficient factor loadings and differential relationships among all stressors ( $.51 \leq r_{it} \leq .84$ ; see Figure 2). Moreover, we evaluated robustness of the four-factor model by comparing it with an alternative single-factor solution. Results from Chi-square difference testing indicated that the single-factor model fits significantly worse to the data (see Table 4).

Results from descriptive analysis show that teachers report low to moderate levels of stressors in Instagram use (see Table 3). In particular, teachers assess to a moderate degree that there is an overabundance of school-related information and material being shared on Instagram ( $M=2.50$ ,  $SD=0.85$ ) and that they procrastinate due to their use of Instagram ( $M=2.67$ ,  $SD=0.72$ ). Moreover, on average teachers report rather high quality of information and material being shared on Instagram ( $M=2.13$ ,  $SD=0.57$ ) and they rather rarely compare themselves with other teacher users of Instagram ( $M=2.11$ ,  $SD=0.71$ ). Overall, they perceive low to moderate levels of stress from Instagram use in general ( $M=1.97$ ,  $SD=0.65$ ).

In terms of research question 2 and partially agreeing with H1, the results of a latent structural equation model suggest positive relationship between information overload ( $\hat{\beta} = .42$ ,  $p < .001$ ), social comparison ( $\beta = .45$ ,  $p < .001$ ), and procrastination ( $\hat{\beta} = .16$ ,  $p < .01$ ) with teachers' general sense of stress from Instagram use, respectively (see Figure 3). In other words, teachers who perceived themselves experiencing an overload of school-related information and materials on Instagram, more social comparison with other users, and engaging in more procrastination due to their Instagram use report more stress associated with their Instagram use. We found no significant relationship between teachers' perceived quality of information on Instagram and their self-reported stress. That is, the extent to which teachers perceived the information they encountered on Instagram to be low quality was not associated with how much stress resulted from their Instagram use. All stressors explained 58% of the variance in teachers' general sense of stress resulting from Instagram use.

With regard to research question 3, we find that teachers mainly use Instagram for seeking information ( $M=3.04$ ,  $SD=0.69$ ) and rarely engage in information sharing ( $M=1.28$ ,  $SD=0.59$ ) or co-construction with other users ( $M=1.08$ ,  $SD=0.35$ ). Results from structural equation modeling further indicate that—in line with H2—the search for information and materials on Instagram

Table 3. Descriptive statistics ( $n=304$ ).

Construct	$N_{Items}$	$M$	$SD$	$\omega$
Stressors in Instagram				
Information overload	4	2.50	0.85	.90
Poor quality of information	4	2.13	0.57	.82
Social comparison	4	2.11	0.71	.86
Procrastination	4	2.67	0.72	.81
General stress from Instagram use	4	1.97	0.65	.84

Note:  $\omega$  = McDonald's Omega;  $Min = 1.00$ ,  $Max = 4.00$ .

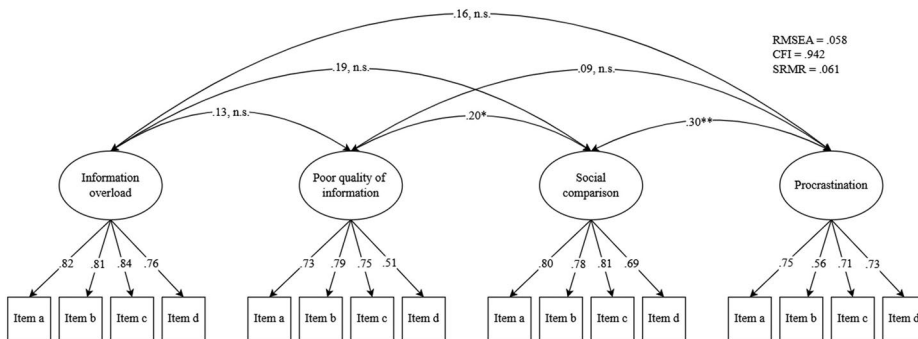


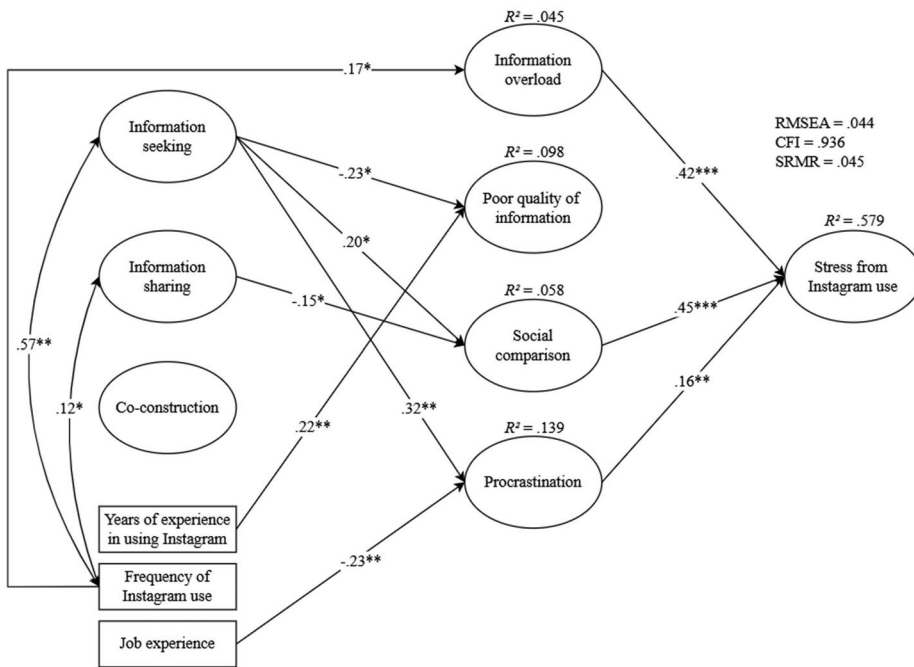
Figure 2. Measurement model for stressors in teachers' Instagram use.

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

**Table 4.** Fit statistics for the single-factor and four-factor measurement models ( $n=152$ ).

Model	$\chi^2$ (df)	RMSEA	CFI	SRMR	$\Delta\chi$ ( $\Delta$ df)	$\Delta$ RMSEA	$\Delta$ CFI
1-factor	653.962*** (103)	.188	.358	.184	507.228*** (6)	.130	.584
4-factor	146.734*** (97)	.058	.942	.061			

Note.  
 \* $p < .05$ .  
 \*\* $p < .01$ .  
 \*\*\* $p < .001$ .



**Figure 3.** Structural equation model on multivariate relationships between teachers’ Instagram usage patterns, stressors in Instagram, and teachers’ general perception of stress from Instagram use.

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ , only significant paths are shown

is associated with the perception of stressors (social comparison:  $\hat{\beta} = .20, p < .05$ ; procrastination:  $\hat{\beta} = .32, p < .01$ ), meaning that teachers who report higher levels of looking through school-related content on Instagram are more likely to experience social comparison and procrastination. Additionally, those teachers are more likely to report finding high-quality information on Instagram ( $\hat{\beta} = -0.23, p < .05$ ). However, consistent with H3 we find that teachers who share information on Instagram report lower levels of social comparison ( $\hat{\beta} = -0.15, p < .05$ ) (see Figure 2).

We further find that teachers who spend more time on Instagram are more likely to report information overload ( $\hat{\beta} = .17, p < .05$ ). Also, more experience in using Instagram is associated with perceiving poorer quality of information being shared on the platform ( $\hat{\beta} = .22, p < .01$ ). Teachers with fewer years of job experience are more likely to report procrastination from Instagram use ( $\hat{\beta} = -0.23, p < .01$ ).

## Discussion

This study examined teachers’ professional Instagram use, focusing on associated stressors. We developed an instrument to measure Instagram-related stressors and their relationship to general stress perceptions, while also exploring differential relationships between Instagram use types and stress.

Our results indicate that information overload, social comparison, and procrastination are significant stressors for teachers using Instagram. These stressors were validly and reliably measured using the instrument we developed. This finding aligns with prior research in educational studies and media psychology, which highlights a link between intensive social media use and negative individual outcomes (Brooks & Califf, 2017; Fu et al., 2020; Lee et al., 2016; Matthes et al., 2020). Specifically, these outcomes include: feeling overwhelmed by the volume of relevant information shared by other Instagram users (Carpenter & Harvey, 2019; Fyfield et al., 2021; Iredale et al., 2020; Staudt Willet, 2019); engaging in upward social comparison and self-referencing, which can lead to feelings of inadequacy (Carpenter & Harvey, 2019; Lee et al., 2025; Meier & Johnson, 2022; Verduyn et al., 2020; Willis et al., 2023); and experiencing procrastination by prioritizing time on social media over other responsibilities (Alblwi et al., 2021; Kim & Seo, 2015; Klassen & Kuzucu, 2009; Krause & Freund, 2014; Sümer & Büttner, 2022). Drawing on Lazarus and Folkman (1984) transactional model of stress and coping, these stressors represent stimuli that can negatively impact teachers' well-being. While these challenges are inherent to Instagram—and likely to other social media platforms (Nagle, 2018; Yoon et al., 2019)—it is essential to equip users with adequate resources to manage and mitigate these stressors, as we will discuss more thoroughly in the implications section.

Although perceived poor information quality emerged as another distinct factor, it appeared unrelated to teachers' broader stress perceptions from Instagram use. This finding contradicts evidence from Carpenter and Harvey (2019), Carpenter et al. (2024), Li and Wang (2021), and Willis et al. (2023), which suggests that teachers may view the reliability, integrity, and authenticity of school-related information on social media with skepticism. Despite such skepticism among teachers, information quality may not act as a significant stressor on Instagram for three reasons. First, most prior studies have relied on qualitative methods to explore teachers' evaluations of information quality, without employing quantitative measures to assess it as a latent construct or its relationship to social media-induced stress. This limits the ability to establish convergent validity. Second, teachers' perceptions of information quality are inherently subjective, shaped by the types of content they consume—strongly influenced by social media algorithms (Cinelli et al., 2021)—and their individual reference points. Finally, teachers may already possess sufficient coping resources to address potential challenges related to information quality. Consistent with this, our findings indicate that teachers report relatively high levels of perceived information quality on Instagram, suggesting it does not significantly contribute to their overall stress from Instagram use.

Our findings further provide evidence for differential relationships of types of Instagram use with stressors in Instagram. Specifically, we find that teachers who seek information on Instagram report higher levels of procrastination and social comparison from using Instagram. Conversely, our results suggest that teachers who share information are less likely to experience social comparison on Instagram. This corresponds with Sümer and Büttner (2022), Thorisdottir et al. (2019), Verduyn et al. (2020), and Yoon et al. (2019) who find that teachers spending large amounts of time-consuming social media content are more prone to compare themselves with others' achievements, and delay other tasks and duties. In contrast, Valkenburg et al. (2022) find in their scoping literature review that passive and active social media use are not definitely linked to decreases or increases in well-being, respectively. We argue that teachers who share content on Instagram may be more intentional platform users who are capable of using Instagram responsibly and reflecting on their behavior. They may be more aware of the side effects of frequent use of social media. Teachers who mainly seek information, however, may be less inclined to responsibly monitor and reflect their professional use of social media.

We find no evidence on relationships of teachers engaging in co-creation with other users and stressors in Instagram. This may be due to the low variance in responses, as few teachers appear to engage in co-creative activities, consistent with findings by Richter et al. (2022). Similarly, we did not find an association between types of Instagram use and perceptions of information overload. However, teachers who use Instagram more frequently are more likely to feel overwhelmed by the overabundance of information shared on the platform. This aligns with

Twenge and Campbell (2019) findings, which show that heavy social media users (5+ hours per day) report lower well-being compared to light users (<1 h per day). Information overload may serve as a mediating variable that explains this mechanism. Additionally, teachers with fewer years of job experience—presumably younger teachers—report higher levels of procrastination associated with Instagram use. This is consistent with global data showing that younger individuals spend more time on Instagram—partially showing symptoms of problematic use (Brailovskaia et al., 2020; Statista, 2021).

### **Limitations**

We recommend interpreting the results of this study while considering certain methodological limitations. First, the study relied on self-reports, which may be influenced by biases such as social desirability or inaccurate self-assessment. Second, our convenience sample of teachers recruited *via* Instagram is likely to be selective. Teachers who rarely use Instagram may have been less likely to see the survey invitation or to participate, and teachers who deliberately avoid social media because of negative experiences are absent from our data. While such sampling constraints are almost inevitable in studies focusing on social media use, they nonetheless limit generalizability. Third, our cross-sectional design prevents causal interpretations of the relationships between usage patterns, stressors, and perceived stress. Stress appraisal is a dynamic process that unfolds over time, and longitudinal data would be needed to capture how teachers' stress experiences develop in relation to social media use. Moreover, while the transactional model distinguishes between primary and secondary appraisal, our survey design does not allow us to empirically separate these phases of stress evaluation. Fourth, we observed limited variance in teachers' responses concerning sharing information and co-creation, which reduced our ability to examine their relationship with stressors or perceived stress; thus, our analyses may lack sensitivity to detect relationships that could emerge in larger or more diverse samples. Finally, the focus on Instagram as a single platform restricts the scope of our findings. While Instagram's distinct affordances and popularity make it a valuable case, stressors may manifest differently on other platforms, which future research should address.

### **Implications**

Despite limitations, our findings offer valuable insights for both practice and research. In teacher education, the results underscore the importance of digital literacy and self-regulation skills and practices (Ning & Inan, 2024; Zembylas, 2024). Targeted training across all phases of teacher education—pre-service and in-service—can help educators manage stressors related to professional social media use (Iredale et al., 2020). In particular, teachers should be able to reflect on their past social media use, be aware of its impact on their well-being, and consider how they can be purposeful and intentional in their present and future social media use and nonuse.

Building on the literature reviewed, our findings suggest that teachers need to acquire specific skills to mitigate platform-related stressors. To reduce information overload, teachers should be able to navigate social media efficiently and filter relevant content. To address issues of information quality, they require critical media literacy to differentiate helpful from harmful or misleading content (Nagle, 2018). With respect to social comparison, teachers should understand strategies of online self-portrayal that shape how content is presented, and reflect on how such portrayals may trigger unhealthy comparisons. Finally, to counteract procrastination, teachers should be capable of monitoring and regulating their time spent on social media, for example by using platform- or device-based time limits.

Identifying these stressors and aligning them with the corresponding skills can inform effective training programs that support informal professional learning while safeguarding teacher well-being. For example, instruction in efficient search strategies may reduce procrastination (Alblwi et al.,

2021), while training in critical media literacy can help teachers evaluate information quality, recognize the mechanics of self-presentation, and reflect on personal habits and platform affordances.

Future research should continue exploring teachers' social media use, its drivers, and its effects. First, additional stressors warrant investigation, such as doom-scrolling—the habit of persistently consuming distressing content—or fear of missing out, which may heighten anxiety and technostress (Buchanan et al., 2021; Hetz et al., 2015). Content portraying schools or educators negatively may also contribute to this stress (Muskin, 2024; Zembylas, 2024). Second, while this study focused on stressors related to content consumption, active content creation presents distinct challenges. Teachers who share content may face pressure to maintain a polished professional image or respond to criticism (Carpenter & Harvey, 2019). Exploring how sharing predominantly positive experiences shapes stress and self-perception is a promising avenue for future work. Third, the connection between social media-related technostress and teachers' offline well-being remains underexplored. Future research should investigate how individual traits influence susceptibility to specific stressors and how Instagram-related stress impacts teachers' professional identity and self-concept. Longitudinal studies are especially needed to uncover causal relationships and assess the long-term effects of social media use on teachers' personal and professional lives. From a theoretical perspective, our findings extend the transactional stress model (Lazarus & Folkman, 1984) to the context of teachers' professional social media use, thereby contributing to a broader understanding of stress appraisal processes in digital environments. In particular, future studies should examine which personal and contextual resources teachers can draw on when confronted with digital stressors and how these resources shape the secondary appraisal of such stressors.

## Conclusion

This study extends the transactional stress model to teachers' professional Instagram use, providing a validated measure of key stressors and underscoring the need for digital literacy and self-regulation to support teachers' well-being in evolving social media environments.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

## Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work the authors used ChatGPT and DeepWrite in order to evaluate and edit syntax, grammar, and orthography of this manuscript. After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

## Notes on contributors

*André Meyer* is a postdoctoral scholar at the University of Potsdam. His research focuses on teachers' professional learning, school improvement, and school leadership. He received his doctoral degree from the University of Potsdam.

*Eric Richter* is a professor of school pedagogy at the Catholic University of Eichstätt-Ingolstadt, Germany. He received his PhD from the University of Potsdam. His research focuses on teacher education, including both pre-service and in-service teacher professional development, with a particular interest in learning processes, digital innovations, and the transfer of training into practice.

*Jeffrey P. Carpenter*, Ph.D., is the William S. Long Professor and Professor of Education at Elon University, in North Carolina. He was a high school English and ESOL teacher for 10 years in various countries before moving into teacher education in 2010. He received his PhD from the University of Virginia. His research focuses on pre-service and in-service educators' self-directed professional learning via social media platforms and in other learning spaces.

**Dirk Richter** is a professor of educational research in the Department of Education at the University of Potsdam, Germany. He is a former research associate at the Institute for Educational Quality Improvement, Berlin, and the Max Planck Institute for Human Development, Berlin, and received his PhD from the Free University, Berlin. His research interests are in the acquisition of professional competencies in teacher training and professional development as well as teacher collaboration.

**Sebastian Kempert** is a professor for primary education and research on learning and instruction at the University of Potsdam, Germany. He received his PhD from the University of Frankfurt and worked as a postdoctoral researcher at the Humboldt University of Berlin. He is interested in research on cognitive, emotional, and linguistic factors associated with learning processes in primary school contexts.

## ORCID

André Meyer  <http://orcid.org/0000-0003-3198-5191>  
 Eric Richter  <http://orcid.org/0000-0003-3572-2022>  
 Jeffrey P. Carpenter  <http://orcid.org/0000-0002-9228-3962>  
 Dirk Richter  <http://orcid.org/0000-0002-2384-1588>  
 Sebastian Kempert  <http://orcid.org/0000-0003-2833-630X>

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