Screens, Streams, and Stress: A Qualitative Study on How Distance Learning Students Cope with Information Overload

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Abstracts: Extensive research has been conducted in the field of information overload, but little attention has been paid to the experiences of distant learners. This research aims to fill that void by delving into the challenges that distance learning students face in online educational environments. The study addresses the following key issues: How are these students dealing with information overload? What effect does this overload have on their stress and anxiety levels? And, perhaps most importantly, what coping strategies do they employ? Data was gathered through interviews with six distance learners using a general qualitative research methodology. Thematic analysis revealed that these students' information overload stemmed from a variety of sources: excessive course materials, constant notifications, live sessions, and technological challenges, among others. This overload, in turn, manifested as feelings of being overwhelmed, the fear of missing out, digital fatigue, and pressure to perform. However, the study also uncovered resilient coping strategies. Distance learners managed information overload through effective time management, strategic information filtering, mindful digital consumption, active learning techniques, and self-care practices. These findings offer useful insights not only for improving online learning delivery but also for guiding other potential online learners through the challenges of digital education.

Keywords: Information Overload, Distance Learning, Online Education, Stress Management, Coping Strategies.

1. INTRODUCTION

In our modern era, information has become incredibly accessible, revolutionizing the way we live, work, and interact. Thanks to advancements in technology, especially Information and Communication Technology (ICT) and the internet, information is now at our fingertips (Lutkewitte, 2019). With just a few clicks, we can access vast amounts of knowledge, from educational resources to news articles, helping us stay informed and connected (Dezuanni et al., 2018). This unprecedented ease of obtaining information has transformed various aspects of our lives, making learning more accessible and enabling global communication on an unprecedented scale (Qodirova, 2023).

The rise of ICT and the internet has led to the immense production and dissemination of information across the globe (Sharma, 2020). This rapid flow of data has powered advancements and sophistication in fields such as science, healthcare, education, politics, and business. The ICT and the internet has made it possible for researchers to collaborate across continents, students to access online courses from renowned universities, and businesses to expand their markets globally (Simmons and Thompson, 2017). The internet has become a virtual library, empowering individuals with knowledge, fostering innovation, and bridging gaps between cultures and nations (Akhtar, 2020).

However, the abundance of information, while valuable, has created its set of issues and challenges. The information age has steered in an era of information overload. With the constant influx of data from various sources, individuals often find themselves overwhelmed (Lee, Tandoc and Diehl, 2023). Sorting through vast amounts of information to find accurate and relevant content has become an intimidating task. Moreover, the unchecked dissemination of information has given rise to misinformation, disinformation and fake news, leading to confusion and distrust (Miró-Llinares and Aguerri, 2023). Balancing the benefits of easy access and retrieval of information with the need to filter out the noise has become a crucial skill in today's digital landscape. As we traverse this information-rich environment, finding a way to manage the influx of data effectively has become essential to making informed decisions (Janssen, Cobbe and Singh,2020) and fostering a knowledgeable society.

Extensive research on information overload has been reported in the literature, shedding light on the complexities of this phenomenon (e.g. Fu et al., 2020; Hong and Kim, 2020, Matthes et al., 2020). These studies have significantly improved our understanding of the challenges posed by the overwhelming influx of information in various contexts. Past studies have delved into different settings, including universities, healthcare, and businesses, providing valuable

insights into how professionals and individuals in these sectors manage information overload (e.g. Mohammed et al., 2021; Zhang, Ding and Ma, 2022; Li and Khan, 2022). However, despite the considerable attention given to educational settings, there remains a notable gap in the exploration of information overload especially on distant learners (Dawie, Masrek & Baharuddin, 2022). While the experiences of traditional or conventional students have been studied in depth (Shi et al., 2020), the unique challenges encountered by distant learners (Clarins and Baluyos, 2022) in coping with information overload have not been thoroughly examined.

This gap in research is of paramount importance due to the growing prevalence of online education and distant learning platforms. As more students adopt remote learning options, understanding how they navigate the vast sea of information is crucial. Distant learners, often juggling multiple responsibilities (Kara et al., 2019), require tailored strategies to handle information overload effectively. Addressing this gap not only enhances our understanding of the digital learning experience but also informs the development of targeted interventions and support systems. By comprehensively studying how distant learners experience and cope with information overload, on-line learning developers can design more efficient learning environments, ensuring that students can engage with the material meaningfully without feeling overwhelmed, resulting in a more conducive and enriching educational experience.

2. LITERATURE REVIEW

2.1 Information Overload

In today's digital age, where information flows continually through various channels, a plethora of terms has emerged to describe the overwhelming experience individuals face. Phrases like "information overload," "information overabundance," "infobesity," "infoglut," "data smog," and "information pollution" have become commonplace, emphasizing the massive amount of data bombarding our senses. (Bawden and Robinson, 2020). As our lives intertwine with technology and social media platforms, newer terms such as "social media fatigue" and "social media overload" have gained prominence, emphasizing the time-consuming nature of continuous online engagement (Zheng and Ling, 2021). In academic circles, the concept has been explored through terms like "information anxiety," "library anxiety," and "reading overload," highlighting the stress and anxiety that can accompany the constant flow of information (Khademizade and Nasab, 2023). Moreover, in professional and cognitive contexts, terms like "infostress," (Ledzińska and Postek, 2017) "infoxication," (Dias, 2014) "communication overload," and "cognitive overload" (Batista and Marques, 2017) have been coined to describe the mental strain felt when attempting to process and filter an excessive amount of information. These terms collectively capture the multifaceted challenges posed by our daily data inundation.

Information overload, a common problem in our digital age, can be defined in a variety of ways, capturing the multifaceted challenges that people face. According to one definition, it is the condition in which the volume of available information exceeds the processing capacity, making it difficult to effectively absorb, analyse, and make decisions (Kivuti, 2021). Another perspective describes it as the feeling of being overwhelmed and mentally exhausted due to the constant influx of data, hindering the ability to concentrate and prioritize (Fuertes, et al., 2020). From a cognitive standpoint, information overload occurs when the brain struggles to handle the sheer quantity of information, leading to decreased comprehension and retention (Chen, Shang and Kao, 2007).

Additionally, information overload can be viewed as the imbalance between the information one receives and the time and resources available to process it adequately (Matthes et al., 2020). It appears as the sensation of being overloaded with notifications, messages, and updates on social media and other online platforms, which lowers engagement and reduces enjoyment. Practically speaking, information overload can be defined as the interference brought on by an abundance of data that makes it difficult to locate pertinent, accurate, and useful information and impedes efficient decision-making (Beasly et al., 2011). These varied definitions collectively highlight the intricate nature of information overload, emphasizing its impact on cognitive functioning, decision-making processes, and overall well-being in the modern information-driven world (Kominiarczuk and Ledzińska, 2014).

Information overload is a multifaceted issue influenced by various factors, including personal attributes (Eppler and Mengis, 2004). The degree to which an individual can control their time, attention, and cognitive resources has a

significant impact on how susceptible they are to information overload. Traits such as lack of information literacy, poor time management skills, or an inability to discern essential information from non-essential contribute significantly (Kurelović, Tomljanović and Davidović, 2016). Additionally, compulsive behavior may be fueled by stress, anxiety, or the fear of missing out. These emotions may cause people to obsessively check their notifications and sift through an excessive amount of data, which exacerbates the feeling of overwhelm. (Harkin and Kuss, 2021).

Information characteristics also contribute significantly to information overload (Mahdi et al., 2020). The sheer volume of available information, its complexity, and the speed at which it is generated all play crucial roles (Laker at al., 2018). In the digital age, information is often presented in various formats, from text and images to videos and podcasts, making it challenging to process and prioritize (Mahdi et al., 2020). Moreover, the credibility and reliability of information sources vary widely, making it necessary for individuals to invest time and effort in evaluating the authenticity of the data they encounter, adding an additional cognitive load (Kaylor, 2014).

Task and process parameters further exacerbate information overload (Eppler and Mengis, 2004). When tasks require individuals to process a vast amount of data, make quick decisions, or switch between multiple sources of information, the cognitive demand increases significantly. Similarly, organizational design plays a pivotal role. In workplaces where communication channels are constantly open, and information flow is unregulated, employees might find themselves bombarded with emails, messages, and notifications, making it difficult to focus on essential tasks (Graf and Antoni, 2021). Unclear roles and responsibilities within an organization can lead to redundant communication, adding to the overload. Moreover, in environments that lack proper training or guidelines on information management, employees may struggle to filter through the influx of data effectively (Misra, Roberst and Rhodes, 2020).

Lastly, information technology, while a boon, also contributes to information overload (Eppler and Mengis, 2004). The advent of smartphones, social media platforms, and communication apps means that information is always at our fingertips (Firth et al., 2019). While this accessibility enhances connectivity and productivity, it also blurs the boundaries between work and personal life. The constant influx of emails and messages, even during non-working hours, can lead to burnout and stress (Stich et al., 2019). Moreover, the algorithms used by online platforms to personalize content can create echo chambers, reinforcing existing beliefs and preferences, limiting exposure to diverse perspectives but also inundating individuals with repetitive information (Ćebek, Antolović and Kramarić, 2023).

2.2 Information Behavior of Distance Learner

Information behavior, a concept rooted in library and information science, refers to the ways in which individuals access, seek, manage, and use information. It explores the complex procedures and patterns people use to interact with information in a variety of contexts. This multidisciplinary field explores not just the technical aspects of information retrieval but also the psychological, social, and cultural dimensions that shape how we engage with information in our daily lives (Pettigrew, Fidel, and Bruce, 2001).

Understanding information behavior entails looking at how people form queries, where they look for information, how they evaluate the validity and applicability of sources, and how they use the information they find to fulfil their needs (Bates, 2010). It's a holistic approach that considers the interplay between individual factors, such as cognitive abilities, emotions, and past experiences, and external factors, such as the availability of information sources, technological tools, and social networks (Wilson, 2000).

Distance learners, also referred to as online or remote learners, have unique qualities that set them apart from regular classroom-based students. One key trait of distance learners is their self-motivation and independence (Dos Santos, 2020). As they navigate the virtual learning environment, these individuals often need to manage their time, set goals, and remain disciplined to keep up with coursework without the regular physical presence of instructors and peers (Ilonga, Ashipala and Tomas, 2020). In online education, where students are expected to take charge of their education, this self-driven method of learning is crucial.

The information behavior of distance learners is deeply influenced by the unique challenges and opportunities

presented in online education. Since they must independently research various online resources, digital libraries, and academic databases to supplement their course materials, distant learners frequently display proactive information-seeking behavior. Due to the absence of face-to-face interactions, these students frequently engage in virtual discussions, online forums, and collaborative platforms to share knowledge, seek clarifications, and expand their understanding of the subject matter (Oliviera and Greenidge, 2020). Their information behavior is characterized by a strong reliance on search engines and online databases, as well as adeptness in critically evaluating the credibility and relevance of online sources (Alturki, 2022). Distance learners often demonstrate a high level of self-regulation in managing their information intake, using digital tools to organize resources, take notes, and create a structured learning environment tailored to their individual needs and preferences (Carter et al., 2020).

The experience of information overload is significantly influenced by an individual's information behavior, which encompasses their habits, preferences, and strategies in dealing with information (Ndumu, 2020). For instance, if someone has a tendency to download and save a lot of digital content without having a system in place, they might find themselves quickly buried under a mountain of digital clutter. While their intention might be to gather useful resources, the lack of a structured approach makes it challenging to sift through the accumulated data when needed (Chaudhry, Rehman and Al-Sughair, 2015). Similar to this, someone who doesn't have effective filing or organisation techniques may find it difficult to quickly find the information they need, which can be frustrating and add to the information overload. These actions highlight the crucial connection between how people handle information and their propensity to experience information overload.

Furthermore, an individual's information behavior can directly impact their cognitive load (Noll, 2021). Constantly switching between multiple sources, engaging in non-stop scrolling on social media, or compulsively checking emails are behavioral patterns (Carmi et al. 2021) that can contribute significantly to information overload. The inability to filter out irrelevant or redundant information and the habit of multitasking can strain mental resources (Ngo, Rauffet and Banks, 2022). Understanding these behavioral tendencies is vital in addressing information overload effectively.

3. RESEARCH QUESTIONS

RQ1: How do distance learning students experience information overload in online educational environments?
RQ2: How do challenges related to information overload influence the levels of stress and anxiety experienced by distance learning students?
RQ3: What coping strategies do distance learning students employ to manage information overload?

4. RESEARCH METHODOLOGY

The research methodology employed in this study was a general qualitative research method, similar to that of Mathis (2010) and Shim (2013). Qualitative research focuses on exploring the depth and nuances of human experiences, perceptions, and behaviors within their natural context (Nassaji, 2020). This method relies on non-numerical data from open-ended surveys, observations, and interviews to glean rich, in-depth insights. The study's qualitative approach, which captured the nuances and complexity of the participants' responses, enabled a comprehensive understanding of the topic.

4.1 Data Collection

This study employed in-depth interviews as the primary data collection method. The research focused on a specific group, consisting of six students enrolled in a distant learning program at Universiti Teknologi MARA. Purposive sampling, a technique that enables researchers to specifically choose people with particular characteristics pertinent to the research questions, was used to choose the participants. Face-to-face interviews with each participant took place, lasted 2 to 3 hours, and were meticulously conducted. Participants in these interviews discussed their perspectives, experiences with, and difficulties with distance learning. The conversations were taped and later verbatim transcribed, guaranteeing the accuracy of the information for careful analysis.

4.2 Data Analysis

In this study, the data gathered from the interviews with distance learning students were analysed using thematic analysis, a reliable qualitative research method. Thematic analysis is a preferred method in qualitative research due to its benefits (Terry and Hayfield, 2021). Its versatility, which enables researchers to examine a variety of research questions and topics, is one of its main advantages. Additionally, it offers a methodical approach for locating and analysing data patterns, ensuring a thorough comprehension of the participants' experiences.

The process of thematic analysis involves several steps (Terry and Hayfield, 2021). First, the researchers became familiar with the data by verbatim transcribing the interviews and reading them several times to fully comprehend them. After that, initial codes were created by spotting recurrent themes and patterns in the data. The key ideas arising from the participants' responses were then highlighted by grouping these codes into larger themes. The researchers developed distinct and cogent themes that captured the essence of the participants' narratives through an iterative process of refinement and revision.

A crucial step in improving the study's credibility was member checking, in which the researchers gave the participants access to the analyzed data (Candela, 2019). The participants were able to confirm and validate the results through this feedback loop, ensuring that the interpretations accurately reflected their experiences. The researchers strengthened the validity and authenticity of the study's conclusions and improved the overall reliability of the research findings by including participant perspectives in the validation process.

5. FINDINGS

5.1 Demographic Information

The demographics of the participants are summarised in Table 1. Six people took part in the study, equally divided between men and women. Their ages ranged from 28 to 42, reflecting the study's diverse age group. The participants' educational backgrounds also varied, with two of them pursuing master's degrees and the remaining four enrolled in bachelor's degree programmes. Participants were spread out across different years and semesters in terms of academic progression, with representation in years 2 and 3 as well as semesters 3, 4, and 5. The study's perspective on the experiences of distance learners will be diverse and well-rounded due to the study's diverse demographic makeup.

Table 1. Participants Information

Participant	Gender	Age	Program Level	Semester/Year
P1	Male	28	Bachelor	5/3
P2	Female	28	Bachelor	3/2
P3	Male	31	Bachelor	4/2
P4	Male	34	Bachelor	4/2
P5	Female	29	Master	3/2
P6	Female	42	Master	3/2

5.2. Situations of Information Overload

Distance learners can feel overloaded with information in several ways during their learning experience:

Excessive Course Material

Detailed readings, articles, and research materials are frequently provided for distance learning courses. The enormous amount of content that students must read and comprehend in a short amount of time may overwhelm them. Courses also include podcasts, interactive multimedia, and videos in addition to text-based materials. For some learners, processing these various formats at once can be difficult. Among the participants, one said "*The lecturer overloaded us with tons of stuff — PowerPoint slides, PDFs, short videos... it was a lot to handle!*". Another participant elaborated that "*So many materials... some of them I haven't even had the chance to open or read yet*!"

Constant Notifications and Communications

Distance learners receive numerous emails and announcements from instructors, administrative staff, and fellow students. One participant pointed out *"We keep getting notifications all the time – not just from our lecturer, but also from the program coordinator and even the office clerk. They need us to respond right away!"*. It can be difficult to manage these communications and maintain concentration on your studies. As a result of the constant stream of new posts and replies generated by participation in online discussion forums and group chats, it can be challenging to follow the flow of the conversation. One participant gave the following example: "*We have to participate in this online forum, but some students write extremely long, off-topic answers. It's really challenging for me to keep up with the entire conversation*".

Live Sessions and Webinars

Students may need to participate in live sessions, webinars, or virtual classrooms as part of some online courses. There may be time conflicts and information overload when attempting to balance these real-time interactions with asynchronous study materials. It can be difficult for students to focus on the lecture material during live sessions because they may be using multiple platforms at once (video conferencing, chat windows, shared documents, etc.). One person spoke about his personal experience: "*Our lecturer uses Webex and sometimes Google Meet. They share extra info in the chat, and we're supposed to ask questions there too. It's tough to concentrate on the lecture and read the chat at the same time!*"

Diverse Information Sources

For assignments and projects, distance learners frequently need to conduct independent online research. It can be overwhelming to navigate through various websites, databases, and academic journals, especially for inexperienced researchers. Participating in academic discussions on social media sites or online forums exposes students to a variety of viewpoints and data. Most of the participants acknowledged that it can be difficult to sort through this information to determine its applicability and accuracy. Of them, one said that "*Our lecturer tells us to find research articles online, but there are so many! We can't read all of them, it's just too much.*"

Technological Challenges

Some students might become overwhelmed when using sophisticated Learning Management Systems (LMS) or online platforms. It can be intimidating to start learning how to use these systems, access course materials, turn in assignments, and take part in discussions. During the interview, several participants brought up these issues, and one of them quoted "*This U-Future* (i.e. LMS) *thing keeps changing, and it's a real headache. Plus, it often doesn't work, especially when everyone's trying to use it at the same time during busy hours.*" Learning to use specialized software, applications, or tools related to the course adds another layer of complexity, especially for students who are not tech-savvy. One participant explained "*We have to learn not just SPSS but also other software like Smart PLS and N-VIVO for data analysis. The lecturer can't cover everything in our online sessions, so we have to figure it out ourselves. It's tough because we're not really familiar with these programs*".

Assignment and Assessment

The need for students to manage several topics and requirements at once can result in information overload when there are numerous assignments, quizzes, and exams with overlapping deadlines. The majority of participants stated that tests for various courses occasionally have conflicting dates. Among them said, "*Usually, before the mid-term break, we have tests. They're all on the same days: one in the morning, one in the evening, and another the next day.*" Courses often include diverse assessment formats such as essays, presentations, online quizzes, and group projects. Understanding the specific requirements for each assessment adds to the cognitive load. One participant shared his experience "*For most courses, we have to do written assignments. But it really depends on the lecturer. Some lecturers are really picky and only want us to use the latest journal articles. Others are more relaxed and don't mind as much.*"

Peer Interaction and Collaboration

Collaborative assignments involve coordinating with peers across different schedules. Coordinating tasks, sharing

information, and managing collaborative documents can be challenging as highlighted by one participant "*Sometimes, in group projects, we have a member who's part-time and a semester senior. It's hard to find a time that works for all of us because his class schedule is so different from ours*." Providing and receiving feedback from peers in online discussions or group projects means processing a significant amount of information and incorporating it into one's work. One participant also lamented "*My teammate is really experienced and has great ideas, but when it comes to putting it all down in a document or report, he doesn't contribute much.*"

5.3. Stress and Anxiety

Distance learners frequently experience stress and anxiety related to information overload and digital interactions in various ways:

Feeling Overwhelmed

The constant flow of information from lectures, readings, online discussions, and social media can be overwhelming for students. Trying to keep up with the volume of content while juggling multiple sources of information causes stress. "*The reading list is insanely long, with so many articles," one participant said. I read one and got a headache because I didn't fully understand it. Moving on to the next one made my head spin even more*." Another participant explained "*If we don't watch the video lectures, we're totally lost in the next class. To get the next topic, we really have to understand what came before*." He further added that "*I haven't even started yet... just seeing the long list of readings is already stressing me out*."

Fear of Missing Out (FOMO*)*

Distance learners often witness their peers' achievements and activities on social media platforms. The fear of missing out on important updates or opportunities can lead to anxiety and a sense of inadequacy. One participant described "*It's normal for friends to share what they've accomplished. They always talk about their successes like submitting assignments, finishing presentations, or defending proposals. Seeing their posts stresses us out because we're still struggling.*"

Pressure to Perform

Observing the progress of peers in online discussions or collaborative projects can foster a competitive mindset. Distance learners may feel pressure to perform at the same level as their peers, which can lead to stress and self-doubt. Pressure can be created by high academic expectations combined with the need to constantly engage with digital materials. Learners are anxious because they are concerned about meeting deadlines, getting good grades, and understanding complex topics. One participant elaborated "*Passing in master's is different from undergrad. You need at least a B to pass; anything less and you fail, needing to redo the course. Some classes are super tough. Hearing that seniors failed in those courses stresses me out*." Another participant explained "*My boss knows I'm studying. They let me leave work early for my evening classes, so they expect me to do well in my studies."*

Digital Fatigue

Long periods of time spent in front of a screen, listening to lectures, participating in discussions, and completing assignments can result in digital fatigue. This physical strain can contribute to stress and fatigue. The need to stay connected to online learning and communication platforms can blur the lines between academic and personal life. Learners may feel pressured to be available at all times, increasing stress levels. One participant shared her story. "*I get a headache if I stare at the screen for more than three hours." As a result, I usually stop after two hours. But I know I won't be able to cover everything if I stop. So that's a new headache*." Another participant said "*I had this really bad pain in the back of my neck. I went to the doctor, and they sent me to physiotherapy. The physiotherapist said it's because of my posture and spending long hours on the computer that my neck is all strained*."

Technical Challenges

Technical issues, such as glitches in online platforms, connectivity issues, or device compatibility issues, can all disrupt the learning process. Dealing with these difficulties can lead to frustration and anxiety. Learners are concerned about missing important updates or announcements due to technical difficulties. The fear of missing vital information

can cause stress and hypervigilance. One participant shared her experiences: "*Even with broadband, my internet isn't always reliable. Sometimes, it just cuts out. It's a nightmare, especially during online classes. Once, during my final presentation last semester, the internet went off and I freaked out. I had to reschedule for another day*." She also elaborated that "*I wanted my presentation slides to be really cool, so I added a bunch of infographics. But doing that makes the internet slow because it uses a lot of data*".

Social Isolation

Distance learning, especially when combined with information overload, can lead to social isolation. Learners miss the face-to-face interactions with peers and instructors, which can contribute to feelings of loneliness and anxiety. One response stated that "*Distance learning is totally different from regular classes. We hardly, or sometimes never, meet our classmates in person. It's all online. Even if we want to talk, it's all through messages or video calls. Sometimes, we can't even see each other because the cameras are off. So, it's not as clear. When we meet in person, our conversations are much more open and honest*." Another sharing stated "*In distance learning, you really need discipline. Even though you have lecturers, team mates, or classmates, it's mostly about you and your ability to work independently*."

Managing Multiple Roles

Many distance learners juggle multiple roles, such as work, family, and academics. According to most of the participants, balancing these responsibilities while managing information overload requires careful time management, causing stress due to the pressure to excel in all areas of life. One participant highlighted "*Usually, working folks go for distance learning. Those who have free time and don't work prefer regular classes. People with jobs have a lot on their plate - work, family, and community stuff in the neighborhood. It's really hard to balance it all.*"

5.4 Information Overload Coping Strategies

Distance learners employ various techniques and tools to cope with information overload and manage the influx of information in their online learning environment:

Effective Time Management

Distance learners prioritize tasks based on deadlines and importance. They focus on completing high-priority assignments first before moving on to other tasks as shared by one participant "*I've got to manage my time wisely, prioritize things. I focus on assignments with earlier deadlines and get them done first*.". They allocate specific time blocks for studying, attending lectures, and engaging in online discussions. This structured approach helps them manage their time effectively. One participant said "*Our online lectures are usually on weekends, specifically Saturdays. On other days, we study independently or have online discussions, mostly in the evenings after work*."

Effective Information Filtering

Distance learners practice critical thinking skills in order to assess the credibility and relevance of online sources. They learn to distinguish reliable information from misinformation or biased content, as one participant pointed out. "*You have to know how to filter information." We're in so many groups, and so much information is shared in those groups. We must be wise in filtering and reading only what is truly useful*." They use academic library databases and scholarly journals, which provide peer-reviewed and credible research articles, ensuring that the information they access is trustworthy and accurate. This was explained by most participants "*Basically, our lecturers always tell us to stick to the databases our library pays for when finding articles. These journals are way more trustworthy than the random free ones you find online*."

Mindful Digital Consumption

Distance learners consciously limit their time on social media platforms to reduce distractions and prevent the influx of non-academic information. They restrict access to distracting websites during study sessions, helping them stay focused on their coursework. For instance, few participants responded "*We do use social media, but we can't be too active on it because the free time we have needs to be focused on studying*" and "*Social media really eats up a*

lot of time, you know – editing, reading comments, and responding. When it comes to study time, there's just no room for it, except maybe during semester breaks."

Active Learning Strategies

Distance learners actively engage in discussions, group projects, and online forums. Actively participating in the learning process helps them process and understand information more effectively. Collaborative tools like Google Docs enable learners to collaborate on documents and projects, fostering a sense of shared responsibility and information sharing. One participant shared "*For online learning, you gotta stay active, chat with your friends and lecturers a lot. Otherwise, you won't be able to catch up, for real.*" Another participant also shared "*Studying remotely means we're all in different places. We hardly get to meet in person. For group projects, we use Google Docs – it's easier. Everyone can share and edit, it's more transparent, and we know who did what and how much they've done.*"

Self-Care and Well-being

Distance learners plan regular breaks during their study sessions. Short breaks allow them to relax and avoid mental fatigue, allowing them to process information more efficiently. Outside of academic work, physical activities, meditation, or hobbies can help distance learners manage stress and maintain overall well-being. "*Even though my schedule is quite busy, I try to find time to exercise once in a while, take the family out, or go to the mosque for religious talks,*" one participant said. "*And thank God for semester breaks!*" It's a chance to unwind a little. I don't think I'd be able to handle it if it went on without a break*."

CONCLUSION

Implications

The theoretical implications of this study are found in its contribution to the understanding of information overload in the context of online education, with a particular emphasis on distant learners. The study adds to existing theories on information behavior in digital learning environments by identifying the various sources of information overload, such as excessive course materials, constant notifications, and technological challenges. It sheds light on the nuanced ways in which information overload affects learners, including feelings of overwhelm, fear of missing out, and digital fatigue. These findings not only extend current theoretical frameworks, but also provide valuable insights for educators, psychologists, and information scientists. Understanding how distance learners experience and cope with information overload enhances our theoretical grasp of the complexities involved in online education, thereby guiding future research endeavors in similar contexts.

On a practical level, this study holds significant implications for both educators and learners engaged in online education. By uncovering coping strategies such as effective time management, strategic information filtering, and mindful digital consumption, the research offers practical tools for distant learners to navigate the challenges of information overload. Educators can incorporate these coping mechanisms into their teaching strategies, providing students with tailored guidance. Furthermore, administrators in charge of online learning platforms and educational institutions can use these insights to effectively redesign interfaces, streamline notifications, and curate course materials, resulting in a more learner-friendly online environment. Furthermore, the findings of the study on the stress and anxiety caused by information overload highlight the importance of comprehensive support systems within digital learning platforms. Implementing these practical suggestions has the potential to significantly improve the overall online learning experience for distance learners, making the educational journey more manageable and less stressful.

Limitations and Future Studies

One of the study's limitations is the relatively small and localized sample size, with participants from a single university. While the findings provide valuable insights into the experiences of distant learners in this specific context, they may not fully represent the diverse range of challenges faced by online learners across institutions and cultural backgrounds. This narrow scope necessitates caution when extrapolating the findings to a larger population of distance learners. Furthermore, the lack of data triangulation due to privacy concerns hampered the study. Some participants were hesitant to share their learning materials with the researchers, limiting their ability to cross-verify

information and perspectives. This limitation emphasizes the importance of finding innovative ways to balance participant privacy with the need for comprehensive data collection in future studies.

Future studies in the field of online education and information overload should consider using quantitative methods, such as surveys, to supplement qualitative findings. Researchers can collect a larger and more diverse dataset using surveys, allowing for a more comprehensive analysis of patterns and trends related to information overload among distant learners. Quantitative studies allow for the development of generalized findings, providing insights that could be applied across a variety of online learning environments. Furthermore, expanding the research to multiple institutions and geographical locations would improve the study's external validity and provide a more comprehensive understanding of the challenges faced by distance learners. By combining qualitative depth with quantitative breadth, future studies can offer a more nuanced and comprehensive perspective on information overload in online education, ensuring a broader applicability of the research findings.

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