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Virtual Connection, Real Loneliness： The Impact of Social Media on International Students' Experience of Isolation

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Abstract. Social media has become an important tool and key means of seamless interpersonal interaction, allowing users to share their needs, feelings and daily life mainly on social media platforms. As a unique group, international students often use social media to maintain their continuity with various social relationships. This paper reviews and analyses the existing research on the use of social media platforms by international students and explores the impact of social media platforms on students' social support, social networks and psychological needs. The study found that social media is like a "double-edged sword" for international students. Although it benefits connecting with family and friends, adapting to new environments and gaining information quickly, excessive use can aggravate loneliness in real life. The study also provides important insights into solving the complex and contradictory negative effects that international students may face when using social media platforms.

Keywords: Digital platform, Social media, International students, Loneliness

1. Introduction

The global proliferation of digital technology has made social media a key driver of interpersonal interaction. Users rely on these platforms increasingly to communicate personal emotions and to record daily activities. Through real-time communication across geographical boundaries, individuals are able to observe different social realities and disseminate their experiences at a faster speed. International students are a unique population with temporary cross-border mobility for academic purposes. They often use digital communication platforms, such as WeChat, QQ, WhatsApp and FaceTime to keep in touch with their families and friends in their home countries. As the enrolment rate of international students has increased significantly worldwide, digital communication has become an essential part of their daily life.

Although digital technologies have strengthened connections, they may also bring new forms of alienation. Different from existing research focusing on the positive impact of social media on international students, this study will investigate whether the interaction of digital media platforms replaces face-to-face social participation and whether this replacement is associated with increased loneliness. This study will emphasize the tendency to " share good news and hide bad news" and their isolation in the local social network. It is hoped to shed light on the ways platform-mediated interactions influence core dimensions of human relating. Thus, this article aims to address the

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following questions: How do the motivations and behavioral patterns of international students in using social media differ in different situations? When does social media use reduce, rather than increase, international students' loneliness? How does the use of social media alleviate and exacerbate the loneliness of international students?

2. Theoretical basis and concept definition

2.1. Social support

Social support is described as a state in which individuals feel loved and cared for, respected and valued by others, and individual are involved in the social network helping each other and sharing obligations [1]. Individuals receive social support from many sources, such as family, friends and community. Social support can be divided into informational support, instrumental support and emotional support. Individuals obtain support and reduce stress through information and advice, service or assistance, and care and care for others, respectively.

Wills proposed two ways to measure social support, namely structural social support and functional social support [2]. The former is related to people's social relationship structure, i.e., social integration. The latter is evaluated by specific functions provided for specific target objects. In the natural environment, social support stems from personal relationships, which give support a certain meaning. When a close relationship is broken, unexpected support can promote the formation of new social bonds and strengthen them [3]. Social support is closely related to mental and physical health, which can buffer stress and promote well-being. Research consistently demonstrates that social support reduces psychological distress, such as depression or anxiety during times of stress [4, 5]. House [6] showed important causal effects of various social relationships, social networks, and social support on health, stress exposure, and the relationship between stress and health.

2.2. Social network

In previous studies, social networks, social support, and social integration are often confused. The fundamental assumption underlying social network theory is that seemingly autonomous individuals and organizations are embedded in social relations and interactions [7].

Social networks constitute the structural configuration of lasting interpersonal relationships, such as kinship, friendship, or shared members of informal organizations, which together form a relationship system for the exchange of resources, information and influence. Granovetter [8] theorized the basic difference between the strong and the weak bonds. Strong bonds are characterized by frequent interaction, emotional intensity, intimacy and reciprocal communication, and usually embedding individuals within cohesive social units. In contrast, weak bonds involve infrequent contact, low emotional intensity and limited reciprocity. It served as a key bridge mechanism to connect other disconnected social clusters, thus promoting the dissemination of new information, job opportunities and cross-border resources. As the structure of social support, social networks shape its availability, quality and functional impact.

Social network analysis (SNA) is a methodological framework to systematically map and quantify relational ties among actors. It can examine determinants of network formation and configuration and evaluate how network properties, such as density, centrality, brokerage potential, and tie strength, influence the relationship between social support and health-related outcomes [8]. According to Brandes et al. [7], the visualization of social networks is influenced by online social

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networks and other networks derived from social media. As social media has more complexity, it has changed the layout of social networks.

2.3. Maslow's hierarchy of needs

The American psychologist Abraham Maslow proposed the hierarchy of needs theory as a pyramid [9]. Physiological needs formed the foundation, followed by safety, love and belonging, respect, cognitive, aesthetic, self-realization and self-transcendent needs. Maslow's hierarchical motivation model divides into deficiency-driven needs and growth-oriented needs. The former includes basic physiological needs, safety and stability, interpersonal relationships and acceptance, as well as recognition and self-worth. If not met, they trigger an innate, physiologically based motivational reaction. The latter includes intellectual exploration, sensitivity to beauty and form, and realizing one's greatest potential. Only when the basic needs are satisfied, will they become prominent. Growth-oriented achievements have always been associated with the "peak experience". Although Maslow's hierarchy is hierarchical, international students may experience many different levels of needs at the same time, which may lead to conflicts. For example, differences in the living cost across countries have put financial pressure, resulting in safety needs to coexist with love and belonging.

This article primarily relies on three interrelated theoretical frameworks, social support theory, social network theory, and Maslow's hierarchy of needs. Social support theory emphasizes the psychological and behavioral benefits to individuals of emotional, instrumental, informational, and esteem support. Social network theory examines the structure and dynamics of social ties that influence resource access, social influence and health outcomes. Maslow's hierarchy of needs provides a motivational perspective for understanding how different needs appear and interact. By integrating these perspectives, this paper discusses the sense of virtual connection and real loneliness experienced by international students through social media use results not from a single factor, such as social support or social networks but from interactions across multiple levels.

3. Synthesized evidence from existing studies

Current research on social media use among international students primarily focuses on social participation, social support, cultural adaptation, emotional communication, and information acquisition. Qualitative, quantitative methods and mixed-methods, including interviews, participant observation, surveys are commonly employed to investigate how social media shapes international students' experiences.

From the perspective of social support and cultural adaptation, Anran and Chen [10] adopted observation and interviews to examine international students' use of WeChat in China. They found that social media platforms function as important channels for obtaining social support. Social media facilitates cross-cultural adaptation and participation in public affairs, while extending social interactions beyond physical boundaries. In terms of social networks and adaptation, Eric and Brooke [4] conducted a quantitative study on the use of social networking sites among 120 Chinese international students in the US. Their findings demonstrated that early social network diversity positively predicted academic and social adaptation. Similarly, Yang and Zhao [11] employed questionnaires and interviews among international students in the UK. They reported that Chinese international students used domestic and international social media platforms for different purposes, primarily for obtaining information, receiving emotional support and expanding social relationships.

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Although these studies have shown the importance of social media for adaptation and social support, they rarely measure loneliness directly. In sociological and psychological research, loneliness is usually assessed using the UCLA loneliness scale [12]. The UCLA loneliness scale consisting of 20 items can measure social isolation, relationship dissatisfaction and perceived social connection, which has proven high reliability and effectiveness in different cultural contexts, including international students.

Overall, social media is a significant resource for international students' adaptation processes and support systems. However, existing literature primarily emphasizes the positive functions of social media and behavioral outcomes with limited attention to potential negative consequences, such as emotional investment, identity conflicts, or psychological burdens arising from maintaining online relationships. Thus, there is a need to explore the more complex and contradictory aspects involved in international students' use of social media.

4. Social media's double-edged sword

4.1. Social media and emotional connection

Social media plays an important role for international students, especially in emotional connection. On the one hand, it enables them to maintain close contact with their families and friends in their home countries. On the other hand, it facilitates their adaptation to local culture and learning in a new environment. Students studying abroad rely heavily on social media platforms to sustain relationships with family, close friends, and romantic partners. Video-calling apps such as WeChat, WhatsApp, and FaceTime enable the preservation of emotional intimacy through real-time interaction, while social media strengthens social networks and supports adaptation by connecting with family, friends, classmates, etc. Take China as an example, domestic social media has involved from Tencent QQ (1999) to WeChat (2011), Bilibili (2009), Zhihu (2011) and Xiaohongshu (2013), provided various functions such as knowledge sharing, lifestyle recording, and interest community building. These platforms offer multi-level, scenario-based, and highly adaptable digital connection channels for Chinese international students to maintain ties with family and friends in China through sharing their life status, emotions, chatting and other behaviors [13].

Furthermore, social media facilitates culture adaption. Cultural shock is an inevitable stage of cross-cultural adaptation, referring to anxiety and depression that occur psychologically when individuals face the loss of familiar social and cultural symbols in a new environment [14]. Using social media platforms aboard will enable international students to smoothly transition and adapt to the new culture. They can use popular social media software in the host country to communicate and interact with local people and obtain necessary daily information before arrival [15]. Similarly, visually oriented platforms such as Instagram and TikTok function as supplementary, informal channels for intercultural learning, offering exposure to authentic representations of daily life, colloquial language, social etiquette, and contextualized humor through content generated by domestic students and residents regardless of their language proficiency or social confidence.

4.2. Social media and physical isolation

Although social media plays an important connecting role, it cannot prevent physical isolation. Relying on the emotional links provided by social media will intensify the sense of physical isolation and loneliness. After leaving the virtual spaces, international students still have to return to the unfamiliar reality of the country, including second language communication, academic

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expectation, and the challenge of building new friendships. This contrast between the highly clear and emotionally supported online space and the ambiguity of daily offline life may deepen the sense of isolation and loneliness, especially during holidays, weekends or academic pressure. This influence is more obvious in students with limited language proficiency, short study abroad time, or larger native-language communities.

Cultural differences are also one of the reasons for this isolation between the virtual and the real. Hotta & Ting-Toomey and Olding [16, 17] found that international students mainly establish social relationships with people from similar cultural backgrounds through social media to reinforce cultural boundaries. They also prefer to use social media platforms from their home country in the host country. According to Granovetter's social network theory, maintaining strong ties with people from home country may not benefit the development of weak ties with local classmates, neighbors and community members [8]. Because weak ties are crucial for social integration, excessive reliance on home country connections may reduce adaption and increase loneliness in real life.

According to Erving Goffman's dramaturgical theory, social interaction encourages "impression management", allowing users to present various identities to different audiences [18]. International students engage in selective self-presentation online through sharing positive experiences rather than revealing negative emotions [17]. Over time, the practice of "reporting good news but not bad news" can produce significant emotional labor and eventually create a gap between one's real experiences and displayed identity, resulting in loneliness, identity fragmentation or emotional exhaustion. Although social media can help students to adapt to an unfamiliar environment, it may reduce their well-being when communications stay at a superficial level [19]. According to Maslow's hierarchy of needs, once basic physiological and safety needs are met, social needs for belonging and love increase. A long-term tendency to report only good news while withholding difficulties can make it difficult for international students to receive genuine understanding and support from family and friends, thereby intensifying feelings of loneliness.

5. Conclusion

In conclusion, the use of social media has a dual and often contradictory impact on international students. On one hand, it helps them keep in touch with family and friends in their home countries and supports adaptation through information sharing, peer networks, and access to local and global resources. On the other hand, it may deepen the sense of loneliness. Severe dependence on home countries reduces the opportunity to establish meaningful relationships in the host country, leading to separation and alienation. In addition, international students often show the idealized version of their overseas life online while hiding struggles and setbacks. This distorts other people's views on studying abroad and aggravates one's inner loneliness, because the real challenge cannot be shared and supported. Although social media provides functional benefits, it often fails to provide the structural support from stable, routine-based face-to-face relationships. Social media provides comfort through virtual connection but cannot replace stable and face-to-face connections established through daily interaction, local community participation and repeated social contact. Therefore, reducing loneliness requires not only better digital tools but also conscious offline participation. The lasting sense of belonging of international students comes not only from screen time but also from the connection reflected in their continuous daily experience of real life. These findings contribute to academic and policy discussions on digital mediation, transnational identity shaping and mental health resilience, and call for supportive strategies to guide international students' digital and real-life participation in combination with institutional awareness, integrated teaching methods and attention to psychological needs.

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