A Survey of Current Status of Digital Reading Proficiency among Master's Students: A Case Study of a Normal University in Southwest China

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Abstract. In the era of artificial intelligence, the cultivation of digital reading skills has become a crucial focus for graduate students to disseminate their research findings and a key breakthrough point for cultivating high-quality talents. This study employed a questionnaire survey to investigate the current status of digital reading abilities among master's students at a southwestern normal university in China. The research findings indicate a steady improvement in the digital literacy of the surveyed master's students, with the digital reading environment provided by universities meeting the reading needs of these students. However, the survey also revealed several shortcomings: (1) 10% of master's students feel that their mentors provide insufficient support and guidance in digital reading; (2) 20% of master's students scored low in reading process management, indicating a lack of metacognitive abilities; and (3) 46% of master's students exhibit weaknesses in higher-order digital reading abilities. Based on these findings, the study proposes targeted recommendations to present new approaches for enhancing the digital reading abilities of master's students.

Keywords: artificial intelligence; master's students; digital reading ability

1 Introduction

In the realm of artificial intelligence, it's crucial to cultivate high-level talents with moral integrity and professional competence to advance both the Party and the nation. Elevating graduate education quality is now an urgent priority in China's educational system. [1]. Recently, the number of master's students has grown continuously, reflecting broader and more intricate developments in society, technology, and the economy. Digital reading, crucial for accessing digital information, has become a focal point in assessing its efficacy for master's students' learning. Cultivating advanced digital reading skills among graduate students is now imperative in graduate education. However, universities have been slow to update and upgrade digital resources, teaching facilities, and faculty teams. Divya P and Mohamed Haneefa[2] argue that there is a significant relationship between digital reading proficiency and the level of competence in using

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computers and other digital devices. Lan Thi Nguyen and Kulthida Tuamsuk[3] suggest that factors related to students and instructors are the most crucial influencers of digital reading. Suyu Lin, Chia-Hsiang Chen, and Hao-Ren Ke[4] propose that the digital reading behavior of graduate students is primarily influenced by their economic capital; while they prefer using electronic resources, they still prefer printed textbooks. Researchers such as Li Ziyun[5] et al. indicate that gender is not the primary influencing factor in graduate students' preference for digital reading. Instead, factors such as academic year and experience with digital reading play a moderating role in their choice. However, the primary determinant of their preference lies in their expectations of digital reading. Huang Xiaobin, Lin Xiaoyan, and Liu Ziming [6] argue that digital reading and reading printed materials are not mutually exclusive but interdependent. However, users still tend to emotionally favor printed reading. Existing literature typically examines the factors impacting graduate students' digital reading ability from two perspectives: internal and external. Internal factors focus on students' inclinations and motivations, while external factors encompass school support, mentor guidance, and other aspects. By researching these dimensions, we can further investigate the factors affecting graduate students' digital reading ability. This paper, situated in the context of artificial intelligence, examines the current status and challenges of master's students' digital reading skills, offering a pathway for cultivating and improving these abilities.

2 Research Design

2.1 Research Approach

This study consolidates relevant literature and research findings to define digital reading proficiency among master's students. It establishes evaluation criteria through expert interviews, resulting in an index system detailed in Table 1. After developing a questionnaire and conducting a pre-survey to refine it, a survey targeting master's students at a specific university is conducted online. The study used SPSS 26.0 to analyze the reliability and validity of the questionnaire. Cronbach's α coefficient, measuring reliability, yielded a value of 0.951, indicating excellent internal consistency. For validity, factor analysis was conducted, showing a high KMO value of 0.954 and a significant p-value (< 0.001), confirming the questionnaire's suitability and good structural validity. Data analysis is performed using SPSS S 26.0, leading to recommendations based on the research findings.

Table 1. Indicator System for Investigating the Current Status of Master's Students' Digital Reading Competence

Primary Indicators	Secondary Indicators
Digital Reading Environment	Equipment Resources, Community Influence
Digital Reading Attitude	Digital Reading Inclination, Digital Reading Motivation
Digital Reading Management	Resource Management, Process Management

Digital Reading Competence	Reading Perception Ability, Information Retrieval Ability, Information Integration Ability, Information Evaluation Ability

2.2 Data Source

This study used a Likert five-point scale to assess master's students' digital reading proficiency. The survey targeted students from a specific university between 2020 and 2022, employing random sampling. An online questionnaire was used to ensure an adequate sample size, with 522 distributed and collected. Exclusions were made for responses under 30 seconds or displaying similar patterns, resulting in 495 valid questionnaires and a 94.8% recovery rate. The surveyed samples' basic information includes gender, grade, training mode, and discipline category, detailed in Table 2.

Table 2. Distribution of Basic Sample Characteristics

Category	Characteristic	Frequency	Percentage
Gender	Male	101	20.4
	Female	394	79.6
Grade	First-year	353	71.3
	Second-year	103	20.8
	Third-year	39	7.9
Degree Type	Academic-oriented	204	41.2
	Professional-oriented	288	58.2
Major Category	Humanities	327	66
	STEM	163	33

3 Results and Discussions

3.1 Digital Reading Environment

As illustrated in Figure 1, 73.2% rate resource facilities positively, while 12.7% rate digital devices poorly, indicating allocation disparities despite overall adequacy. Additionally, 77.3% view the "software environment" favorably, with 8.6% dissatisfied with social community influence and 14.1% uncertain. This underscores mentors' and peers' substantial influence on digital reading among master's students, despite occasional shortcomings in mentorship or peer interaction.

Hence, university libraries should efficiently provide quality user experiences and diverse reading materials[7]. Faculty should actively guide graduate students in digital reading to enhance their literacy and interest[8].

Fig. 1. Current status of digital reading environments

3.2 Attitudes Towards Digital Reading

Figure 2 illustrates that 90% of master's students exhibit a preference for digital reading, embracing its novel features over traditional methods. Over 80% of the participants demonstrate digital reading motivation. Nonetheless, a minority display uncertainty about their preferences and motivations, suggesting potential deficiencies in autonomous digital reading awareness.

The above results show: there's no need to pit traditional reading against digital reading. Graduate students should approach both sensibly, enjoying the depth and tangibility of traditional reading while embracing the versatility and customization of digital reading for a richer reading experience[9].

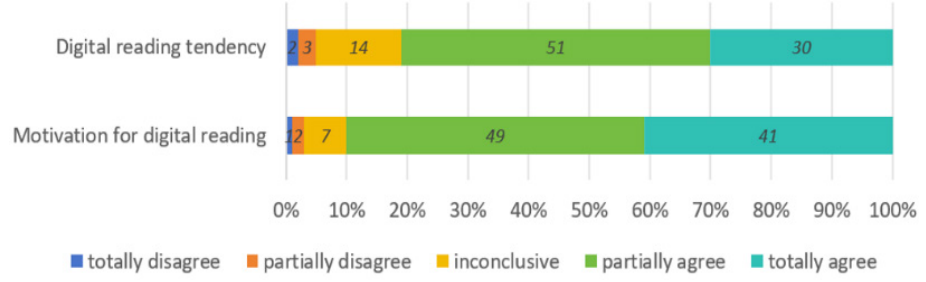

Fig. 2. Current status of digital reading attitudes

3.3 Digital Reading Management

Figure 3 presents survey results indicating that 81% of respondents feel proficient in managing research literature, but 19% seek improvement. Regarding process management, 80% believe they can control reading activities well, while 14% are uncertain and 6% rate their abilities poorly,

These findings emphasize schools and instructors should prioritize graduate students' metacognitive skills in digital reading, encouraging them to explore personalized reading approaches to avoid instances of "getting lost" and superficial reading[10].

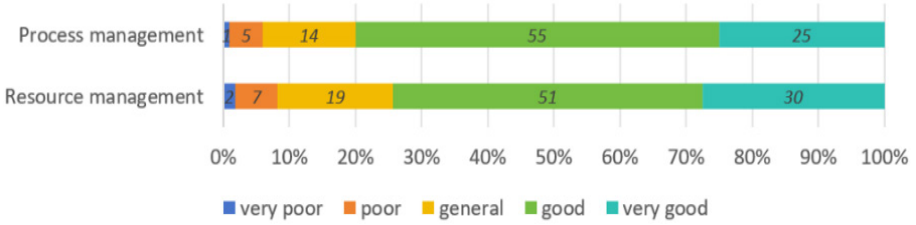

Fig. 3. Current status of digital reading management

3.4 Digital Reading Ability

This study extends the definition of digital reading proficiency from PISA 2009, covering skills in acquiring, reasoning, interpreting, and evaluating electronic texts for personal, educational, and social purposes[11]. It assesses master's students' digital reading abilities in four dimensions: perception, retrieval, integration, and evaluation, representing different levels of proficiency.

Figure 4 illustrates master's students' digital reading abilities. 87% perceive their skills as somewhat fitting for reading perception, but this decreases to 70% for information retrieval, 64% for information integration, and 54% for information evaluation. Only 13% rate their integration and evaluation abilities as very good, indicating a need for improvement in higher-order digital reading skills among master's students.

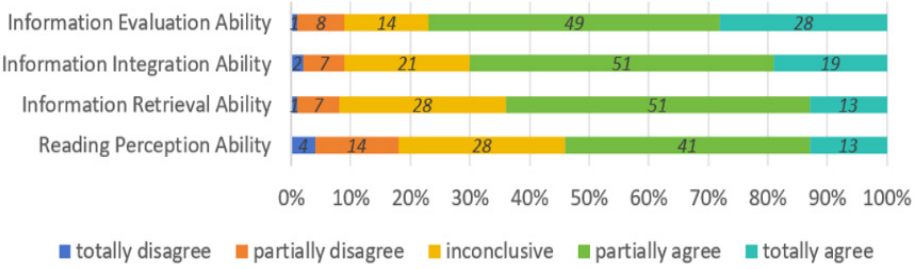

Fig. 4. Current status of digital reading ability

4 Conclusion

Contemporary Contemporary graduate students, as digital natives, find digital reading convenient for research and learning. However, it also poses challenges like internet navigation issues and shallow reading. Enhancing their digital reading abilities is crucial. This study, through a questionnaire survey, identified current issues and proposed solutions, offering insights for further research. Future studies should conduct case studies, analyze individual reading data using learning analytics, and provide personalized guidance to address potential problems more accurately and objectively.

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