

Novice Users' Perceived Value of Information Literacy Education: A Grounded Theory Exploration (Postprint)

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Abstract

[Objective/Significance] To investigate the interactive alignment mechanism between information literacy education value and user perception, providing reference for value marketing of university information literacy education.

[Method/Process] Focusing on novice users' information literacy learning practices, with university students as research subjects, grounded in perceived value theory, and employing grounded theory methodology to explore and construct a user perception-driven model of information literacy education value.

[Results/Conclusion] Novice users' perceived value of information literacy education is manifested under the drive of instructional interaction and task context; the user-perceived value of information literacy education comprises six main categories: resource value, information literacy identity value, peer value, emotional value, teaching value, and cost value, with the functional relationships among the main categories exhibiting complexity and difference.

Full Text

Preamble

Research on Novice Users' Perceived Value of Information Literacy Education: An Exploration Based on Grounded Theory

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Abstract:

[Purpose/Significance] This study explores the interactive fit mechanism be-

tween the value of information literacy education and user perception, providing insights for value marketing of university information literacy education. [Method/Process] Focusing on the information literacy learning practices of novice users and using university students as research subjects, this study employs grounded theory methodology based on perceived value theory to construct a user-perceived value driver model for information literacy education. [Result/Conclusion] Novice users' perceived value of information literacy education emerges under the drive of teaching interaction and task situations. The user-perceived value of information literacy education comprises six main categories: resource value, information literacy identity value, peer value, emotional value, teaching value, and cost value. The relationships among these main categories exhibit complexity and differentiation.

Keywords: information literacy education; information literacy; educational value; novice users; perceived value; value marketing

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Information literacy education refers to training users in their ability to search for, acquire, evaluate, and use information [1]. The IFLA *Development and Access to Information Report 2019* affirmed the importance of information literacy education in helping “users and consumers maximize benefits from information access,” recognizing that librarians possess unique advantages in accessing and utilizing information and in helping users learn these skills [2]. Research on information literacy education and evaluation in university/academic libraries has been a hot topic in domestic and international information literacy studies for over a decade [3]. The “Action Assessment: Academic Libraries and Student Success” project investigated how libraries’ instructional guidance influences student learning and success, demonstrating that university library information literacy education can enhance students’ ability to explore and solve problems, thereby helping them achieve university educational goals [4]. The Association of College & Research Libraries (ACRL) encourages librarians to actively seek opportunities to collaborate with faculty, systematically integrating information literacy education into students’ academic activities at different stages according to their receptivity and interests [5], thereby adapting to diverse user needs and shortening the learning cycle for information literacy novices to become competent practitioners or even experts.

However, the disconnect between theory and practice persists in unidirectional information literacy instruction, guidance, and training centered on information retrieval, sparking diverse academic debates domestically and internationally. These debates primarily focus on: conceptual and theoretical research on information literacy education [6-8], knowledge practice sharing and value reflection based on the ACRL Framework for Information Literacy [8-9], and studies on university students’ behaviors in discovering, evaluating, using, and disseminating information [10]. While some scholars have evaluated the effectiveness of information literacy education using experimental comparisons [11-12], ques-

tionnaires [13], and case studies [14], the value of information literacy education from the user perception perspective remains underexplored. Since novices and experts exhibit significant differences in information gathering abilities and online search strategies based on domain knowledge and interest levels [16], this study adopts a qualitative research approach within specific situational settings to collect and analyze data on novice users' information literacy learning experiences, exploring the composition of information literacy education value and its impact on student learning behaviors and success.

2 Literature Review on Perceived Value Theory

Library user perceived value (UPV) refers to users' subjective cognition and value judgments regarding library service effectiveness based on the degree to which their personal expectations are met during participation in information, knowledge, and skill services provided by libraries [17]. This complex concept, originating from economics, finance, and other disciplines, has been extensively studied by library science researchers regarding its dimensional definitions, influencing factors, and service evaluations. Perceived value dimensions can be broadly divided into two perspectives: value trade-off and value composition.

First, perceived benefits versus perceived sacrifices, perceived gains versus perceived costs, and perceived total utility versus perceived total costs all belong to the value trade-off perspective. Positive perceived benefits include product value, service value, personnel value, situational value, functional value, emotional value, security value, brand value, and psychological satisfaction value. Negative perceived costs include monetary and non-monetary costs [18]. Due to differences in research objects, themes, and contexts, scholars' definitions of user perceived value dimensions vary significantly. For instance, Wang Wei and Cao Jindan defined perceived sacrifices primarily as non-economic costs such as time, effort, physical energy, and conflict costs [19]. Li Wu et al., in their study on users' payment intentions on online Q&A platforms, adopted economic dimensions including economic benefits and cost expenditures [20].

Second, from the value composition perspective, researchers have constructed theoretical frameworks to conduct diverse studies on user participation intentions and service evaluations. For example, Wei Caoyuan et al. used grounded theory analysis to construct a scientific data user perceived value model from four aspects: attribute value, functional value, social value, and cognitive value [21]. Zhao Wenjun and Xie Shoumei attributed the deep-level value of users' mobile reading behaviors to four dimensions: knowledge value, convenience value, social value, and emotional value [22]. Chen Na and Hou Guanghui found that users' perceived functional value, emotional value, and social value significantly influence their willingness to participate in subject services [23]. Yang Jialuo constructed a reader perceived value evaluation system from three dimensions—social value, emotional value, and functional value—to empirically study readers' intentions to use physical public libraries [24]. Zhang Min et al. examined the role of perceived knowledge value and perceived utilization value in scien-

tific research collaboration from cognitive and motivational perspectives [25]. Lu Yao evaluated user perceived value of public science popularization reading promotion activities from three dimensions: quality, service, and cost [26]. Beyond value trade-off and composition perspectives, Zhao Chuang constructed the SUB-SERVQUAL model for evaluating university library subject services based on perceived value hierarchy theory [27].

Different research contexts yield different user perceived values. Guan Fang et al. constructed a multi-factor influence model for user perceived value of scientific data services in university libraries [28]. Deng Lijun et al. explored influencing factors of digital resource utilization among university users in Chongqing from five dimensions: digital resource richness and accessibility, reference consultation services, and skills training [29]. Xue Diao et al. used NVivo software to analyze qualitative data from in-depth interviews with 13 teaching administrators, constructing an influencing factor model for embedded teaching in university libraries from five dimensions: understanding, suitability, support, recognition, and demand [30]. The above analysis demonstrates that value-based user evaluation can promote library service quality improvement, and that information literacy education is practical and valuable. However, previous research has not systematically analyzed user perceived value of information literacy education. Therefore, this study employs qualitative analysis to identify the dimensions of novice users' perceived value of information literacy education and their interrelationships, constructing a novice user perceived value theory for information literacy education.

3 Research Design and Data Analysis

3.1 Research Methods and Tools

This study adopts qualitative research methods, applying grounded theory to systematically explore users' perceived value of information literacy education. Following the principle of deriving theory from observational data, we collected cognitive, learning experiences, and feelings about information literacy from 36 university students (novice users) who participated in a two-month information literacy training camp. Using the qualitative analysis tool NVivo12, we conducted open coding, axial coding, and selective coding on 36 self-evaluation reports to construct a theoretical framework of user perceived value of information literacy education.

3.2 Research Subjects

In 2019, Shandong Technology and Business University Library conducted an information literacy training camp as an extracurricular activity using research materials such as "The First Voyage Destination of the Eastern Maritime Silk Road" and "The Convergence Point of Shandong Traditional Culture and New-Old Kinetic Energy Conversion." Over 200 undergraduates registered through the "Dream Space" platform. Under the principles of "no credit reward for mid-way

withdrawal,”“two sophomores and one freshman per group,”and “group members from different majors and schools,” 36 students successfully enrolled and freely formed 12 teams, each selecting one librarian mentor. All 36 undergraduates had no prior systematic information literacy instruction, including 15 freshmen and 21 sophomores from 11 secondary schools including the School of Business Administration, School of Public Administration, School of Accounting, and School of Statistics .

3.3 Data Collection

The training camp lasted two months, adopting a model of one librarian mentoring three students. Under clear project task guidance, it aimed to cultivate novice users’ literature retrieval, resource acquisition, and reading/writing abilities. Students communicated with their librarian mentors and teams at least once weekly, completing six or more information literacy courses. They submitted weekly learning reflections, task progress, and self-reflections via Youdao Cloud Notes. Based on peer review of weekly journals, they used library databases or other authoritative information sources to collect materials, completing group topic selection, literature acquisition, report writing (over 3,000 words), and PPT presentation. To ensure consistent data collection, 36 self-evaluation reports submitted by campers according to the outline became the coding research materials. Through text mining of learners’ self-evaluation reports, we understood users’ value perception of information literacy education from multiple dimensions including reflection, experience, feelings, beliefs, difficulties, viewpoints, learning, and willingness [31], thereby improving information literacy education effectiveness and promoting student success.

3.4 Coding

Drawing on previous qualitative research experience, this study used NVivo12 software to assist coding. By creating new cases, 36 self-evaluation reports were imported into NVivo12’ s “internal materials” and numbered sequentially as IL01, IL02, ..., IL36 to form coding materials. Through manual bottom-up, coarse-to-fine refinement, generalization, and organization of source data using phrases or sentences, we completed conceptualization and categorization.

To ensure coding reliability and validity, two researchers participated in coding. Through pre-coding and literature review, they reached consensus on relevant concepts and coding methods. Both researchers observed texts from a third-party perspective, conducted independent coding, and wrote memos. By reading coding materials sentence by sentence, they extracted semantic blocks based on research themes, summarized free nodes with parallel logical relationships, and completed first-level coding. Initially, both researchers’ coding reliability exceeded 70%, indicating good reliability. Through repeated discussion, comparison, and reconceptualization of inconsistent nodes, internal consistency reached over 90% in later stages, ensuring acceptable reliability. In the open coding stage, 638 independent initial concepts were generated from 33 randomly

sampled documents, which were then summarized into 22 categories: resource experience, novice knowledge, meaningful activities, assistance in learning and paper writing, growth through practice, continued learning willingness, peer motivation, peer assistance, team division and cooperation, task progress, role cognition, positive learning attitude, anxious learning emotions, knowledge practice, teacher guidance, teaching effect evaluation, teaching attitude evaluation, time cost, ability cost, resource cost, technology cost, and communication cost [TABLE:3, TABLE:4].

3.4.2 Axial Coding

Based on structural hierarchies, semantic associations, and situational clustering among initial concepts and categories, combined with multi-dimensional perspectives of perceived value trade-off and composition in library science, we used tree node operations (adding, merging, deleting, renaming) to cluster the 22 categories from open coding into 8 main categories (B1-B8): teaching interaction, task situation, cost value, information literacy identity value, peer value, emotional value, teaching value, and resource value. These were assigned to three dimensions: situational drivers, perceived cost, and perceived usefulness, as shown in Table 5 .

3.4.3 Selective Coding

Information literacy education is a systematic process involving multiple factors and participants (organization, people, resources, technology, knowledge) that interact with each other [32]. Based on grounded theory analysis, the core category was summarized as “user perceived value of information literacy education.” Main categories ranked by coding frequency were: cost value, information literacy identity value, peer value, emotional value, teaching value, and resource value, with the core category accounting for 64.27% of total coding references, demonstrating global dominance .

To further clarify the driving mechanism of information literacy education value perception, this study employed a causal condition relationship model, incorporating task situation and teaching interaction (accounting for 35.73% of total coding references) as situational driver factors to construct a user-perceived value driver model for information literacy education [Figure 1: see original paper]. This reveals typical relationship structures among the eight main categories , connecting various categories around a central storyline.

4 Analysis of User Perceived Value Structure in Information Literacy Education

Through the three coding steps, we obtained 157 initial concepts, 22 categories, and 8 main categories. Based on the two-dimensional relationship between value gains and losses, this study divides user perceived value of information literacy education into two dimensions: perceived usefulness and perceived cost (see

Figure 1). The former includes five main categories: resource value, information literacy identity value, peer value, emotional value, and teaching value, while cost value belongs to the perceived cost dimension. Under the combined influence of teaching interaction and task situation, users' value perception of information literacy education emerges.

Using Ucinet software, we converted the 8×8 main category co-occurrence matrix generated by NVivo12 into a `##h` file and imported it into Netdraw. After K-core and centrality analysis, we generated the main category co-occurrence network diagram [Figure 2: see original paper]. In terms of node size, cost value and teaching interaction have the highest network centrality, each co-occurring with five main categories. Resource value, peer value, task situation, and emotional value have secondary centrality, each co-occurring with four main categories. Line thickness in the co-occurrence diagram reflects relationship strength, with the three strongest co-occurrence pairs being: peer value and teaching value, cost value and task situation, and cost value and emotional value, among which the peer value-teaching value relationship is strongest. Based on coding frequency and the co-occurrence diagram, peer value and cost value require particular consideration from educators in information literacy education practice.

4.1 Situational Driver Factors

Situation, also called context or setting [33], relates to subjects and their political, economic, legal, ideological, and physical environments. It encompasses sociological, psychological, and educational contexts, as well as contexts related to subject behaviors such as learning, consumption, searching, and gamification [34]. Increasingly, scholars focus on conducting information literacy education theory and practice research within contexts [35-38], where reflective information discovery, understanding information generation and evaluation, creating new knowledge using information, and reasonable participation in learning communities can all be nested within specific contexts. The situational driver factors in this research framework primarily include teaching interaction and task situation.

Teaching interaction refers to mutual exchange and interaction between students and learning environments (including teachers, peers, and information resources). It encompasses student-teacher interactions (in-class, out-of-class, online, offline), student-student interactions, and student-resource interactions, all aimed at facilitating task achievement. In guiding students through training camp tasks, instructors interacted via WeChat, face-to-face guidance, and other methods, with 26 learners actively seeking offline Q&A sessions with instructors seven times or more. Major problems learners encountered included initial topic selection, resource practice and searching, mid-stage literature screening and reading, and later-stage paper revision. Through interactive engagement with knowledge, novice users processed and refined knowledge via reflection, effectively promoting internalization and enhancing the value perception of in-

formation literacy education. Data analysis revealed that 26 learners expressed how repeated trial-and-error and understanding of information literacy knowledge and skills promoted their value identification with information resources and information literacy education.

In information literacy research, task situations are often applied to information-seeking behavior [39-40], collaborative information behavior [41], information resource selection [42], and search strategy differences [43]. In this study, task situation refers to the problem-solving context presented by training camp tasks. Under the contextual requirement of “why to do it,” novice users enhanced their ability to discover and solve problems through analyzing, understanding, and completing series of learning tasks (“what to do,” “how to do it,” “who to do it with”), while deeply understanding the importance of teamwork. For example, one student noted, “The final product is the result of efforts from our three group members plus our mentor [IL27].” Under task situation drivers, teachers and students fostered mutual growth through positive motivational contagion [44], manifested in novice users’ learning ability improvement, critical thinking development, sustained learning behavior formation, and enhanced librarian professionalism.

4.2 Perceived Usefulness

Perceived usefulness reflects novice users’ value identification of information literacy knowledge and skills in promoting student success, which manifests in academic learning, employment, graduation, entrepreneurship, postgraduate entrance exams, civil service exams, skill learning, health, leisure, interpersonal relationships, psychological well-being, and financial independence. Novice users initially participated in information literacy training to earn extracurricular credits [IL09]. When learners realized that information literacy could be applied to learning, employment, entrepreneurship, and daily life—especially in assisting learning and paper writing—their learning goals shifted to genuinely wanting to acquire practical knowledge and skills [IL32]. This change reflects users’ cognitive integration of information literacy value identification. The training camp integrated information literacy education into practical problem-solving and knowledge innovation applications, positively influencing learners’ ability to use information literacy to solve problems, promote personal growth, and engage in lifelong learning, making it a meaningful activity.

Beyond information literacy identity value, perceived usefulness includes four other main categories: resource value, teaching value, peer value, and emotional value.

Resource value specifically refers to the attributes and capabilities of literature or data resources that satisfy user needs through their functions, characteristics, and quality. Through teacher guidance and task matching, novice users encountered many previously unfamiliar resources. For example, they learned for the first time that the library’ s WeChat public account could report lost campus

cards, provide online quality courses, and enable book renewal [IL17]. They also experienced using truncation and other retrieval techniques to improve recall [IL02]. Additionally, through resource experiences such as subject searching, document delivery, book authenticity identification, and statistical data searching, they discovered that resources like CNKI, literature management software, and various statistical information networks offered advantages over search engines in terms of “comprehensiveness, precision, time-saving, and efficiency,” realizing that “the library website truly contains many useful resources that we should utilize more [IL35].”

Teaching value refers to the influence of teaching or guidance activities—encompassing teaching philosophies, activity experiences, and problem-solving feedback speed—on users’ retrieval thinking, retrieval abilities, and retrieval knowledge. It includes teaching effect evaluation and teaching attitude evaluation. Instructors’ responsible, dedicated, enthusiastic, rigorous, and patient teaching attitudes effectively promoted users’ divergent retrieval thinking, enhanced problem-solving abilities, and increased learning interest, advancing task completion progress. Learners commented: “Being able to access such wonderful courses outside my major is exciting [IL16]” and “Today’s lecture made me feel a bit passionate, wanting to develop my own patent [IL03].” Users repeatedly praised librarian mentors in their weekly journals: “Whenever I felt lost, the instructor’s guidance instantly clarified things [IL35]” and “This training camp journey was worthwhile thanks to our mentor [IL03].”

Unlike peer education models that recruit and train student volunteers to compensate for insufficient teaching staff [46], this study’s “peers” refer to team peers or role model peers in similar task situations. Peer value arises from knowledge sharing, mutual assistance, and mutual motivation among peers, including peer motivation value and peer assistance value. Peer assistance value is primarily manifested in mutual learning, critical reflection, and similar aspects, with reference nodes slightly higher than peer motivation value. As one learner noted: “The three of us are not from the same major, and our different professional insights, knowledge backgrounds, and personal experiences are all distinct. Through mutual reference and exchange, we can learn much knowledge that we could not acquire on our own” (#IL06). The exemplary demonstration effect from team members, training camp participants, and other peer role models constitutes peer motivation value. On one hand, learners aspire to achieve the information literacy level of role model students who participate in competitions such as the “Leyan Cup” National Competition. On the other hand, they can promptly identify their own shortcomings through peer sharing, as illustrated by another learner’s comment: “The weekly journals of classmates ZLA and YZZ opened my eyes—they applied the knowledge they learned” (#IL10).

Emotional value refers to learners’ attitudes, emotional experiences, and psychological tendencies during training camp tasks and courses, manifested as positive learning attitudes (36 references) and anxious learning emotions (21 references). Positive learning attitudes reflect learners’ persistence and pleasant emotions,

while anxious learning emotions focus on individuals' subjective experiences of difficulty, anxiety, and pressure during task execution. Analysis revealed that anxious learning emotions mostly appeared in initial task stages, manifesting as anxiety, nervousness, panic, and cautiousness. However, as learners engaged in deep learning, team 磨合, teacher guidance, peer assistance, and research topic determination, these negative emotions gradually diminished [IL27], giving way to excitement, surprise, happiness, pleasure, stability, and self-extension feelings. Emotional value emphasizes the affective dimension of learning information literacy, helping maintain and apply information literacy abilities [6] and supporting learners in persisting with research work [4].

4.3 Perceived Cost

This study summarizes cost value (98 references) as the perceived cost dimension, including communication cost, technology cost, resource cost, ability cost, and time cost, with frequencies of 5, 8, 19, 20, and 46 respectively. Time cost represents the most significant perceived cost (high-level), while resource and ability costs constitute medium-level costs. Obstacles in resource utilization due to computers, software, and access permissions, as well as communication barriers or lack of exchange due to unfamiliarity or peer dependence, trigger negative emotions and indirectly affect perceived usefulness. With low coding frequencies, communication and technology costs are classified as low-level costs.

Ability and resource costs can create expectation gaps for novices. For example, “search results sometimes completely differ from what I wanted, which is discouraging [IL11],” and “the amount of literature found is too small [IL09, IL11, IL15, IL17, IL27, IL33]” also reflects insufficient ability. Learners with positive mindsets engage in self-reflection, transforming gaps into motivation and making continuous progress through trial-and-error iterative learning.

Time cost comprises time investment cost and time conflict cost. Learners spent considerable time weekly on lectures, literature searching and reading, weekly journals, team communication, and task practice [IL36]. When training camp schedules conflicted with other extracurricular activities, learners typically chose to attend mandatory events like sports meets, certificate exams, defenses, or temporary class adjustments, missing training camp tasks, course content, instructor guidance, and peer communication opportunities. Participating in information literacy training camps is important yet challenging, requiring significant time to overcome difficulties, though the process matters more than the outcome [IL35].

5 Conclusions and Recommendations

This study collected and analyzed novice user data on information literacy learning through qualitative methods, systematically examining the positive impact of information literacy education on student learning behaviors and success from a user-perceived value perspective. Theoretically, it constructed a user-

perceived value driver model for information literacy education and analyzed the driving factors and mechanisms among perceived values.

5.1 Constructing an Information Literacy Education Value System

The information literacy education value system encompasses two dimensions—perceived usefulness and perceived cost—comprising six main categories: resource value, information literacy identity value, peer value, emotional value, teaching value, and cost value. The relationships among main categories are complex and differentiated. The strongest co-occurrence is between peer value and teaching value, followed by cost value and task situation. Therefore, in the information literacy education value system, librarians must emphasize both teaching information literacy knowledge and skills and carefully consider how peer value and cost value influence student persistence and value identification.

Information literacy education is a “practical” activity that can integrate with disciplines and 致力于 problem-solving, characterized by value orientation and situational dependence. Driven by teaching interaction and task situations, information literacy education value must be realized through richer, more complex curriculum development and learning design. Librarians’ professional competence is a key implementation factor. Whether they can reflect on teaching practices, examine the perceptibility of teaching objectives to stakeholders (librarians, faculty, students), and continuously activate and reconstruct their practical knowledge through critical reflection determines their ability to promote users’ transition from emotion to intention and maximize teaching and resource value.

5.2 Value Marketing of Information Literacy Education

This case study innovated information literacy education models by seamlessly integrating traditional library one-hour lectures with Youth League second-classroom activities, expanding new teaching modes where teaching benefits both instructors and learners. During implementation, 12 team research reports were submitted to the university’ s Library and Information Committee for review by over 20 committee members, subtly winning favor and confidence from senior teaching management and enhancing potential users’ perceived value of information literacy education.

Since information literacy education is not yet widely popularized in universities, librarian instructors must actively conduct value marketing, seeking broader collaboration opportunities with faculty and departments. By clarifying user needs, they should explore faculty users’ perceived value frameworks for information literacy education. A successful value marketing plan includes: developing clear value marketing strategies, innovating new courses closely integrated with disciplines, establishing evaluation standards reflecting all stakeholders’ objectives, selecting appropriate marketing channels, and standardizing librarians’ marketing attitudes.

Although this study's framework provides reference for the interaction between information literacy education value and user perception, sample types, quantity, and representativeness have limitations. Future research should expand data collection, clarify perceived value frameworks for faculty users and different user segments, and explore coordination, responsiveness, and integration between value marketing and user perception systems in information literacy education.

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Author Contributions:

Chang Hong: conceptualized the research framework, designed and implemented the project, collected and analyzed data, and wrote the manuscript;
Tian Ye: organized and analyzed data, participated in discussion and revision.

Research on the Perceived Value of Novice Users to Information Literacy Education: Based on Grounded Theory

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Abstract: [Purpose/significance] Exploring the interactive fit mechanism between the value of information literacy education and user perception can provide inspiration for the value marketing of university information literacy education. [Method/process] Focusing on the information literacy learning practice of novice users, taking university students as research subjects, based on perceived value theory, and using grounded theory research methods, this paper explores the construction of a user-perceived value conceptual model for information literacy education. [Result/conclusion] The perceived value of novice users to information literacy education is driven by teaching interaction and task situation. The value of information literacy education includes six main categories:

resource value, information literacy identity value, peer value, emotional value, teaching value, and cost value. The relationships among main categories show complexity and differences.

Keywords: information literacy education; information literacy; educational value; novice user; perceived value; value marketing

Note: Figure translations are in progress. See original paper for figures.

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