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A Study on the Current Status of Informal Learning Among College Normal Students

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Abstract: Informal learning is a type of learning that contrasts with formal learning. It is characterized by autonomy, regulation, intentionality, flexibility, sociality, and diverse learning outcomes, free from time and space constraints. The current status of informal learning among normal students at local undergraduate teacher training colleges exhibits internal incompatibilities between a high level of awareness and low satisfaction with learning environments and support, a clear learning paths or methods and a strong desire for a platform to evaluate and certify learning outcomes. This study aims to stimulate learning motivation from an endogenous perspective and enhance the effectiveness of informal learning for normal students through appropriately guided external dimensions. The integration of the first, second, and third classrooms highlights the importance of practice, while the integration of explicit and implicit environments provides support and services. The concept of "micro-skills, micro-learning, micro-certification" through digital badges can be used to certify learning outcomes.

Keywords: normal students; informal learning; micro-certification

Introduction

Informal learning was first proposed by American scholar Malcolm S. Knowles in the 1950s, and mainly applied in adult education (Guo et al., 2021). With the widespread adoption of lifelong education and the ubiquity of learning resources in the digital age, informal learning methods have been applied to broader educational fields, gaining increasing attention. Domestic scholars have conducted extensive localized research on learning method classifications by drawing on foreign experiences and adapting them to China's national conditions. In summary, informal learning is "ubiquitous and influenced by the environment or specific situations, intentional or unintentional, occurring at any informal time and place, acquiring new knowledge" (Xu, 2017). In this study, informal learning for normal students refers to the intentional or unintentional learning activities beyond the first classroom teaching, which are credit-required or graduation competence-achieving in the second and third classrooms at universities. Local undergraduate teacher training colleges have their unique characteristics regarding the quality of student sources, faculty, and educational conditions. The current status and problems of informal learning among normal students at these colleges provide a reference for effectively integrating the first, second, and third classroom learning in teacher pre-service education and enhancing teachers' lifelong learning abilities and comprehensive competencies during the pre-service education phase.

1. Study Design

1.1 Study Subjects

The survey targeted students majoring in teacher education at local normal colleges in Chongqing. A total of 626 questionnaires were distributed, and 604 valid questionnaires were collected, with an efficiency rate of 96.6%. Among them, 102 were male and 502 were female; 112 were Chinese normal students, 89 were mathematics normal students, 147 were English normal students, 169 were elementary education normal students, and 87 were preschool education normal students. The grade distribution was 223 first-year students, 221 second-year students, and 160 third-year students.

1.2 Survey Tools

The research utilized a self-compiled questionnaire and interview outline as analysis tools. The self-compiled questionnaire was designed with 32 survey questions from five dimensions: concepts and awareness, paths and methods, needs and values, support and environment, and outcomes and recognition, along with seven questions on basic information about the survey subjects. The questionnaire was designed using a five-point Likert

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scale (the scale consists of a set of statements with five response options: "strongly agree," "agree," "undecided," "disagree," "strongly disagree," scored as 5, 4, 3, 2, 1, respectively). The data analysis tool was SPSSAU, with a total sample reliability Cronbach's α coefficient of 0.981 and a questionnaire validity KMO of 0.979.

2. Study Results Analysis

2.1 Overall Status of Informal Learning Among Normal Students

Table 1: Five Dimensions of Informal Learning among College Normal Students - Overall Description

Dimension	Sample Size	Mean ± Standard Deviation
Concepts and Awareness	604	3.726 ± 0.999
Paths and Methods	604	3.701 ± 0.789
Needs and Values	604	3.601 ± 0.773
Support and Environment	604	3.569 ± 0.816
Outcomes and Recognition	604	3.117 ± 0.758

Table 1 shows that normal students have a strong awareness of informal learning, with an average score of 3.726, recognizing its importance in pre-service teacher education. The average score for informal learning paths and methods is 3.701, highlighting internships, network resources, observation, and skill imitation as key methods. Students show confidence in their learning abilities and access to resources.

The support and environment dimension averages 3.569, with students perceiving a strong extracurricular learning atmosphere (3.483). However, satisfaction with the physical space for informal learning is lower, with an average score of 3.311 and a high degree of variation (SD=1.101). There is also a strong desire to break down teacher abilities into micro-tasks, with an average score of 3.796, reflecting a demand for diverse and certified informal learning outcomes.

2.2 Internal Differences Based on Survey Subjects

2.2.1 Gender Differences

Table 2: Results of t-test Analysis for Gender Differences (Mean ± Standard Deviation)

Gender	Concepts and Awareness	Paths and Methods	Needs and Values	Support and Environment	Outcomes and Recognition
Female (n=502)	3.722 ± 0.732	3.712 ± 0.437	3.607 ± 0.768	3.574 ± 0.818	3.122 ± 0.770
Male (n=102)	3.715 ± 0.811	3.642 ± 0.790	3.572 ± 0.802	3.539 ± 0.810	3.091 ± 0.695
t	0.149	0.835	0.407	0.403	0.384
p	0.882	0.404	0.685	0.687	0.701

$p < 0.05$ ** $p < 0.01$

Table 2 shows that the t-test for the gender of the survey subjects across the five dimensions had p-values greater than 0.05, indicating no significant differences between male and female normal students in informal learning across the five dimensions.

2.2.2 Urban-Rural Differences in Student Sources

Table 3: Results of Urban-Rural Differences Analysis Based on Students' Place of Origin (Mean ± Standard Deviation)

Place of Origin	Concepts and Awareness	Paths and Methods	Needs and Values	Support and Environment	Outcomes and Recognition
Rural (n=277)	3.648 ± 0.774	3.598 ± 0.816	3.528 ± 0.791	3.474 ± 0.833	3.035 ± 0.792
Urban (n=327)	3.790 ± 0.715	3.788 ± 0.754	3.662 ± 0.752	3.649 ± 0.793	3.187 ± 0.720
F	0.599	1.787	0.647	0.633	0.868
p	0.021*	0.003**	0.034*	0.009**	0.014*

*$p < 0.05$ ** $p < 0.01$

Table 3 reveals significant differences in informal learning scores between rural and urban students across five dimensions. For concepts and awareness, rural students average 3.648, significantly lower than

urban students' 3.790 (p=0.021). In paths and methods, rural students score 3.598, compared to urban students' 3.788, with a significant difference (p=0.003). For needs and values, rural students average 3.528, lower than urban students' 3.662 (p=0.034). In support and environment, rural students score 3.474, significantly lower than urban students' 3.649 (p=0.009). Lastly, for outcomes and recognition, rural students' average score is 3.035, compared to urban students' 3.187, with a significant difference at the 0.05 level.

2.2.3 Differences in Academic Discipline Categories

Table 4: Results of Variance Analysis Based on Categories' Differences in Place of Origin (Mean ± Standard Deviation)

Academic Discipline	Concepts and Awareness	Paths and Methods	Needs and Values	Support and Environment	Outcomes and Recognition
Humanities (n=286)	3.722 ± 0.732	3.712 ± 0.437	3.607 ± 0.768	3.574 ± 0.818	3.122 ± 0.770
Science (n=318)	3.739 ± 0.789	3.689 ± 0.805	3.592 ± 0.782	3.564 ± 0.815	3.113 ± 0.749
F	0.241	0.453	0.053	0.076	0.035
p	0.788	0.501	0.819	0.783	0.854

p < 0.05 ** p < 0.01

Table 4 shows no significant differences between normal students in science and humanities disciplines across the five dimensions of informal learning, with p-values all greater than 0.05.

2.2.4 Differences Across Grades

Table 5: Grade-Level Differences Among Respondents (Mean ± Standard Deviation)

Grade	Concepts and Awareness	Paths and Methods	Needs and Values	Support and Environment	Outcomes and Recognition
First-year (n=223)	3.793 ± 0.737	3.705 ± 0.767	3.618 ± 0.754	3.599 ± 0.822	3.162 ± 0.768
Second-year (n=221)	3.704 ± 0.785	3.690 ± 0.826	3.598 ± 0.814	3.546 ± 0.846	3.083 ± 0.758
Third-year (n=160)	3.635 ± 0.705	3.705 ± 0.758	3.576 ± 0.741	3.538 ± 0.786	3.095 ± 0.738
F	0.640	0.046	0.077	0.187	0.440
p	0.525	0.955	0.926	0.829	0.644

p < 0.05 ** p < 0.01

Table 5 shows no significant differences in the five dimensions of informal learning across different academic years. First-year students in teacher education scored higher in all five dimensions compared to other grades, while sophomores scored lower in all dimensions compared to freshmen and juniors. Interviews indicate that sophomores experience a dip in motivation as they are in the middle of their four-year college journey, whereas juniors feel the pressure of employment, which further enhances their learning initiative.

2.2.5 Differences in Family Economic Status

Table 6: Differences in the Impact of Family Economic Status on Informal Learning (Mean ± Standard Deviation)

Annual Family Income	Concepts and Awareness	Paths and Methods	Needs and Values	Support and Environment	Outcomes and Recognition
¥100,000 and above (n=89)	3.736 ± 0.798	3.732 ± 0.792	3.522 ± 0.817	3.486 ± 0.850	3.100 ± 0.811
¥50,000 - ¥100,000 (n=135)	3.753 ± 0.710	3.712 ± 0.764	3.630 ± 0.734	3.594 ± 0.763	3.125 ± 0.718
¥40,000 - ¥50,000 (n=151)	3.742 ± 0.718	3.664 ± 0.792	3.628 ± 0.727	3.610 ± 0.773	3.178 ± 0.715
¥30,000 and below (n=229)	3.694 ± 0.765	3.706 ± 0.804	3.595 ± 0.810	3.558 ± 0.861	3.078 ± 0.787
F	0.22	0.173	0.43	0.495	0.552

p	0.882	0.915	0.732	0.686	0.647
Pearson Correlation	0.020	-0.011	0.041	0.042	0.029

*p<0.05 ** p<0.01

The participants did not show significant differences in concepts and awareness, paths and methods, needs and values, support and environment, or outcomes and recognition based on family economic status. Additionally, using the Pearson correlation test, the correlation was weak, and no significant level of correlation was found.

2.2.6 Differences in Academic Self-Evaluation

Table 7: Differences in Self-Evaluation of Academic Performance (Mean ± Standard Deviation)

Academic Self-Evaluation	Concepts and Awareness	Paths and Methods	Needs and Values	Support and Environment	Outcomes and Recognition
Excellent (n=59)	4.065 ± 0.685	4.186 ± 0.690	4.014 ± 0.785	3.891 ± 0.800	3.370 ± 0.812
Good (n=300)	3.832 ± 0.684	3.808 ± 0.712	3.684 ± 0.695	3.656 ± 0.773	3.177 ± 0.742
Average (n=221)	3.593 ± 0.693	3.520 ± 0.750	3.471 ± 0.732	3.457 ± 0.759	3.035 ± 0.697
Poor (n=24)	2.782 ± 1.081	2.826 ± 1.122	2.732 ± 1.105	2.705 ± 1.131	2.494 ± 0.937
F	2.627	2.728	2.972	1.418	1.351
p	0.000**	0.000**	0.000**	0.000**	0.000**
Pearson Correlation	0.112**	0.126**	0.089*	0.082*	0.061

*p<0.05 ** p<0.01

Table 7 shows that self-evaluation of academic performance differs across all five dimensions of informal learning. The correlation coefficients for concepts and awareness, and paths and methods are 0.112 and 0.126, respectively, showing a significant positive correlation at the 0.01 level. This indicates a significant positive correlation between self-evaluation of academic performance and concepts and awareness, paths and methods, and needs and values. The correlation coefficients for self-evaluation of academic performance with needs and values and support and environment are 0.089 and 0.082, respectively, showing a significant positive correlation. The correlation coefficient for self-evaluation of academic performance with outcomes and recognition is 0.061, with a significant difference at the 0.05 level, but the correlation test shows no correlation between self-evaluation and outcomes and recognition.

3. Conclusions

3.1 Overall Situation of Informal Learning among Local Normal University Students

Students at local normal universities value informal learning, recognizing its importance in pre-service teacher education. They primarily use online resources, feel confident in their learning abilities, and have clear pathways for accessing informal resources. Informal learning effectively complements formal classroom teaching, enhancing graduation competencies.

However, there are gaps in the informal learning atmosphere, particularly in physical spaces. Students express a strong need for better guidance, preferring tasks broken down into micro-tasks. While recognition of learning outcomes remains unclear, students appreciate the concept of "micro-certifications" and propose using digital platforms to certify outcomes, linking them to credits and graduation. They also seek dynamic monitoring and digital profiling of academic and employability skills throughout their studies.

3.2 Internal Differences in Informal Learning among Local Normal University Students

Firstly, there are no significant differences in the five dimensions of informal learning based on gender, family economic status, academic year, or disciplinary backgrounds (history vs. physical sciences). Second, significant differences in informal learning across urban and rural origins of students are observed. Generally, rural-origin students score lower in all dimensions compared to urban-origin students. Urban-origin students exhibit better awareness and concepts of informal learning than their rural counterparts. Third, there are significant differences in all five dimensions of informal learning based on students' self-assessment of academic performance. Higher self-evaluation of academic performance correlates positively with increased focus on informal learning among teacher education students.

4. Recommendations and Strategies

4.1 Establishing an Intrinsic Learning Mechanism to Promote the Endogeneity of Informal Learning

University students recognize informal learning as essential for developing practical skills and supporting lifelong learning. However, further research is needed on empowering students to take ownership of their learning. Informal learning complements formal education, helping

teacher-education students transition to lifelong learning, driven by self-awareness and intrinsic motivation through four stages: initiating behavior, change, perception, and future action (Wen et al., 2022). To foster this, addressing students' intrinsic needs and providing consistent guidance is key. For first-year students, combining peer mentoring and industry guidance with career planning is crucial to avoid employment mismatches. Connecting informal learning with future careers emphasizes the practical and long-term value of education (Zhang & Zhong, 2012). Encouraging experiential learning, positive incentives, and self-evaluation helps students set goals, identify needs, and use diverse resources effectively.

4.2 Organized and Appropriate Guidance to Enhance the Externality of Informal Learning

Informal learning emphasizes learner initiative and intrinsic motivation, but student teachers need organized guidance to avoid aimlessness. Survey results show a strong demand for effective guidance, revealing a lack of well-structured informal learning and insufficient supervision. To address this, guidance can be provided in three ways:

1. Teachers should offer clear instructions on classroom observation, lesson standards, and reflective evaluation.
2. Learning resources should be task-oriented, providing a "menu-style" selection of quality resources for student teachers to choose based on their needs.
3. Emotional support through industry and peer guidance is essential, using senior students' learning experiences as models for success.

4.3 Linking First, Second, and Third Classroom Activities to Highlight the Practicality of Informal Learning

The practicality of informal learning distinguishes it from formal learning, as it integrates with real-life practice, making it a way of life. While formal learning relies on teacher-led classroom instruction with limited time and space, primarily offering indirect experience, informal learning takes place in students' everyday environments, where work and life are learning processes.

In teacher education, the separation of the "first, second, and third" classrooms—academic, extracurricular, and practical settings—hinders a comprehensive learning experience. To maximize the value of learning, these classrooms must be linked. For example, teacher ethics taught in formal courses can be reinforced through student organizations, professional competitions, and social practice, helping students fully grasp the significance of moral and professional growth.

4.4 Integrating Explicit and Implicit Environments to Enhance the Supportiveness of Informal Learning

The explicit and implicit learning environments are interdependent and mutually reinforcing, reflecting the service, permeation, and support that the environment provides for learning (Gao & Wu, 2018). The supportiveness and service of informal learning are manifested in how education grants student teachers full autonomy in learning and provides diverse educational resources that facilitate student development, achieving an organic unity of the explicit and implicit physical and cultural environments.

Universities are creating a new learning model by integrating formal and informal spaces, promoting changes in learning and lifestyle. Informal learning is enhanced by improving physical environments, digitally expanding resources, and breaking traditional learning boundaries, offering multifunctional, open, flexible, and convenient spaces.

Public areas like lobbies, corridors, and courtyards are equipped with networks and facilities to enrich learning spaces, while classrooms and labs are open for reservations, forming an integrated campus ecosystem. Some universities have transformed cafeterias into "third learning spaces," combining living and learning areas. These spaces support informal learning and social interaction, with upgraded hardware and software, such as networks, learning resources, and display platforms, enhancing their multifunctionality.

4.5 Introducing the Concept of "Micro-Credentials" to Achieve Recognizability of Informal Learning Outcomes

Educational institutions at home and abroad have extensively explored methods for certifying open learning outcomes. With the learning output being the certifiable orientation, "micro-credentials" have become a meaningful way to certify informal open learning outcomes. East China Normal University has conducted practical explorations using "micro-credentials" to certify informal learning outcomes of student teachers' teaching practice capabilities (Yash & Xu, 2018). Grant vividly described the origin of "micro-credentials": many people acquire skills, abilities, and knowledge outside the classroom but lack the necessary certificates to verify what they know and can do (Grant, 2014). One of the key issues reported in surveys by teachers and students is how educational institutions and employers can recognize informal learning outcomes. This indicates learners' urgent demand for their informal learning outcomes to be "recognized, traceable, queryable, convertible, and presentable."

The concept of "micro-credentials" can shift the focus from the learning input process to the presentation of learning outcomes, aligning with the OBE (Outcome-Based Education) concept in teacher

training certification. Micro-credentials have characteristics such as short development cycles for micro-tasks, diverse developers, more convenient and flexible learning methods, and granular and cumulative outcome certification ("Introduction to the Huawei Certification System," n.d.). These methods certify informal learning outcomes for student teachers. Following the OBE concept, teacher training certification divides graduation competencies into eight indicators, addressing the need for informal learning certification through micro-capacity decomposition, micro-project learning, and micro-credential certification.

In "micro-credentials," based on the eight competency requirements for graduating student teachers, college teachers and frontline primary and secondary school teachers collaboratively prepare task sheets for micro-credential projects (Wei et al., 2017). The project sheet for micro-credential tasks outlines competency areas, dimensions, and indicators to clarify certification goals for student teachers. It provides guidelines for competency training, performance tasks, and evaluation standards, encouraging organized informal learning and preventing aimlessness. By offering a diverse selection of micro-tasks, students can choose based on interest, avoiding rigid task structures that may undermine intrinsic motivation.

Digital badges and management platforms enhance process evaluation and provide timely feedback, stimulating active participation in informal learning. These badges create a visual digital profile of students' competencies, which can generate a QR code for employers to assess graduates' skills, facilitating hiring decisions.

While informal learning and micro-credentials hold promise in teacher education, further research is needed to explore their effective integration with formal learning, digital platforms, and accurate competency profiling. This is essential for advancing teacher education in building a strong educational system.

Conflict of Interest

The author declares that he has no conflicts of interest to this work.

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