Article

A Study on the Correlation between Self-directed Learning and Classroom Psychological Climate among Undergraduate Nursing Students

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Abstract

Objective: To study the correlation between self-directed learning ability and the classroom psychological atmosphere of undergraduate nursing students. **Methods** One hundred and sixteen undergraduate nursing students from a college in Pingdingshan City, Henan Province, were selected, and the study was carried out through the Chinese version of the Self-Directed Learning Rating Scale and the Class Psychological Atmosphere Scale.

Results The total score of nursing undergraduate interns' self-directed learning ability was (221.43±10.59). The score of the class psychological atmosphere was (151.17±7.92), and self-directed learning ability and class psychological atmosphere were positively correlated (rs=0.793, P=0.000).

Conclusion Nursing undergraduates' self-directed learning ability is at a medium level, the class psychological atmosphere is at a medium-high level, and the two are strongly positively correlated, so it is recommended that colleges and universities take direct or indirect ways to improve the class psychological atmosphere and promote students' self-directed learning ability.

Keywords: Nursing; Undergraduate students; Self-directed learning ability; Class psychological atmosphere

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Introduction

Since the 1960s, self-directed learning has attracted the attention of educational researchers worldwide as a hot topic in Western adult education. Compared with self-directed learning, self-regulated learning and active learning, self-directed learning focuses more on strengthening the discipline of society and oneself under the guidance of learners' goals and motives. It combines self-directed learning and various activities to satisfy learners' various needs. In today's society, with the rapid development of science and the iterative updating of knowledge and information, each medical student not only needs to update their professional knowledge and learn new professional skills but also needs to take the initiative to build knowledge development ability according to their situation, which is also known as self-directed learning. Self-directed learning refers to the activities in which learners can independently identify the need for learning, establish a learning plan, evaluate useful information, determine and implement appropriate learning strategies, and assess the effectiveness of their learning without regard to whether or not external forces can support them. The main characteristics of learners are flexibility, autonomy and criticality（2019）. Self-directed learning is also gaining more and more attention, and the Ministry of Education in Taiwan has listed it as one of the key competencies and methods for developing self-directed learners （2021）. Self-directed learning is the key to promoting the development of learners' lifelong learning skills in the 21st century. Self-directed learning allows nursing students to affirm their abilities and enhance their independence, decision-making ability, and self-confidence and helps improve their ability to cope with clinical problems.

The study of psychological climate first began with the "psychological environment" proposed by Koffka, W. and Lewin, K., the main representatives of the Gestalt school of psychology（1935）. The psychological climate is formed and developed by the interaction of managers, the management and the management environment. It consists of the common attitudes, dominant moods, and emotional states of most people in the group. It is specifically manifested as the group's psychological state and psychological tendency that can be perceived by the majority of members and have a practical impact on the psychological development of human beings. Class psychological atmosphere refers to the characteristics or tendencies shared by class members, which can be perceived by most members and influence their psychological development, which is formed and developed by the interaction of teachers, students and the learning environment（Lu et al.,2018）. Studies have shown that students who learn in a harmonious psychological classroom atmosphere can better utilise learning methods and are prone to positive learning attitudes（Zou et al.,2020）. A good classroom psychological atmosphere has a very important influence on the individual psychological quality of students, the overall quality of students, and healthy personalities. It can be seen that the classroom's psychological climate may have some connection with students' self-directed learning ability.

Currently, relevant studies mainly include the survey on the current status of self-directed learning ability and the analysis of influencing factors of nursing undergraduates and nursing specialists, the survey on the current status of students' classroom psychological climate, and the study on the correlation between students' classroom psychological climate and career values and self-leadership, etc. There is a lack of research on the correlation between undergraduate nursing students' self-directed learning ability and classroom psychological climate. This study investigates the relationship between undergraduate nursing students' self-directed learning ability and classroom psychological climate to provide nursing educators with theoretical references for improving students' classroom psychological climate and self-directed learning ability.

Objects and Methods

Objects of the Study

In December 2022, 116 undergraduate nursing students of our university were selected as the research subjects using the convenience sampling method. Inclusion criteria: full-time undergraduate nursing students, informed consent, and voluntary participation in the study. Exclusion criteria: students who were on leave due to sick leave or personal leave.

Research Tools

Self Rating Scale of Self-Directed Learning (SRSSDL): The scale was translated and revised in Chinese by Shen Wangqin et al.（2011）, including learning awareness (12 entries), learning behaviour (12 entries), learning strategies (12 entries), learning evaluation (12 entries) and Interpersonal Skills (12 entries), a total of 60 entries. A five-point Likert scale was used, with never, seldom, sometimes, often, and always scoring one to five points, respectively, and each entry was positively scored. The total score ranges from 60 to 300, with higher scores indicating greater self-directed learning. The scale's content validity (CVI) was 0.963, the Cronbach's alpha coefficient was 0.966, and the retest reliability was 0.855.

Class Psychological Atmosphere Scale (CPAS): This scale was compiled by Xiangdong Li in 2006 to assess the psychological atmosphere of class groups of university students. The scale consists of 42 entries in six dimensions (collaborative atmosphere, class teacher atmosphere, cohesive atmosphere, culture and development atmosphere, learning atmosphere, and class officer atmosphere). The scale was scored on a five-point Likert scale, with scores ranging from one to five for "not at all conforming" to "fully conforming" and total scores ranging from 42 to 210, with higher scores indicating a better classroom psychological climate. The Cronbach's alpha coefficient of the scale is 0.972.

Data Collection Method

Data were collected by distributing questionnaires on the Internet, using a unified guideline to explain the purpose of the study and the method of filling out the questionnaires, which were filled out anonymously after the respondents gave their informed consent. One hundred twenty questionnaires were distributed, four invalid questionnaires were excluded, 116 valid questionnaires were recovered, and the effective response rate was 96.67%.

Statistical Analysis Method

SPSS 22.0 statistical software was used for statistical analysis. The mean and standard deviation were used to describe the scores of the students' questionnaires, and Pearson correlation analysis was used to analyse the correlation between the two variables.

Results

Self-Directed Learning Skills Scores of Undergraduate Nursing Students

The total SRSSDL score of undergraduate nursing interns was (221.43±10.59), with the highest score on the learning awareness dimension and the lowest score on the learning evaluation dimension. The details are shown in Table 1.

Table 1: Self-Directed Competence Scores of Undergraduate Nursing Students ($\bar{x}\pm s$)

Dimension	Number of entries	Score
Total Self-Directed Learning Score	60	221.43±10.59
Learning Awareness	12	44.75±2.23
Learning Behavior	12	44.42±2.30
Learning Strategies	12	44.39±2.51
Evaluation of Learning	12	43.21±3.06
Interpersonal Skills	12	44.66±3.43

Psychological Climate Score of Undergraduate Nursing Students' Classes

The psychological climate score of undergraduate nursing students' class was (151.17±7.92), with the highest score for the collaborative climate dimension and the lowest for the learning climate dimension. Details of the scores for each dimension are shown in Table 2.

Table 2: Psychological Climate Score of Undergraduate Nursing Students' Class ($\bar{x}\pm s$)

Dimension	Number of entries	Score	Average score of entries
Total Classroom Psychological Climate Score	42	151.17±7.92	3.60±0.19
Culture and Development Climate	7	24.78±2.22	3.54±0.32
Class Cadre Climate	7	25.38±2.47	3.63±0.35
Cohesion Climate	8	28.49±2.16	3.65±0.27
Counselor/Class Teacher Climate	7	25.64±2.27	3.66±0.32
Learning Climate	7	24.04±2.36	3.44±0.34
Collaboration	6	22.72±2.17	3.79±0.36

Correlation between class psychological climate and self-learning-oriented ability

The results of Pearson correlation analysis showed that rs=0.793, P=0.000, undergraduate nursing students' class psychological climate was positively correlated with self-directed learning ability. See Table 3.

Table 3: Results of correlation between class psychological climate and self-learning-oriented competence

	Learning Awareness	Learning Strategies	Evaluation of Learning	Interpersonal Skills	Total Self-Direction Score
Collaboration	0.430**	0.621**	0.159**	0.864**	0.782**
Culture and Development	0.032	0.122	0.092	0.306**	0.128
Learning Climate	0.338**	0.273**	0.296**	0.245**	0.367**
Counselor Climate	0.429**	0.618**	0.617**	0.846**	0.777**
Classroom Leadership Climate	0.084	0.073	0.042	0.121	0.028
Cohesive Climate	0.425**	0.604**	0.606**	0.836**	0.765**
Total Class Psychological Climate Score	0.499**	0.614**	0.642**	0.791**	0.793**

Note: ** Significantly correlated at the 0.01 level (bilateral).

Discussion

Analysis of Self-Directed Learning Ability of Nursing Undergraduates

The results of this study showed that the total score of self-directed learning ability of nursing undergraduates was (221.43±10.59), which was at a medium level, indicating that they had some self-directed learning ability but still had room for improvement, slightly lower than the total score of undergraduate nursing students (238.8±29.6) by Li Juan（2022）, higher than the total score of self-directed learning ability of senior nursing students (207.94±36.91) by Lin Xiaoqiong（2019）, and higher than that of Kou Yuzhu et al.（2021）(170.99±36.91). (207.94±36.91) score, which is higher than the findings of Kou Yuzhu et al. (170.99±54.16). The difference in scores may be because this study and the studies of Li Juan（2022）and Lin Xiaoqiong et al.（2019）were conducted on current college students, while Kou Yuzhu et al.（2021）conducted the study on post-internship college students in Tai'an City. There are some differences in the self-directed learning scores depending on the study's location, the study's node, and the study population's level. The scores of the five dimensions of self-directed learning ability in this study were, in descending order, learning awareness (44.75±2.23), interpersonal skills (44.66±3.43), learning behaviour (44.42±2.30), learning strategies (44.39±2.51), and learning evaluation (43.21±3.06), which indicated that most nursing undergraduates were able to recognise the importance of learning, have a strong sense of independent learning, and have good interpersonal skills, but relatively lack learning strategies and learning evaluation skills. Possible reasons for this are that colleges and universities pay more attention to cultivating students' knowledge and abilities, there is a lack of teaching-learning strategies, and students have not learned how to use learning strategies to improve their learning efficiency. In addition, some students are not aware of using learning strategies to improve learning efficiency. They do not know which learning strategies should be adopted to improve efficiency in the learning process, not to mention the ability to use reasonable and effective learning methods to carry out self-directed learning, which leads to inefficient learning. It is difficult to obtain a sufficient sense of achievement in learning, which hinders the self-directed learning process to a certain extent （Xiong, 2020）. Learning evaluation and continuous reflection and improvement are the keys to effective learning, but most college students cannot process evaluation and only focus on the final results. Some may ignore the "substandard" learning process, which affects the next step of learning, leading to the final "substandard" learning results.

As the saying goes, "To do a good job, you must first sharpen your tools." a good learning strategy can make students' learning twice as effective with half the effort. In the knowledge transfer process, college teachers should also pay attention to learning methods, learning strategies, and "taught to fish" as "taught to fish". Students should be good at trying different learning strategies through continuous reflection, summarisation, evaluation, and choosing more suitable learning strategies. When studying, they should be good at checking the gaps, constantly evaluating the learning effect, further improving the learning method and enhancing the learning efficiency.

Analysis of the Current Situation of Psychological Atmosphere in Undergraduate Nursing Students' Classes

The study results showed that the psychological climate score of undergraduate nursing students' class was (151.17±7.92), which was at the medium-high level, similar to the results of the study by Lu Zhenyu et al.（2018）. The mean score of each dimension entry was higher for the collaborative atmosphere and counsellor/classroom teacher atmosphere dimensions, which may be attributed to the fact that in the last two years, due to the new crown epidemic, counsellors have to pay attention to the students' dynamics daily and establish close contact with their classmates. Hence, the counsellor/classroom teacher atmosphere dimension scores were higher. Students were closed on the campus after the beginning of the school year, and the circle of activities became smaller, indirectly enhancing the friendships among classmates. In addition, several touching stories that emerged in the context of the epidemic infected students, and the teaching methods, of course, civics inculcated students, cultivating their altruistic spirit and ability of solidarity and collaboration. The cultural development and the atmosphere of learning reflect the personal development of the students in the class and are the main components of classroom psychology. The low scores in these two dimensions may be due to a certain degree of learning inertia, a lack of active learning, and a lack of creativity on the part of students. On the other hand, students may not be clear enough about their orientation and goals.

A good psychological atmosphere in class helps to improve students' motivation in thought and action and contributes to the construction of class and academic styles. To strengthen the class's psychological atmosphere, on the one hand, the construction of class activities should be strengthened so that all the students in the class can show themselves in the activities as much as possible. On the other hand, counsellor-teachers should further strengthen the construction of class goals and set accurate development goals according to different learning stages and class learning conditions to strengthen the culture and development atmosphere. Furthermore, class theme discussions and other forms can help students establish positive learning motives, develop appropriate learning strategies, clarify learning goals, and create a healthy learning public opinion and atmosphere.

Correlation Analysis of Undergraduate Nursing Students' Self-Directed Learning Ability and Class Psychological Atmosphere

The correlation analysis of this study shows that the total score of self-directed learning ability is significantly positively correlated with the total score of class psychological atmosphere (rs=0.793, P=0.000), i.e., the higher the degree of class psychological atmosphere, the stronger the self-directed learning ability, which may be due to the interactions between the students in the positive and harmonious classroom atmosphere, which leads to the formation of a more positive attitude toward learning and the effective improvement of their learning autonomy (direct pathway)（Lin, 2019）. Classroom psychological climate can have a significant impact on students' learning attitudes and

academic performance（Zou et al.,2020）, and a classroom psychosocial environment with good interpersonal relationships, strict order, intense competition, and moderate academic load is more conducive to the development of students' learning autonomy. A good classroom atmosphere helps to develop students' sense of responsibility for learning. A healthy and good sense of responsibility for learning can lead them to set feasible learning goals, adopt appropriate learning behaviours according to the goals, and effectively implement learning strategies (indirect approach). The results of the correlation analysis showed that a collaborative atmosphere has the highest correlation with interpersonal skills, which is strongly positive (rs=0.864), probably because students are united and collaborate to accomplish learning tasks. The cooperation process strengthens the communication between classmates, teachers, and students, further improving students' interpersonal skills.

Conclusion

In summary, classroom psychological climate can directly or indirectly affect students' self-directed learning ability, and educators can take various measures to improve students' classroom psychological climate, stimulate students' learning initiative and cohesion, and improve their self-directed learning ability. However, only 116 undergraduate nursing students of our college were selected for this study, which is a single source of sample, and the study's results have some limitations. It is recommended to select a larger scope, expand the sample size, and improve the representativeness of the sample to increase the persuasiveness of the research results.

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