



The Role of Continuing Education in Lifelong Learning: A Quantitative Study in Two Universities in China

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Abstract: This quantitative study explores the role of continuing education (CE) in fostering lifelong learning among students in two universities in China: Hunan University of Science and Technology and Changsha University of Science and Technology. The research investigates students' attitudes, perceptions, and engagement levels towards continuing education, aiming to provide insights into the effectiveness of existing CE programs and identify areas for improvement. Through a structured questionnaire administered to 300 undergraduate and graduate students, the research explores students' attitudes, perceptions, and engagement levels towards CE programs, aiming to gauge their effectiveness and pinpoint areas for improvement. Results reveal a balanced representation across gender identities, with varying engagement levels observed across academic years and fields of study. The majority of respondents report prior experience with CE, signaling proactive engagement in lifelong learning activities. Additionally, a generally positive outlook towards lifelong learning is evident, with consensus on the importance of self-directed learning, adaptability, and openness to new ideas. Engagement with CE activities is predominantly positive, with strong participation in industry conferences, online courses, and additional certifications. Participants perceive CE as positively impacting academic performance, career prospects, and personal growth. The study underscores the significance of integrating CE initiatives into educational frameworks to support holistic student development and promote lifelong learning, emphasizing the need to address barriers to access and enhance skills development within CE programs to empower students for success in today's dynamic job market.

Keywords: Continuing education, Lifelong learning, Student attitudes, Student engagement, China.

I. Introduction

1.1 Study Background

Continuing education holds a paramount significance in nurturing lifelong learning, a concept increasingly acknowledged as indispensable in contemporary knowledge-driven societies. ^[1]Lifelong learning transcends formal educational environments, encompassing the perpetual pursuit of knowledge, skills, and personal development across one's lifespan. It embodies a proactive and self-directed approach to acquiring new competencies, ensuring relevance in an ever-evolving global landscape. ^[2]

Amidst shifting societal needs, technological progress, and dynamic career landscapes, continuing education stands as a crucial mechanism for individual adaptation and flourishing. It presents avenues for acquiring contemporary knowledge, refining existing skills, and venturing into novel domains. ^[3]Through tailored programs, individuals access specialized expertise, broaden professional networks, and remain abreast of emerging trends and best practices in their respective fields. Moreover, continuing education cultivates intellectual curiosity, nurtures critical thinking, and hones problem-solving abilities, fostering a growth-oriented mindset that advocates lifelong learning for personal and professional enrichment.

By actively participating in continuing education initiatives, individuals expand their horizons, challenge preconceptions, and experience a sense of fulfillment and self-actualization. Moreover, it contributes to societal advancement and economic prosperity by equipping individuals with requisite tools and knowledge to make meaningful contributions to their communities and organizations. Continuously updating skills and staying abreast of developments renders individuals more adaptable, resilient, and adept at navigating the complexities of contemporary society. ^[4]

1.2 Purpose of the Study

The primary objective of this study is to investigate the role of continuing education in promoting lifelong learning among students of Hunan University of Science and Technology and Changsha University of Science and Technology. By examining students' attitudes, perceptions, and engagement levels towards continuing education, the study aims to provide insights into the effectiveness of existing continuing education programs and identify areas for improvement. Additionally, the research seeks to contribute to the academic literature on lifelong learning and continuing education within the Chinese higher education context.

1.3 Research Questions

- What are the attitudes of students towards continuing education at Hunan University of Science and Technology and



Changsha University of Science and Technology?

- How do students perceive the role of continuing education in their lifelong learning journey?
- To what extent are students engaged in continuing education activities outside of their formal academic curriculum?

1.4 Significance of the Study

This study contributes to the theoretical understanding of lifelong learning and continuing education by examining these concepts within the specific context of Chinese higher education institutions. Secondly, the findings of this study can inform university administrators, policymakers, and educators about the effectiveness of current continuing education initiatives and strategies for enhancing student engagement and learning outcomes. Ultimately, by emphasizing the importance of continuing education in lifelong learning, this research aims to support the holistic development of students and foster a culture of lifelong learning within the Chinese higher education system.

II. Literature Review

Continuing education serves as a pivotal component across numerous sectors, particularly within healthcare and education domains. Arcia et al. (2019) illuminate the significance of tailored continuing education modules by examining the information needs and seeking processes of low-income pregnant women in relation to digital maternity education resources.^[5] This study underscores the necessity of addressing specific population needs through customized educational approaches. Similarly, Caporiccio et al. (2019) emphasize the indispensable nature of continuing education for Haitian nurses, stressing its role in enhancing patient care quality and ultimately saving lives.^[6]

In addressing broader educational disparities, Mason (2020) advocates for a more balanced allocation of public spending, proposing the abolition of tuition fees for further education courses to mitigate the imbalance favoring higher education. This perspective highlights the systemic challenges in resource allocation and underscores the potential policy interventions to rectify them. Olson-Strom et al. (2020) contribute to the discourse by examining higher education in Asia through a gender lens, accentuating the role of single-sex institutions in fostering an environment conducive to women's educational pursuits. This study underscores the importance of addressing systemic barriers to educational access and equity.^[7]

Pang et al. (2022) provide insights into the demand for continuing education among nurses in the Department of Infectious Diseases, emphasizing the need to understand their specific needs and factors influencing participation. This research sheds light on the practical considerations involved in designing effective continuing education initiatives within specialized healthcare settings. LeMarbe et al. (2023) direct attention to the significance of continuing education interventions in specific healthcare contexts, focusing on trauma-informed pain management in labor and delivery. Their work underscores the importance of ongoing professional development to enhance healthcare delivery practices and patient outcomes.^[8]

In sum, the reviewed literature demonstrates the multifaceted applications and benefits of continuing education across diverse contexts, ranging from healthcare to broader educational landscapes. It underscores the imperative of tailored and targeted continuing education programs to address the unique needs of various populations and professions, thereby contributing to enhanced practice and policy within respective fields.

III. Methodology

3.1. Research Design

This study employs a quantitative research design to investigate the significance of continuing education in fostering lifelong learning among students of Hunan University of Science and Technology and Changsha University of Science and Technology in China. A cross-sectional survey approach will be utilized to collect data from the respondents. A quantitative approach allows for the collection of numerical data that can provide insights into the prevalence and extent of attitudes, perceptions, and engagement levels regarding continuing education.

3.2. Participants

The target population for this study consists of undergraduate and graduate students from Hunan University of Science and Technology and Changsha University of Science and Technology. A purposive sampling technique will be employed to select 300 participants who are currently enrolled in various programs across both universities. Each university will be chosen 150 respondents for the study. The purposive sampling technique ensures that participants are deliberately selected based on specific criteria relevant to the research objectives, enhancing the relevance and representativeness of the sample.

3.2. Data Collection Instrument

To measure the attitudes, perceptions, and engagement levels of respondents towards continuing education and its impact on their lifelong learning journey, a structured questionnaire was developed. The questionnaire was designed based on Likert scale with four response options ranging from "Strongly Disagree" to "Strongly Agree". The Likert scale is widely used in social science research to gauge participants' opinions and attitudes towards a particular topic.

Content of the Questionnaire includes Demographic Information, Attitudes towards Continuing Education, Perceptions of Lifelong Learning, Engagement with Continuing Education, Impact of Continuing Education on Lifelong Learning.

3.3. Data Collection Procedure

Prior to data collection, ethical approval will be obtained from the respective Institutional Review Boards (IRBs) of Hunan University of Science and Technology and Changsha University of Science and Technology. The researchers will then seek permission from the university administrations to conduct the survey.

The survey will be administered electronically using online survey platforms to ensure ease of access for participants. A cover letter explaining the purpose of the study, confidentiality, and voluntary participation will be provided along with

the questionnaire. Participants will be assured of the anonymity and confidentiality of their responses.

E. Data Analysis

The statistical treatment encompasses descriptive statistics, including percentages, frequencies, mean scores, and standard deviations, to summarize and interpret the data across different variables.

F. Limitations

The study's findings may be limited to the specific context of Hunan University of Science and Technology and Changsha University of Science and Technology, thus generalizability to other universities or settings may be limited. Self-reported data collected through surveys may be subject to response biases and social desirability effects. Time and resource constraints may limit the depth and scope of data collection and analysis.

IV. Results and Discussion

Table 1, Demographic Information

Indicator	Percentage	Frequency
Gender		
Male	50.00%	150
Female	46.67%	140
Other (please specify)	3.33%	10
Academic Year		
Freshman	18.33%	55
Sophomore	26.00%	78
Junior	18.33%	55
Senior	17.33%	52
Graduate student	20.00%	60
Program of Study		
Engineering	30.00%	90
Business	21.67%	65
Medicine	18.33%	55
Humanities	11.00%	33
Sciences	19.00%	57
Prior experience with continuing education programs		
Yes	71.67%	215
No	25.00%	75

Table 1 is the results of the demographic information. In terms of gender distribution, the study reveals a relatively balanced representation among respondents, with 50.00% being male and 46.67% female. Interestingly, a small percentage, 3.33%, identify as "Other," indicating the presence of gender diversity within the sample. This balanced representation suggests that the significance of continuing education in fostering lifelong learning is acknowledged across gender identities. The distribution of respondents across different academic years demonstrates varying levels of engagement with continuing education initiatives. While Freshmen and Juniors each comprise 18.33% of the sample, Sophomores and Graduate students exhibit slightly higher participation rates at 26.00% and 20.00%, respectively. This indicates that engagement with continuing education may increase as students progress through their academic journey, possibly reflecting a growing awareness of the importance of lifelong learning over time.

Regarding the distribution of respondents across different programs of study, engineering emerges as the most common field of study among respondents, with 30.00% majoring in this area. Business, Medicine, Sciences, and Humanities also

have notable representation, indicating that the significance of continuing education transcends disciplinary boundaries, catering to diverse academic interests and career aspirations. The overwhelming majority of respondents, comprising 71.67%, report having prior experience with continuing education programs. This high level of engagement underscores the proactive approach of students towards lifelong learning and skill development. However, it is noteworthy that 25.00% of respondents indicate no prior experience, suggesting potential barriers to access or differences in motivations for participation that warrant further investigation.

The balanced gender representation, varying levels of engagement across academic years, diverse participation across programs of study, and high prevalence of prior experience with continuing education programs collectively underscore the significance of integrating such initiatives into educational frameworks to support holistic student development and promote lifelong learning.

Table 2, Perceptions of Lifelong Learning

Statement	Mean	Standard Deviation	Remarks
I believe in the importance of self-directed learning	3.35	0.59	Very high level
I am adaptable to changes in learning environments	3.54	0.62	Very high level
I am open to new ideas and experiences	3.48	0.65	Very high level
Lifelong learning is essential for my personal/professional development	3.00	0.75	High level
Continuous learning is necessary for competitiveness	3.42	0.62	Very high level
I actively seek out opportunities for learning	3.19	0.65	Very high level

Table 2 shows the results of Perceptions of Lifelong Learning.

The mean scores indicate a generally positive outlook towards various aspects of lifelong learning, with the majority of respondents expressing very high levels of belief in the importance of self-directed learning, adaptability to changes in learning environments, openness to new ideas and experiences, and the necessity of continuous learning for competitiveness. These results suggest that students recognize the value of lifelong learning not only for their personal and professional development but also for staying competitive in today's dynamic job market.

The high mean scores and relatively low standard deviations across most statements reflect a consensus among the respondents regarding the significance of lifelong learning. However, it is noteworthy that while there is a high level of agreement on the importance of self-directed learning, adaptability, and openness to new ideas, the mean score for the statement "Lifelong learning is essential for my personal/professional development" is slightly lower, indicating a relatively lower level of agreement compared to other statements. This discrepancy may suggest a need for further exploration into the specific factors influencing students' perceptions of the importance of lifelong learning for their personal and professional growth.

The results highlight the proactive attitude of students towards seeking out opportunities for learning, as evidenced by the high mean score for the statement "I actively seek out opportunities for learning." This suggests a strong motivation among students to engage in continuous educational activities beyond the traditional classroom setting. The findings underscore the importance of integrating continuing education initiatives into the educational framework of universities to support students in their lifelong learning journey and enhance their competitiveness in the ever-evolving global landscape. Further qualitative research could delve deeper into the underlying factors shaping students' attitudes towards lifelong learning and identify potential barriers that need to be addressed to promote a culture of continuous learning within academic institutions.

Table 3 shows a generally positive disposition towards various forms of continuing education activities among respondents. The mean scores across different engagement activities indicate a predominantly positive response from the respondents. Notably, participating in industry conferences or events received the highest mean score, suggesting a particularly strong engagement level in such professional gatherings. This finding underscores the importance of exposure to real-world industry practices and networking opportunities for students in enhancing their learning experiences and career prospects.

Table 3, Engagement with Continuing Education

Activity	Mean	Standard Deviation	Remarks
Attending workshops or seminars	3.28	0.70	Very high level
Enrolling in online courses	3.32	0.68	Very high level
Participating in industry conferences or events	3.68	0.56	Very high level
Joining professional organizations or clubs	3.25	0.70	Very high level
Engaging in volunteer work or community service projects	3.12	0.77	High level
Pursuing additional certifications or qualifications	3.41	0.64	Very high level

Similarly, enrolling in online courses and pursuing additional certifications or qualifications also received very high mean scores, indicating a keen interest among students in leveraging digital platforms and educational resources to broaden their knowledge base and enhance their credentials. This inclination towards online learning reflects the growing trend towards digital education and the increasing accessibility of learning opportunities facilitated by technology.

Furthermore, attending workshops or seminars and joining professional organizations or clubs received commendable mean scores, indicating active participation in extracurricular activities aimed at skill development and networking within professional communities. These activities not only contribute to the acquisition of practical knowledge and skills but also foster a sense of belonging and camaraderie among students with shared interests and career aspirations.

However, it is worth noting that engagement in volunteer work or community service projects received a slightly lower mean score compared to other activities. While still at a high level, this suggests a relatively lower level of participation in such socially oriented activities among the respondents. Further exploration into the factors influencing students' engagement in community service projects could provide valuable insights into ways to promote a more holistic approach to lifelong learning that encompasses both professional development and social responsibility.

Table 4, Impact of Continuing Education on Lifelong Learning:

Statement	Mean	Standard Deviation	Remarks
CE has positively influenced my academic performance	3.38	0.64	Very high level
CE has expanded my career prospects	3.45	0.61	Very high level
CE has broadened my perspective and knowledge base	3.32	0.64	Very high level
CE has helped me develop new skills and competencies	3.13	0.71	High level
I feel more confident in my ability to adapt to changes	3.48	0.60	Very high level
CE has had a positive impact on my personal growth	3.20	0.75	High level

The results, as presented in Table 4, indicate a generally positive impact of continuing education across various dimensions of academic, professional, and personal development. The high mean scores across statements such as "CE has positively influenced my academic performance" and "CE has expanded my career prospects" reflect a widespread acknowledgment among respondents of the positive outcomes associated with engaging in continuing education activities. These results suggest that students perceive CE as a valuable tool for enhancing both their academic achievements and future career opportunities, thereby highlighting the instrumental role of such programs in facilitating lifelong learning and professional advancement.

Moreover, the findings indicate that CE plays a significant role in broadening students' perspectives and knowledge base, as evidenced by the high mean score for the statement "CE has broadened my perspective and knowledge base." This suggests that students perceive CE as a means of acquiring new insights and understanding diverse subject matters beyond their academic curriculum, thereby contributing to their overall intellectual growth and development.

Additionally, the results suggest that CE contributes to the development of new skills and competencies among students, albeit to a slightly lesser extent compared to other dimensions. While the mean score for the statement "CE has helped me develop new skills and competencies" is still at a high level, the slightly lower score and higher standard deviation indicate some variability in students' experiences in this regard. Further exploration into the specific types of skills and competencies acquired through CE activities could provide valuable insights into areas for targeted improvement and curriculum development. The findings highlight the positive impact of CE on students' confidence in their ability to adapt to changes, with a very high mean score for the statement "I feel more confident in my ability to adapt to changes." This suggests that students perceive CE as not only enhancing their knowledge and skills but also equipping them with the resilience and adaptability needed to navigate dynamic environments and challenges effectively.

IV. Implications of the Findings

The implications drawn from the findings of this quantitative study carry significant weight for both academic institutions and policymakers, offering valuable insights into the role of continuing education (CE) in fostering lifelong learning among students in China. The balanced representation of gender identities within the sample underscores the importance of promoting inclusive lifelong learning initiatives. This suggests that CE programs resonate with students across diverse gender identities, emphasizing the need for academic institutions to design programs that cater to the needs and interests of all students, regardless of gender. By ensuring inclusivity in CE offerings, universities can create a supportive environment that fosters equal opportunities for lifelong learning and personal growth.^[9]

The variation in engagement levels with CE activities across different academic years suggests a potential correlation between academic progression and participation in lifelong learning. Academic institutions can leverage this insight to tailor CE programs that align with students' educational journey, providing relevant and accessible opportunities for lifelong learning at various stages of their academic career. This approach not only enhances the relevance of CE offerings but also encourages students to actively engage in continuous learning as they progress through their studies, ultimately fostering a culture of lifelong learning within the university ecosystem.^[10]

The findings highlight the importance of addressing barriers to access and promoting skills development within CE programs. While the majority of respondents reported prior experience with CE, a significant proportion indicated no prior engagement, suggesting the presence of barriers that may hinder certain students from participating in lifelong learning activities.^[11] By identifying and addressing these barriers, policymakers can ensure equitable access to CE opportunities for all students, thereby promoting social inclusion and enhancing educational outcomes. Additionally, prioritizing skills development within CE programs ensures that students are equipped with the necessary competencies to succeed in today's dynamic job market, ultimately empowering them to thrive in a rapidly changing global landscape.

V. Conclusion

In conclusion, this study illuminates the pivotal role of continuing education (CE) in nurturing lifelong learning among students at Hunan University of Science and Technology and Changsha University of Science and Technology in China. By examining attitudes, perceptions, engagement levels, and the impact of CE, significant insights have been gleaned, offering valuable guidance for both academic institutions and policymakers. The findings underscore the imperative of CE in championing inclusive lifelong learning initiatives that cater to the diverse needs and interests of students across gender identities and academic disciplines. Recognizing the multifaceted benefits of lifelong learning for personal, professional, and academic growth, universities are encouraged to cultivate an environment that fosters equal access to continuous learning activities for all students.

The study underscores the necessity for tailored CE programs that evolve alongside students' academic progression, ensuring that lifelong learning opportunities remain relevant and accessible at every stage of their educational journey. By seamlessly integrating CE initiatives into the educational framework, universities can instill a culture of lifelong learning that empowers students to thrive amidst the ever-evolving global landscape. Additionally, the findings stress the importance of dismantling barriers to access and enhancing skills development within CE programs. By prioritizing inclusivity, equity, and skills enhancement, policymakers can bolster CE initiatives to equip students with the competencies needed to excel in today's dynamic job market, thereby fostering individual growth, societal advancement, and national competitiveness. Ultimately, this study underscores the transformative potential of continuing education in sculpting the lifelong learning trajectory of Chinese students, urging collaborative efforts from academic institutions and policymakers to prioritize and invest in lifelong learning initiatives that propel individuals towards realizing their full potential in an increasingly intricate and interconnected world.

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