

The Reviews of Comprehensive Quality Based on the Iceberg Model

Wang Dongxu^{1*}, Yasmin Ahmad¹, Syed Zulkarnain Syed Idrus¹

¹ Faculty of Business and Communication, Universiti Malaysia Perlis, 02600 Arau, Perlis, Malaysia

* Corresponding Author: dongxu@studentmail.unimap.edu.my

Received: 11 January 2025 | Accepted: 19 February 2025 | Published: 15 March 2025

DOI: <https://doi.org/10.55057/ijares.2025.7.1.38>

Abstract: *This study investigates research on comprehensive quality under the iceberg model. The iceberg model is a famous theoretical model for evaluating personal comprehensive abilities. The paper examines the comprehensive quality of teachers, the comprehensive quality of medical workers in the library field, the comprehensive quality of library field library staff, the evaluation of entrepreneurs, and the evaluation of college students in China. The findings indicate that the cultivation of comprehensive quality has become an educational concept valued in the world's education field. This is not only reflected in the cultivation of students' ability levels but also in various fields of talent demand in society.*

Keywords: Comprehensive quality, iceberg model, evaluation index

1. Introduction

With the advancement of science and technology and the fierce competition for comprehensive national strength, possessing a high level of comprehensive quality has become the key for individuals to obtain better development opportunities. Comprehensive quality is the entirety of the performance of individual knowledge, intelligence, technical ability, and psychological quality, and the approach of education is to provide each trainer with the knowledge of professionalism, excellence, motivation, and learner satisfaction (Nazareth et al., 2020). Improving the comprehensive quality of educated groups is a common educational concept in all countries in the world.

Comprehensive quality is an important factor to promote the civilised quality of social groups and the level of social technological progress, and it is also an important demand for the country's high-level talent pool (Tang, 2022). The improvement of comprehensive quality helps to cultivate good social citizens, who not only play an active role in economic and social development but also promote social harmony and stability through the improvement of moral and cultural literacy.

2. Iceberg Model

The comprehensive quality is the assessment content of the basic professional ability and level of individual capability, which is also an important way to promote the individual ability and professional scientific development in the professional field. The iceberg model is applied to the evaluation of individual competency literacy in human resource management. The iceberg

model is a famous model proposed by American psychologist McClelland in 1973. The "iceberg model" divides the different manifestations of individual qualities into the surface "above the iceberg" and the deep "below the iceberg." American scholars Lyle M. Spencer Jr. and Signe M. Spencer proposed the "quality iceberg model" from the perspective of features. The quality iceberg model refers to knowledge and skills as threshold competencies. Benchmark qualities are easy to measure and observe; therefore, they are also easy to imitate (Krishnamoorthy & D'lima, 2014). Internal drive, social motivation, personality traits, self-image, attitude, etc. are called distinguishing competencies. It is a key factor in distinguishing between outstanding and average performers.

In 1954, John C. Flanagan invented a method called the critical incident technique to analyse the things people do (Flanagan, 1954). In 1973, David C. McClelland Carrying out relevant test research about competency, we proposed a competitive model that includes individual motivation, self-image, characteristics, values, etc. that play a hidden role in people's lives; those are factors and have an important competitive correlation with capability. Southworth (1990) proposed that the essential of the competency model is constituted by quality. The Iceberg model of competency proposes that the individual's competence can be seen from the ice landscape surface, representing the knowledge and skills of explicit knowledge and the composition of the hidden self-concept, motivation, characteristics, and social roles that cannot be seen. Typical competency models include iceberg models and onion models. As a result, a research team represented by McClelland has triggered a new research revolution called the "capability movement."

Capability can be motivation, characteristics, self-image, attitude or values, knowledge, cognition, or behavioural skills in a certain field—any individual speciality that can be measured or counted as distinguished excellent performance and general performance (Li, 2008). The research of KSAO dimensions provides a reliable basis for the value and scientific argumentation of the iceberg model (Maurer et al., 2003). At present, the evaluation of comprehensive literacy in the iceberg model is concentrated in the areas of education, medical care, and individual ability.

3. A Comprehensive Assessment of Teachers' Capabilities

As the most related to the educational field of comprehensive quality factors in educators, its research on the application of iceberg models and research on teachers' educational literacy has attracted much attention. Olson and Wyett (2000) found that the teachers' competency refers to the professional knowledge, professional skills, and professional value related to the implementation of successful teaching by the teacher individually. Teachers' professionalism is the key to guiding students to achieve the expected development goals (Wang & Song, 2019). The research on teachers' abilities concentrated on the level of education, which derived the "knowledge" or "skill" based on the "capability model (Tang, 2001; Yang, 2004). In the teacher quality structure model, the quality above the iceberg is the basic requirement for the quality of the teacher, and the moral quality under the iceberg is the core of the teacher quality (Zu, 2016). The competency model based on the iceberg model can be used to predict and evaluate the comprehensive ability of teachers (Xu, 2004; Xing & Yu, 2004; Liu & Li, 2010; Xue & Hu, 2010; Lin et al., 2020). Xu (2020) believes that the evaluation system of college academic leaders includes basic quality, academic leadership quality, and social recognition. Wang et al. (2016) constructed a professional ability evaluation model to conduct an empirical analysis of young teachers in Wuhan local colleges and universities; the results show that the non-balanced distribution of the professional capacity is significant in the group. Universities should pay

attention to the group of young teachers in political literacy, professional ethics, personality, professional knowledge, and skill, and pay more attention to practical ability (Wang, 2015).

The ideological and political theory of college teachers has seven factors in capability models: professional knowledge, skills, relationships between teacher and student, personality quality, political literacy, occupational attitude, and professional internal drive (Lin, 2015; Cong & Wu, 2023). The needs of a Master's graduate based on the Iceberg model include professional knowledge and skills of teaching, such as teaching skills, organizational management ability, communication and cooperation ability, a sense of responsibility, and invisible factors such as learning ability (Li, 2020; Zhang, 2014). Zhu et al. (2020) and Yan (2022) have established an evaluation model of tutoring that will provide effective theoretical reference for selecting and constructing the professional team of the instructor and drafting the relevant competence standards.

The competency model of college counselors includes the teacher moral cultivation system, values cultivation system, skill cultivation system, and knowledge cultivation system (Lv, 2011; Sun, 2023). Chen (2020) believes that the competency model of psychological health education teachers in primary and secondary schools contains 5 competency indicators: professional knowledge, skills, and abilities; general characteristics; professional characteristics; and professional literacy. According to the theory of the iceberg model, the kindergarten teacher's competency model divides into three dimensions, which are "professional and skills" and "individual characteristics" (Liu, 2007).

The comprehensive ability quality of college managers also plays an important role in the development of education. Tian (2020) builds a model of university managers' competency models and proposes the path of improving the emergency ability construction of college managers from the four aspects of ideal beliefs, spiritual quality, professional literacy, and ability framework. The competency of Onion model on student affairs managers is a composite organic model, which includes the elements of victory, the vitamin of victory, the weight of the victory, the weight of the power, and the strong structure of the competent er. At the same time, it has important application significance about "selection, use, education, and stay" in all aspects of talent management (Xie, 2022).

By establishing an award system, it can improve the level and motivation of teachers' competence. Through building the same individual and organizational goals, the assessment and evaluation indicator system with incentive effects can improve the teachers comprehensive quality (Wang, 2020; Xu et al., 2015). In order to promote the application of the system of innovation and entrepreneurship teaching ability evaluation index systems, unified innovation and entrepreneurial education management departments should be established (Liu Feng, 2017).

4. Comprehensive Quality in Medical Hygiene

The improvement of human resources in nursing is conducive to the career attitude and comprehensive quality of nursing workers and improving the core competitiveness of the hospital (Wang et al., 2016; Zhao, 2018). The iceberg model and double spiral model can be used as an evaluation tool for medical nursing trainers to win the level (Zhang et al., 2023; Fang et al., 2019; Yuan et al., 2018). Guo et al. (2021) believe that through the main-class nurses established by Delphi Fa, the position index of the index is reasonable; it has a reference value for the construction of the hospital nursing team. However, the indicator system still

needs to be verified, modified, and improved in practice. The basics of clinical physicians can be refined into five aspects, which are diagnosis and treatment service capabilities, professional knowledge and skills, communication and cooperation capabilities, management skills, scientific research, and teaching ability (Chen & Yu, 2015).

The core ability model of medical and health personnel includes "public health knowledge," "public health skills," and "public health concepts and values (Liu et al., 2022). Xie et al. (2021) construct the competency of rescue teams, which improves the ability of health emergency players and has an effect on guiding significance.

The management model of capacity and quality the iceberg model can improve the theoretical knowledge and practical operation ability of pediatric nursing staff in hospitals, improve the comprehensive ability of nursing staff, reduce the occurrence of bad nursing events, avoid the occurrence of nursing disputes, and improve the satisfaction of children's family membership satisfaction (Zhang, 2018; Wang, 2017). Iceberg model management is used in ICU patients. Hospital infection prevention can increase the compliance rate of ICU nurses, hospital infection prevention, control knowledge grasp rate, and patient satisfaction rate, and reduce the incidence of infection in patients with ICU; the effect is better than the management prevention and control management of conventional hospitals (Pan, 2021; Zhou et al., 2017).

5. The Comprehensive Quality Model in the Library Field

The construction path of the quality model of the archive manager based on the "iceberg model" includes value level and operating level. In the iceberg model of the professional literacy service library of college, Tang (2016) believes that motivation, attitude, behavior, cognition, skills, and management are a dynamic development process. Jiang et al. (2017) discussed the core of the library's core competence and quality. Kong and Li (2022) believe that the embedded librarian competent model is composed of six dimensions: cross-border collaboration capabilities, basic literacy, personal characteristics, auxiliary ability, user ability, and internal driving force.

6. The Comprehensive Quality Models in Entrepreneurs

Huang (2020) constructed the competency model of innovation and entrepreneurship college students and found that expressive quality is the basis of innovative and entrepreneurial talents. Li and Ma (2018), and Pan and Wang (2016) analyzed the competency model of college students' entrepreneurship and proposed that professional quality, innovation ability, and interpersonal communication ability are important comprehensive quality factors in the development of entrepreneurship. Cui et al. (2015) construct the capital model of high-level entrepreneurship by using the Delphi method and the hierarchical analysis method, which include 7 first-level indicators, 16 second-level indicators, and 40 third-level indicators.

In addition to the basic quality of talents in colleges and universities, innovation and entrepreneurship talents should have the basic qualities of expression, understanding and grasping the laws, self-analysis, art and humanistic literacy, imagination, insights, courage, innovation motivation, entrepreneurial passion, adventure spirit, and other core qualities (Liu & Chen, 2014).

The quality of innovative talent in an iceberg model-based OBE application can achieve deeper ability training for application-orientated innovative talents (Zou & Zhu, 2017). Jiang et al.

(2012) build the competency mode and double-dimensional iceberg model about small and medium-sized enterprises and explore the application of quality iceberg theory in human resources management. In addition, the research on the construction of competency models involves a number of fields such as social workers, registered technicians, crew literacy, migrant workers insurance personnel, high-skilled talents, and other fields.

Xu (2023) believes that improving the labor literacy of middle school students needs starting from the two paths of display and inner hiddenness; expressive literacy includes labor knowledge and labor skills; and recessive literacy includes labor concepts, labor habits and quality, and labor spirit. Xia (2015) constructed and researched the secondary school students' sports quality model and found that there is a significant positive correlation between these elements and exercise participation, the predictive position of exercise participation changes in different scientific segments, and sports activity capabilities model elements.

McLeland's iceberg model provides a new perspective and a more favorable tool for the practice of human resource management. It not only meets the requirements of modern human resource management, constructs a competency model for a certain position, provides a clear explanation of the competency characteristics required for a certain job, but also becomes an important basis for personnel quality evaluation. This provides a scientific prerequisite for the development of human resource management.

7. Conclusion

The demand for talents with comprehensive qualities has become a long-term policy for the cultivation and selection of talents in the development of various countries with the improvement of educational concepts, especially the demand for professional and technical talents. Improving comprehensive quality is of great significance to personal growth, social development, and the long-term development of the country. The educational concept of comprehensive quality and the evaluation of comprehensive quality have become key issues in future education and career development.

References

- Binbin Huang. (2020). The important of explicit quality in innovative and entrepreneurial talents—the construction of competency model in college student innovation and entrepreneurial based on iceberg model.
- Changxi Wang, Yin Lei, & Jialong Jie. (2016). Design and application the professional ability evaluation system of young teachers based on iceberg models. *Journal of Heilongjiang Education College*, 35(12),28-31.
- Nazareth, E. I., Rosal, E. C., Manalastas, R. D. C., Tenerife, P. N., Malabago, N. K., & Miranda, M. M. (2020). Collaborative teaching-learning engagement program of the secondary curriculum in the new normal. *International Journal of Trend in Scientific Research and Development*, 5(1), 1236–1259.
- Fenfeng Tang. (2001). The tendency of teacher education on nature and development based on “ability” and “emotion”. *Journal of Yunnan Normal University*, 2(5), 25-27.
- Flanagan, J. C. (1954). The critical incident technique. *Psychological bulletin*, 51(4), 327-358. doi: 10.1037/h0061470
- Haifeng Wang, Sheng Guan, Min Liu, et al. (2016). Application of capable iceberg model in nursing human resources. *General attendance*, 14(36), 3843-3844.
- Hongzhou Zhu, Chuan Hu, & Qing Yu. (2020). Construct the competency model of tutor in

- engineer institute—take Chongqing university as an example. *Journal of Chongqing traffic University (Social Science Edition)*, 20(05),105-112.
- Hongjie Wang. (2020). The construction of Quality Evaluation Indicators system in Higher Vocational College. *Cooperation economy and technology*, (08), 120-123. <https://doi.org/10.13665/j.cnki.hzjjykj.2020.08.049>
- Jianping Xu. (2004). Study the teacher's competency Model and Evaluation. Beijing Normal University, 92-96.
- Jie Xu. (2020). Research the classification evaluation of academic leaders based on iceberg models. *Statistics and management*, 35(04), 119-124. <https://doi.org/10.16722/j.issn.1674-537x.2020.04.025>
- Jin Zhao. (2018). The progress of nursing resources management based on Iceberg model. *Nursing research*, 32(02), 169-171.
- Jingjing Zu. (2016). Research on the quality structure of teachers based on iceberg models. *Contemporary Teaching and Research Cong*, (02), 79-80.
- Jingguo Zhang. (2014). Research the competency model of martial arts teaching based on iceberg model. *Chinese martial arts (research)*, 3(06), 67-71.
- Junbio Xia. (2015). The effect of sports activity capabilities model construction and impact on sports participation—take some primary and secondary schools in Shanghai and Nanjing as an example, 34(04),112-116.
- Liang Cong, & Tao Wu. (2023). Research the competency model on curriculum ideological and political teacher in medical college. *Journal of Jinzhou Medical University (Social Science Edition)*, 21(02), 51-55. [https://doi.org/10.13847/j.cnki.lnmu\(sse\).2023.02.019](https://doi.org/10.13847/j.cnki.lnmu(sse).2023.02.019)
- Ling Zhang. (2018). The effect application ability of the iceberg model management mode during the pediatric care. *Chinese Medicine Management Magazine*, 26(19),193-195. <https://doi.org/10.16690/j.cnki.1007-9203.2018.19.097>
- Kelin Li, & Xueyan Ma. (2018). Research the entrepreneurship of competency model on the college student under the new media. *Journal of Changzhou Information Vocational and Technical College*, 17(04), 68-71.
- Krishnamoorthy, B., & D'lima, C. (2014). Benchmarking as a measure of competitiveness. *International Journal of Process Management and Benchmarking*, 4(3), 342-359.
- Lan jie Tian. (2020). Analysis the Emergency management capacity of the College managers based on iceberg models—view from the preventing and control of the new type of coronary pneumonia, 40(04), 24-29. <https://doi.org/10.15963/j.cnki.cn12-1401/f.2020.04.004>
- Li Li. (2008). Research Study on the competency Model about Construction of Public Institutions in the Transitional Period. *Huazhong University of Science and Technology*, 88-92.
- Li Yuan, Qingfeng Feng, Jin Huai, et al. (2018). Evaluation effect of nursing practical training based on capacity iceberg models. *PLA Hospital Management Magazine*, 25(12), 1173-1176. <https://doi.org/10.16770/j.cnki.1008-9985.2018.12.024>
- Liu et al. (2022). Construction the core competency model of public health personal who working in bottom medical and institutions based on factor analysis. *China Public Health Management*, 38(05), 599-603. <https://doi.org/10.19568/j.cnki.23-1318.2022.05.0007>
- Maurer, T. J., Wrenn, K. A., Pierce, H. R., Tross, S. A., & Collins, W. C. (2003). Beliefs about 'improvability' of career-relevant skills, relevance to job/task analysis, competency modelling, and learning orientation. *Journal of Organizational Behavior: The*

- International Journal of Industrial, Occupational and Organizational Psychology and Behavior, 24(1), 107-131. <https://doi.org/10.1002/job.182>
- Olson, C. O., & Wyett, J. L. (2000). Teachers need affective competencies. *Education*, 120(4), 741-741.
- Qian Liu, & Xue Feng. (2017). Establish the evaluation System of University teachers' innovation and entrepreneurial teaching ability. *Journal of Hebei Agricultural University (Agricultural Forestry Education Edition)*, 19(06), 100-105. doi: 10.13320/j.cnki.jauhe.2017.0152
- Qiang Xing, & Weiqing Yu. (2004). Principles and technology, Evaluation teachers' capability in the further. 16(1), 47-51.
- Qin Xue, & Meijuan Hu. (2010). The human resources management system of college teacher based on competency Model. *Continuance education research*, 7, 137-139.
- Qiqing Lin. (2015). Research the competency model on the Ideological and Political Theoretical Course of Universities teacher. *Journal of Hebei Agricultural University (Agricultural Forestry Education Edition)*, 17(04), 73-77. <https://doi.org/10.13320/j.cnki.jauhe.2015.0117>
- Qinyao Liu. (2007). Research the competency model of kindergarten teacher. *Zhejiang echnology University*, 104-108.
- Qiong Tang. (2016). The construction of iceberg model based on the professional literacy services in college. *Journal of Sichuan Library*, (03), 89-93.
- Shengming Jiang, Zhihua Pan, & Xiang Zhang. (2012). The revelation about human resources management of SMEs based on Iceberg model. *Journal of Changchun University*, 22 (11),1317-1319.
- Southworth, G. (1990). Leadership, headship and effective primary schools. *School Organization*, 10(1), 3-16. <https://doi.org/10.1080/0260136900100101>
- Sulan Jiang, Qin Song, & Juan Xu. (2017). Discussion and analysis the quality of file manager in colleges -based on the iceberg model. *Journal of Beijing University of Science and Technology (Social Science Edition)*, 33(04),115-118.
- Tao Lin, Pei Zhou, & Jingbo Wu. (2020). Research on the Construction of Undergraduate College Teachers' compency Model. *Journal of Jinling University of Science and Technology (Social Science Edition)*, 34(04), 77-82. <https://doi.org/10.16515/j.cnki.32-1745/c.2020.04.014>
- Tang, S. (2022). Public scientific literacy is the basis for the progress of social civilization. *Cultures of Science*, 5(2), 73–78. <https://doi.org/10.1177/20966083221103985>
- Wei Wang, & Jiatong Song. (2019). The Countermeasures of improving college teachers' professional competency under the perspective on "Iceberg Model". *Heilongjiang Provincial Higher Education Society 2019 Academic Annual Conference*, 56-63.
- Weiwei Tao. (2021). The construction and development tools of kindergarten teachers competency models. *Shandong Normal University*, 60-66. <https://doi.org/10.27280/d.cnki.gsdsu.2021.000479>
- Wenjing Pan. (2021). The application effect of quality iceberg model management in the infection prevention of ICU patient hospital. *China Minkan Medicine*, 33(18), 131-133.
- Xiaohui Sun. (2023). Promoting the competency of college counselors based on Iceberg model. *Ingenious*, (07), 60-63.
- Xiaomin Li. (2020). Research the cultivation mode of economics master based on iceberg model. *Industry and Technology Forum*, 19(09), 221-222.
- Xianyu Xie, Huijie Yang, Qinde Wu, et al. (2021). Research the competency model of healthy emergency rescue team player. *Straits of Pharmacy*, 33(03), 214-219.
- Xiaoyun Wang. (2017). The effect of prevention the pediatric nursing incidents during the

- training based on capable iceberg model. *Southern Medical University*, 46-50.
- Xiaoyun Chen, & Zhongguang Yu. (2015). Analyze the typical characters of emergency specialist by competency. *China hygiene talent*, (04), 78-84.
- Xiangchao Kong, & Chaochao Li. (2022). Research the competency model of embedded librarian in university library University. *Library research*, 52(05), 86-93.
- Xinrui Yan. (2022). Research the verification and practice of travel instructor on competency model. Southwest University. <https://doi.org/10.27684/d.cnki.gxndx.2022.001555>
- Xingwu Cui, Bin Wang, & Tao Shi. (2015). Research the construction of High -level entrepreneurial talent ability evaluation index system. *Northwest population*, 36 (05), 63-67. <https://doi.org/10.15884/j.cnki.issn.1007-0672.2015.05.012>
- Xuemei Xu. (2023). Research the path of improving middle school students' labor literacy based on the view of iceberg model. *Current teaching and research discussion*, 9(03), 13-17.
- Xu Zhou, Ling Zhang, Jing Li. et al. (2017). The control effect of children patient in hospital infection under the iceberg model. *Chinese Hospital Infectious Magazine*, 27 (13), 3095-3098.
- Yalin Chen. (2020). Construction the competency model and development the measurement tools of psychological health education teachers in primary and secondary schools. *Shandong Normal University*, 54-58. <https://doi.org/10.27280/d.cnki.gsdsu.2020.001797>
- Yazhuo Xie. (2022). The construction of student manager' competency model in University. *Northeast Normal University*, 92-99.
- Yantao Pan, & Hongjun Wang. (2016). Research the competency model of entrepreneurship college student based on the iceberg model. *Ability and wisdom*, (12), 196-197.
- Yeyun Liu, & Xue Li. (2010). Construct the Evaluation System of university teachers' competency in China. *Journal of Education and Science*, Hunan Normal University, 9(2), 89-94.
- Yiqin Zou, & Xifang Zhu. (2017). Research the innovative talent iceberg model based on OBE application. *Journal of Electronics Teaching*, 39(05), 100-102.
- Youzhi Fang, Qian Zhang, Xude Wang, et al. (2019). Research the competency of nursing teacher based on the iceberg model. *Practical Cardiovascular and Pulmonary Vascular Diseases Magazine*, 27(S2), 223-225.
- Yuli Guo, Xiaohong Zhang, Xianping Xie, et al. (2021). Construction the indicator system of Nurse position's competency based on the iceberg model. *Journal of Shanxi Sanitation Vocational College*, 31(02), 91-94.
- Yunchao Lv. (2011). Training the competency of college counselors based on the Iceberg model. *College counselor school journal*, 3(05), 4-7. <https://doi.org/10.13585/j.cnki.gxfdyxk.2011.05.004>
- Yousheng Liu, & Jibin Chen. (2014). Research the innovation and entrepreneurship talents of college under the iceberg model —evidence analyze based in Fujian Province. *Journal of Electronic Science and Technology University (Social)*, 16(04), 70-74. <https://doi.org/10.14071/j.1008-81052014.04.036>
- Zhenghua Wang. (2015). Research on the practice of young teachers' competency model in colleges and universities. *Chinese adult education*, (03), 90-92.
- Zhicheng Xu, Hong Xu, & Jiaxue Qiu. (2015). Build the counselor's performance assessment multidimensional evaluation system by competency model. *Period education*, (21), 11-12.
- Zhiyuan Zhang, Wanfang Liu, Liyan Zhang, et al. (2023). Building a Evaluation System of Medical Career Trainer' competency based on iceberg model and dual spiral model. *Nursing research*, 37(04), 691-696.

Zunwei, Y. (2004). Compare the American Teacher Education, from “Foot Ability Books” to “Standard Standard”. *Educational Research*, 1, 8-11.