

Designing an Applying Cloud Intelligent Curriculum for Healthcare Administration

Miao-Kuei Ho, Hung-Jen Yang, and Hsieh-Hua Yang

Abstract—The presence of technology in work settings has enriched and expanded some workers' responsibilities. Since less time is needed to compile and manage large quantities of data, more time is available for creative, higher level work that depends on the quick availability and easy manipulation of information. Although workers in the fields of health care, administration, manufacturing, and electronics are all expected to exhibit industry-specific competencies, they must also master a similar set of technology-related competencies. The purpose of this study was to identify those core components of cloud intelligent in healthcare administration. Based on penal review, a curriculum for healthcare administration with cloud intelligent competency emphasized learning were designed and presented. The could intelligence is working as a integrating role to prepare student with contents of Health, Care, and Medical Treatment.

Keywords—Applying Cloud Technology, Cloud Intelligence, Healthcare Administration

I. INTRODUCTION

IN recent years, there has been a movement toward defining and promoting professional technology competency standards. The movement toward defining standards is a reaction to the impact of new technology on workers' traditional activities.

The presence of technology in work settings has enriched and expanded some workers' responsibilities. Generally, for most workers, technology has become a mediator between the worker and some facets of his or her job. Affective responses to technology also influence workers' learning and productivity. Workers who know relatively little about technology, who carry with them negative attitudes and anxieties toward computers, or who have a difficult time learning to use technology or upgrading existing technology skills may find themselves on the lower end of a professional hierarchy. Technophobia among employees is a threat to productivity;

however, it can be treated and reduced if an effort is put forth by employers.

Many technology-related competencies that employers expect their workers to exhibit are similar across industries, particularly in the use of technology to communicate with others and to gather data. Industries and organizations want their technologies and workers to be superior and operate efficiently; employees must be as skilled as the technology demands and dictates. Since both employers and employees benefit from the expansion of employees' skill sets, opportunities for employees to acquire and upgrade skills should be the responsibility of both partners. In their efforts to keep abreast of the global economy, many employers are emphasizing professional flexibility in the workplace. Ultimately, replacing experienced employees with less experienced workers (who possess specific technology skills) may not be a good investment in the long run. A technology-rich workplace demands continuous learning, which will require both employees and employers to alter their expectations.

In short, employees should expect to learn how to use symbolic representations and employers should expect to invest more in continuous training. Employers would be better served by helping experienced workers apply their current expertise to the emerging technologies. There is a call for elegant reinventing technological advancing in vocational education reform. This study would focus on healthcare administration professionals. The purpose of this study was to identify those core components of cloud intelligent in healthcare administration. Based on penal review, a curriculum for healthcare administration with cloud intelligent competency emphasized learning were designed and presented. In this session, education system and foundational endeavour for professional education in Taiwan would be reported.

II. PROBLEM FORMULATION

A. Education System in Taiwan

The contemporary university education should not only be able to help students develop the professional knowledge or skills, but need to consider how it can really be for the country, develop a rational thinking, human literacy, and social care professionals[1].

Students may study, under the current education system, for up to 20 years, which includes 6 years of primary education, 3

This work was supported in part by the Taiwan Ministry of Education under The Second Phase of Technical and Vocational Education Reengineering-Reengineering Excellent Technology Plan Grant.

M.K. Ho is with the National Kaohsiung Normal University, 80201 Taiwan, R.O.C. (e-mail: hmq0402@gmail.com, phone: 886-7-7172930 ext. 7603, fax: 886-7-6051206)

H.J. Yang is with the National Kaohsiung Normal University, 80201 Taiwan, R.O.C. (e-mail: hjyang@nknuc.nknu.edu.tw, phone: 886-7-7172930 ext. 7603; fax: 886-7-6051206).

H.H. Yang is with the Oriental Institute of Technology, 220 Taiwan, R.O.C. (e-mail: yansnow@gmail.com)

years of junior high school, 3 years of senior high school, 4 to 7 years of college or university, 1 to 4 years for a master's degree and 2 to 7 years for a doctoral degree.

A 9-year Compulsory Education system was put into effect in 1968, of which 6 years are for elementary education and 3 years for junior high school. To offer more diverse development opportunities for junior high school students, technical arts education is included as well, in addition to the regular curriculum. Practical classes allow students to better understand vocational education and their future career choices. Compulsory education will be extended to twelve years in 2014.

Senior High School and Vocational Education category include senior high schools and vocational high schools and consists of three years of schooling. Senior high school includes "ordinary senior high schools," "comprehensive senior high schools," "magnet senior high schools," and "experimental senior high schools." Vocational high schools offer a special curriculum with general high school courses as well as classes in practical skills, classes in industry-related subjects, and cooperative education programs, all designed in line with the various needs of students for a balanced vocational education. Junior college education can be classified according to admission requirements into 5-year junior colleges and 2-year junior colleges. 5-year junior colleges admit graduates of junior high schools, whereas 2-year junior colleges admit graduates of vocational high schools.

The teacher education system, comprised of multiple providers, serves to screen potential teacher candidates and establish a pool of prospective teachers. Teachers who teach in preschool, primary school, junior high school, and senior high school are trained in universities of education with teacher training programs or centres. These institutions are also responsible for providing in-service training and guidance for local education practitioners. In December 2012, the Ministry published its White Paper on Teacher Education, which focuses on pre-employment training, counselling-infused teaching, teacher's professional development and support system with 9 development strategies and 28 action plans to provide a comprehensive plan for the education of teachers at all levels and for all subjects. To protect the teacher's professional status and the student's right to education, the Ministry will promote a professional development evaluation system for teachers in primary and secondary education. As a response to the implementation of 12-year Basic Education in SY2014, the Ministry will improve professional knowledge and skills for effective teaching, multiple evaluations and differentiated knowledge among teachers.

The maximum study period for university education (including universities, colleges, universities of technology, and technical colleges) is 4 years (the Post-bachelor Second Specialty Program is 1-2 years, while the bachelor's program is usually 2 years), and internships can last one-half to 2 years depending on the needs of the subject. For Master's Degree candidates, the study period is 1-4 years and for Doctoral Degree candidates the duration is 2-7 years.

Special education institutions are established for students with mental and/or physical disabilities, and offer education at the levels of preschool, primary school (6 years), junior high school (3 years), and senior or vocational high school (3 years). Moreover, students with disabilities from all educational levels may apply for extensions according to their mental and physical conditions, learning needs and willingness. The goals of arts education are to cultivate artistic talent, enrich the spiritual lives of citizens and elevate the cultural level. Arts education in Taiwan can be divided into professional arts education offered at schools, general arts education offered at schools and arts education offered to the public. Supplementary and continuing education institutions provide extensive and comprehensive learning opportunities for the general public. This kind of education can be divided into general supplementary education, continuing education, and short-term supplementary education. Students may study, under the current education system, for up to 20 years, which includes 6 years of primary education, 3 years of junior high school, 3 years of senior high school, 4 to 7 years of college or university, 1 to 4 years for a master's degree and 2 to 7 years for a doctoral degree.

B. Technology and Technology education

Technology is a body of knowledge and the systematic application of resources to produce outcomes in response to human needs and wants. Technology education is a subject of studying technology in which learners could learn about the context, process, and knowledge related to technology [2].

Technology as a human endeavor can be understood by analyzing the three human adaptive systems: technological, sociological, and ideological [2]. Technological human adaptive systems pertain to technical means of manipulating the physical world to meet human needs and wants. Sociological systems are patterns of societal endeavor, characterized by social organization and regulation. Ideological systems are concerned with the values and beliefs of society. The three human adaptive systems, as presented in the Jackson's Mill Industrial Arts Curriculum Theory, are interrelated and exist within the human-made and natural environments[3].

Technology involves the generation of knowledge and processes to develop systems that solve problems and extend human capabilities. Technology has a process, knowledge, and context base that is definable and universal. The processes are those actions that people undertake to create, invent, design, transform, produce, control, maintain, and use products or systems. Technological knowledge includes much of the knowledge of how the technological processes are developed, applied, and used. The context of technology involves the many practical reasons why it is developed, applied, and studied. People develop technological processes and knowledge for a reason—they want to develop and use systems that solve problems and extend their capabilities. The processes, knowledge, and context are all equally critical to the existence and advance of technology[4].

Technology education is a subject area of common education and provides learner the opportunity of understanding technology. Technology education is a important course to host learners with the opportunity of adopting technology to gain innovation. Based upon the recognition of problem solving, technology resource and technology process, learning experience could provide a profound foundation of preparing behavior in using technology [4].

C. Actions for Bridging Digital Divide

Create Digital Opportunity Centers (DOC) in remote villages to provide equal access to information opportunities and competency in information application[5].

- The MOE has deployed 188 DOCs over the remote areas since 2005.

- There were 10,902 courses provided by the DOCs, and 168,620 learners attended DOC courses by 2011. Also, 986,097 users and 55,637 local volunteers served in the DOC.

The Project of Online Tutoring for After School's Learning

- On-line tutoring for after-school students to improve ICT abilities provides web services to enrich learning resources.

- 28 universities and 1,344 volunteers participate in the project and 1,030 elementary and junior high school students are served in 2011 school year.

Encourage and subsidize ICT-professional volunteers group

- Recruit university and secondary volunteer students to provide remote schools and DOCs with necessary ICT-related assistance since 2001.

- Results from 2001 to 2011: There were 946 youth teams joining the program and about 14,000 youth served as ICT volunteers. Also, cumulatively 1,487 remote schools and 392 DOCs were served.

One Laptop Per Child Program

- Children from low-income families have equal information technology opportunities. The MOE subsidizes 1 computer and 3-year online fee.

- There are 13,201 families were benefited from this program.

The academia- industry training programs launched by the Ministry of Education have their specialties but they share a basic spirit. Their goal is to link academia with industry to achieve zero-gap and to stress training or human resources needed by the industry. In teaching, academia and industry join in course planning, and flexibility is emphasized, with full emphasis on sharing of resources. Mutual assistance is also emphasized in faculty, equipment, teaching environment, course unit calculation, etc. Through assistance and sharing, and in line with industry technological personnel needs, schools carry out training of diverse and professional human resources for the industry.

D. Technology & Healthcare Administration

Technology is pervasive in most professional environments. The presence of technology in traditionally "non-technical" workplaces creates a demand for differently skilled workers;

this phenomenon is occurring across occupations and industries and produces similar needs and patterns across previously distinct work settings.

In general, employees must expand their professional repertoire to include technology skills. The prevalence of computer-based technology requires workers to learn and apply new techniques and procedures for completing tasks and may ultimately cause certain employees to adopt different roles within organizations. As technology has prompted significant reorganization in and of work settings, employees have needed to develop a more complete understanding of their workplace as well as their contribution and place within it.

E. Technology & Healthcare Professions

Defining the basic technology skills required in the workplace (or the creation of "standards") has become a crucial component of many industries' work plans. Clarifying expectations regarding individuals' professional competencies supports realistic decision making on productivity issues. As suggested in *Raising the Standard: Electronics Technician Skills for Today and Tomorrow* [6], the conceptualization and development of technology skills standards (either across professions or within a particular profession) are especially important as companies' ability to facilitate and integrate technology into their general operations affects the United States' overall economic stability in a competitive global market.

The Secretary of Labor's Commission on Achieving Necessary Skills (SCANS) set out to define general workplace skills[7]. Although different professions clearly require the mastery of different and specific skills, most jobs demand a set of basic competencies. SCANS researchers interviewed employers, trainers, and workers from several industries in their efforts to define these generic skills. They identified two categories: foundation skills and workplace competencies. Foundation skills refer to employees' educational preparation, thinking strategies, and personal qualities. Workplace competencies refer to employees' practical and/or vocational skills. SCANS researchers further divided workplace competencies into the following five groups (p. vii):

- Resources allocating time, money, materials, space, and staff;

- Interpersonal Skills working on teams, teaching others, serving customers, leading, negotiating, and working well with people from culturally diverse backgrounds;

- Information acquiring and evaluating data, organizing and maintaining files, interpreting and communicating, and using computers to process information;

- Systems understanding social, organizational, and technological systems, monitoring and correcting performance, and designing or improving systems; and

- Technology selecting equipment and tools, applying technology to specific tasks, and maintaining and troubleshooting technologies.

Although technology was identified as a separate category in the framework, in reality, technological competency permeates all of the above areas. Managing resources, communicating with colleagues and acquiring, managing, and using information are enhanced by, and increasingly require, the use of technology. Workers must be familiar with many different kinds of hardware and software designed for different purposes; generally, they will be more productive if they feel comfortable working with technology and implementing various technology-based procedures.

SCANS found that most organizations currently expect their workers to possess high-level foundation skills and workplace competencies as prerequisites to new skill acquisition. Perhaps the most important overall skill is the ability to learn on the job, to recognize and adapt to change in the workplace. This ability is particularly crucial because the technology, itself, is constantly evolving. SCANS suggests that employees must continually build on their foundation of knowledge as they adjust to technology's evolution, learn about new products such as word processing programs, spreadsheets, databases, statistical software, and graphic software, as well as understand these programs' effects on their work environment. While broad-based documents such as the SCANS report point to the complexity of the activities that people encounter in workplaces, they are not particularly informative about the skills, competencies, and dynamics of individual industries or professions. In this paper, we focus on the issue of technological competency within a select set of industries and examine the impact of technology on individual workers' roles, their work activities, and their acquisition of technology skills. This paper is not exhaustive in its scope; rather, it examines a number of critical issues affecting workers and their employers.

Following the publication of the SCANS report, many industries and researchers began to formally identify the set of competencies required of industry workers and disseminate this information widely. Competencies are typically identified in a variety of areas including reading, writing, mathematics, communication activities, technical expertise, and technology. As examples, the required technology competencies for four distinct professional fields (health care, administrative/secretarial, general manufacturing, and electronics) are summarized in this section, using the terminology of their own industry-specific standards reports when available. There are some similarities in skill requirements across the industries as technology is used for universal activities and there are also expected differences that reflect industry-specific activities.

Far West Laboratory for Educational Research and Development, the National Consortium of Health Science and Technology Education, and the Service Employees International Union examined health care standards and identified the requisite skills for health care professionals in *Quality and Excellence: Health Care Skill Standards* [8].

Two functions of technology were identified:

- to improve overall health care management (insurance and patient record keeping, for example), and to advance specific client treatment and care.

Specific technological competencies mentioned in this report indicate that employees may be expected to

- understand the general flow of electronic information in the health care system and be able to enter and retrieve data on the computer,
- use automated systems,
- keep records of inventory and supplies,
- communicate with co-workers through electronic mail,
- monitor and evaluate patients' status,
- interpret medical charts and other printouts, and
- select and operate appropriate instruments and equipment in medical procedures.

The presence and growing predominance of technology in offices and administrative settings has affected "secretarial" positions and requires this working population to maintain extensive technical skills. In *The Learning Industry: Education for Adult Workers* [9], Eurich discusses some of the technical skills required of secretaries in government offices. Specific technology training courses are common in this setting; employees are encouraged to keep up with changing technologies. For example, first level secretaries in the Central Intelligence Agency must be able to type, understand small computer systems, communicate with co-workers and clients electronically, retrieve and transmit data, and use software packages for word processing, database management, and accounting.

F. Cloud Computing Services

Cloud Computing (CC) is a term that describes the means of delivering information technology from computing power to computing infrastructure, applications, business process and personal collaboration to the end user. Cloud Computing (CC) is the name of a computing system in the field of advance computing and information management. Cloud Computing (CC) is a kind of virtualization; thus also known as Virtualization Technology[10-12]. Cloud Computing and its benefits attracts several other field. Educational Systems also interacts with Educational applications for Cloud Computing (CC). Cloud Computing (CC) provides several benefits in Educational Systems such as creation of Virtual teaching learning environment, making interacting and speedy smart class room, it also minimizes the time of knowledge collection model preparation and delivery.

Cloud Computing (CC) and its benefits are used around the world and especially in the Western countries. Due to poverty and underdevelopment; Asian and African and other undeveloped countries are still unable to offer such benefits to teachers, student, administrator, instructor and other stakeholders related to education systems [12-14].

The challenges and issues are one of the important concerns for strong and healthy educational systems powered by cloud computing and virtualization technique.

Cloud Computing (CC) is a kind of virtualization method, which includes designing and building hardware and software systems for large and wide range of purpose. Practically Cloud Computing (CC) provides several opportunities and benefits over conventional IT and Computing[13, 15, 16]; thus it can create a better administration and governance for government as well as private corporate houses. Cloud Computing (CC) provides several opportunities and benefits such as:-

- Concerned organization need not to install hardware or software. The service provider give all such services;
- With the help of Broadband and healthy connection any where and any time services are possible;
- Large number and amount of data, infrastructure can be availed by Cloud Computing (CC);
- Cloud Computing (CC) gives opportunities to harness the power technologies in the new and creative way with out extra budget on IT;

- It allows consumer to get only those services which are needed at the moment;
- As far as running Cloud Computing (CC) less IT Infrastructure is required; thus in-house staff and other cost is saved;
- It provides massive, web scale, abstracted infrastructure;
- Dynamic allocation, scaling, movement of applications are possible;
- It provide an effective and creative service delivery model;
- Cloud Computing (CC) model does not support any long term commitments.

In Fig 1, the cloud computing benefits were listed. They are development optimization, virtualization, and resource Allocation.

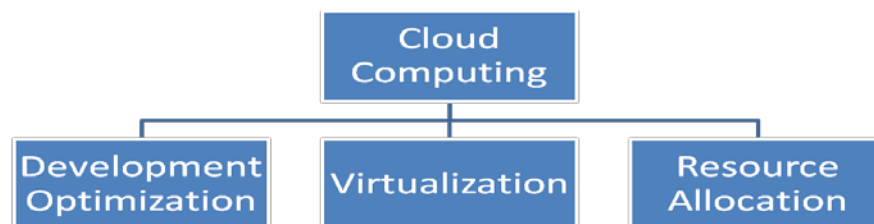


Fig. 1 Cloud Computing Benefits

G. Cloud Intelligent in Healthcare Administration

To deliver an e-learning, virtual reality or multimedia solution that achieves its goals to a high standard with a minimum of fuss, Rosen[18] suggested that there are five stages in the development cycle. Those are analyzing, designing, developing, delivering, and tracking. This process can take anywhere from 220-2,500 man hours to complete,

requiring upwards of 4 developers to create the material within months.

III. METHODOLOGY

Panel discussion method was applied in this study. Six major meetings were conducted and listed in Table 1.

Table 1 Panel discussion records

	Meetings	Committee	Time
1.	The overall plan objectives and direction of development seminars	Project Steering Group	July, 2014
2.	Consultation with internal and external experts to discuss directions	Department of Nursing & Healthcare Administration	July, 2014
3.	Department of Nursing & Healthcare Administration Preparatory Meeting	Department of Nursing & Healthcare Administration	July, 2014-September, 2014
4.	Preparatory Meeting for the overall plan	Project Steering Group	July, 2014-September, 2014
5.	The eligibility criteria and the documents verification meeting	Project Steering Group	August, 2014-September, 2014
6.	Project Review Meeting	Project Steering Group	September, 2014

IV. FINDINGS

In this session, findings would be reported according to methodology. First, the proposed procedure was reported. Second, resource creating time evaluation would be reported.

Third, feasibility of procedure output in each step was reported. At last, tool availability verification was reported. In Fig 2, A Profession Preparation Model in Oriental Institute of Technology is illustrated.

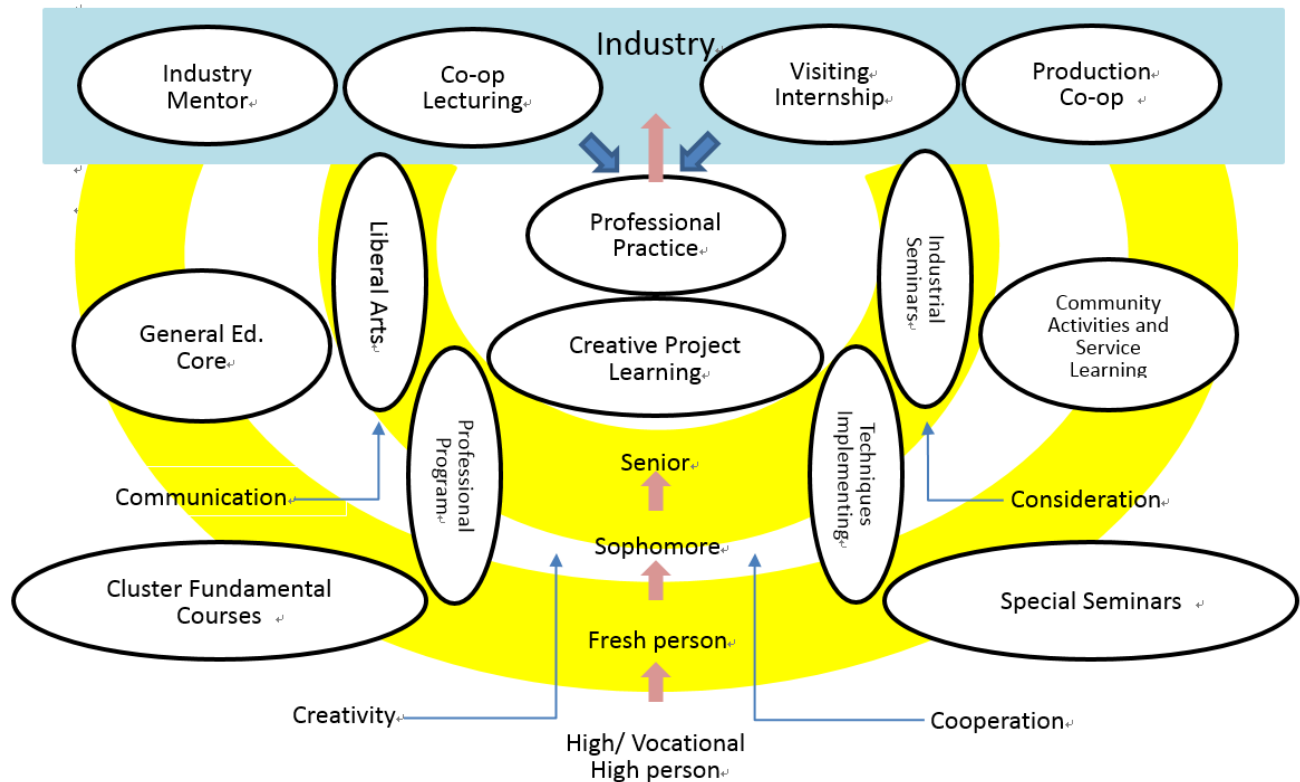


Fig. 2 A Profession Preparation Model in Oriental Institute of Technology

A. Goals

The cloud intelligent application project would be based upon the original basic theory curriculum with enhancing with practical operation in application to implement by altering practice courses, learning contents, hardware, software and learning environment. The goals are:

- Activation of Healthcare Administration by learning environment redesign, department standard curriculum altering.
- Advancing students' professional technique by redesign content of lessons, hardware & software updating, and performance verification.
- Enhancing the connection between learners and industry through institutional cooperation.

Promoting healthcare administration education by introducing middle school students with professional career information.

B. Core Ability

In this project, there are four major core abilities for the learner to reach. Those are:

- Preparing learners with the ability of basic knowledge of healthcare administration and operation design ability
- Strengthening the ability of professional terminology and medical case recognition and interpretation
- Enhancing students the theory and practical foundations of computing technology strengthen the professional ability of database management, data mining and analysis of medical information, so can pass related certification.
- Achieving the professional employment goals.

For ensuring the quality of these core abilities, a plan, do, check, and act four steps procedure could be implemented. The healthcare quality steps is illustrated in Fig. 3.



Fig. 3 Project Implementing steps for healthcare quality

C. Curriculum

For achieving the project goals, practical curriculum were designed according to those core ability presented in the last

session. There are nineteen subjects with total 47 credits. Practice hours are 32. Internship hours are 806.

In Table 2, curriculum subjects, credits, and hour by types are listed.

Table 2 Subjects, credits, and hour types

Subject	Credits	Theory/Practice
1. Computer programing & appication	2	1/1
2. Health Statistical Software Package Application	2	1/1
3. Health Insurement Database Analysis	2	1/1
4. Management Science Research & Case Study	2	1/2
5. Health Operation Study	2	1/2
6. Hospital Operate Software Application	2	1/1
7. Hospital Managing Project Study	2	1/2
8. Classification of diseases and medical records management	2	1/2
9. Applied Statistics and Implementing	2	1/1
10. Implementing Medical Informatics	2	1/1
11. Hospital Information Management	2	1/1
12. Implementing biomedical data mining	2	1/1
13. Special Topic I	2	1/1
14. Special Topic II	2	1/5
15. Medical Instituion Internship	9	1/5
16. Oversea Medical Institution Internship	3	0/486
17. Implementing Classification of diseases and medical records management	2	0/320
18. Licencing Guidance	2	0/2
19. Medical Information Technology	2	0/2
20. Oriental International Medical Seminar	1	1/0

V.CONCLUSION

Technology is having a definite impact on the workplace. Although workers in the fields of health care, administration, manufacturing, and electronics are all expected to exhibit industry-specific competencies, they must also master a similar set of technology-related competencies. The purpose of this study was to identify those core components of cloud intelligent in healthcare administration. Based on penal review, a curriculum for healthcare administration with cloud intelligent competency emphasized learning were designed and presented.

Based upon panel discussions, a project plan was concluded and submitted to the ministry of education in Taiwan. First project goals were identified. Second, core ability were illustrated for curriculum adjusting. Finally, curriculum were rearranged for integrating cloud intelligent into courses. The integrating model is illustrated in Fig. 4. The could

intelligence is working as a integrating role to prepare student with contents of Health, Care, and Medical Treatment.

The applications of joint contents are health management, chronic disease management, hospital management, and medical treatment integration..

The whole project had been recognized and will be supported with budgets for implementing.

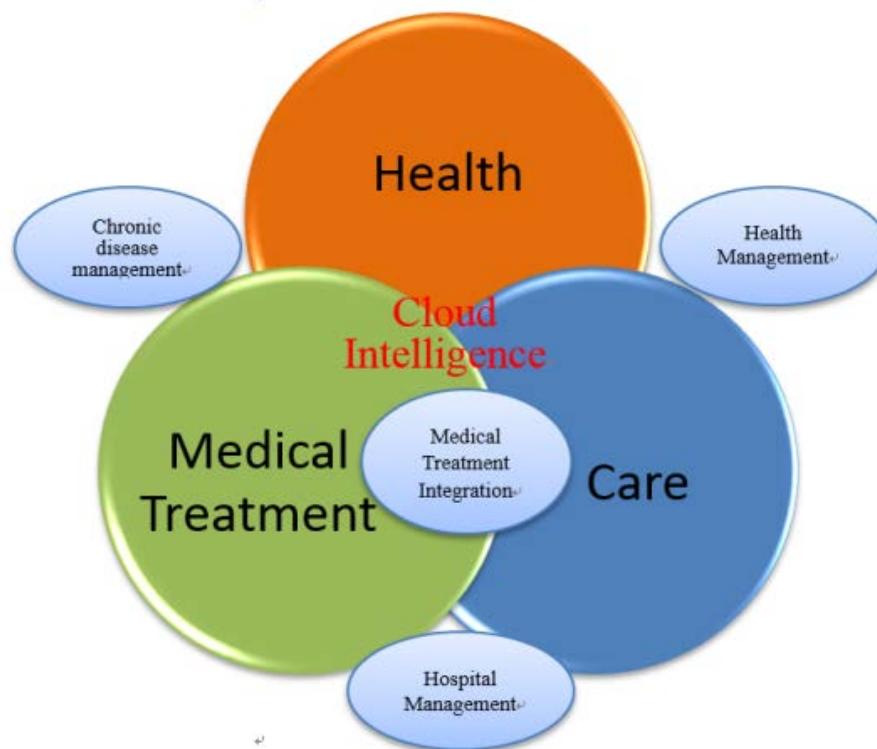


Fig. 3 Integrating Framework

REFERENCES

- [1] L.-H. Kuo, H.-J. Yang, and T.-H. Tseng, "Computer and Information Course Curricula of the University General Education in Taiwan " in *AMERICAN CONFERENCE on APPLIED MATHEMATICS (AMERICAN-MATH '10)* Harvard University, Cambridge, USA, 2010.
- [2] L.-H. Kuo, H.-J. Yang, and Y.-W. Lin, "Overcoming the imbalance in the supply and demand of professionals in the marine industry: Professional development of marine education in Taiwan," *African Journal of Business Management*, vol. 6, pp. 9202-9209, 2012.
- [3] M. o. Education. (2012, 29 March, 2015). *Profile on Education: Actions for Bridging Digital Divide*. Available: <http://english.moe.gov.tw/ct.asp?xItem=14608&ctNode=11435&mp=1>
- [4] K. Bathgate, C. Harris, J. Comfort, and B. Oliver, "Challenges and Opportunities Implementing an ePortfolio Approach to Interprofessional Health Education in Australia," *Journal of Interprofessional Care*, vol. 27, pp. 160-161, Mar 2013.
- [5] M.-C. Wang, C. Chang-Chien, Y.-H. Hung, L.-H. Kuo, and H.-J. Yang, "A Study of Developing Cloud Computing Curriculum," in *The 5th International Conference on Education and Educational Technologies (EET '14)*, Kuala Lumpur, Malaysia, 2014.

- [6] M. o. Education. (2012, 29 March, 2015). *Profile on Education: Actions for Bridging Digital Divide*. Available: <http://english.moe.gov.tw/ct.asp?xItem=14608&ctNode=11435&mp=1>
- [7] E. I. A. E. I. Foundation, *Raising the standard: Electronics technician skills for today and tomorrow*. Washington, DC: The Foundation of The Electronic Industries Association, 1994.
- [8] U. S. D. o. L. S. Secretary's Commission on Achieving Necessary Skills, *What work requires of schools: A SCANS report for America 2000*. Washington, DC: U.S. Government Printing Office, 1991.
- [9] N. o. H. S. a. T. E. Far West Laboratory for Education Research and Development, & Service Employees International Union., *Quality and excellence: National health care skill standards project*. San Francisco: Far West Laboratory for Education Research and Development, 1996.
- [10] N. P. Eurich, *The learning industry: Education for adult workers*. Princeton, NJ: Princeton University Press, 1990.
- [11] S. Balasubramaniam and V. Kavitha, "Geometric data perturbation-based personal health record transactions in cloud computing," *ScientificWorldJournal*, vol. 2015, p. 927867, 2015.
- [12] A. Horri and G. Dastghaibiyar, "A novel cost based model for energy consumption in cloud computing," *ScientificWorldJournal*, vol. 2015, p. 724524, 2015.
- [13] M. Lawrenz, D. Shukla, and V. S. Pande, "Cloud computing approaches for prediction of ligand binding poses and pathways," *Sci Rep*, vol. 5, p. 7918, 2015.
- [14] B. T. Moghadam, J. Alvarsson, M. Holm, M. Eklund, L. Carlsson, and O. Spjuth, "Scaling predictive modeling in drug development with cloud computing," *J Chem Inf Model*, vol. 55, pp. 19-25, Jan 26 2015.
- [15] H. Xue, S. Inati, T. S. Sorensen, P. Kellman, and M. S. Hansen, "Distributed MRI reconstruction using gadgetron-based cloud computing," *Magn Reson Med*, vol. 73, pp. 1015-25, Mar 2015.
- [16] S. Balasubramaniam and V. Kavitha, "Geometric data perturbation-based personal health record transactions in cloud computing," *ScientificWorldJournal*, vol. 2015, p. 927867, 2015.
- [17] R. Thackston and R. C. Fortenberry, "The performance of low-cost commercial cloud computing as an alternative in computational chemistry," *J Comput Chem*, Mar 9 2015.
- [18] A. Rosen, "Rapid eLearning: Another view on a thing fast," in *The eLearning Guild*, L. S. Magazine, Ed., ed: Focuszone Media, Inc., 2006

Miao-Kuei Ho received her Master (M.S.) in Industrial Technology Education (2003~2005) from National Kaohsiung Normal University. She is pursuing her Ph.D. in Industrial Technology Education from National Kaohsiung Normal University now. She has been teaching elementary school since 1990. As a senior teacher, she has had ten years field research experience with NSC projects. Her research interests include technology education, educational technology, and learning theory. She also has experts in technology process skills..

Hung-Jen Yang obtained a Master (M.S.) in Technology Education from University of North Dakota and a Ph.D. in Industrial Technology Education from Iowa State University. He is currently conducting research on knowledge transfer, and knowledge reuse via information technology. His research has appeared in a variety of journals including those published by the WSEAS.

Hsieh-Hua Yang received her Master (M.S.) in Health Promotion and Health Education from National Taiwan Normal University and Ph.D. in Health Policy and Management from National Taiwan University. She is a professor in Health Care Administration at Oriental Institute of Technology. Her research focuses are health behavior, social network and organizational behavior.