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Yong, Jin-Han and Shiau, Wen-Lung, "AN EXPLORATORY STUDY OF IT FIT MOTIVATION IN A CLOUD-COMPUTING CLASSROOM" (2016). *PACIS 2016 Proceedings*. 128.
<http://aisel.aisnet.org/pacis2016/128>

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AN EXPLORATORY STUDY OF IT FIT MOTIVATION IN A CLOUD-COMPUTING CLASSROOM

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Abstract

In recent years, digital learning has received more attention from the field of education, and many schools in Taiwan have begun to introduce the cloud-computing classroom platform as another learning environment for students. However, as there remains a lack of research on fit and performance in the cloud-computing classroom, this study attempts to explore students' views and effects when using the cloud-computing classroom. The research methods include case study and survey. Case study involved interviews with 18 students regarding their motivations and usage of the Ming Chuan University cloud-computing classroom. Based on the interview results, this study proposed three propositions, which were converted to three hypotheses. We collected data from a field survey and our results showed that (1) the user's needs positively and affect the perceived fit; (2) the user's usage of the cloud-computing classroom positively and affects the perceived fit; (3) the perceived fit in the usage of the cloud-computing classroom positively and affect user performance. Implications for academic researchers and practitioners are discussed.

Keywords: Cloud-computing classroom, Motivation, Fit, Need, Performance.

1 INTRODUCTION

With rapid development of the Internet, learning from classroom activities changes largely. While traditional web pages and applications have been proposed to support various classroom activities, most of these applications are standalone programs. Instructors and students must install additional programs on their own devices and activate them, which would negatively affect the motivation to use these applications or services (Lin, Lin, & Huang, 2011). Different from traditional web pages and applications, cloud-computing applications offer infrastructure as a service (IaaS), platform as a service (PaaS), and software as a service (SaaS), to users who can use these applications and services openly and freely (Lin et al. 2009; Armbrust et al. 2010; Doelitzscher et al. 2011; Shiau 2015; Shiau and Chau 2015). Instructors and students are motivated to use cloud-computing applications and services in their daily lives (Lin & Jou, 2012). Moreover, cloud-computing applications and services could be used to facilitate student learning activities anywhere, anytime, and anyplace. Lin et al. (2014) proposed a cloud-based learning environment to assist instructors and students in developing and strengthening reflection ability during and after actual class sessions, and their study results showed that the cloud-computing classroom is able to effectively facilitate student reflection abilities and enhance their learning motivation. To help students' learning, Ming Chuan University has built a cloud-computing classroom with many applications, including Microsoft Office, Visual Studio, Adobe Creative Suite, SPSS, and the Techficiency Quotient Certification (TQC) system. This cloud-computing classroom provides the necessary resources for instructors to teach and students to practice after class. Instructors and students can use the applications and services of the cloud-computing classroom anywhere, anytime, and anyplace. However, as there remains a lack of research on fit and performance in the cloud-computing classroom, this study attempts to explore students' views and effects when using the cloud-computing classroom. Cloud computing in academic environment will be benefitted by every student and staff. Only IT (Cloud Computing) fits users (students and staff) may have better performance in the cloud-computing classroom. Thus, the purpose of this study is to investigate the fit between the cloud-computing classroom, the users (students), and the usage outcomes of this learning system. Based on this purpose, this study attempts to answer: (a) does a cloud-computing classroom, a kind of information technology (IT), fit users' motivations and (b) will the fit between IT and users' motivations affect learning outcomes? This study used the mixed method to answer the above-mentioned questions, including case studies to develop propositions and a survey to validate our novel research model. The remainder of this paper is structured as follows: section 2 provides the literature review; section 3 details the research model and hypotheses; section 4 presents the research methodology; section 5 presents the data analysis and results; section 6 provides a discussion, implications, and limitations; and section 7 offers conclusions.

2 LITERATURE REVIEW

2.1 Motivation

Motivation is the need to satisfy oneself through the active and intentional actions of an individual; it can be defined as a thinking model that stimulates a person's actions (Malone and Lepper, 1987; Wu and Lu, 2013). Motivation can be divided into two categories, intrinsic motivation and extrinsic motivation (Deci and Ryan, 2000; Malone and Lepper, 1987). Extrinsic motivation refers to the influence of factors outside the activity itself; the most common extrinsic motivation is money or the self-interested behavior involved in the activity (Lee et al., 2005). Intrinsic motivation refers to when an action is taken; the primary motivation is to engage in the action, and enjoy the challenge or intrinsic satisfaction from the activity itself, rather than relying on external pressure or rewards. This is because the activity is inherently interesting or pleasing. Some people would have intrinsic motivation for certain activities; however, this would not be true for everyone (Deci and Ryan, 2000). The motivation theory, as based on the aforementioned extrinsic motivation and intrinsic motivation, has been developed by scholars into achievement motivation, learning motivation, and reading motivation.

Humanistic psychology has also engaged in in-depth research on motivation. Maslow (1970) believed that motivation states are continuous for people; the nature of motivation is passive and complex. When an individual has satisfied personal needs, another type of need would arise, meaning human need is never-ending. Maslow proposed “Maslow's hierarchy of needs” to further explain the hierarchy of human needs. The development of the motivation theory has gradually changed along with the development of psychology. Moreover, in addition to the foregoing concept of motivation, there are the behavioral motivation theory, humanistic motivation theory, cognitive motivation theory, and the socialization learning theory. At the same time, for students, motivation is an important factor influencing online learning (Chua and Don, 2013; Huet et al., 2011). David and Enric (2014) also pointed out that, there is a direct relationship between student performance and motivation; meaning proactive students would also be more proactive when learning skills, which ultimately helps them achieve better performance.

2.2 Fit

The concept of the Person-Environment fit (P-E fit) is primarily in organizational behavioral psychology, which explores the fit between a person and the people, matters, and objects of a work department or colleagues and environments; the better the fit, the lower the work stress, and vice versa, according to Bretz et al. (1993). In subsequent studies, the term “environment” developed into many different contexts, such as: Person-job fit, Person-group fit, Person-supervisor fit, and Person-Organization fit. Among fit theories, Task-Technology Fit (TTF) is being used in many studies in the field of management information systems. This theory was proposed by Goodhue and Thompson (1995), and primarily explores the fit combination between task, technology, and individuals, their influence on performance and usage. The theory asserts that technology and tasks supplement each other, thus, the two are combined into one model for exploration. It primarily explains that, while technology assists in performance, the premise is that technology must be accepted by users who are willing to use it, and that technology must have considerable fit with its associated tasks.

2.3 Cloud computing

Cloud-computing is an innovative technology, which includes new computational methods and services that evolved from distributed, grid, and utility-based computing. The potential advantages of adopting cloud-computing include reduced costs (Leavitt 2009; Marston et al. 2011; Sultan 2010), expected switching benefits (Park and Ryoo 2013), omnipresent services (Erdogmus 2009; Park and Ryoo 2013), collaborative support (Park and Ryoo 2013). In addition, more advantages of adopting cloud-computing include access to infinite computing resources on demand (Armbrust et al. 2010; Marston et al. 2011), ability to pay for computing resources as needed (Armbrust et al. 2010; Evans 2009), economies of scale generated by large data centers (Armbrust et al. 2010), high use by multiplexing the workloads of diverse organizations (Armbrust et al. 2010), and simplified operation and increased use due to resource virtualization (Armbrust et al. 2010; Marston et al. 2011). With such benefits, cloud-computing has become an increasingly popular technology in education, as cloud-computing applications and services can be provided to users seamlessly and ubiquitously (Shiau and Chau 2015). Instructors and students can access their information anywhere, anytime, and anyplace from any digital device (Marston, Li, Bandyopadhyay, Zhang, & Ghalsasi, 2011, Jou & Wang, 2013). A cloud-computing classroom could offer authorized software, personal web sites services, and contents of courses for Instructors and students. Instructors can easily and conveniently conduct formal lessons in the cloud-computing classroom, as they can share their information with anyone, anywhere, and at any time (Astrid, Paul, Carol, & Jordana, 2012; Shiau and Chau 2015). As instructors can effortlessly and suitably manage entire learning processes, students learn efficiently (Paul, Chen, & Gloria, 2010).

3 RESEARCH METHODOLOGY

Regarding research of information systems, diverse research methods are an important issue (Sidorova et al., 2008). Hybrid research methods have begun to receive attention from various research fields, thus, social sciences and natural sciences can benefit from such hybrid research methods (Venkatesh, 2006, 2013). In general, there are qualitative and quantitative methods. Qualitative research is used when we don't know what to expect, to define the problem or develop an approach to the problem. Quantitative research is to develop and employ mathematical models, theories and/or hypotheses pertaining to phenomena in order to be generalized to some larger population. Qualitative and quantitative methods could enrich the research question and provide different research results and interpretations. Researchers are encouraged to engage in hybrid research methods to provide rich views and develop new theories and perspectives of various phenomena (Venkatesh, 2013). Based on these recommendations, this study uses hybrid research methods to express research results through both qualitative and quantitative data, provide comprehensive and rich research materials, and develop new research models and frameworks based on phenomena. Current research is inconclusive regarding the fit between IT and people. The first stage is case study which is to collect data by representative examples. This study uses convenient sampling to choose subjects, asks questions relating to the context of the cloud-computing classroom, then the interviews converted to transcripts and the completed text file is confirmed by the interview subject. Data analysis by Nvivo 8 qualitative research software for classification and processing and summarization are used to establish the research model and propositions. The second stage is quantitative. Based on the research propositions, the interview data is used to formulate operational definitions to quantify the questions, and convert the propositions into hypotheses. A field survey is collected to have the reliability and validity, tests the hypotheses, and shows the data analysis results. Structure equation model (SEM) is used to analyse our collected data and shows the results of a proposed model.

4 RESULTS

4.1 Qualitative Research

The total number of Ming Chuan University are about 17000 students. All informants are voluntary to participate this study and have experiences of cloud-computing classroom. Convenient sample is used to collected data. In total, we collected 18 cases with usage of "Ming Chuan University cloud-computing classroom", as shown in the appendix B. The contents of informants show that, users use the cloud-computing classroom because they have initial motivation, and prefer to use the cloud-computing classroom because they have the need to meet their motivation goals and needs. The user first has motivations and needs, then, in order to achieve their motivation target, the action of using the cloud-computing classroom occurs; in addition, they expressed their perception of whether usage of the cloud-computing classroom met their initial motivation.

For example, informant A-8 explained that, his motivation was the school's graduation requirements, which initiated his use of the cloud-computing classroom. Ultimately, he expressed his views regarding the action (convenient and simple), thus, the school's graduation requirements became the user's extrinsic motivation. Yoo's (2012) study explained that, with higher extrinsic motivation, there would be guidance for intrinsic motivation, in turn affecting the usage intention for online learning. The application of previous studies on this study explains that, school graduation requirements (extrinsic motivation) affect students' intrinsic motivation, thus, driving students to use the cloud-computing classroom, and the ease of system use determines whether they are willing to use the cloud-computing classroom (Punnoose 2012). Informant A-7 mentioned that his own computer did not include the required software program, and as it would have been expensive to make the purchase, he preferred to use the cloud-computing classroom. He also gave his thoughts regarding this activity (money-saving and convenient). The interview data showed that there are subjects' need is meet with the perceived fit

of cloud-computing classroom. Based on the reason mentioned above, this study presents proposition 1 as follows:

P1: User need is related to the perceived fit of cloud-computing classroom.

According to the study by Calli et al. (2013), students believed that using online learning can increase their knowledge and improve their skills; it also accounted for cheerful attitudes when using the system, and easily usable systems can facilitate effective learning. Previous studies evaluated satisfaction of online learning, with “perceived usefulness” of students being defined as a cognitive response to online learning systems. Based on the correlation between technology and perception, this study summarized data of this study, which shows that when users used the Ming Chuan University cloud-computing classroom, it expressed a fit between technology and themselves, such as convenience and time. For example, informants A-15 and A-14 explained that, the characteristics of using the cloud-computing classroom related to ubiquitous internet use in cloud computing (Broad Network Access) and rapid elastic services (Rapid Elasticity). User can use the cloud-computing classroom at anywhere, anytime, and anyplace, and they do not have to install or configure the software, it gave rise to their perceived views regarding the technology (easy to use and convenient). Based on the reason mentioned above, this study details proposition 2 as follows:

P2: The IT (characteristics) is related to the perceived fit of cloud-computing classroom.

People would find online learning more effective, as they are likely to consider using the cloud-computing classroom to elevate their efficiency and performance (Punnoose, 2012). Our data show that users would seek to elevate their own ability in using IT, and the expressed cognitive response of fit is converted to user performance. In the interview process, some subjects explained that they obtained certification by practicing on the cloud-computing classroom, and passed the graduation requirement. For example, informant A-16 offered his motivation for using the cloud-computing classroom, “the department had the TQC requirement, and my computer doesn’t have that program, so I practiced with that part in the cloud-computing classroom.” Later, he explained the fit of using the cloud-computing classroom and the technology characteristics, “it felt pretty good, because having the cloud-computing classroom means that I don’t have to use the memory of my own computer, and I can use it by connecting to the cloud-computing classroom through the network.” Finally, the performance was provided, “Because of the cloud-computing classroom, I can practice and finally pass the certification exam.” Therefore, the subject first proposed the motivations and needs before reflecting the perceived thoughts, which ultimately lead to performance. Based on these results, this study proposes proposition 3 as follows:

P3: The perceived fit of cloud-computing classroom is related to the user performance

Finally, this study integrated the three propositions, P1, P2, and P3 into the relationships among the dimensions of the framework in Figure 1. The theoretical framework demonstrates the overall concept of this study: when users use IT, they express their cognitive response regarding whether the technology meets their and needs, as well as whether the technology is a good fit for themselves, and user performance is expressed on this basis.

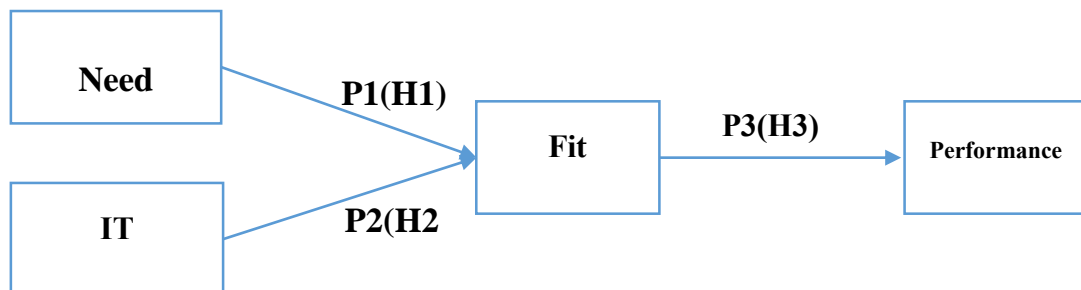


Figure 1. The theoretical framework of need and fit of the cloud-computing classroom for performance.

4.2 Quantitative Research

The shortcoming of the case study is that it cannot be generalized to population. This study uses quantitative research to generalize our case study findings. Based on the data of previous interviews, this study converted the three propositions into three hypotheses confirmed by two experts. These three hypotheses are as follows:

H1: The user's need positively and affects the perceived fit of cloud-computing classroom.

H2: The IT (characteristics) positively and affects the perceived fit of cloud-computing classroom.

H3: The perceived fit of cloud-computing classroom positively and affects user performance.

In terms of questionnaire design, this study referred to previous interview materials and reviews, and made a survey. The questionnaire in this study uses a Likert 5-point scale: (1) highly disagree; (2) disagree; (3) neutral; (4) agree; (5) highly agree. All constructs, operational definitions, and measurement questions are adapted from raw data of informants. The operational definition of need is that things are very important to meet certain requirements. The operational definition of IT is the usage of cloud-computing classroom to connect, store files, and access professional software. The operational definition of fit is the match between need and the usage of the cloud-computing classroom. The operational definition of performance is improvements or accomplishments in overall learning by using the cloud-computing classroom. In terms of question design, questionnaires come from our interview data. The interview data is used to adjust the question semantics, as based on the research context. After two experts' confirmation, all questionnaires regarding need, IT, fit, and performance were developed and shown in the appendix A. This study uses SPSS 22.0 to undertake descriptive statistics, and uses SmartPLS 2.0 to conduct the measurement and structure model. The measurement model is used to analyze whether all test variables correctly reflect the dimensions in the research model, and whether the tested questions fell into different dimensions. Therefore, this study evaluates the measurement model, which includes: individual item reliability, composite reliability, convergence validity, and discriminant validity. An online survey on Facebook's Ming Chuan University Group is used to collect data. We collected 161 samples; after discarding subjects who did not use the cloud-computing classroom, those who gave incomplete answers, and those who overlapped with the first sample, 16 invalid questionnaires were eliminated, and 145 valid samples remained. The descriptive statistics is shown in Table 1:

| Question | Item | Number of respondents | Percentage | Cumulative percentage |
|-------------------------------|------------------------|-----------------------|------------|-----------------------|
| Gender | Male | 61 | 42.1 | 42.1 |
| | Female | 84 | 57.9 | 100 |
| Year | Freshman | 29 | 20 | 20 |
| | Sophomore | 73 | 50.4 | 70.4 |
| | Junior | 6 | 4.1 | 74.5 |
| | Senior (and over) | 37 | 25.5 | 100 |
| Amount of time used each time | Less than half an hour | 48 | 33.1 | 33.1 |
| | half-1 hour | 60 | 41.4 | 74.5 |
| | 1-2 hours | 26 | 17.9 | 92.6 |
| | 2-3 hours | 10 | 6.9 | 99.3 |
| | More than 3 hours | 1 | 0.7 | 100 |

Table 1. Descriptive statistics of samples

| Dimension | Question | Factor loading | T-value | Cronbach's α | CR | AVE |
|-------------|----------|----------------|---------|---------------------|------|------|
| Need | Need01 | 0.84 | 11.76 | 0.75 | 0.86 | 0.67 |
| | Need02 | 0.82 | 20.54 | | | |
| | Need03 | 0.79 | 14.88 | | | |
| IT | IT01 | 0.81 | 30.50 | 0.77 | 0.87 | 0.68 |
| | IT02 | 0.86 | 17.89 | | | |
| | IT03 | 0.81 | 14.03 | | | |
| Fit | Fit01 | 0.84 | 25.79 | 0.69 | 0.83 | 0.62 |
| | Fit02 | 0.71 | 22.06 | | | |
| | Fit03 | 0.81 | 8.84 | | | |
| Performance | Per01 | 0.87 | 31.50 | 0.72 | 0.84 | 0.65 |
| | Per02 | 0.65 | 24.32 | | | |
| | Per03 | 0.87 | 7.90 | | | |

Table 2. Individual items reliability and validity

Composite reliability (CR) refers to the internal consistency of dimension variables; the higher the composite reliability in questions, the higher the correlation between the questions and the dimension; the recommended value is 0.7 or above. In this study, the composite reliability ranges from 0.83 and 0.87, as shown in Table 2. Therefore, the research model has a high degree of internal consistency. The evaluation of validity is the average variance extracted (AVE), which refers to how the dimensions explain the variance among the questions. If AVE is high, the variance convergence of the dimension is high. Previous scholars have recommended that the values must be greater than 0.5. The AVE of this study ranged between 0.62 and 0.68, as shown in Table 2, demonstrating that the research model has good convergence validity. Discriminant validity is tested by using the square root of AVE to replace the correlation coefficient matrix diagonals, with values greater than the correlation coefficients in the other dimensions. As summarized and shown in Table 3, this study's square root of AVE is greater than the correlation coefficients in other dimensions, which show that the model in this study has discriminant validity.

| Dimension | Fit | IT | Need | Performance |
|-------------|------|------|------|-------------|
| Fit | 0.79 | | | |
| IT | 0.56 | 0.82 | | |
| Need | 0.46 | 0.41 | 0.82 | |
| Performance | 0.53 | 0.53 | 0.35 | 0.81 |

Table 3. Discriminant validity

The structural model test the model's path coefficient and R-square in order to confirm the causal relationships among the dimensions in the research model. The path coefficient represents the strength and direction of relations in the dimension, while R-square refers to the ratio of explained variance by the exogenous variables to the endogenous variables, and represents the explanatory power of the research model. The results of structural model are as shown in Figure 2:

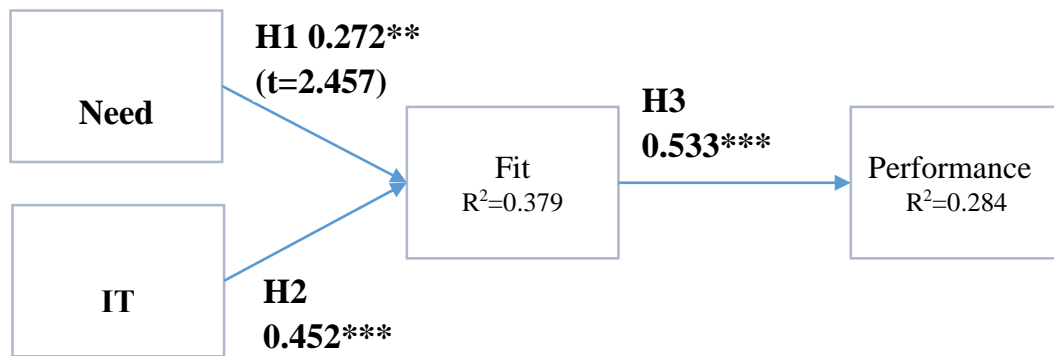


Figure 2. The results of structural model

5 DISCUSSION AND CONCLUSION

The results of this study showed that, the main motivations of informants in using the cloud-computing classroom are homework needs and the need to obtain professional certification to meet graduation standards; without professional certification, the graduation requirement would not be met and graduation would not be possible. Therefore, the informants use the cloud-computing classroom system to meet their needs and to achieve their motivation objectives. Regarding usage of the cloud-computing classroom, the informants think that the functions are comprehensive, the connection is convenient, it is easy to use, and can be used anywhere, anytime, and anyplace, thus, meeting informants' academic needs and their need to practice for certification examinations. In other words, the users' high motivations, their study needs, and the comprehensiveness of the cloud-computing classroom would increase fit. The research model of this study explains the variance (R^2) of the potential variables, with the empirical results of the structural model showing that needs and IT are 37.9% for fit, and the explanatory power of fit for performance is 28.4%. Our results show that, fit is an important factor for performance, and fit is the combination of need and IT. In other words, when students have considerable usage needs, and the cloud-computing classroom itself has considerable connection quality and rich professional software functionality, it would be worthy to be used by students. Students use the cloud-computing classroom environment to practice and obtain professional certification, and shorten their homework time, which all demonstrate performance.

This study attempts to explore IT fit motivation and outcomes after the perceived fit of cloud-computing classroom. This study applies the hybrid research method by using case study to collect qualitative data for three propositions, conversion into questionnaires, then converts the information into scales in order to collect quantitative data for confirmation, and proposes three hypothetical models (H1-H3 results). Our results confirm a kind of IT (cloud-computing classroom) fit users' need and the fit between IT and users' motivations affect learning performance. This study contributes to cloud-computing literature and fulfill the gap of fit between IT and motivation. Further, this study provides a new model for the consideration of future studies regarding the match between IT and people and help academics and practitioners have better understand IT (cloud-computing classroom) usage from the viewpoints of students.

5.1 Implications for Academics

Previous studies focus learning performance more on the field of digital learning (Johnson and Galy, 2013; Larsen et al., 2009; Lin, 2012). This study uses the recent growth of cloud-based systems and the cloud-computing classroom as the research topic. Case study is used to gain in-depth understanding of students' need in using the cloud-computing classroom. According to this study, greater student motivation and more comprehensive functions of the cloud-computing classroom lead to greater fit,

which in turn enables the cloud-computing classroom to assist students in learning performance. As a result, this study successfully connects motivation and IT with fit in a new model. Therefore, the results of this study can serve as a reference for future researchers, and enhance the research value of the cloud-computing classroom in the academic field.

5.2 Implications for Practice

A good cloud-computing classroom really help learning performance. When training students and employees, schools and companies can provide considerable motivations and incentives in order that users will use the functions of cloud-based systems. Cloud-based functions should also be complete with smooth connection abilities in order that users need not worry about their own computer specifications or usage environments, and need only connect to the cloud system in simple ways to use efficiently. Research results also show that, if other people use the same cloud system for learning and work, it would improve their performance.

5.3 Limitations and future studies

This study has several limitations. First, the subjects are from students of Ming Chuan University. Additional motivations may be obtained from other data sources. Second, a survey from a university's Facebook group does not represent entire populations and may limit the generalizability of this study. Third, the user responses in this study are cross-sectional data. A longitudinal approach may validate and extend the current research model of the cloud-computing classroom usage behaviors. According to the research outcomes and limitations, this study has provided certain recommendations for future research. Data collection may come from different groups, different age levels, and even countries with different cultures, in order to strengthen the views of this study. Further, the interviews only focused on the Ming Chuan University cloud-computing classroom, future research may extend our research model to different technologies and fields. Finally, future researchers may explore other user motivations on the IT (cloud-computing classroom) and evaluate the other outcomes of an IT usage.

Appendix A:

| Dimension | Questions | Informant |
|-------------|--|-----------|
| Need | It is very important to complete class requirements | A-4 |
| | It is very important to obtain professional certification | A-1 |
| | It is very important to have free software | A-16 |
| IT | Cloud-computing classrooms can be used anywhere | A-10 |
| | Cloud-computing classrooms are very easy to use | A-11 |
| | Cloud-computing classrooms are very easy to connect to | A-12 |
| Fit | Software services provided by the cloud-computing classroom meet my needs and usage for academics | A-5 |
| | Software services provided by the cloud-computing classroom are a good fit for my needs and usage in examinations for certifications | A-3 |
| | Software services provided by the cloud-computing classroom meet my interests in saving money from software purchases | A-6 |
| Performance | I used the cloud-computing classroom to practice so I could pass certification examinations | A-17 |
| | I used the cloud-computing classroom to meet graduation requirements | A-18 |

| | | |
|--|---|------|
| | The cloud-computing classroom can speed up completion of homework | A-13 |
|--|---|------|

Appendix B:

| Number | Interview content |
|--------|--|
| A-1 | In the first year of university, the teacher would force you to obtain certifications for Word and PPT, thus, if your own computer does not have Office, you would have to connect to the cloud-computing classroom on the school network. This would be more convenient. |
| A-2 | It is still mainly to practice TQC, as this is a school graduation requirement, and because it is difficult to find this software for practice, I have to use the cloud system for practice. |
| A-3 | Because the department has the TQC requirement, and my computer does not have the program, I used the cloud-computing classroom to practice Word and PPT, as these programs are required for certification examinations. |
| A-4 | If I do not have this program, but I need to use it in the classroom, I would connect to the cloud-computing classroom when I need to use this program. |
| A-5 | Because I need to use some special programs for schoolwork, and my home computer does not necessarily have these programs, I would need the help of the cloud-computing classroom to complete homework or exercises. |
| A-6 | I think it is very convenient. While you can only get trial versions of some software online, we can use the cloud-computing classroom without paying, and use the official versions of software. I think this really benefits students who cannot pay for software. |
| A-7 | My own computer does not have software like PPT or Word, but I can use them through the cloud-computing classroom. If I want to install these programs, I would have to pay, so when I need to use them, I just connect to the cloud-computing classroom to use the provided software; it is convenient, fast, and free. |
| A-8 | I wanted to take the certification examination because it is a graduation requirement of the school; as I could the cloud-computing classroom to practice TQC, I have more opportunities to operate it. The cloud-computing classroom is convenient because I only need to use the school-provided account number without applying separately. I think it is more simple than other systems to use it to practice TQC. |
| A-9 | Because everyone can enter their student number to use the system, after you finish using it, it would store the information. I think it is pretty convenient. Next time I connect and log in, the things I left in there will still be there. It is just very convenient. |
| A-10 | As long as there is internet and a computer, I can connect to the cloud-computing classroom to do what I want to do. I think it is very convenient. |
| A-11 | My computer is not very new, but when I connect to the cloud-computing classroom, it runs very smoothly and is not too slow; but, if too many people are using it, the wait might be very long to connect to the cloud-computing classroom. |
| A-12 | There is some homework required for classes and files need saving, and the certification examinations require practice, so I use the school's cloud-computing classroom system when I |

| | |
|------|--|
| | go online. I think it is very convenient, I do not have to fill out any data, and I can connect just by entering my account and password, it is very convenient. |
| A-13 | The cloud-computing classroom allows me to use the school's professional software at home. I can do homework wherever I have a computer. It is just very convenient, I can save a lot of time. It is very convenient. |
| A-14 | Because a lot of programs are not free, or involve complicated installation processes, I think the cloud-computing classroom is very convenient and does not require other complicated steps. |
| A-15 | I do not live on campus, so if I have to come to school for the purpose of practice, or if I have to find a classroom, it would be very inconvenient. As the school has this system, I could use it to practice and it is very convenient. |
| A-16 | I have access to some expensive software that I do not have at home through the cloud-computing classroom. For example, I could use SPSS statistical software in the cloud-computing classroom, and it is completely free. I could also use the TQC practice system so that I could earn certification for IT application. |
| A-17 | I used it to practice, and I passed the certification examination. I could only practice with the cloud-computing classroom, and I passed the certification examination. |
| A-18 | I felt more familiar with it and it is more convenient to get the certification. Finally, I got the certification and I passed the graduation requirement. |

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