

Future vision of educational innovation and technology for ASEAN community

Visión de futuro de la innovación educativa y la tecnología para la comunidad ASEAN

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Contents

1. Introduction
 2. Methodology
 3. Results
 4. Conclusions
- Bibliographic references

ABSTRACT:

The purpose of this research was to study the influence factors which cause development and the future of innovation and technology for the Association of South East Asian Nations (ASEAN).

Keywords: Educational innovation and technology, ASEAN Community, Future Vision innovation

RESUMEN:

El propósito de esta investigación fue estudiar los factores de influencia que causan el desarrollo y el futuro de la innovación y la tecnología para la Asociación de Naciones del Sudeste Asiático (ASEAN).

Palabras clave: Innovación educativa y tecnología, Comunidad ASEAN, Innovación de Visión Futura.

1. Introduction

The Association of Southeast Asia (ASA), a group consisting of 10 Countries: Malaysia Indonesia, the Philippines, Singapore, Thailand, Brunei, Myanmar, Laos, Vietnam and Cambodia (The Association of Southeast Asia, Ministry of Foreign Affairs 2017:2). The As set out in the Declaration, the aims and purposes of ASEAN are to accelerate the group's economic growth, social progress, and cultural development in the region, to collaborate and give mutual assistance on matters of common interest, investment and craftsmanship. The countries in association will collaborate for better utilization of agriculture and industry to raise the living standards of their people. To be one of efficiency in international economics, ASEAN member states have invested heavily in public education at the primary level. (ASEAN Economic Community: 2017). Since education is important factor to develop association's economy.

In the 12th ASEAN Health Ministers Meeting, the Heads of States and Governments signed the Cebu Declaration. Cebu Declaration aims to encourage greater institution and get the

group's populations to collaborate in promoting ASEAN awareness particularly among teachers and students. Moreover, the committee encourages the cooperation by setting the English language as the Interlingua to enhance the knowledge of technology study, folk wisdom and integrate various cultural in ASEAN. To goal is to increase the competitiveness of the people through education and make valuable contributions towards the achievement of ASEAN Community among Global Community.

Education development in ASEAN must be developed in constant and sustainable ways (Ministry of Education, 2017) Technology in terms of multimedia become a crucial part in collecting data. Many institutions implement educational technology by using internet, Mobile learning to classes. Moreover, the implementing of portal and hub system help the populations to learn their interested skills efficiently. Kaplan and Haenlein, 2009: 33) There are various methods of education tools in ASEAN education e.g; video, sounds and motion sources. Online learning is beneficial alternatives that students are able to study via online channel at any place or time in online platform. In addition, online learning enhances learning performance of all involved people, both students and teachers. People can integrate contents to personal implementation perfectly with their physical, mentality, society as well as intelligence. (Teera Rujcharoen,2012) The integral tactic that increases performance of ASEAN's population is to urge the application of knowledge in future professions effectively. Number of Application creators are augmented up to 1,000%. This figure shows the growth of online learning with increasing ubiquitous 3G and 4G (Loffler, Krockel, & Hettich, 2011: 658)An effective way which develop universities must be correlate with student performance improvement. (Ministry of Education , 2017) Online education E-learning) is the great material provided via online platforms, so students will easily access them from any type of convenience. (Supanee Charnprasert, 2013: 33). Office of the Basic Education Commission (2007) revealed research results that education which implements technology should learn better through Internet courses because users have been surrounded by computers all their lives and know how to use the technology and can reach information in any places.

Nowadays, many institutions use technology as the e-Learning tool which is a popular method to create new experience for students. E-Learning is the d-Learning which formalized teaching system specifically designed to be carried out remotely. This is important national strategy which will change students' behavior according to 2 stages of experiences: 1) Non complicated studies 2) Complicated studies which have to be analyzed, research from self-learning method. Many institutes still lack of the innovative of instructional medias, time management of students and students' knowledge support. (Office of the National Education Commission, 2017) The bright future of students needs to be focused in developing useful contents for their implementation. Students must able to identify the result analysis, synthetic, integrate the learning knowledges from worldwide sources. Besides, people should know how to express and exchange the ideas effectively, an important issue for the Future of innovation and Technology in Association of South East Asian Nations (ASEAN), that stimulates innovation in education for undergraduates to develop the progress of knowledges, economics, society and politics in the future.

1.1. Research Objectives

The objectives of this research consist of:

- 1.To study the factors which influence innovation and technology in education of ASEAN
- 2.To study the future-development of technology and innovation of ASEAN

1.2. Literature Review

Development of innovation and technology in ASEAN's education based on e-Learning (Electronic Learning). Due to its convenience and flexibility, the resources are available from anywhere and at any time. E-Learning diminishes the hindrances of learners, e.g. distance from school tohome, some duties. Web-based learning from e-learning promotes active searching and independent learning. Network-enabled in this source create an effective

transfer of skills and knowledge to students. With its convenience and flexibility, this method is becoming a quality source to be implemented as knowledge's hub. Moreover, e-Learning captures the students' interest to maintain their motivation and increase the effectiveness of the learning experience. Given that interactive systems increase the education efficiency and the individual abilities of student.

Nowadays, various universities are aiming to develop the educational technology with other channels (Mogalakwe, 2006: 222). Giving the reasons that technology is an important factor that helps in developing education. Applications are also the main gadget that arouses students to broaden their imagination. Moreover, many companies create many solutions for educational technology that changed traditional of education. Techniques and technologies are used to deliver the e-Learning requirements. Various applications are designed to gain the students attention, highlights the lesson objective(s), stimulates recall of prior knowledge, and progressively elicits new material to guide increased performance by providing feedback using benign assessment to enhance retention of progress which crosses the border of cultural and even geographic boundaries. (Scott, 2006) Online sources present contents in various ways: videos, images, messages, ideas, insights, humor, opinion, gossip, news etc. (Drury, 2007) The means also include blogs, vlogs, social networks, message board, podcasts, public bookmarking (Varnali & Toker (2010: 146). Importantly, Social media is claimed to be self-generated source which creates authentic conversation. All of electronics ways are the main hub for students to learn. Social media, nowadays also the center of place where people share not only new vision, or news but also offer the alternatives for audiences, even sharing experiences to each other.

Mayfield (2008) stated that Social media is the new platform that can be categorized by 1) Participation contribution and feedback from people who share the same interest. 2) Openness – Social media accept the feedback and participation of audiences. Moreover, it generates activities as voting, comments, sharing of information 3) Conversation in traditional media is the same way of broadcasting which is one-way communications, but Social media platform is two-way communications between audiences. 4) Social media creates Community. There are many interactive activities that occur in social media platform: political issues, economics etc. 5) Social media is the Connectedness. Its links generate the growth of linkage to multiple websites. Kaplan and Haenlein (2009) defined by Social media as the group of internet users in Web 2.0. Users have interaction together and generate contents. (User Generated Content). Baird and Parasnis (2011) also defined the meaning of social media as the concept that is developed to be the future framework which varies from the upcoming technologies. Mayfield (2008) mentioned that social media create interaction and create affection among audiences. The internet users will be craving for the new core value which never been seen before. ARCA (2012) defined that Social Media sites or Social Network is online community what share their common interests, activities and create interactive in sharing experiences. In addition, social media is implemented to be one of the new innovations of education. (Kandari, 2010) There are many tools that are used to be the sources to connect with information in self-learning process. Online contents assessment efficiency is an important concept among many international universities. They develop and design new learning methods to their own communities.

In conclusion, innovating technology of Education in ASEAN related to digital technologies including the Internet, cloud computing, data analytics, Notebook Computer, Portable computer, Tablet PC and Smart Phones has facilitated education by making it easier for students to connect with learning contents in Social-Networked Learning. All of these improve learning efficiency which removes the border in learning. Moreover, technologies are the center of news, knowledge sharing, news broadcasting and be center of online library. (Wing and Lai, 2008) all contents can be served from any places and anytime. (Mardikyan, Besiroglu and Uzmaya, 2012) This online classroom is the main place that people can connect to the contents even when a library is closed due to out of time operation.

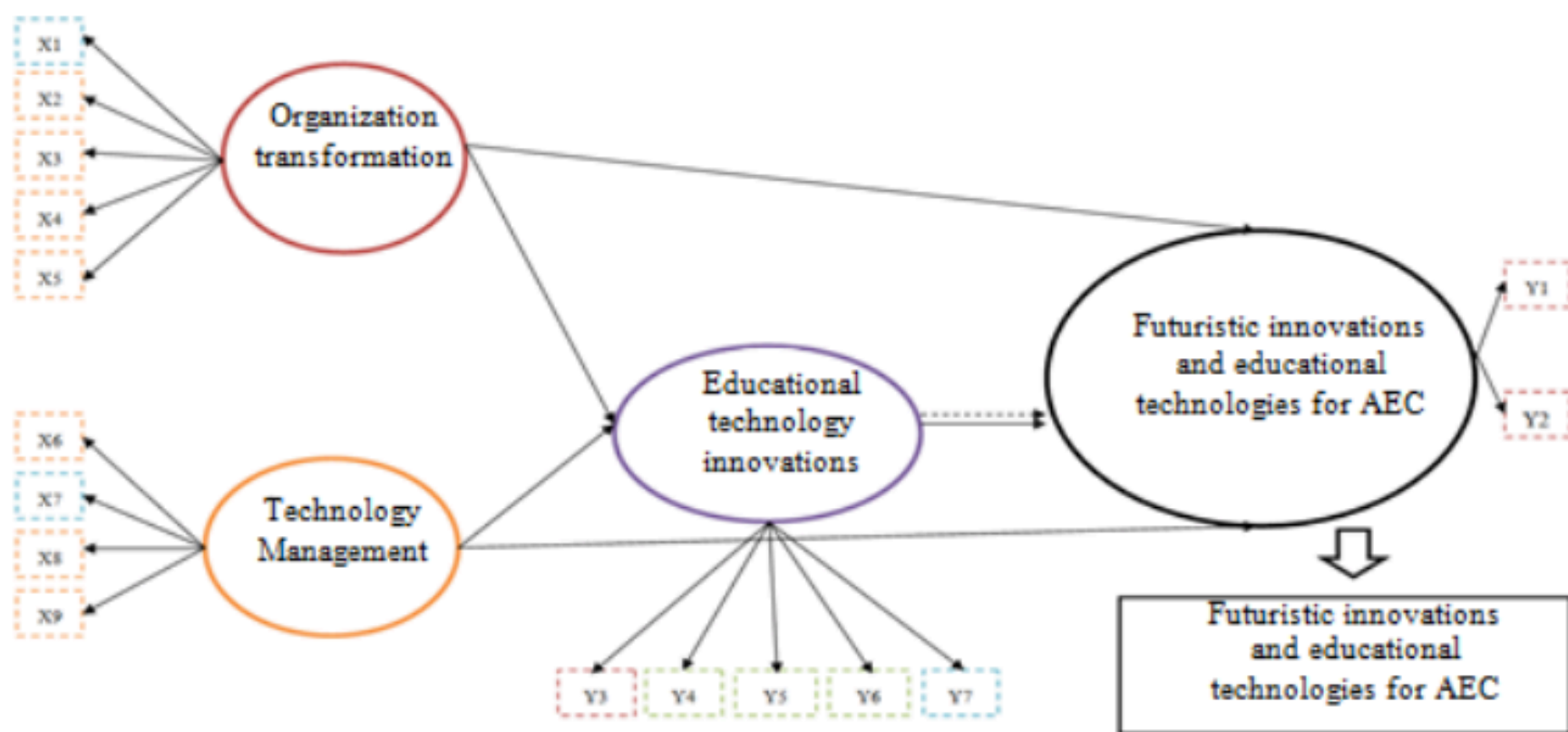
Future development of innovation and technology in education consists of course framework integrated with the knowledge from students, the tools which were created to help students generate the information through students' interaction. In other words, effective and efficient technology system, one aimed at quality of knowledge integration will be more

capable of delivering better education to all students and in a more efficient way in the future.

1.3. Research Framework

Concepts, theories and related researches that were reviewed, which compose of 1) Development of Thailand's education quality 2) Concepts and theories about technology management 3) Concepts and theories about organization transformation 4) Innovations in educational technology 5) Concepts about innovations and distribution of educational innovations 6) ASEAN Economic Community (AEC) 7) Related researches, the researcher has created a conceptual framework of the future of innovation and educational technologies for AEC which composes of 1) Components of factors in organization transformation 2) Components of factors in technology management 3) Components of factors in educational technology innovations 4) Components of factors in futuristic innovation and educational technology for AEC. The previously mention points can be shown as a conceptual framework as in Figure 1.

Picture 1
Research Framework



2. Methodology

The research uses a mixed method from both qualitative and quantitative methodology starting by studying related literatures to examine new knowledge from books, journals, conferences from both national and international along with documents from related organizations and from the Internet. The information is then analyzed, synthesized to obtain new knowledge to answer the research objectives that aim to develop innovations and educational technology for AEC today and also in the future. The developed innovations and technology are also expected to be used to create effective impacts in higher education institutions. The researcher would conclude the results from the use of 1) Inductive analysis which is an analysis on concrete data or phenomenon which can be examined using some other inspection methods to be able to conclude about the results 2) Discrimination of data which are processes of continuously occurring events. Theorems were used to discriminate types of each event by basing on concepts and theories to frame actions, situations, behaviors and activities that happen continuously which is an interpretation of actual vision 3) Comparison of data by comparing with phenomenon to make them more concrete. Then they were categorized by types and compared by finding relations. They were then analyzed and synthesized to produce conceptual framework. After that quantitative and qualitative research methodologies were employed by using focus groups method, which is a method

that uses experts to brainstorm their opinions and suggestions about applicability and potentials of a given topic, to validate and evaluate the future vision and its potential. The details of the research are presented in the following section.

2.1. Quantitative Research

1. Population – Manager and personnel in higher education institutions in total of 400 people. The sample size is from a population size in education which cannot be estimated. Therefore, a formula for calculating a sample size with an unknown population size is suitable to be used in this case. Confident interval is defined as 95% and an error rate is defined as no greater than 5%. A simple random sampling method was used to obtain the desired population size.

2. Research instrument – Questionnaires were used as an instrument to gather data about significance level of factors about futuristic innovations and educational technologies. An answer is a one-to-five significance level of each factor. Measure of internal consistency was also used to check construct validity of the instrument. Validity and reliability testing methods – 1) Content validity by presenting the questionnaires five professionals and finding index of item-objective congruence (IOC) 2) Testing validity of internal consistency using Cronbach's alpha coefficient. The questions yield a Cronbach's alpha value of 0.70 and thus, is considered valid.

3. Data collection – The researcher would contact and coordinate with the individuals to appoint suitable date and time. Questionnaires were distributed to achieve the target population size of 400.

4. Statistics used for data analytics – percentage, frequency distributions, significance level of factors of the futuristic innovations and educational technologies for AEC by mean and standard deviation, and path analysis with .05 as the level of significance.

2.2. Quantitative Research

The researcher uses focus group method on a group of experts composing of six scholars in a field of education and experts in innovations and educational technologies of nine ASEAN countries. This is done by contacting embassies of the nine countries. Therefore, in this research, there are in total of 15 domain experts. Discussions were carefully record and were analyzed, interpreted. Then, results were separated into suitable topics. The steps of the research are as follows: 1) Define a clear scope of situations of the futuristic innovations and educational technologies for AEC covering at least 10 years in the future; 2) Let the experts brainstorm and conclude points about education beforehand; 3) Identify trends driving society, technology, economy, environment and politics which could transform the current situation or trends; 5) Connect and use the depicted situations as background to picture the possible futures and use the discussions as important data for conclusion of the research.

3. Results

Development of innovations and educational technologies for AEC is a management of knowledge which emphasizes on exchanging knowledge to create opportunities to practice critical skills in self-development. The researcher aim that it could be used in the technologically advance future world to create economic competitions. It would force all educational institutions to develop students to be more competitive internationally. The researcher starts by showing results from statistical data analysis about critical success factors which was done by calculating mean and standard deviation used to measure significance of each factor. The results are presented as in the following section.

1. Confirmatory factor analysis of a measure model of each latent variable to determine construct validity by using convergent and discriminant validity, normality of data and statistical assumption testing compose of testing the assumption in structural equation modeling using LISREL version 8.8 software. These assumptions compose of testing of

homogeneity of a distribution and testing of linear relation between independent and dependent variables.

2. Path analysis and hypothesis testing by analyzing causal model with LISREL version 8.8 software of futuristic innovations and educational technologies for AEC were conducted. Results of the confirmatory factor analysis of variables to determine construct validity with empirical data as shown in Figure 2, which is a modified structural equation model following the empirical data after adjusting the model 26 times, show that a theoretical model is consistent with empirical data. This is according to a chi-square value of 48.05, degree of freedom of 37, p-value of 0.1055 (greater than 0.05 is considered passed), relative chi-square value of 1.298 (less than 2 is considered passed), goodness of fit index (GFI) of 0.990 (greater than 0.9 is considered passed), adjusted goodness of fit index (AGFI) of value 0.946 (greater than 0.9 is considered passed) and root mean square error of approximation (RMSEA) value of 0.0245 (less than 0.05 is considered passed). Comparisons of model and empirical data agreement between hypothesized model and modified model from direct, indirect and total effect of futuristic innovations and educational technologies for AEC are shown in Table 1.

Picture 2
Futuristic innovations and educational technologies for AEC

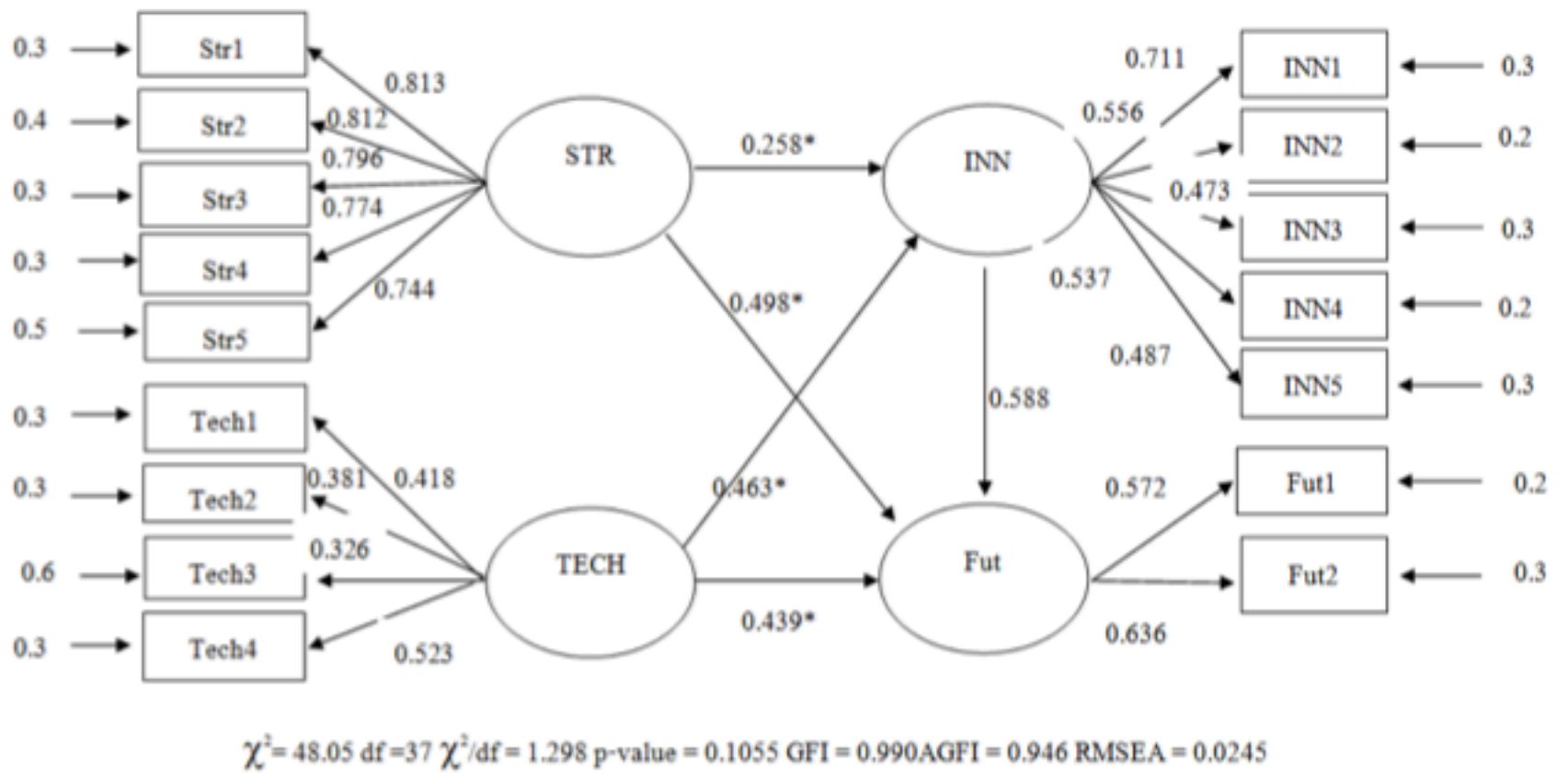


Table 1
Direct, indirect and total effect of futuristic innovations and educational technologies for AEC.

	STR			TECH			INN		
	DE	IE	TE	DE	IE	TE	DE	IE	TE
TECH	-	-	-	-	-	-	0.463**	-	0.463**
	-	-	-	-	-	-	(0.059)	-	(0.059)
INN	0.258**	-	0.258**	0.463**	-	0.463**	-	-	-
	(0.065)	(0.065)	(0.053)	(0.072)	-	(0.072)	-	-	-
FUT	0.498**	0.129	0.627**	0.439**	0.272	0.711**	0.588**	-	0.588**

(0.047)	(0.041)	(0.039)	(0.081)	(0.050)	(0.054)	(0.075)	-	(0.075)
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$c^2 = 48.046$, $df = 37$, $c^2/df = 1.298$, $p\text{-value} = 0.106$, $GFI = 0.990$, $AGFI = 0.946$, $NFI = 0.999$, $NNFI = 0.998$, $CFI = 1.00$, $RMSEA = 0.025$, $RMR = 0.005$, $SRMR = 0.011$, $CN = 611.838$

Notes TE = total affect, IE = indirect affect, DE = direct affect *means the statistical significance at .05 ($1.960 \leq t\text{-value} < 2.576$), ** means the statistical significance at .01 ($t\text{-value} \geq 2.576$)

Table 2
Mean and coefficients of total effect from each factor in general.

No.		Mean	Coefficient	Order
1	Organization transformation	3.96	0.627	2
2	Technological management	4.01	0.711	1
3	Educational technology innovations	3.92	0.588	3
4	Futuristic innovation and educational technologies for AEC	3.88		

From Table 2, mean and coefficients of total effect from each factor in general can be ordered by significance level as follows:

Firstly, technology management in the future of AEC with mean value of 4.01, this is consistent with coefficients of total effect which is 0.7111 for technology management. There should be a promotion supporting the use of new tools or technological innovations to manage education in all suitable aspects. It is an important part in developing education in the future. There should be policies regarding this subject clearly announce for AEC. There should be strategic planning in international technology management which should be a way to use management effectively and there should also be assignment of responsibility to knowledgeable and skillful individuals. Various teaching methods which support on demand self-learning should be provided. The methods should be convenient, easy to use, access and always updated for suitability. Technology should be used to manage experience and design flexible and various teachings with an emphasis on AEC.

Secondly, organization transformation has a mean value of 3.96 which is consistent with total effect coefficients which is 0.627. In the future of AEC, there would be transformations of organizations, obligations and cultures of educational institutions of all countries of AEC to support connections in educations which would be more dynamic and various. The transformations would be in terms of objectives and targets of management in innovations and educational technologies in the future with an emphasis on being central of the region to create excellence in education of AEC internationally.

Thirdly, the factor educational technology innovations has a mean value of 3.92 which is consistent with total effect coefficients which is 0.588. In the future, AEC will need to bring processed data to create information in various form using educational technology such as using technology or teaching innovations to integration variously make changes in teaching. Examples of these are two-way distant learning, learning through satellite television to support learning, knowledge, experiences to systematically create knowledge and applications. There will be encouragement of sufficiently supplying, manufacturing and developing innovations that use technologies to manage learning to support full potential development of people in ASEAN through the Internet.

Finally, futuristic innovations and educational technology for AEC has a mean value of 3.88.

In the next 10 years, AEC should have goals of using the Internet as media to connect educational networks for systematic learning and teaching. They should use technology as a principal in developing international collaboration networks about innovations and educational technologies to develop intellectual capital for the people and encourage people to easily and modernly self-learn with suitable and practical content for people of AEC which can be apply efficiently and effectively from collaborations in educational technologies from all the member countries with an emphasis on the benefits of the member countries.

Table 3
Order of significance in changing of innovations and educational technologies for AEC.

Order	Present	Next 10 years
1	Technology management of AEC in the future	1) Use of technology innovations to manage education in important aspects 2) Clear announcement of policies for AEC 3) Strategic plan in technology management internationally 4) Various form of learning to promote self-learning 5) Use of technology to manage experiences design learning with an emphasis on ASEAN people
2	Organization transformation	1) Adjustment of educational institution structure, obligations of all countries to support dynamic and various learning 2) Change of goals in innovations and educational technology management with an emphasis on being central of the region to create excellence in education of AEC internationally
3	Innovations and educational technologies	1) Brining processed data to create various information in a form of electronics, and use of educational technology and modern innovations to transform learning variously 2) Enabling two-way distant learning with satellite television 3) Sufficiently supplying, manufacturing and developing of innovations that use technology to manage learning to support full potential development people of ASEAN through the internet
4	Futuristic innovations and educational technologies for AEC	1) Goals of using the Internet to connect educational networks for systematic learning 2) International quality of educational technology innovations to create intellectual capital for people 3) Encourage ASEAN people to self-learn on which topics that can be applied efficiently and effectively from collaborations in educational technologies from all the member countries with an emphasis on the benefits of the member countries

The results of analytics and qualitative research conclusion are presented in this section. Using focus group with a group of experts, the conclusions are achieved about futuristic innovations and educational technologies for AEC. To accomplish goals, there need to be developments to integrate innovations in learning by using online media comprised of the following components.

1. Member countries need to establish a central educational institution directly responsible for this subject. Every country needs to participate in the process to create educational connections to allow people to learn and develop self-competence. The institution needs to have a management in terms of operation, finance, etc.
2. Preparation contents, lessons, courses, exercises, tests multimedia files, content management system are needed. The system composes of tools used to create content which should support texts contents, streaming media, displaying of images, videos, sounds with an emphasis on allowing on-demand learning. Create suitable learning environment consists of history of ASEAN, culture and stories which is beneficial to ASEAN people who

would access the content to study with educational technology innovation integrated learning via multiple online media which is always open for access from anywhere. The system also needs to be able to handle any number of users and contents.

3. There needs to be a learning support system which consists of devices to use educational technology to connect programs for managing learning which are devices used for user-teacher and user-user communication.

4. In AEC, people education would play a vital role in helping all involved to learn from each other. Innovations and educational technologies for AEC would be a guideline for creating relationships between people in the future, which is consistent in the goal aiming to be people-centric community, to create high quality and sustainable human resource. This would lead to benefits from worthy applications such as strategic measure of ASEAN 4.0. The measure encourages partnering between educational institutions in ASEAN to reinforce human resource of ASEAN to have international standard and be able to adapt to changes in society, politics and global economy. Desired competencies which people should have include effective communication to exchange experiences which would benefit self and society development, using of innovations and educational technologies to develop critical thinking, creative problem-solving skills, understanding of different cultures and international competitive skills.

5. Innovations and educational technologies would be an important part driving AEC to accomplishment of the 2020 ASEAN declaration and vision. This is consistent with dynamic of economy in a society with related culture and regional identity which influences the development of its people, quality of work and entrepreneurship from academic collaboration of all educational institutions.

6. Development of human resources, which are people in ASEAN, with innovations and educational technologies, would play a significant role in the development of economy and society of countries in ASEAN to grow and be internationally competitive especially in a globalization era and knowledge-based society, in creating a strong community in all aspects to build flourishing future for ASEAN.

7. Innovations and educational technologies for AEC thoroughly distribute education to the people of ASEAN which would eliminate illiteracy in the region leading to equality in terms of opportunity for the people and eliminate inequality in society, nation, region and physical impairments.

8. Innovations and educational technologies for AEC causes exchanges of culture among member countries of ASEAN to create success and understanding of the people with different culture and creates shared culture and ASEAN cultural heritage. It is also a development of learning and importantly, it effectively promotes the learning of ASEAN languages and exchanges in terms of language.

In the development of innovations and educational technologies for AEC to create students' diligence, higher education institutions should have strategic and academic plans which are an obligation of the institutions in terms of policies about development of innovations and educational technologies for AEC to create students' diligence. They should have a curriculum which defines objectives of learning by using online media to encourage diligence. The online media should define content for each subject along with sources of knowledge and define learning activities and communication for convenience of students, teachers, administrators, program directors and managers of the institutions who would access the media through computer networks or mobile devices.

The development of innovations and educational technologies for AEC to create students' diligence needs to consider factors such as communication, creativity of teachings, collaborations in learning along with nature in learning of each individual and competitions to create varieties of learning from globalization of communication with networks over the world. The Internet has changed organizations by erasing boundaries in the use of information. All activities can be connected, creating usefulness from stream of information and knowledge making learning faster and more convenient. Personnel can use these devices inside and outside to learn by themselves. The fact that personnel can always

connect to a hi-speed wireless network and access to online library via intranet allows more freedom to learning and more effective, continuous learning. Furthermore, coordination can be done more effectively and personnel can consult with others regarding learning and can also schedule a timetable. A group of personnel can interact with each other more by creating learning friendly environment. Importantly, communication to organizations can be done much more quickly since flexibility is one of the benefits of educational technology. Hence, no matter where a person is, there is always a connection to online social networks without much cost. The development created is a guideline which can be used to increase potential and sustainable growth to individuals, societies, and countries for the times to come.

Success of innovations and educational technologies for AEC would be from the collaboration of ASEAN member countries. The collaboration would be specific with sequential development in policy management. However, in practice, ASEAN always has structural reforming to strengthen its collaboration and to achieve more goals. Innovations and educational technologies for AEC would be an important foundation leading to flourishing in economy of ASEAN and of the world. Furthermore, educational businesses in ASEAN have become huge and boundless to meet freedom of education in ASEAN and world trade which cause competitions in education management. Development of innovations and educational technologies for AEC would affect the development of ASEAN's educational standard to be international comparable to in Europe and in the United States. This is to meet the changes and the needs of high-quality human resources of national and regional labor markets. The development would be a guideline leading to academic collaborations among educational institutions of both public and private institutions.

In a learning environment of an era with advanced educational technology innovations, the number of innovations is dramatically increasing which cannot only be adhered to teachers and textbooks. With an enormous amount of information which can be conveniently accessed, online media would be a form of learning which emphasizes on collaborative learning to create knowledge in a free society. This follows a notion "All are sources of knowledge for shared learning" in accordance with Varnali and Toker (2010) who found that education in globalization era is open and leads to learning in all over the place of educational technology networks which are continuously developed. This is also consistent with Kaplan and Haenlein (2009) who found that modern learning needs to be always active (active learning), covers all places (U-learning) and is a life-long learning idea which would be done together with working (re-learning). In a world of not only competition but also sharing, the use of educational technology innovations via online societies is growing from the expansion of information technology, which allows instant communication between people of all nations and languages and allows freedom to utilise desired media, especially development of integrative learning using online media, would improve networks of information to become a form of learning through online media which would be very important in the future.

Development of innovations and educational technologies for AEC would be a connection of right and suitable knowledge and understanding which can be used for the benefits of students which is a way to develop education to create competitive competencies internationally. It is also an important factor which helps to improve students' standard of living in accordance to the twelfth national economic and society plan (2017 - 2021) which aims to develop Thai students to have high potential and able to apply knowledge to develop the country in the future.

Developing students with innovation and educational technology development, considering National Education Act B.E. 2542 Amendment (No. 3) B.E. 2553, Section 66, defines objectives of education management with a point stating that students have a right to acquire development in using educational technologies to obtain knowledge and skills to self-learn continuously for the rest of their lives. Development of innovations and educational technologies for AEC would be a tool to acquire knowledge in a fast-changing world and is more important than content knowledge. It aims to develop students to be more diligent in accordance with Mogalakwe (2006) who found that educational technology leads to a fast growth in educational development by learning from suitable cooperative working.

Educational technology innovations are essential for all member countries of AEC. There must be policies supporting the innovations from both in basic infrastructure and budgets to create quality which is a promotion of sustainable development. This would also be an educational collaboration in trends of using educational technologies for AEC which are using digital videos for teaching, using massive open online courses (MOOC), cooperative teaching, establishment of ASEAN's society and culture learning center. Using technology helps to create skills and lifetime continuous self-learning. Learning should emphasize connections and exchanges of experiences along with promotion and development of national education network (NEdNet), national learning center (NLC), national education information system (NEIS), distant learning through the Internet, smartphone using, satellite for education, learning through the internet and webpage, virtual classroom, cloud computing and using of online social networks. The government of each country should define policies encouraging innovations and educational technologies for AEC to allow ASEAN people to learn through computer networks or mobile devices. There needs to be a creation of various types of learning. In an era of advancements in communication with networks connecting over the globe, connections can be made to benefit the people of ASEAN to create effective self-learning. One advantage of learning with education technology innovations is flexibility since online networks can always be connected effectively.

For the innovations and educational technologies for AEC to accomplish the defined goals, all member countries need to establish a central educational institution directly responsible for this subject. Every country needs to participate whole-heartedly in the process to succeed. There needs to be a learning support system in a form of devices to use educational technology to connect programs for managing learning between user-teacher and user-user communication. All groups should support ASEAN strategy which encourages partnering between educational institutions in ASEAN to create ASEAN human resources with international standard. Innovations and educational technologies would be an important part driving AEC to accomplishment of the 2020 ASEAN declaration and vision. This is consistent with dynamic of economy in a society with related culture and regional identity. Developing human resources with innovations and educational technologies would play a vital role in the development of the economy and society of member countries of ASEAN to grow and be competitive internationally especially in a knowledge-based society. It would also create a strong community in all aspects to build flourishing future for ASEAN. Innovations and educational technologies would equally distribute education to people which would lead to elimination of regional illiteracy. This would provide opportunities for people and reduce inequalities in society, nation, region and physical impairments. Innovations and educational technologies would influence exchanges of culture to create success and good understanding of people, create shared culture and ASEAN cultural heritage. Importantly, it would be a promotion of learning of ASEAN languages and effective exchanges of languages. Innovations and educational technologies in the future would be a very important form of learning and also would be a way to create sustainable growth for individuals, societies and countries effectively.

4. Conclusions

Success of innovations and educational technologies for AEC would be from the collaboration of ASEAN member countries. The collaboration would be specific with sequential development in policy management. However, in practice, ASEAN always has structural reforming to strengthen its collaboration and to achieve more goals. Innovations and educational technologies for AEC would be an important foundation leading to flourishing in economy of ASEAN and of the world. Furthermore, educational businesses in ASEAN have become huge and boundless to meet freedom of education in ASEAN and world trade which cause competitions in education management. Development of innovations and educational technologies for AEC would affect the development of ASEAN's educational standard to be international comparable to in Europe and in the United States. This is to meet the changes and the needs of high-quality human resources of national and regional labor markets. The development would be a guideline leading to academic collaborations among educational institutions of both public and private institutions.

In a learning environment of an era with advanced educational technology innovations, the number of innovations is dramatically increasing which cannot only be adhered to teachers and textbooks. With an enormous amount of information which can be conveniently accessed, online media would be a form of learning which emphasizes on collaborative learning to create knowledge in a free society. This follows a notion "All are sources of knowledge for shared learning" in accordance with Varnali and Toker (2010) who found that education in globalization era is open and leads to learning in all over the place of educational technology networks which are continuously developed. This is also consistent with Kaplan and Haenlein (2009) who found that modern learning needs to be always active (active learning), covers all places (U-learning) and is a life-long learning idea which would be done together with working (re-learning). In a world of not only competition but also sharing, the use of educational technology innovations via online societies is growing from the expansion of information technology, which allows instant communication between people of all nations and languages and allows freedom to utilise desired media, especially development of integrative learning using online media, would improve networks of information to become a form of learning through online media which would be very important in the future.

Development of innovations and educational technologies for AEC would be a connection of right and suitable knowledge and understanding which can be used for the benefits of students which is a way to develop education to create competitive competencies internationally. It is also an important factor which helps to improve students' standard of living in accordance to the twelfth national economic and society plan (2017 - 2021) which aims to develop Thai students to have high potential and able to apply knowledge to develop the country in the future.

Developing students with innovation and educational technology development, considering National Education Act B.E. 2542 Amendment (No. 3) B.E. 2553, Section 66, defines objectives of education management with a point stating that students have a right to acquire development in using educational technologies to obtain knowledge and skills to self-learn continuously for the rest of their lives. Development of innovations and educational technologies for AEC would be a tool to acquire knowledge in a fast-changing world and is more important than content knowledge. It aims to develop students to be more diligent in accordance with Mogalakwe (2006) who found that educational technology leads to a fast growth in educational development by learning from suitable cooperative working.

Educational technology innovations are essential for all member countries of AEC. There must be policies supporting the innovations from both in basic infrastructure and budgets to create quality which is a promotion of sustainable development. This would also be a educational collaboration in trends of using educational technologies for AEC which are using digital videos for teaching, using massive open online courses (MOOC), cooperative teaching, establishment of ASEAN's society and culture learning center. Using technology helps to create skills and lifetime continuous self-learning. Learning should emphasize of connections and exchanges of experiences along with promotion and development of national education network (NEdNet), national learning center (NLC), national education information system (NEIS), distant learning through the Internet, smartphone using, satellite for education, learning through the internet and webpage, virtual classroom, cloud computing and using of online social networks. The government of each country should define policies encouraging innovations and educational technologies for AEC to allow ASEAN people to learn through computer networks or mobile devices. There needs to be a creation of various types of learning. In an era of advancements in communication with networks connecting over the globe, connections can be made to benefit the people of ASEAN to create effective self-learning. One advantage of learning with education technology innovations is flexibility since online networks can always be connected effectively.

For the innovations and educational technologies for AEC to accomplish the defined goals, all member countries need to establish a central educational institution directly responsible for this subject. Every country needs to participate whole-heartedly in the process to succeed. There needs to be a learning support system in a form of devices to use educational technology to connect programs for managing learning between user-teacher and user-user

communication. All groups should support ASEAN strategy which encourages partnering between educational institutions in ASEAN to create ASEAN human resources with international standard. Innovations and educational technologies would be an important part driving AEC to accomplishment of the 2020 ASEAN declaration and vision. This is consistent with dynamic of economy in a society with related culture and regional identity. Developing human resources with innovations and educational technologies would play a vital role in the development of the economy and society of member countries of ASEAN to grow and be competitive internationally especially in a knowledge-based society. It would also create a strong community in all aspects to build flourishing future for ASEAN. Innovations and educational technologies would equally distribute education to people which would lead to elimination of regional illiteracy. This would provide opportunities for people and reduce inequalities in society, nation, region and physical impairments. Innovations and educational technologies would influence exchanges of culture to create success and good understanding of people, create shared culture and ASEAN cultural heritage. Importantly, it would be a promotion of learning of ASEAN languages and effective exchanges of languages. Innovations and educational technologies in the future would be a very important form of learning and also would be a way to create sustainable growth for individuals, societies and countries effectively.

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[\[Index\]](#)

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