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Comparative Study of Chinese Advanced Management Education Accreditation (CAMEA) and International MBA Certification[1]

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Abstract
With the rapid development of China's MBA education, participation in MBA certification has become the important measure for MBA organizations to enhance their quality to attract students. From the international perspective of business education, the access to three international certifications AMBA, AACSB and EQUIS is an important step for China's first-class business schools towards internationalization and their common pursuit. In recent years, the Chinese Ministry of Education has also launched Chinese Advanced Management Education Accreditation(CAMEA) to focus on the development of MBA with Chinese characteristics. This paper makes a comparative study on the similarities and differences between the three major MBA certification systems and the CAMEA certification system, and points out that domestic universities should actively participate in international certification and local certification according to their own situation.

Keywords: CAMEA certification, MBA education, MBA international certification.

Research background

China MBA education began in 1991 and has formed a variety of forms of MBA education now. The amount of MBA training institutions has developed from 9 in 1991 to 233 in 2017. Although MBA education started late in China, the pace of development is very fast that participation of institutions and number of enrollment are increasing and scale of institutions is larger. For China's universities, once '985' and '211' universities and today's 'Double-First Class' universities are signs of high-level personnel training and high level of education. The universities who have access to the top quality certification of world's top business schools receive an international recognition of quality assurance. These 'international' accreditations serve as a

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quality label and as a competitive advantage in the struggle for the best students and most outstanding researchers (Trapnell, 2007; Urgel, 2007).

From the international perspective of business education, there are three most authoritative international certification system, namely AMBA (Association of MBAs), AACSB (The Association of Advance Collegiate Schools of Business) and EQUIS (The European Quality Improvement System). AMBA whose headquarter locates in London, UK, mainly focuses on MBA and EMBA project; AACSB whose headquarter locates in the United States, focuses on whole projects of business schools, emphasizing on the academic quality and standardization of teaching; EQUIS whose headquarter locates in Brussels, Belgium, focuses on international teaching and contact to industry contact. Internationalization is a common pursuit of high-level universities in China today, and international certification is an important method and means of internalization.

In order to meet the macro requirements of China's MBA education, regulating the MBA education market and fostering management systems and models that are suitable for China's conditions. In 2012, Chinese Advanced Management Education Accreditation (CAMEA) was launched by China Academic Degrees & Graduate Education Development Center and China National MBA Education Supervisory Committee. The certification is the most authoritative certification for MBA program of China's domestic business school who is as important as EQUIS and AACSB international certification.

This paper employs the methods of literature survey and comparative analysis and introduces development process of the United States and the European MBA education and three certification system which are representative and have influence on International MBA education. Also, this paper produces a comparative study between three international certification systems and CAMEA system for finding out the similarities and differences. Accreditations have become an important way of ensuring the quality of higher education institutions (Stensaker, 2011). Therefore, Chinese MBA institutions should participate in the international certification according to their own actual situations and take the participation in international certification as a basic strategy for improving the quality of MBA education and international development. Moreover, Chinese MBA institutions can participate in the China's MBA certification timely to protect the sustainable development of China's MBA education.

Introduction to international MBA certification

MBA is the abbreviation of Master of Business Administration. MBA education originated in the United States which was founded by the American University in the early 20th century. In the last few decades, it has gradually become the mainstream educational model of the world management. The master of business administration (MBA) degree continues to grow in popularity in response to organizational needs for employees who can navigate the complexities of current and future business environments (Byrne, 2014). AACSB, EQUIS and AMBA are three major international certification systems related to the world's top MBA education. These three certifications are launched respectively by three international business organizations that the purpose is to promote the communication and cooperation between members. According to the specific situation of their own development, the three major organizations have introduced targeted certification system, which can be seen as the quality control and improvement standards of the business school to regulate the behaviors of leaders, teachers, managers and the resources allocation of the hardware and software.

Development of American MBA education

The United States is the birthplace of MBA education. It's generally believed that the American earliest management school is The Wharton School of finance and Economics which was founded by University of Pennsylvania in 1881. The establishment of MBA program was born later in Harvard University.

The American development of MBA education can be divided into three stages. From 1865 to 1945, it is the embryonic stage of American MBA education. After four years of the Civil War, the United States also entered the stage of monopoly imperialism and began colonization, which accelerated the process of industrialization in the United States. In this stage, the United States has entered the era of the machine industry, leading to a large number of various factories which has demand of an education that can cultivate senior managers for enterprises. It provided an opportunity to the birth of an education which can produce senior management talents. The American earliest management college was founded by the University of Pennsylvania in 1881 and MBA education was born in Harvard Business School in 1908 which has nearly 110 years of history now. The establishment of Harvard Business School is seen as a sign of MBA education.

From 1946 to 2000, the American MBA education ushered in the transformation and challenges. After the Second World War, only the United States was not damaged and its economy had greatly developed, especially the development of enterprises. Business management education is booming, mainly due to the demand of business managers because of the separation of company's ownership and the right to management. Because MBA education gradually get enterprises' approve, more students from different backgrounds participated in MBA education that MBA education has become the main body of American education. In 1980s, because of the rapid development of the world economy, the US market was influenced by other countries. The American MBA education began to consider the problems of MBA education. In this context, major business schools in the United States began to innovate in MBA education, including: promoting internationalization of education; integrating courses; strengthening training in leadership, team awareness and management skills; focusing on the development of business and entrepreneurial ethics; the use of network universities and Virtual B-school.

After the 21st century, the world has stepped into the information age that the rise of many high-tech enterprises have emerged and MBA education is also facing new economic challenges. Coetzee (2011) described a postmodern MBA program that is flexible enough to be offered as a traditional MBA, an executive MBA, or as standalone leadership development modules. In the new economic conditions, MBA education will pay more attention to online education and international education. Many business schools timely introduce some new MBA education projects, for example, the technology produced by high-tech industry and management. In this period, the American MBA education is making market segmentation and is more specialized,mature and perfect.

AACSB

Among the American education certification systems, AACSB certification system is the most representative and influential. The Association to Advance Collegiate Schools of Business was established in 1916 and later became a certification organization for management education. It is a global and nonprofit membership organization. There are 796 business schools in 53 countries and territories that have earned AACSB Accreditation (Association to Advance Collegiate

Schools of Business International [AACSB], 2017). The certification has three standards: Strategic Management and Mission, Participant Standards, Teaching Support System (Zhang Jianru & Zhao Ping, 2006). The strategic management criteria include whether a higher management education institution under review has a mission statement, a mission statement is appropriate, sources of students, evolving education goals, and financial goals. AACSB-accredited schools need to be sensitive to changing accreditation requirements and the utility of assessment in satisfying those requirements, and business school deans pay careful attention to their schools' efforts to improve assessment (William & Agnieszka, 2015).

AACSB's education certification is performed by a specialized agency of the Association. The certification takes the form of voluntary participation for education management units in university. Its purpose is mainly to conduct academic appraisals for educational curricula. Formal assurance of learning is required for business school accreditation (AACSB, 2013). The education certification has two major categories, namely business certification and accounting certification. Some educational institutions only participate commercial certification, and some participate both.

Development of European MBA education

Compared with the United States, the development of European MBA was initially hindered by government regulations. It was not until the 1950s that European MBA education began to sprout. After the Second World War, the hard-hit European economy was in urgent need of recovery. The business sector needed to change its model in order to achieve rapid growth. Therefore, companies needed a large number of business managers who had management experience and experience of international experience. In addition, many American business schools were also actively exporting their education to Europe. Many business schools also set up their branch offices in Europe, which objectively prepares for the emergence of European education. After the 1960s, according to the talent training plan of American universities' business schools, Europe also started to establish its own education system. In the 1950s, a group of French entrepreneurs started to establish private business schools to provide a distinctive European MBA education. INSEAD Business School in Fontainebleau, France, was established in 1958. IMEDE Business School in Switzerland (now IMD) was also established in Lausanne, Switzerland a few years later.

In the 1980s, Europe's industries entered a period of rapid development, and enterprises needed more senior personnel with managerial experience. Therefore, the European Business School responded to business requirements and cooperated with large enterprises for personnel training. In 1979, Britain broke the monopolies of London Business School and Manchester Business School, allowing any UK university to run its own MBA program. France took the same steps in the early 1980s. Finally, Germany adopted this view in 1998. The European MBA education began to flourish and hit the U.S. leadership in MBA education. European EQUIDS certification was officially appeared in 1997.

After the 21st century, due to the advent of the information age, the development of hi-tech and the refinement of the market, education in European schools also appeared in different forms. Schlegelmilch and Thomas (Schlegelmilch, B., & Thomas, 2011) described the MBA of the future as quite different in content and delivery mode. They predict greater emphasis on corporate social responsibility, ethics, and soft skills that allow complex dialog between business

and multiple stakeholder groups. Many European business schools partner with first-rate business schools in Asian countries to launch projects, which has become a major form of exportation of their education.

AMBA

AMBA is an abbreviation of English Association of MBAs, namely the British Association of MBA, is one of the world's three major business education certification organizations and one of the world's most authoritative management education certification system. AMBA was established in the United Kingdom in 1967. Unlike AACSB and EQUIS, which certify the whole business school, AMBA is accredited only for degree programs offered by certified university business schools. It only focuses on courses for master's degree and emphasizes practice training. AMBA's certification standards include the education quality of the whole MBA program in the business schools, whether business schools can award their degree independently, whether individuals and graduate employers agree with the international certification system, etc. It is important to assess the training objectives of the MBA program, training methods and whether the assessment system is reasonable and can run effectively. At the same time, assessment of the college system, teacher quality, student size can support the development of MBA programs.

EQUIS

EQUIS stands in English as the European Quality Improvement System, launched and operated by the European Foundation for Management Development. EQUIS was founded in 1997. It is an international certification system founded by the EFMD in the form of certification, which evaluates the quality of higher education and management institutions and promotes education. EQUIS and the business community are closely linked, and the business relationship is the new standard supplemented by the late EQUIS certification. The business school needs to actively develop good relations with relevant enterprises and employers (Ding Bin, Zhou Yueyue, & Deng Zhiqiang, 2012). EQUIS assesses institutions as a whole. It assesses not just degree programme but all the activities and sub-units of the institution, including research, e-learning units, executive education provision and community outreach. Institutions must be primarily devoted to management education.

EQUIS accreditation has ten standards, including faculty, students, research and development, top-level training, project quality management, contact with enterprises, environmental governance and strategies. The internationalization of projects includes faculty, students, internationalization of teaching and research, resources and management, contribution to the community. EQUIS in particular emphases internationalization of student body and faculty (Proitz, Stensaker, & Harvey, 2004). The EQUIS standard is divided into three scales, including general quality guidelines, international standards and the links between the higher education and management institutions under review and the business community. General quality guidelines include the organization's national fame, agency mission statement, degree of management, scope of educational activity, educational strategy, institutional resources, teaching strength, student qualifications, student services, personal development, course projects and academic research（Zhang Jianru & Zhao Ping, 2006). International standards refer to the degree of internationalization of higher management education institutions that offer MBA programs, including the internationalization of student groups, faculty, and curricula. The connection with the business community refers to the policy explicitly stated by the organization and the actual contact with the business community.

Introduction to CAMEA

Chinese Advanced Management Education Accreditation, referred to as CAMEA was launched in 2012. It is jointly organized by China Academic Degrees & Graduate Education Development Center (CDGDC) and China National MBA Education Supervisory Committee (CNMESC). The certification secretariat is located at the CDGDC.

CAMEA draws on the main ideas, standards and concepts of international certification 'AACCSB' and 'EQUIS', basing on the requirements of domestic economic development, paying more attention to the mission guidance and business education, more emphasizing on China's national conditions and innovative features (Chinese Advanced Management Education Accreditation [CAMEA], 2017). Because accredited institutions also need to develop clear strategies for reaching their goals and investing their resources (Lejeune, 2011), CAMEA certification is to highlight the mission-oriented, improvement mechanism of quality development and development characteristics of the MBA certification system. The theoretical system is as the standard figure below.

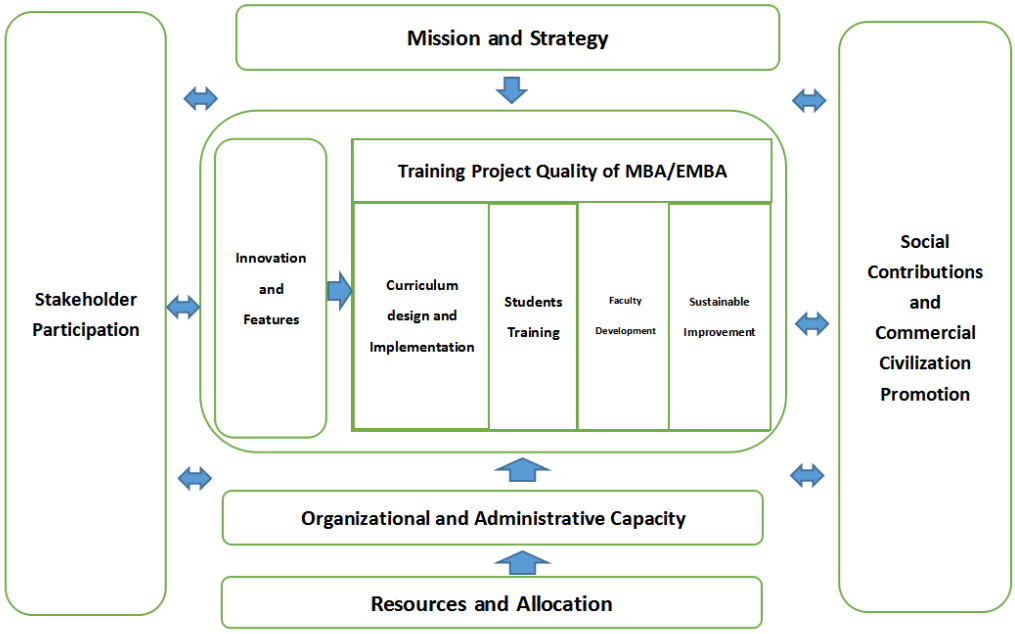

Figure 1. Theoretical system diagram of CAMEA

Source: Translated from Chinese Advanced Management Education Accreditation (CAMEA). (2017), http://www.camea.net.cn/

The certification process is very standardized, including the consulting of training participation, submission of applications, inspection the confirmed qualifications, self-assessment of organizations, experts on-site assessment, the results confirmed, continuous improvement and other sectors. Qualified organizations on the spot will be allowed to pass the CAMEA valid for three years or five years after being discussed and approved by the Chinese Advanced Management Education Accreditation Working Committee. Certified organizations must also be in strict accordance with the relevant requirements of the certification process, doing a good job of certification and keep promoting the continuous improvement of the quality of MBA education. It takes 1-3 years to complete the entire certification process.

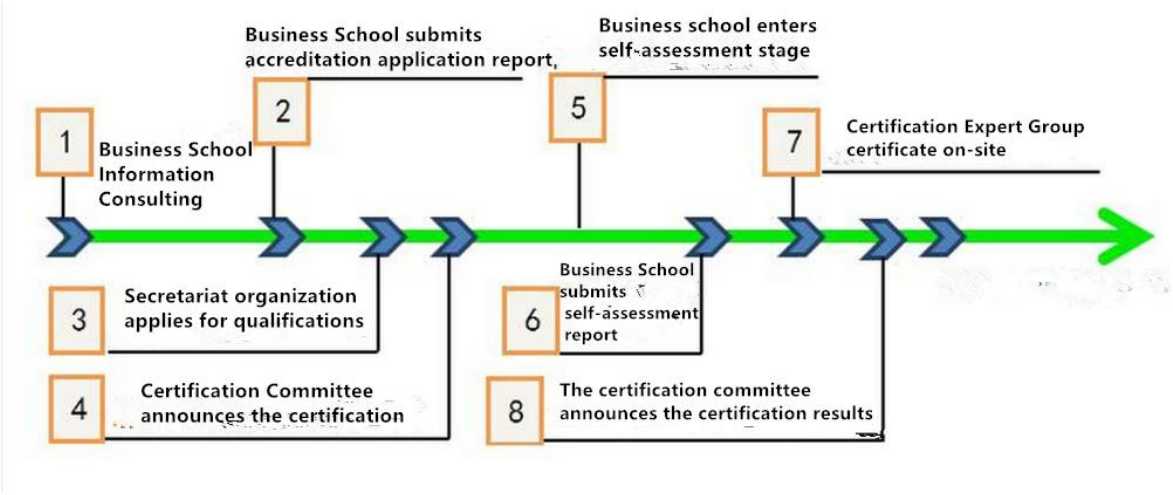

Figure 2. Certification Process of CAMEA

Source: Translated from Chinese Advanced Management Education Accreditation (CAMEA). (2017), http://www.camea.net.cn/

Comparison of Three International Certification Systems and CAMEA

The three authoritative certification systems have in common that the college participate voluntarily, make explicit demands on college resources, faculty and curricula, emphasize internationalization and encourage innovation. The assessment is basically divided into the two important stages including self-evaluation and joint assessment. The main difference between the three major certifications is that AACSB has the heavier traces of the United States which usually takes five to seven years from the beginning of assessment process to pass the certification. EQUIS has a significant European ancestry whose passing time is generally two years. AMBA is different from AACSB and EQUIS which focus on the overall development of business schools. AMBA only focus on master's degree courses. The CAMEA, as a product with Chinese characteristics, refers to AACSB and EQUIS certification system and more emphasizes on business education mission and guidance. Its assessment time is generally 1-3 years. Some of CAMEA's standards are even higher than the international ones.

Certification features

The AACSB certification system is primarily concerned with the quality of education. The certification process benefits all stakeholders, including staff, students, alumni and the university itself. Romero (2008) states that AACSB accreditations encourage flexibility and creativity. AMBA only concerned with the degree offered by a certificated university business school, with a focus on business and management practices. As an European MBA certification, EQUIS promotes personality and internalization, emphasizing on diversity education of college and student with an international perspective. CAMEA regulates the MBA education market and fosters a management system and model that is suitable for China's conditions through strategic positioning, education quality assurance system, innovation and diversified development, social contribution of business schools and promotion of commercial civilization.

Certification numbers

The total number of AACSB International accredited organizations is 796, mainly in the United States and Canada. A total number of AMBA accredited bodies is 241, UK business schools accounting for 35%, followed by continental European business schools accounting for 30%. In

2016, AMBA accredits more Business School MBA, MBM and DBA programme than ever before in its history and has attracted a truly global membership of more than 20,000 aspirational MBA students and graduates from 120 countries across the world. There are 172 institutions that have obtained EQUIS accreditation from Europe, mainly from business schools in European countries.

Certification focus

AACSB certification system focuses on the overall business school and emphasizes on teaching and research results assessment and teacher-student ratio. It only certificated degree project. Certified university should have business management courses which can offer degree and courses need to be supported by updated data. Degree programs offered by business schools require regular or irregular checks.

AMBA certification system for the AMBA project certification, only focuses on degree education offered by evaluated business schools. It provides the overall supervision on the evaluated business schools, not only to review its proposed degree system, but also to check their own departments. Moreover, it requires that the business schools must take education management as the basic form of education.

The EQUIS certification system focuses on courses and career development after graduation, attaching importance to internationalization, connection with enterprises and contribution to social practice. EQUIS is not primarily focused on the MBA or any other specific program. EQUIS accreditations foster three core-capabilities of business schools: strategizing, changing resources and activities, and branding (Lejeune, 2011). Its scope covers all program offered by an institution from the first degree up to the PhD.

CAMEA is a high-level MBA program that focuses on mission orientation, improvement mechanisms of quality development and development features. The certification program covers five aspects, including mission strategy, quality, innovation, resource allocation and organizational administration.

Certification process

AACSB certification system consists of six programs: candidate counseling, qualification evaluation, evaluation from inspection team, inspection team review, assessment result and evaluation support. The AMBA certification system includes initial discussions, self-assessment, preliminary assessment, field surveys and preparation of reports. The AMBA accreditation process provides schools with holistic, detailed analysis comprising: institution interest expression; self-assessment; pre-assessment visit; self-audit report submission; official assessment visit; feedback or commendation; final report and final accreditation decision(Association of MBAs [AMBA], 2017, p20). The EQUIS certification system requires a pre-investigation followed by formal application, qualification studies, self-assessment, international expert review, eligibility for accreditation and guidance if necessary. CAMEA certification process includes the following procedures: participation in training consulting, submit an application, examine and confirm the qualifications, self-assessment units, on-site certification, the results confirmed, continuous improvement.

The combination of international and local certification

According to the global education trend, many schools regard the development of education quality certification as a very important task. Especially in the specialized fields of some

developed countries in Europe and the United States, more and more countries and regions, recognize this system. U.S News & World Report (Flanigan & Morse, 2015) and Bloomberg Businessweek (Rodkin, 2014) annually rank graduate business programs based on faculty credentials, admissions selectivity, student engagement, and recruiter ratings. China's business schools, especially the top ones, rely on the their own strong academic strengths, building MBA education brand. Therefore, the domestic first-class business schools are also seeking this internationally renowned MBA certification, especially the three major certification system. The main advantages of international certification for Chinese MBA institutions are as following: First, it increases the space for international exchanges that schools, teachers and students can get more exchange and communication opportunities. Second, the schools can sort out its own positioning, vision and goals, looking for precise positioning, rather than blindly follow the trend. Thirdly, in the process of international certification, the schools can regulate and improve the teaching quality. As accreditation policies evolved, accredited schools pursued a moving target, attempting to find more effective methods to improve performance and the best way to document these efforts (Kelley, Tong, & Choi, 2010). Some poor quality and non-standard teaching projects will be cut off under the pressure of certification.

To a certain extent, international certification can regulate the management, improve the quality of education and enhance the level of internalization. On the other hand, because of the difference of cultural background, especially education system and philosophy, international education certifications are not entirely suitable for the development of MBA education in China. Therefore, the development of CAMEA certification system with Chinese characteristics can raise the educational power of MBA education in China.

The three major international MBA certification systems are highly valuable that only 1% of the world's business schools can get certification. Today, being accredited by one of the main agencies in this field, considerably contributes to a business school' s reputation (Bradford, Guzmán, & Trujillo, 2017). The access to the three major certification is necessary for domestic business schools who want to gain public recognition and enhance international influence. There are 28 AACSB-certified business schools, 20 EQUIS-certified business schools and 32 AMBA-certified business schools in China (including HK). Most of the business schools that receive the three major international certifications are 211 or 985 university business schools such as Sun Yat-sen Business School, Fudan University Business School, or domestic business schools cooperated with European business schools, for example, China Europe International Business School. It shows that currently the Chinese business schools who have strength to apply for and pass the three major international business schools are basically the first-class ones. These first-tier business schools also approve CAMEA that a total of 19 business schools have passed CAMEA and more than 20 schools have applied for accreditation.

According to the data from official website of AACSB, AMBA, EQUIS and CAMEA, to most of first-class business schools in China, the first choice of certification are the three major international accreditation, but most can only pass one international certification. Domestic business schools who have three international certification are Sun Yat-sen University (China) School of Business, Hong Kong Baptist University (China)School of Business , Antai College of Economics and Management of Shanghai Jiao Tong University, School of Economics and Management of Tongji University and Zhejiang University Management of Schools. Among them, Antai College of Economics and Management of Shanghai Jiao Tong University, School of Economics and Management of Tongji University and Zhejiang University Management of Schools also received CAMEA certification. It shows that some top domestic business schools

have begun the 'three major international certification + CAMEA' model to further increase their influence at home and abroad. Among the business schools accredited by CAMEA in China, the School of Economics and Management of East China Normal University, Business School of East China University of Science and Technology, Sichuan University and Western Business School have not obtained any three international certifications. It proved that some non-leading business schools turn their attention to CAMEA certification to enhance their influence.

MBA education should combined international certification and local certification. On the one hand, according to their own characteristics, domestic MBA programs should select a number of indicators in the developed regions as a reference. Just like the indicators required by the three major international certification AMBA, AACSB and EQUIS, we should set these indicators as the benchmark and set reference content to compare, analyze and improve for changing the current status(Huang Lei, 2011). The international certifications are standardized and mature which are world's universal certification system. They are the cornerstone for domestic business schools walking towards the world and enhancing internationalization. On the other hand, the domestic business schools should make up for the deficiencies of the three major international certifications by participating in the domestic local certification. The aim of CAMEA is to promote the continuous improvement of the quality of MBA education in China. Compared with the international certification 'AACSB' and 'EQUIS', this certification more emphasizes the China's national conditions, innovation and features. To domestic business schools, active participation in local certification will help to train qualified personnel in China market, but also help the development and improvement of the domestic MBA certification system.

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Female ESP Postgraduates' Acceptance of Virtual Reality Learning: Aye or Nay

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Abstract
The current study examined the views and attitudes of (N=20) postgraduates' after using virtual reality (VR) headsets to learn English for Specific Purpose (ESP) vocabulary. The study also explored factors affecting their perception. A mixed method approach was used to collect the data. First, initial focus group interviews were conducted with some students to explore their opinions. To assess whether other participants share the same views, a follow up online questionnaire was adopted and adapted, afterward, based on themes emerged from the literature review and the focus group interviews thematic analysis. The results concluded that students were enthusiastic about using VR as an instruction tool in their ESP classrooms. They also suggested integrating it in other courses. This study helps to bridge the gap in literature as few studies investigated Saudi female postgraduates' perception toward the use of VR headsets to learn ESP vocabulary. This study answers the calls of using immersive interactive VR in ESP environments to provide mock-ups of real-life experiences to compensate for the lack of authentic ESP learning.

Keywords: Perception, virtual reality headset, ESP vocabulary, immersion, imagination, Technology Acceptance Model, Task-Technology Fit.

Introduction

Researchers have shown an increased interest in the relationship between the techniques of teaching and the traditional and new strategies of learning lexis (Bahanshal, 2015; Elyas & Alfaki, 2014; Wahyuni & Rozani Syafei, 2016; Liu, 2016; Khonbi & Sadeghib, 2017).With the emergence of technology and the calls to integrate them when teaching a language, many scholars attempted to experiment their usage as well as investigate users' perceptions toward them. These are exemplified in studies that investigated the role of flipped learning, social network sites, blended learning, mobiles applications, video games and recently, wearable technologies that are generally

used for entertainment, tracking activities, and monitoring health. Some studies even reported new paradigm shifts and suggested combined models and frameworks to help understand the factors behind certain attitudes.

Since wearable technology markets have witnessed a dramatic change the last few years, vocational education recognized a need to integrate them into the curriculum. This is evident in a few recent studies. For example, in Switzerland, Rosenthal et al. (2008) explored 735 surgical trainees' attitude toward VR simulation for surgical assessment and training. The majority of the participants were motivated to train regularly via VR. Moreover, to collaborate in building cities, Nguyen et al. (2016) introduced a system to bring architectures together into a 3-dimensional (3D) virtual environment. Also, in an inclusive educational environment, Ip et al. (2016) designed six VR training scenarios along with corresponding training protocols to examine VR ability in facilitating social adaptation training for school-aged children diagnosed with Autism Spectrum Disorders (ASD). The findings revealed children's significant improvements in social reciprocity, affective expression, and emotion recognition.

Although the aforementioned investigations and many others reported interesting results, little work has examined the effect of VR headsets on female ESP students' ability to retain vocabulary related to their field of study, specifically, in the Saudi context. Therefore and based on the premise that VR may transform the learning experience, the current authors Madini & Alshaikhi (2017) examined in a previous study the interaction of (N=20) ESP Saudi female postgraduates with VR goggles while watching YouTube videos, recorded in 360°, related to Didactic Terminologies. The pre and post-test scores were compared. The result revealed that VR videos actually helped the postgraduates retain ESP vocabulary. This promising result prompted the authors to extend research further and explore, in this current study, the same participants' attitudes toward using VR goggles and the factors affecting their perception.

In the light of this, this paper aims to add to the growing body of VR literature by exploring Saudi ESP female students' attitude toward using VR goggles to retain ESP vocabulary and the factors affecting their perception. The long-term implications of this study will contribute to enhance knowledge on the impact of VR in ESP classes as well as inform policies to attend to ESP students' needs by adopting VR in ESP filed.

Literature Review

Virtual Reality Definition

Many scholars proposed various definitions of VR. Achille et al. (2016) for example, referred to it as "a computer technology that gives the illusion, to those who use it, of being immersed in a virtual environment that does not really exist." (p. 140). However, the term 'virtual reality' is often used interchangeably in the literature. Generally, it is used to refer to visualizing believable imaginary environments experienced in a three dimensional (3D) view. Specifically, it refers to the immersive hardware used to interact with objects viewed and heard in mock-ups 3D environments such as gloves and headsets. Furthermore, Fernandez (2017) offered to explain and clear the misconception between Augmented Reality (AR) and VR. He pointed out some distinctive features of both among them:

1. VR runs over new virtual environments in terms of touch and interaction while AR implements virtual elements to enhance the real world experience.
2. Virtual reality replaces the physical world while AR does not.
3. VR's immersion level is 100% where users are fully detached from their real world, unlike the AR where users are fully aware of their surroundings.

4. VR needs powerful processors while AR can be experienced through tablets , smart mobile phones and some dedicated devices such as Microsoft HoloLens or Meta 2
5. Depending on the application, VR "is 10% real and 90% virtual. Augmented reality is 75% real and 25% virtual" (p.3)

In addition, numerous recent studies identified different types of virtual realities. These are: fully immersive, non-immersive, collaborative, and web-based. Each of which has its own features and drawbacks (Huang, Rauch, & Liaw, 2010; Curcio, Dipace, & Norlund, 2016; Hsu, 2017; Hung, Chen, & Huang, 2017). Similarly, early literature documented different wearable devices that can be used to experience each VR type such as body suits, joysticks, helmets, data gloves, and recently goggles. For the purpose of this paper, the participants' views on the virtual environment are explored after inserting smartphones in VR headsets (Figure 1) to watch YouTube videos recorded in 360°.

Figure 1. Gear VR (Samsung mobile press, 2017)

Why Virtual Reality?

The literature highlighted some benefits for using VR in learning. Cassard & Sloboda (2016), for example, indicated that VR goggles help learners to be "fully immersed and engaged in the learning of content" (p.57). Moreover, Fernandez (2017) pointed out that they are flexible to access from anywhere and that the new immersive 3D experiences can be "worth more than a thousand images" (p.6). Lan (2015) supported that and proved that VR could save costs of physical field trips to complement the insufficient learning opportunities in EFL Taiwanese classes. The researcher created virtual *English Villages* and observed the English learning performance of 132 elementary school students. The result indicated that: a) the mobility of the VR worlds provide learners with the chance to learn without time and space constraints, b) VR provide EFL learners with an exciting game-like scenario, and (3) VR enhances their performances. Similarly, VR offers to enhance spatial knowledge, motivation, and engagement, effective collaborative learning, and contextualized learning as well as simplify complex abstract concepts (Dalgarno & Lee, 2010; Hwang & Hu, 2013). VR also triggers the imagination, initiate interaction instantaneously through users' motion detectors, enhances mental and physical immersion through multisensory stimuli and thus reduces cognitive load (Huang, Rauch, & Liaw, 2010; Huang, Liaw, & Lai, 2016).

By the same token, Duncan, Miller, & Jiang (2012) provided a valuable contribution to the literature by suggesting a general taxonomy for the various applications of VR environments inside the classrooms. According to them, VR is effective for virtual fieldworks, game-based learning, role-playing, collaborative learning simulation, enquiry-based learning, collaborative construction, virtual quests, and problem-based learning.

Challenges of Virtual Reality learning

Although the benefits of VR are still under investigation, some challenges have been reported and thought to limit their uses in education. For instance, Fernandez (2017) noted that learners' abusive use of VR in class might lead to personal isolation from their peers. Also, Walker (2009) and Stojsic, Dzigurski, Maricic, Bibic, & Vuckovic (2017) pointed out some concerns such as slow wireless Internet connections in the classrooms, limited VR content, and the inability to provide VR headsets in large classes due to their high prices. Also, as with most wearable devices, some psychological and physical discomforts were experienced. These include loss of balance, disorientation, motion sickness, and headset weight and fit (Merchant et al., 2014). Also, if not guided and used for the first time, VR may not aid absorbing the presented content but rather distracts students with the engaging sensory experiences (Adams, Mayer, MacNamara, Koenig, & Wainess, 2012; Rupp et al., 2016).

Factors Influencing Learning via Virtual Reality

When it comes to integrating new technology in education, concerns always rise, specifically regarding its usefulness, appropriateness in meeting tasks requirements, feasibility, acceptance, and learners' and teachers' attitude towards it. When comparing VR to theories and pedagogical practice, Bricken (1991) identified fear of technology, usability, and cost as three main challenges.

Likewise, the literature discussed other attributes that may affect the practical, effective use of VR in education such as lack of designed instructional principles, the need of theoretical guidelines, limited practical adoption in literature and lack of teachers' training in using VR within meaningful educational contexts (Curcio, Dipace, & Norlund, 2016). To solve the problem, Fernandez (2017) proposed six-steps to assist basic adoption of augmented and virtual reality within regular education. These steps start with (1) orienting instructors and familiarizing them with VR technology; (2) encouraging them to design conceptual prototypes; (3) developing the design with technical programmers and educational architects; (4) piloting the design with students; (5) training instructors to customize the courses they teach by adding pedagogical elements to include VR solutions; (6) encouraging instructors' implementation of the VR experience in their classes.

The Conceptual Framework

Evaluating learners' acceptance of VR is a critical issue to ensure wearable technologies are used effectively to serve the intended purpose. Therefore, Technology Acceptance Model (TAM) and Task-Technology Fit (TTF) are considered in this paper as a theoretical guideline to evaluate the appropriateness and effectiveness of VR. The use of the theoretical framework in developing research is of utmost importance as it helps the researchers to formulate the research problem, choose the best method to investigate the problem and guide the process of analyzing the research data (Imenda, 2014).

Technology Acceptance Model vs. Task-Technology Fit

TAM was proposed by Davis in 1986 (Chuttur, 2009). It is used as a tool to measure users' acceptance of using technology through their internal beliefs, attitudes, and intentions (Turner, Kitchenham, Brereton, Charters, & Budgen, 2010). Moreover, using TAM as a theoretical framework for a study helps in identifying factors that affect users' acceptance based on two beliefs: a) perceived usefulness (PU) and b) perceived ease of use (PEoU) (Marangunic & Granic, 2015). As defined by Davis (1989) PU refers to "the degree to which a person believes that using a particular system would enhance his or her job performance". However, PEoU indicates "the

degree to which a person believes that using a particular system would be free of effort" (as cited in Akour, 2010. P. 94).

When exploring the learner attitudes toward the acceptance of a certain technology particularly VR headsets, three features should be considered. These are imagination, immersion, and interaction (Burdea & Coiffet, 2003). As a result, the current study adopted a conceptual model (Figure 2) based on TAM which was developed by Huang, Liaw, & Lai (2016) to further investigate the relationship between the three features of VR and acceptance of VR learning systems.

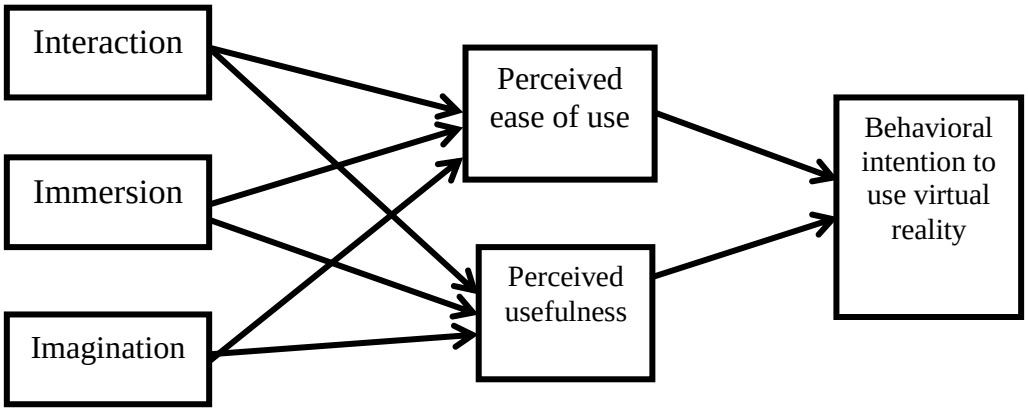

Figure 2. A conceptual model of learners' attitudes toward VR learning (adopted from Huang, Liaw, & Lai. 2016, p. 7)

On the other hand, Task-Technology Fit (TTF) model implies matching of the capabilities of the technology to the demands of the task (Dishaw & Strong, 1999). In other words, TTF investigates how well the new technology (VR headsets) fits the requirement of a particular task (acquiring and recalling ESP vocabulary relevant to the student's major).Therefore, this study also adopted Integrated TAM/TTF model (Figure 3) designed by Dishaw & Strong (1999) because TTF measures the fit between the task and the technology (Goodhue & Thompson, 1995).

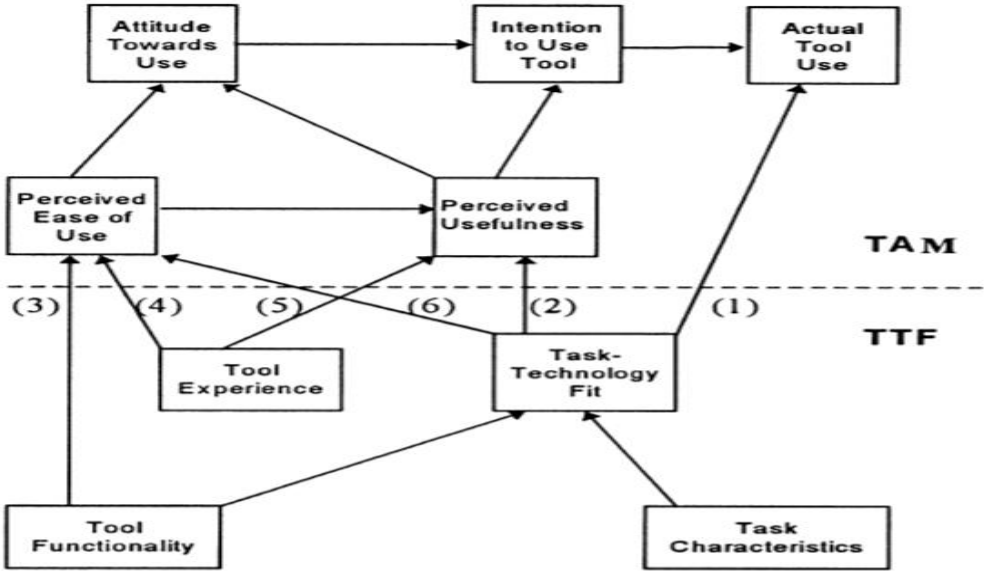

Figure 3. Integrated TAM/TTF model. (adopted from Dishaw & Strong, 1999, p.13)

To this end, combining TAM with TTF provides a more effective model than the TAM or TTF models alone. The combined model can be more useful for explaining the variance intentions of using the technology than using the TAM alone (Klopping & McKinney, 2004). TAM model helps in studying the attitude toward the use of VR headsets in language education, whereas TTF helps in investigating the functionality of the VR headsets and the characteristics of the task. Therefore, integrating both models is essential for this study to provide a better explanation for the variance in VR headsets utilization.

Research Objective and Questions

In this dynamic and 'interactionist' age, students' interest is exceedingly fading in traditional classrooms where they are chained to their chairs listening to a teacher standing next to a black or whiteboard. This gives rise to tasks with online settings. This availability of online contexts as an experimental field to practice and learn any target language suggests the use of technology as the best medium for language teaching and learning.Therefore and based on all that mentioned above, this research aims to explore the female ESP postgraduates' perception toward the use of VR headset in ESP learning and understand the factors affecting their perception. For this purpose the following two questions are addressed:

1- How do ESP postgraduates perceive retaining ESP vocabulary after using VR goggles?
2- What factors affect student's perception while using the VR goggles?

Methodology

Participants

The participants were (N=20) Saudi female ESP postgraduates enrolled in the Didactic Terminologies in English Language Course. This is the only English course available in the master program of Counselling and Guidance offered by the Department of Psychology at King Abdulaziz University, Jeddah, Saudi Arabia.

In a previous experimental study and during the second semester of the academic year 2017, the participants' interaction with VR headsets was examined. They were exposed to VR smart goggles by watching 360° videos on topics related to: 1) basic skills in counselling, and 2) some cases that require referrals such as depression, addiction, violence, domestic violence, suicide, autism, and bullying. This intervention lasted for about six weeks at the rate of one hour a week. The results of the pre and post tests found that VR headsets, in fact, enabled the postgraduates to retain ESP vocabulary related to their counseling and guidance program (Madini & Alshaikhi, 2017). On that account, a next step of investigating their perception toward the use of VR headsets was needed to explore the benefits as well as the challenges of using such instrument in language teaching. In addition, demonstrating the factors influencing their perception in such unique learning environment could possibly bring new insights to this novice topic.

The age of the sampled participants was ranged between 26 and 35 years old. Their English level varied between beginners to intermediate as determined by their TOFEL iBT and IELTS tests scores. Most of the participants indicated learning English in schools and university preparatory year.

Instruments and procedure

This research applied a mix method approach by employing both quantitative and qualitative instruments. To investigate the participants' perception toward the use of VR headsets for

improving their ESP vocabulary, the researchers followed an exploratory sequential design. For a better and stronger interpretation, Creswell explained that qualitative data collection and analysis builds on quantitative data collection and analysis (2008). Using two instruments also allows the researchers to have multiple insights and avoid bias views regarding the students' perception of using VR headsets for ESP learning.

The qualitative part of the study was collected through focus group interviews. Cassard & Sloboda (2016) highlighted the importance of assessing outcomes of learning via VR and recommended VR course designers to rely on qualitative feedback from students and faculty members using VR in their class. With a total of 12 participants, three focus groups were conducted. Each group had four members, and they were notified of their rights to withdraw. Arabic was used to avoid the language barrier. The researchers recorded, transcribed, and then translated the interviews into English. After that, data were coded thematically using Nvivo, a qualitative analysis software, and a number of references were checked. Four main themes emerged that corresponded with the purpose of this study and the research questions. These themes were: a) students' perception of using VR (such as, in learning new words, improving vocabulary retention, pronouncing new words, and enhancing their English language in general), b) advantages of using VR for learning as well as challenges (such as, motivation, enjoyment, easiness to use, immersion, ability to solve problems encountered in traditional classroom, comfort of use, affordance, and relevance to the course), c) factors affecting students' perception and performance (such as, feeling of physical presence in the watched 360° video, and improving interaction and spatial relationship with the characters presented in the 360° videos), finally d) suggestion for improvement. The Interview questions were adopted from Walker (2009), and Yang, Chen, & Jeng (2010) then adapted to suit the current research questions.

Based on the themes emerged from the literature review and the qualitative part of the study, the quantitative part was then developed. The questionnaire items were adopted from Wu & Chen (2017), and Huang, Liaw & Lai (2016) then adapted to suit the participants under investigation and answer the research questions. It consisted of two sections. The first one comprised six items related to the student's demographic information, such as age, English level, duration of learning the English language, and tool experience. The second section contained six parts with 27 close-ended question items on a five-point Likert scale with 5 indicating participants' strong agreement and 1 indicating a strong level of disagreement. Three constructs were related to TAM, for example, the perception of ease of use (5 items), the perception of usefulness (5 items) and intention to use the VR goggles (5 items). The other items were related to TTF model characteristics, such as interaction with VR goggles when watching a 3D video (4 items), imagination (4 items), and immersion (4 items). To avoid the language barrier from affecting the participants' answers, the questionnaire was translated into Arabic and validated. Then, the questionnaire link, hosted by Google Forms, was shared with the participants via WhatsApp application.

The questionnaire was further piloted to ensure its validity and reliability. Cronbach Alpha was used for testing the reliability coefficient of all the questionnaire items.

Table 1. Cronbach Alpha reliability coefficient of the questionnaire items

No.	Dimension	No. of items	Reliability
1	Perception of Ease of Use	5	0.796
2	Perception of Usefulness	5	0.910
3	Interaction with virtual reality goggles when watching a 3D video	4	0.839
4	Imagination	4	0.851
5	Immersion	4	0.924
6	Intention to Use the Virtual Reality Goggles	5	0.938
All Dimensions		27	0.959

As observed from table 1, the reliability coefficient of the five questions related to perception of ease of use is 0.796, while the reliability coefficient of the five question items related to perception of usefulness is 0.910. For interaction with VR goggles when watching a 3D video the reliability coefficient of the four question items is 0.839. The reliability coefficient of the question items related to imagination is 0.851, for immersion is 0.924, and for intention to use the VR goggles is 0.938. The reliability coefficient for all questionnaire dimensions is 0.959, indicating that the questionnaire is highly reliable and the internal consistency of the scale is acceptable and highly adequate.

Analysis and results

Qualitative Analysis

With regard to the results of the qualitative data collected, the majority of the interviewees expressed different views of their learning experience via VR headsets. Pseudonyms were used to ensure participants' privacy.

A group of participants expressed their enjoyment. They said VR goggles were "engaging", enjoyable", "fun", "interesting", "easy to use" and "promoting collaboration". Amal illustrated "They were good especially that we are now in a technology era. We no longer want traditional classes. We are bored. It was smart to introduce us to new technology in class." However, only one student expressed her dissatisfaction. She explained that using technology in her learning did not excite her as she preferred traditional class learning.

Participants were asked about their past experience of using VR goggles. Some expressed that it was their first time to use them. Others mentioned that they tried them before at home for games and entertainment but never for language learning.

When asked about VR headsets' usefulness and ability to help them retain ESP vocabulary, participants indicated different views. Amal commented: "I liked them because they helped me view and hear at the same time. I tend to forget a lot, but after watching the videos via VR goggles, I recalled the symptoms easily". Rahaf highlighted that VR goggles are fit for the requirement of her learning as they helped her recycle vocabulary, concentrate more in class, and reinforce information. Also, Mariam agreed that VR headset was suitable for helping her "understand the content more and they motivated her to buy one and watch more videos at home". Alaa' agreed and compared by commenting: "I started to enjoy watching the videos at home. I remember once I replayed the counselling video at home. I observed the body movement of the counsellor closely. I remembered all the things we were told about in a previous counseling course, but no one ever has shown us!" Similarly, Aisha mentioned developing the habit of paying more attention when watching videos as that helped her retain familiar lexis heard.

As for the VR headsets advantages, the participants praised their ability to break classes' routine as they helped them immerse in the virtual world. They positively commented that they felt their physical presence. Hala said, "I felt like I am the one committing the suicide". Other eight students shared the same view. Evan Lina expressed her amazement: "I even was surprised when I watched the Autism video! How could they manage to present the idea so clearly to the viewers? I was touched." Tahani commented on the interactive feature:" based on my head movement, I can view the clip from different angles. That is so interesting!".

Participants were also asked about challenges faced when using the VR headsets. One concern was motion sickness felt the first time wore. Sara said: "we only felt uncomfortable and dizzy when we first tried them, but it was a good new experience".

In response to the factors influencing their perception, they stated various views. These can be divided into three main categories: a) the videos' content and b) technical issues and c) the types of follow up activates. As regards the videos' content in general, the participants were concerned about the native speakers' speed rate, the limited VR videos related to their field, and the financial feasibility of VR goggles as they are hard to provide for large classes. Also, Lina added the distraction element: "at first, I was preoccupied with the video's content and 3D graphics, but after replaying the video, I managed to listen attentively".

Talking about the technical issues faced, Rawan and Maha highlighted problems with their headphones quality and the Internet service quality available in class. In fact, six more participants confirmed. The last influential factor was concerned with the follow-up activities. The majority of the participants asserted that the discussions held after watching the VR videos facilitated their understanding of the vocabulary meaning.

With regard to VR headset fit for ESP vocabulary practice, participants supported their use in future classes. They even confirmed their need and willingness to try them in different future courses as they are more appropriate in enhancing their understanding and application of the course's content specifically counseling skills and techniques. Some participants also shared: "We borrowed the VR goggles used in class to use them in the World Autism Awareness Day. A lot of people liked them. Some of them were standing in a line to try them out". Furthermore, some participants suggested watching 360° videos with captions, so they read words and small phrases while listening. Others, however, expressed their dissatisfaction as that may distract them. To solve that issue and aid comprehension, others supported watching the video first with Arabic subtitles then switching to English.

Quantitative Analysis

To analyze the questionnaire responses of the closed-ended items, the researchers used IBM SPSS version 21. Also, a descriptive statistical analysis of frequencies, percentages, and mode was used to describe the raw data collected. Firstly, the participants' demographic information is analyzed to understand their background.

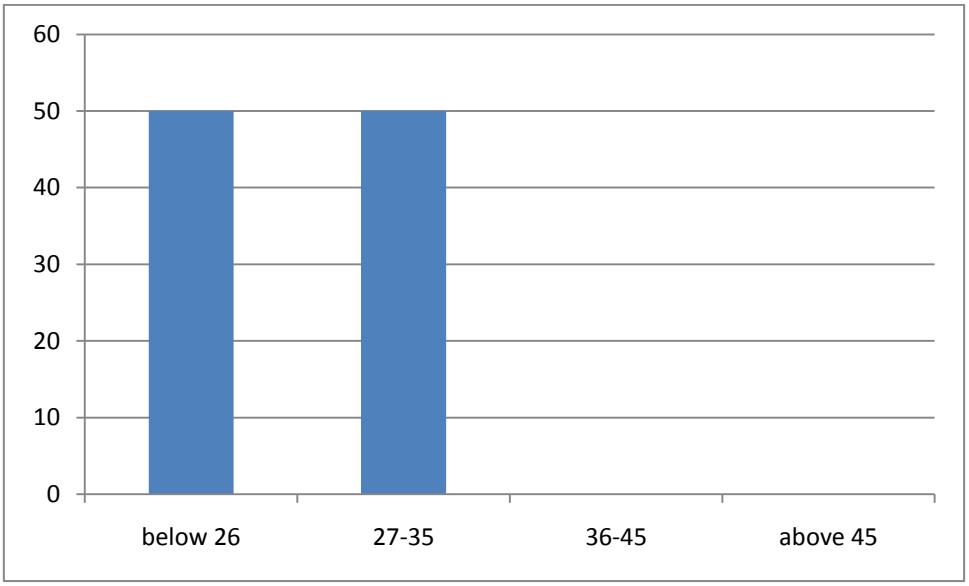

Figure 4. Participants age

Figure 4 above shows that 50% of the study sample ages are below 26 years, while the other 50% ranged between 27 and 35 years. As a result, none of the postgraduates under investigation was above 36 years of age.

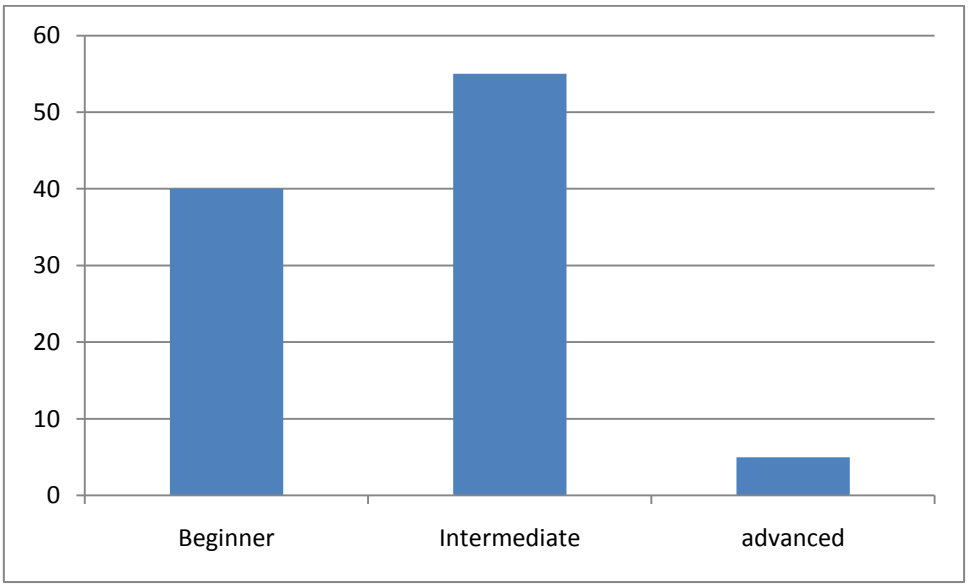

Figure 5. Participants' English Level

Figure 5 illustrates that 55% of the respondents considered their English level as intermediate, whereas 40% of them indicated they were beginners. A limited 5% of the participants considered their English level as advanced.

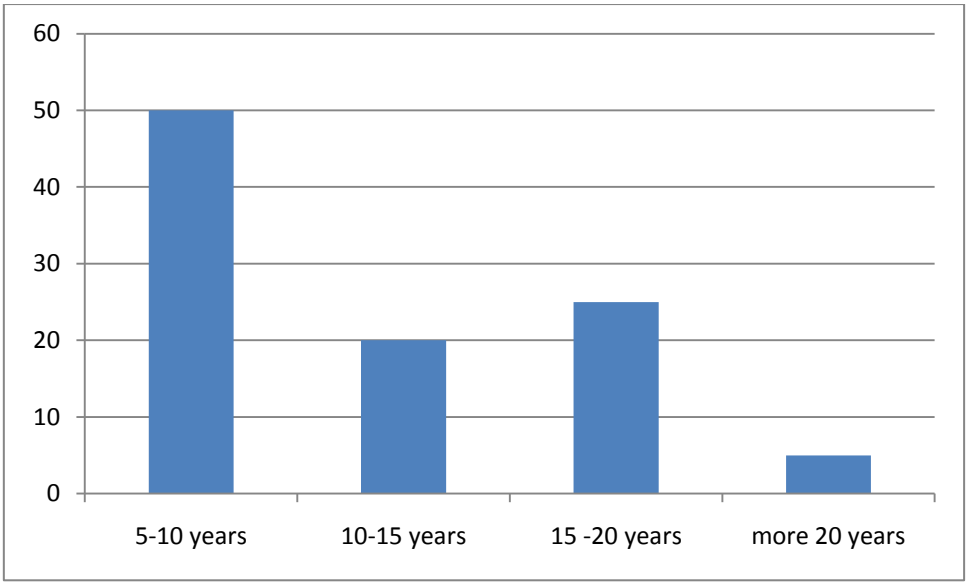

Figure 6. Participants' English background

As observed from the above figure, 50% of the study sample were studying English for 5 to 10 years, while 25% studied English for around 15 to 20 years. Besides, 20% of the participants reported studying English for about 10 to 15 years, and only 5% of them said they were studying English for more than 20 years.

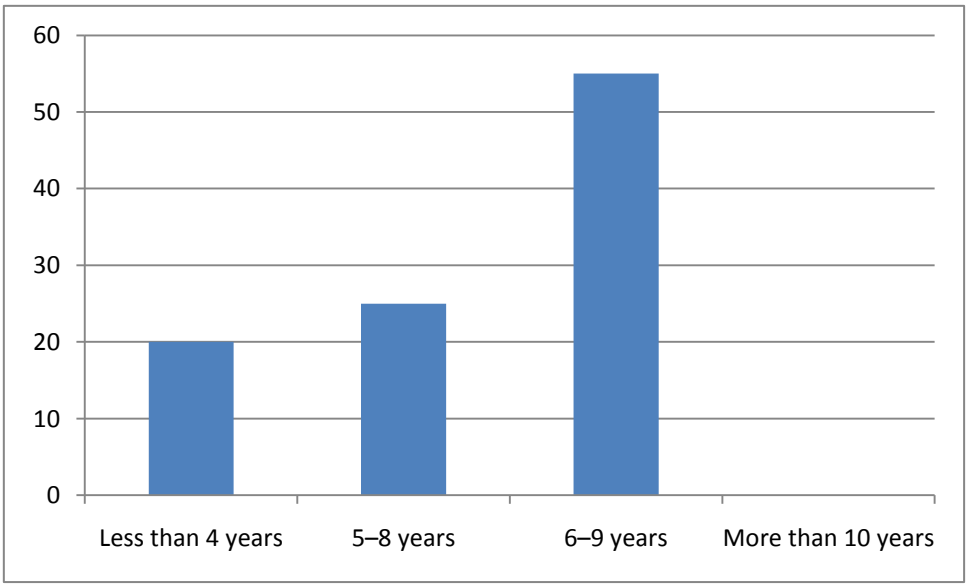

Figure 7. Using computers and handheld devices

The above figure indicates that 55% of the respondents have been using computers and handheld devices for approximately 6 to 9 years, while 25% of them have been using computers and handheld services for about 5 to 8 years. Moreover, 20% of the sample have been using computers and handheld devices for less than 4 years. None of the participants, in fact, mentioned that they ever used computers and handheld devices for more than10 years.

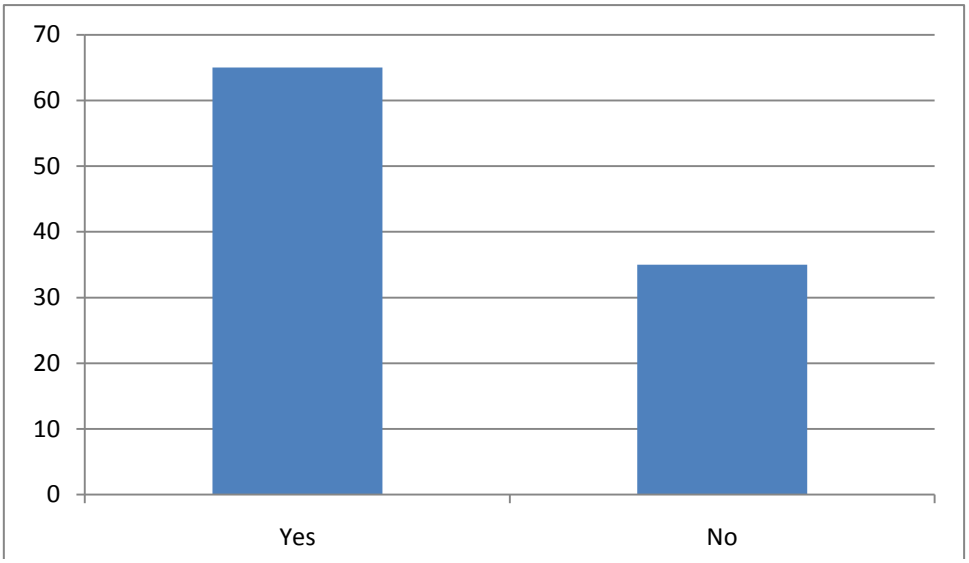

Figure 8. Past experience of VR headsets

Figure 8 highlights that 65% of the participants used VR headsets before; while 35% of the participants indicated that they have never used them before. For the majority who pointed out their previous use of VR headsets, their usage was limited to entertaining purposes such as watching videos or playing video games.

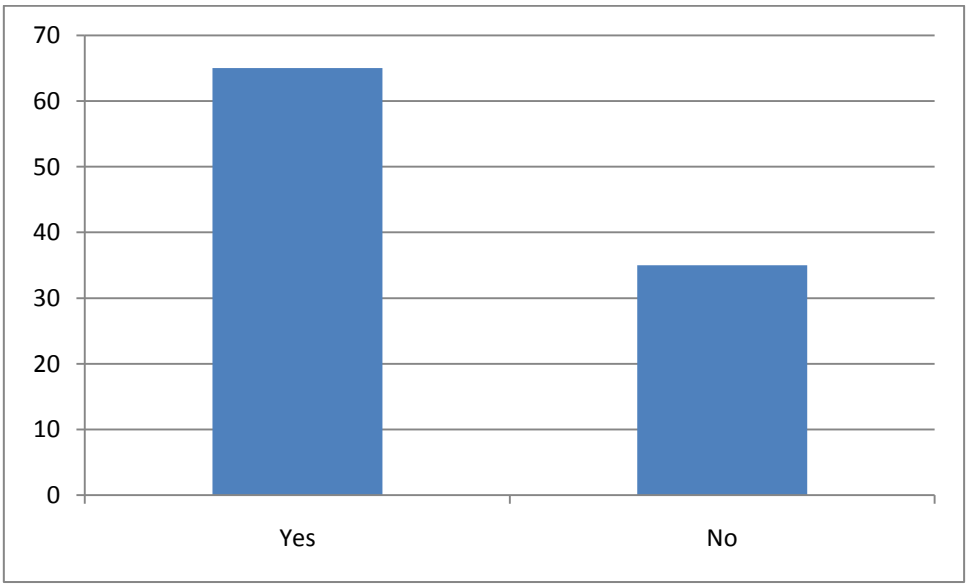

Figure 9. First time to use VR Headsets in ESP class

Figure 9 exhibits that this was the first time for 90% of the participants to use VR goggles in ESP class, while 10% indicated using them before. Even though the participants mentioned that they used the VR headsets before, the majority of them stated that they never used it in their language learning class.

With regard to the Likert scale, the second part of the questionnaire consisted of six constructs related to the conceptual model adopted from Huang, Liaw, & Lai (2016) and the combined TAM and TTF models adopted from Dishaw and Strong (1999). These are 1)

perception of ease of use, 2) perception of usefulness, 3) TTF, 4) task characteristics featuring interaction, imagination, and immersion, and 5) intention to use the VR goggles.

Perception of Ease of Use

Table 2. Perception of ease of use

	QUESTIONS	Strongly disagreed		Disagreed		Neural		Agreed		Strongly Agreed	
		No	%	No	%	No	%	No	%	No	%
1	I feel the virtual goggles are easy to use	0	0.0	1	5.0	0	0.0	8	40.0	11	55.0
2	The virtual goggles are easy for me to control	0	0.0	1	5.0	1	5.0	7	35.0	11	55.0
3	Learning how to use the virtual goggles is easy	0	0.0	1	5.0	0	0.0	5	25.0	14	70.0
4	I feel comfortable wearing the virtual reality goggles from the first time	0	0.0	6	30.0	2	10.0	10	50.0	2	10.0
5	After frequent use, I feel that wearing virtual reality goggles has become comfortable	0	0.0	1	5.0	0	0.0	11	55.0	8	40.0

Table 2 shows the students' perceived ease of using VR goggles in language learning. A total of 95% of the participants agreed and strongly agreed that VR was easy to use. Besides, 90% of the participants indicated a general agreement that virtual goggles were easy for them to control. Moreover, 95% of respondents agreed that learning how to use the virtual goggles was easy. In addition, 60% of the participants illustrated their comfortable feeling toward wearing the VR for the first time. However, 30% of the participants highlighted their discomfort toward wearing the VR goggles for the first time, and 10% revealed a neutral feeling. The participant's response showed a 95% confirmed that VR goggles have become comfortable after frequent use.

Perception of Usefulness

Table 3. Perception of usefulness

	QUESTIONS	Strongly disagreed		Disagreed		Neural		Agreed		Strongly Agreed	
		No	%	No	%	No	%	No	%	No	%
6	The virtual goggles increase my chances of good learning achieving	0	0.0	0	0.0	3	15.0	14	70.0	3	15.0
7	Unlike traditional classes, I feel the virtual reality	1	5.0	2	10.0	3	15.0	8	40.0	6	30.0

	goggles help me better understand the course contents										
8	The virtual reality goggles are a good tool for me to increase my knowledge of English psychological terms	1	5.0	1	5.0	2	10.0	9	45.0	7	35.0
9	I believe the virtual reality goggles help me understand concepts related to my field such as addiction, suicide, autism, and violence	0	0.0	2	10.0	0	0.0	9	45.0	9	45.0
10	I feel the virtual reality goggles are enjoyable assisting learning tool	0	0.0	1	5.0	2	10.0	6	30.0	11	55.0

Table 3 highlights the participants' attitude toward the usefulness of using VR goggles in learning ESP vocabulary. 85% of the respondents agreed that the virtual goggles actually increased their chances of good learning achievement. Also, 70% of the participants asserted that VR goggles helped them better understand the course contents, while a total 30% perceived either a neutral or a disagreement toward the same statement. Besides, 80% of the participants agreed that the VR goggles were good tools to increase their knowledge of English psychological terms. A total 90% of the participants agreed that VR goggles helped them understand concepts related to their fields such as addiction, suicide, autism, and violence. This indicated their realization of VR headsets usefulness. A majority 85% of the respondents agreed that VR goggles were enjoyable assisting learning tool.

Interaction with virtual reality goggles when watching a 3D video

Table 4. Interaction with virtual reality goggles when watching a 3D video

	QUESTIONS	**Strongly disagreed**		**Disagreed**		**Neural**		**Agreed**		**Strongly Agreed**	
		No	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**
11	Unlike 2D, I can establish interaction with the 3D objects and characters when using the virtual reality goggles	0	0.0	1	5.0	1	5.0	10	50.0	8	40.0
12	I can easily rotate the 3D videos by using the virtual goggles	0	0.0	2	10.0	3	15.0	7	35.0	8	40.0
13	By using virtual reality goggles, I can easily zoom in or zoom out 3D objects.	0	0.0	3	15.0	7	35.0	8	40.0	2	10.0
14	I can observe the 3D objects and characters from multiple viewing angles when using the virtual reality goggles	0	0.0	0	0.0	2	10.0	7	35.0	11	55.0

Table 4 indicates the participants' perception of their interaction with VR goggles when watching a 3D video. A total of 90% of the participants indicated establishing interaction with the 3D objects and characters when using the VR goggles. In addition, 75% of the sample agreed to rotate the 3D videos by using the virtual goggle easily. Likewise, 50% of the participants agreed to easily zoom in or zoom out 3D objects when wearing VR headsets, whereas 50% of them either showed a neutral perception or a disagreement to the same statement. Moreover, 90% of the respondents approved their ability to observe the 3D objects and characters from multiple viewing angles when wearing the VR goggles.

Imagination

Table 5. Imagination

	QUESTIONS	Strongly disagreed		Disagreed		Neural		Agreed		Strongly Agreed	
		No	%	No	%	No	%	No	%	No	%
15	I feel the virtual reality glasses help me understand issues related to my field better than a 2D video	0	0.0	1	5.0	2	10.0	10	50.0	7	35.0
16	I feel the virtual reality goggles improve my understanding of spatial relationships	0	0.0	1	5.0	1	5.0	11	55.0	7	35.0
17	I feel the virtual reality goggles help me better experience psychological disorders that require consultation and referral	0	0.0	1	5.0	2	10.0	11	55.0	6	30.0
18	Unlike physical clinical training, I feel the virtual goggles help me better understand psychological issues from patients perspective	0	0.0	1	5.0	5	25.0	10	50.0	4	20.0

The above table demonstrates the participant's perception of the imagination feature of VR goggles. A total 85% of the participants generally came to an agreement that they felt VR glasses helped them understand issues related to their field better than a 2D video. Besides, 90% of participants revealed their general agreement that the VR headsets improved their understanding of spatial relationships. In addition, 85% of respondents benefited from VR goggles in experiencing psychological disorders that require consultation and referral. A majority of 70% respondents reached an agreement that unlike physical clinical training, they felt virtual goggles helped them better understand psychological issues from patient's perspective, while 25% were not certain.

Immersion

Table 6. Immersion

	QUESTIONS	Strongly disagreed		Disagreed		Neural		Agreed		Strongly Agreed	
		No	%	No	%	No	%	No	%	No	%
19	The virtual reality goggles create a realistic learning environment	0	0.0	1	5.0	2	10.0	11	55.0	6	30.0
20	I feel immersed in the 3D videos when I wear the virtual reality goggles	0	0.0	2	10.0	0	0.0	10	50.0	8	40.0
21	I tend to pay more attention in class when using the virtual reality goggles	1	5.0	1	5.0	2	10.0	11	55.0	5	25.0
22	I believe the virtual reality goggles help me make better sense of psychological terms	9	45.0	8	40.0	9	45.0	1	5	2	10

The participant's perception of the immersion feature of the VR headsets is presented in Table 6. A majority 85% of participants approved that the virtual reality goggles created a realistic learning environment. In addition, a common 90% respondent agreed that they felt immersed in the 3D videos when they wore the VR goggles. 80% of the participants also showed their agreement with the statement indicating that they tend to pay more attention in class when using the virtual reality goggles. A total 85% of study sample agreed with the belief that VR goggles helped them make better sense of psychological terms, while only 15% disagreed.

Intention to use the virtual reality goggles

Table 7. Intention to use the virtual reality goggles

	QUESTIONS	Strongly disagreed		Disagreed		Neural		Agreed		Strongly Agreed	
		No	%	No	%	No	%	No	%	No	%
23	I feel the virtual reality goggles support my intention to learn	0	0.0	1	5.0	4	20.0	9	45.0	6	30.0
24	I am willing to use the virtual reality goggles in my future learning	0	0.0	1	5.0	2	10.0	11	55.0	6	30.0
25	I am in favour of adopting virtual reality goggles in other courses to facilitate my learning	0	0.0	0	0.0	6	30.0	9	45.0	5	25.0
26	I am willing to share my knowledge about virtual reality goggles with others	0	0.0	2	10.0	1	5.0	12	60.0	5	25.0
27	Overall, I think virtual reality goggles are good learning tools	0	0.0	0	0.0	2	10.0	10	50.0	8	40.0

The table above illustrates the participant's perception of their intention behind using VR goggles. A majority of 75% participants agreed that VR goggles supported their intention to learn. In addition, about 85% of participants agreed that they were willing to use the VR headsets in their future learning. Moreover, a total 70% of participants were in favour of adopting VR goggles in other courses to facilitate their learning. However, 30% indicated their neutral responses toward the same statement since they were not sure about the applicability of VR goggles to their other courses. A sample of 85% indicated their willingness to share their knowledge about VR goggles with others. Last but not least, a common 90% agreed that VR goggles were good learning tools.

Discussion and Conclusion

The purpose of this study is to explore female postgraduates' perception toward the use of VR headsets to learn ESP vocabulary. The students' opinions are useful not only in helping to evaluate the VR in learning but also in examining whether this wearable technology fits ESP teaching and learning. The qualitative and the quantitative instruments' results were combined to answer the research questions.

The current study combined TAM and TTF constructs and showed that this combination offers a better explanation for the variance in VR utilization than either the TTF or TAM model alone**.** Rather than only perceived usefulness and perceived ease of use, this VR utilization variance was explained by perceived usefulness, perceived ease of use, TTF, task characteristics, and tool experience. This assist**s** practitioners, researchers, as well as tool designers and developers better understand 1) the reason behind choosing to use a tool for particular tasks, and 2) how a tool's characteristics are fit for a particular task.

From the result obtained from the current study, it is clearly indicated that most participants were enthusiastic about using VR goggles in learning ESP vocabulary. This matches the one reported by Rosenthal et al. (2008). They also supported using them in future classes and suggested playing 360° videos with Arabic subtitles first then switching to English ones to ensure comprehension. It is somewhat surprising that only one participant in the focus group expressed her general dissatisfaction with technology integration in her learning. She asserted her preference of traditional class learning. This observation supports students' personal learning preferences and the calls of differentiated tasks within one classroom.

Also, it is interesting to note that some participants reported in the focus group that they were distracted and overwhelmed the first time they wore the VR headsets. However, after multiple repetitions of video watching, their attention was to the educational content presented and not the experience. One potential reason for this may be the novelty of the experience as Rupp et al. (2016) highlighted. This finding answers their calls for solving this issue and confirms the association between replaying the videos and overcoming distraction.

With respect to the characteristics of VR headsets, which are interaction, imagination, and immersion, participants reported VR headsets helped them improve understanding of spatial relationships, immerse in a realistic learning environment, contextualize learning, eliminate class boredom and distraction, and make better sense of psychological terms. This supports the studies of Lan (2015) and Hwang & Hu (2013) that outlined somewhat similar features.

In addition, the second research question investigated the factors influencing postgraduates' perception. The findings from the focus group interviews showed that usefulness and ease of use were in line with Rosenthal et al. (2008) findings that indicated these factors

significantly impact students' satisfaction. Also, most of the survey respondents (85%) reported that VR goggles were enjoyable assisting learning tools. On the other hand, the participants revealed that the limited VR content available online, slow Internet connections and financial feasibility affect their integration. The result is in the lines of earlier literature that noted the same factors such as Bricken's (1991) and Walker's (2009). These significant observations remind education technology supporters to not overemphasis its strengths.

As regards psychological and physical discomforts Merchant et al. (2014) noted, the present findings revealed that VR goggles have become comfortable after frequent use. This indicates that with frequent improvements witnessed every day in wearable technology, lighter-weighted interface designs can solve the problem.

The most important limitation in this study lies in the fact that the participants were limited to (N=20) as indicated above. Therefore, caution must be applied to a small sample size. Future studies may increase the sample size for more insights. Similarly, to help generalize the results, a fully random sample can be used as this study was gender limited due to the Saudi cultural constraints. Also, educators and curriculum designers may consider applying VR technology to wider groups of learners and different foreign and second languages.

Notwithstanding these limitations, the study suggests that VR technology is applicable in ESP classes. This indicates that the VR environments are effective, flexible and can be used not only to entertain but also to contextualize ESP learning and engage students from different age groups, disciplines and linguistic proficiency levels. This study also calls educators to keep abreast of the fast technology developments as they are nowadays considered to be learning requirements for the new generations. That is although VR is less than a decade old, it offered many implications that are subject to change. VR is still evolving and might be rapidly outdated. Thus, research on VR and its impact on language learning is expected to evolve as well especially that the technology markets witness daily improvements in their capabilities such graphics resolution, processing speed, and greater mobility.

In conclusion, the present study helped to supplement the literature as no studies investigated the Saudi female ESP postgraduates' perception toward the VR headsets. It also has gone some way towards enhancing our understanding of ESP learners' readiness of integrating VR in their classes.

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Students and Campus Elections: Case Study at Sultan Idris Education University, Malaysia

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Abstract
This article aims to study the involvement of students in campus elections at Sultan Idris Education University (SIEU). The electoral college is not just a program and procedures. It is a platform for a general election. The campus elections are important to the student as it is one of the elements of practicing democracy. Therefore, this study investigates the level of knowledge, sources of information and the level of political involvement in campus elections. Also, the study identifies the factors that influence student voting in election's campus. The survey used to address all the objectives in this study. The data used are more detailed as the empirical aspect involving in the research field. This study discovered four things. First, the findings show that the knowledge level of students about the development of the electoral college is still small, but the student's knowledge of the voting process is the higher with 83 percent. Second, the study found that the primary source of political information for students in SIEU are websites, followed by newspaper and television. Third, the level of student involvement in campus elections is at a moderate level. However, female students are more likely to be involved. Fourth, the factors that influence student voting in SIEU is a candidate, manifesto, and current issues. However, this choice is different from gender. The notable findings from this study contribute to the body of knowledge that involves students and campus elections.

Keywords: Campus election, politic campus, pro-students, pro-aspirations, SIEU.

Introduction

Students play an important role as heirs to the country. Students' role in politics had begun before the era of independence. They are responsible for motivating people to rise against invaders through associations, magazines, and newspapers. Until now, students have a significant role in the community, state, and nation. Two perspectives of student involvement in politics can be listed, namely, conventional and non-conventional participation. In conventional involvement, students participate as candidates in voting, campaign, and office in campus elections. In non-conventional involvement, students are involved in rallies, petitions, demonstrations, and other activities.

However, the participation of students in politics is very limited because Section 15 of the Colleges and Universities Act (CAUA) prevents students from forming or

joining political parties (www.agc.gov.my, 2017). However, the Ministry of Higher Education allows those involved in campus elections conducted by a university or college to elect the Student Representative Council (SRC). For example, in SIEU, Section 57 of the University constitution allows the polls to elect members of the SRC and to hold elections on campus (SRCEC, 2014). This activity can indirectly educate students involved in politics about control before leaving for the community.

Student involvement in campus elections processes helps students to understand the democratic system to elect leaders. Electoral college students revealed to choose candidates, campaigning, voting, and the system itself. However, it is interesting when they label their groups with specific names. The students label themselves like pro-aspiration and pro-student, not from the university. The pro-aspiration group supports the ideology of the university administration, and the pro-students are a group that tries to bring ideas and issues related to students. The diversity of this group has made campus politics boisterous because of competition for victory in each group. The students can make election platforms to highlight their willingness to be capable leaders and responsible individuals in the society and the nation.

Therefore, it can be said that the electoral campus is not just a program and procedure but a platform to practice because the electoral process is almost the same with the country's general election. Campus elections are important to students as one of the elements of experience practicing democracy before the realities of the real democracy. Hence, the method of the election on campus is meant to produce a quality leader in the elections through democratic practices at universities to develop future leaders.

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Problem Statement and Objective Research

Sultan Idris Education University (SIEU) is a public university that is important in the history of education. Formerly, SIEU was known as Sultan Idris Training College (SITC) (29 November 1922 to 1957). It was then changed to Maktab Perguruan Sultan Idris (MPSI) (1957–1987), to Institut Perguruan Sultan Idris (IPSI) (21 February 1987 to April 1997), and finally to SIEU (1997 to the present). Throughout its development, this institution has produced Malay intellectuals who fight and bring awareness to the people. MPSI had a significant role to bring forth teachers and educated Malays, whose responsibility was to inspire nationalism that ultimately considered radical because it was anti-imperialist. MPSI churned out Malay intellectuals who had the higher political consciousness to resist invaders, such as Ibrahim Yaakob, Zainal Abidin Ahmad (Za'aba), Harun Aminurrashid, and many other great figures in the country.

SIEU's role as a university has shown an educated generation a platform by this institution in the last 75 years. SIEU was incorporated on May 1, 1997, beginning a new role as a university under the Universiti Pendidikan Sultan Idris (Incorporation) Act 1997 and Order of the Sultan Idris Education University (Campus) 1997 through the Government Gazette PU (A) 132 & 133 dated February 24, 1997. Then, reaching nearly a century, the continuity of the role of SIEU and its students in the community and the nation is imperative. However, times have changed, and the involvement of students in politics is barred because students are subject to the CAUA in section 15 that prevents them from forming or joining political parties (www.agc.gov.my, 2017). However, they do have campus elections conducted by the university or college to elect representatives to apply their knowledge and be involved in the practice of democracy.

Education for students should include not only academics but also character development, and take into account the students' personality with regard to a political character. This is because they are the intellectual generation that will lead the country in the future. Therefore, the involvement of students in campus elections helps them understand the processes of the democratic system to elect leaders. The electoral process at the university reveals to the students how to choose candidates, how to campaign, how to vote and the system itself. These activities indirectly educate students about politics before they leave university to live in the community.

The study focused on the electoral college is less widespread than the study of the general election. The general election studies have been so prevalent that they include early elections, such as the Ratnam (1965) study, which discussed the political developments in Malaysia by analyzing the GE 1955 and 1959. He also studied voting patterns that are allegedly still racist because the community is still practicing traditional customs and is in the process of development (Ratnam & Milne, 1967). While Vasil (1971), indicates that there have been multi-ethnic parties, such as the Independence of Malaya Party, the National Party, the Labor Party and the Party of Malaya, they have been unsuccessful in attracting the people and, thus, been ephemeral. Furthermore, the study of the general elections also includes the issue of media and voters, like the Samsudin (2010) and Syed Arabi (2011). Recent studies on the general election are many, such as those by Shamsul Amri (2008), Goh Cheng Teik (2008), Abdul Rashid Moten (2009), Siti Noranizahhafizah et al. (2015), Siti Noranizahhafizah & Jayum (2016) and Junaidi (2017) (to name a few).

Although it seems that elections on campus are not important, they are a platform for students to cultivate the political spirit and learn to be candidates, to campaign, vote and understand the electoral system itself. This is essential when they start interacting with the community later. Nevertheless, studies on campus elections are few. Thus, there are many gaps in knowledge, such as student involvement in campus elections, the level of awareness about campus elections, the sources of media, the factors that influence their votes and issues close to the hearts of students.

Therefore, this study investigated the students and their participation in elections on the SIEU campus. Why the electoral college? The campus elections are good to study as they are a reflection of students' willingness to engage with people outside after graduation. They are also the future leaders of this country. Why students in SIEU? SIEU is one of the renowned educational institutions that produces great leaders. Based on the issues above, the objective of this study is to determine the following items:

i) Identify the level of students' knowledge related to elections on the SIEU campus.
ii) Describe the sources of political information to SIEU students.
iii) Analyze the level of student involvement in campus elections in SIEU.
iv) Determine the factors that influence the voting of students in SIEU.

Literature Review

This part explains previous studies related to the students' behavior in politics, their political participation and their sources of political information. These three themes in literature are interrelated and mutually connected. They always get attention from the community and the public. This is because elections are an important element in a democratic country. The students are young voters who will determine the future leadership by practicing it in the elections organized by the university. Furthermore, students also always get political attention from the public because students are a valuable asset to the country as agents of progress and as a source of energy for the country.

Students Voting Behavior

Among the researchers who conduct research on the political behavior of students is Lipset (1967), which found that political student politics do not overlap with adults. Therefore, it can be said student politics has its ideas and formulas in the fight for the issues and problems in society. This means that students' political behavior is independent and has its struggle. The ideological struggle is shown by UM students in 1960 with the establishment of a Socialist Association and practices the concept of socialism (Muhammad Abu Bakar, 1973). However, the environment in the university also affects the students' struggle. This fact supports the finding Altbach (1968), which states that the ideas of freedom and community development are learned influenced their thinking and character. This means that the character and paradigm of the student are affected by what they know about the idea of freedom and community. Furthermore, the development of age also influences the students to revolt, because the process maturity leads students to find their identity. They also want to maintain the image of a student, and if there is a disruption of the university, they will oppose it (Lipset & Albach, 1969). The study by Muhammad Abu Bakar (1987a) reveals that their struggle philosophy was formed by the position of their social status as a university student. Therefore, the election of campus is the most important platform for any public university in the country to choose a student leader in the SRC. It can be concluded that student participation in campus elections serves as the useful experience of preparing students for life as a mature adult citizen (Mohd Fuad et al., 2005 & 2009; Ramírez et al. 2010; Roslizawati & Mohd Rizal, 2017).

Students Participation in Politics

The next theme is student participation in politics. Lipset (1967) indicates that the political activity of students is part of the culture of the campus. Research on political participation among students led by Muhammad Ali and Ahmad Faiz (2005), entitled *Gerakan Politik Mahasiswa di Malaysia*, studied various angles of political activities of students. He said politics not only focuses on the political affairs of state government only, but it covers a broader nature of love and patriotism to the country. At the same, Thock Ker Pong (2012), a study of student activism and reform of China's post-reform era in Malaysia. The results of his study showed that many Chinese student activists influenced by the call of the reform movement. The student action has been under pressure from the university. This caused the Chinese student activists to join the opposition and NGOs after coming out of universities. Meanwhile, the results of his study also found that some activists became candidates in the 2008 general election and managed to become members of the legislative assembly and of the parliament.

Muhammad Abu Bakar's (1987) study, on the other hand, found that the political student behavior is closely tied to their involvement in student associations. Most of the students are active in campus politics and also in the association. His research also showed that students active in the association had a high interest and engagement in campus politics, while students who were passive in campus politics were not active in the association. This active minority group considered campus politics as part of their lives as students. Additionally, aspects of the personality of students affect their political behavior, which, in turn, affects the political situation in a country (Baranowski & Weir, 2010). It can be seen that medical students in the United States are more likely to be liberal in politics than adults because they are subjective and rationally thinking in evaluating the political issue (Frank, Carrera & Dharamsi, 2007). Meanwhile, Gardner and Stough (2002) believe that spiritual intelligence is imperative because these factors may contribute to the formation of the leadership style of adult leaders. Therefore, participation in campus elections is considered important for students because it can serve as useful experience in preparing them for life as mature adult citizens (Mohd Fuad et al., 2005; Marshelayanti et al., 2016). Hamidah et al. (2004) have conducted research on the connection between student

awareness and the role and responsibilities of the SRC. Their study found that the level of students' knowledge of the existence and the role and responsibilities of the SRC is moderate. Additionally, students' perceptions of the electoral process are also average. Therefore, there is significant room for improvement to ensure that the electoral process is orderly and transparent.

Sources of Political Information

The final theme is the source of the political information used by students. Among the researchers studying this issue are Mondak and Halperin (2008), who found that the introduction of non-news television formats, such as talk, chat, and reality shows, can be an important source of political discourse and political participation among students. Sources of information obtained from television enable students to get information that helps them think more critically and assists them in shaping political ideas on campus. Additionally, Junaidi et al. (2013) conducted a study to examine the use of the Internet and the political perceptions of students at Universiti Kebangsaan Malaysia (UKM). Their study found that the internet and social media play a significant role in influencing the political behavior of students. They also found that although students are critical of the current issue, only a group of intellectuals support the university administration and government. However, the government should listen and consider their views in developing communities and countries. At the same, Sampson and Korn (1970) noted the role played by the mass media in exposing the irregularities of the government fueled the student struggle. However, we can see today that the younger generation has been influenced by the elements and do not stick to materialistic values that resulted from both the passage of time and the increased focus on information and digital fingerprints. This situation shows the destruction of our socio-cultural society and the corruption of students who are considered to be the heirs to the leadership of the future. The political mold of campuses today is becoming less and less venomous, so it is still not able to compete with the products of campus politics during the time of pre-independence and early post-independence.

It can be summarized that students have their ideas and desires related to good and bad issues that they want to express to the government. The issues may relate to the government or the party. At the university, democracy and freedom of speech can be seen in the university elections and the student movements. The purpose of the electoral process is to see to what extent the students are concerned about the issues that are important. This is because the students have three basic demands; they want their voices heard, their role recognized, and their issues addressed in a fair way that is beneficial to the youth (Saifuddin, 2009; Roslizawati & Mohd Rizal, 2017). The fundamental demand would require the government or related parties to be looked at seriously because students are future leaders.

Methodology

Quantitative methods were used in this study to obtain data in the form of a numeric. Descriptive analysis was used to see the profile of the demographic characteristics of the respondents, the source of political information of the respondents, the level of student involvement in campus elections and voting student factors. The analysis is to calculate the frequency and percentage of each category of data for comparison in quantity. Some previous studies that used this method to study the relevant election are Downs (1957), An economic theory of democracy; Lipset (1973), Political Man; Campbell, et al. (1980), The American voter; and Junaidi et al. (2015), Patterns of ethnic politics in Malaysia's 13th General Election: A case study of Selangor.

Data Collection

This study will begin by analyzing the documents. After that, the method used is quantitative surveys. In the first phase, the analyzes carried out by making reference document library. Analyze documents at an early stage is essential to acquire the data and the initial impression on the students and the campus elections, previous studies related to the student, campus politics scrutinized. However, what is more important is that the first phase will closely link to the last stage of analyzing the data field, where researchers need to develop a specific theme and linked as a whole. This situation can only build on the information has to analyze at an early stage, so that researchers can attach to its relationship with the research conducted in the field. The sources used for analyzing documents are books, articles, journals, reports from the Student Affairs SIEU, paper, newspapers and leaflets relating to student, elections, and political campus. However, basically researchers had examined previous studies before starting or selecting the study, to ensure that research conducted new research that can benefit and enhance the dynamics of knowledge in the field.

The next method used is a survey using questionnaires. The survey used in this study to obtain information relating to the objectives of the study. The questionnaires survey provide the data numerically obtained is required to identify the level of student knowledge related campus elections in SIEU, explain sources of political information for students, the level of involvement of students in campus elections and determine the factors that influence the voting of students in SIEU. According to Gilgun & Abrams (2002), "... survey research is helpful in understanding the distribution of qualities and statistical relationships among variables...". The use of this survey helps to explain the distribution obtained regarding quality and relationships between variables numerically. The results of the study will be to the right with the scientific evidence through numerical data obtained.

Research Location

The study conducted in SIEU, Tanjung Malim Perak. Located in Tanjung Malim, Perak has two campuses, Sultan Azlan Shah and Sultan Abdul Jalil Shah. Also, SIEU has four residential colleges, namely Ungku Omar College, Harun Aminurashid College, Aminuddin Baki College, and Za'aba College. The maximum capacity of Ungku Omar College and Harun Aminurashid College is 2,592 people, while Za'aba College and Aminuddin Baki College are able to accommodate a maximum of 1,248 people. In addition, some students live outside the campus and are managed by the Off-Campus Housing Units.

Population & Research Sample

The student population consists of students at Universiti Pendidikan Sultan Idris. The number of current students is estimated at 12,589 people (JHEPA, 2015). Based on the table of sample size determination by Krejcie Dan Morgan (1970), the required number of respondents is 384 people to be adequate. However, the researchers add the number of respondents, favoring information and data obtained better and reliable to strengthen the study. A total of 508 respondents were involved in this study. Respondents in this study were randomly selected and came from various backgrounds and different ideologies to ensure that the data obtained was of a wide range.

Findings and Discussion

This section discusses the results obtained through a survey carried out in the vicinity of the SIEU campus. The analysis is based on information and data obtained from questionnaires distributed to students. A total of 508 questionnaires were distributed to the first-year students to final year includes diploma programs. Data collected through the survey were analyzed by using

frequency distribution and percentage of respondents. The data were analyzed according to the objectives set in the study. Data were analyzed using Statistical Package for Social Sciences (SPSS) version 21 for an appropriate and regular analysis of the data. The next section discusses the findings obtained one by one.

Background of Respondent

This part discusses the diversity of backgrounds of respondents with a view that is based on demographic factors such as gender, age, program, and voted year in as all these features are necessary to analyze one by one. The analysis shows (referring to Table 1) females were the highest number of respondents in a survey conducted as much as of 81.1 percent, or 412 people. The remaining 96 respondents, with a percentage of 18.9 percent, were male. For gender according to the study, a total of 4.1 percent of the respondents were diploma students, comprising 2.1 percent of male and 4.6 percent of female students.

Table 1: Distribution of Respondents by Gender, Age and Program

Respondent	Frequency	Percentage (%)
Gender		
Male	96	18.9
Female	412	81.1
Total	508	100.0
Age		
17-20	169	33.3
21 Above	339	66.7

Program	Male	Female	Frequency	Percentage (%)
Diploma	2	19	21	4.1
Degree	94	393	487	95.9
Total	96	412	508	100.0

Sources: Fieldwork Data, 2015.

The results of the subsequent analysis show the distribution of respondents by age group (Table 1). Results show that 339 respondents are in the age group 21 years and over, with a share of 66.7 percent, while 169 people were 17 to 20 years old or 33.3 percent of the total 508 respondents. It can be summarized that some in the age group 17 to 20 years old are students from diploma and degrees programs (DP) as shown in Table 1, with only 21 students from the Diploma program and the rest are DP students. The DP students are all in the age group 21 years and over.

The breakdown of male and female respondents by age group was 25 percent or 24 respondents were male in the age group 17 to 20 years old, and the rest were 21 years of age or older; for the female respondents, 35.2 percent or 145 persons were in the age group 17 to 20 years, and the remaining were 21 years of age or older.

Further analysis is shown in Table 2, which shows the distribution of respondents who voted in the poll. According to Table 2, Electoral College year 2014/2015 had the highest number of votes, involving a total of 259 persons from 508 respondents, or 51 percent. Female respondents represented 83 percent of respondents, or 215 people, and the remaining 17 percent were male respondents.

Table 2: Respondent Distribution by Year Voting

Voted Year (Session)	Male	Female	Frequency	Percentage (%)
2011/2012	5	4	9	1.8
2012/2013	10	32	42	8.3
2013/2014	25	100	125	24.6
2014/2015	44	215	259	51.0
Not Voting	12	61	73	14.4
Total	96	412	508	100.0

Sources: Fieldwork Data, 2015.

For the year 2013/2014, the number of respondents who voted was 125, or 24.6 percent (Table 2). In the breakdown by gender for the year 2013/2014, 25 respondents, or 20 percent, were male and 80 percent female. The analysis also showed that, of the 508 respondents, 14.4 percent, or a total of 73 people, had never voted, and the majority of respondents are in first semester for a total of 37 people at the same 7.2 percent. Analysis based on the gender of respondents showed that 12 percent of respondents were female, and 2.4 percent were male.

In reference to the data obtained from SRCEC, turnout at the Electoral College for the 2013/2014 and 2014/2015 sessions shows a relatively high reduction of 243 people; 7,404 people voted in 2013/2014 (SRCEC, 2013), compared with 7,161 in 2014/2015 (SRCEC, 2014). This reduction in turnout among eighth-semester students can be explained by the fact that they were not in university because of practicum and industrial training.

Levels of Knowledge Students on Campus Election

This part will analyze and discuss two important aspects of students' knowledge, the first relating to the development of the campus electoral procedure and the second relating to the voting process in campus elections. The first is to know the extent to which students take out the electoral college. The analysis shows (Table 3) a total of 193 respondents with a percentage of 38 percent chose "sometimes" as their option for awareness of campus election. Most respondents select this option. This situation shows that students are less interested in keeping up with the election of campus and campus politics because it is less relevant to their daily lives. Also, the study by Mohd Fuad et. al. (2005) also found that the level of political interest among youth IPT is low, and only 27.2 percent of registered voters are among the youth IPT.

Table 3: Awareness of the Campus Election

Level of Awareness	Male	Female	Frequency	Percentage (%)
Constantly	13	29	42	8.3
Frequent	18	48	66	13.0
Sometimes	31	162	193	38.0
Seldom	22	107	129	25.4
Never	12	66	78	15.4
Total	96	412	508	100.0

Sources: Fieldwork Data, 2015.

According to Table 3, the analysis by gender for the level of awareness about campus election, the highest chosen is sometimes; it shows male respondents made up to 31 respondents or 16.1 percent, and 83.9 percent or 162 respondents were female. These findings indicate that female respondents were the ones who most chose "sometimes" for awareness of campus

elections. Moreover, for the second rank is "seldom," followed by "never aware of campus election."

The next is an analysis of the level of knowledge about the voting process in campus elections. Table 4 shows the analysis of the level of knowledge of the voting process in elections on the SIEU campus.

Table 4: The Respondent's Knowledge of the Voting Process

Level of Knowledge	Male	Female	Frequency	Percentage (%)
Yes	81	344	425	83.7
No	15	68	83	16.3
Total	96	412	508	100.0

Sources: Fieldwork Data, 2015.

The results of the analysis show that 83.7 percent of respondents knew about the voting process implemented in campus elections (Table 4). This number is very high and a positive sign, which is very good for any campus election held. The respondents had participated in the voting process during the campus election that was conducted earlier, and this contributes to the high percentage. Only 83 respondents (16.3 percent) did not know how the campus electoral process is conducted. In terms of gender, both sexes responded positively - 84.4 percent of male respondents and 83.5 percent of female respondents. Thus, the respondents can be classified as being knowledgeable about the voting process in campus elections. This is important because it shows that the electoral process is easy, and campus students know it well.

Sources of Political Information

It is important to know how students get their political information. The previous study shows voters prefer the news they get from the media (Syed Arabi, 1994; 2011). In the view of voters, the media is not in favor of any party, in contrast with the political speaker or political worker. His research proved that the mass media had a profound influence on and captured the hearts of voters. Therefore, this study investigated political information sources used by students.

Table 5: Respondent Sources of Political Information

Sources	Male	Female	Frequency	Percentage (%)
Newspapers	19	99	118	23.2
Radio	4	8	12	2.4
Televisions	11	92	103	20.3
Political Discourses	20	39	59	11.6
Blog	2	25	27	5.3
Website	30	129	159	31.3
Other Resources	5	18	23	4.5
No Feedback	5	2	7	1.4
Total	96	412	508	100

Sources: Fieldwork Data, 2015.

The results indicated that (Table 5) sources of information on the website are the primary source of respondents to get information about politics with a total of 159 respondents, equivalent of 31.3 percent. The catalyst for this result is from internet access facilities to the

student such as wifi and inexpensive subscription mobile internet data plan to facilitate access to get easy information from a website. According to Mohd Fuad et al. (2012), websites that often prevails in improving knowledge about current political issues are *Malaysiakini.com, Agenda Daily* and *Daily News Online* that gets attention and is visited by youth at universities. Whereas the breakdown by gender, the female respondents are most high respondents chose a website as sources of political information for 81.1 percent or 129 respondents were female and male respondents were 18.9 percent.

The next source of political information for student choice is newspaper and television. Sources of information will be the second and third reference for the latest information. The number of respondents who chose the newspapers of origin and television is a total of 118 people and 103 respondents respectively, with percentages of 23.2 percent and 20.3 percent. According to Mondak & Halperin (2008), the introduction of non-news television formats talks on television and reality shows can be an important source of political discourse and political participation among students. The gender breakdown of respondents chooses the newspaper source comprised 16.1 percent of male respondents and 83.9 percent of female respondents. Similarly, with the television source, the male respondents were 10.7 percent and 89.3 percent of the respondents were women.

Hence, it can be concluded that the main source of political information is a student at SIEU website, then follow the newspaper and television. Ease of internet access drives this were students in SIEU like wifi facility and subscription mobile internet data plan to facilitate access to information quickly on the site.

Students Participation in Campus Election

This section analyzes the level of student involvement in campus elections in SIEU. Table 6 shows the level of involvement of the respondents in the campus elections. Results show that 154 respondents, or 30.3 percent, are directly involved in campus elections. While 354 respondents (69.7 percent of respondents) were not involved in campus elections are held. According to gender, of the 154 respondents who are directly engaged in campus elections, as much as 76 percent, or 117 respondents, were female, and the rest were male respondents participating in campus elections. As for who did not participate in the campus election, 83 percent of respondents were female, and the rest were male respondents who were not involved in campus elections.

Table 6: Respondents Participation

Participation	Male	Female	Frequency	Percentage (%)
Involve	37	117	154	30.3
Not Involve	59	295	354	69.7
Total	96	412	508	100.0

Sources: Fieldwork Data, 2015.

When examined, the number of relatively small involvement reflects the limited places to engage directly and campus electoral that has not gained ground among the students as less important to them. This is in line with the findings of Hamidah et. al. (2004), who made an inquiry in connection with student awareness of the role and responsibilities of the SRC. Their study found that the level of students' awareness of the existence and the role and responsibilities of the SRC is moderate. Furthermore, students' perceptions of the electoral process are also moderate. Therefore, much more to improvement to ensure the electoral process to ensure structure and transparency. Also, a study by Muhammad Abu Bakar (1987) stated that the political behavior of students has close ties with their involvement in student associations. Most

of the students who are actively involved in politics also have active roles in the association. An active student association was found to have a high interest in and engage actively in political matters on campus. By contrast, students who were passive in campus politics were not active in the association.

The following analysis is related to the roles of students directly involved in campus elections. Their roles in campus elections can be classified as candidates, election committee members, ordinary members, and so on. Table 7 has more details.

Table 7: Respondents Role in Election Campus

Role	Male	Female	Frequency	Percentage (%)
Candidate	7	13	20	3.9
Election Committee	6	3	9	1.8
Members	11	52	63	12.4
Others	13	41	54	10.6
Total	38	108	146	28.7

Sources: Fieldwork Data, 2015.

Based on Table 7, the analysis shows that 146 respondents, or 28.7 percent of the total, played a significant role in the electoral process on campus. The first role analyzed was that of the candidate. As many as 20 people, or 3.9 percent of respondents, served as candidates in the elections held on campus. This number indicates that the number of candidates is relatively high. There were more female candidates (13) among the respondents than male candidates (7). While 9, or 1.8 percent, of the respondents had been a member of the election committee consisting of 6 male respondents and 3 female respondents.

Overall, it can be seen from the level of involvement of the respondents in the campus elections that female students are more likely to engage in mobilizing and play a significant role in the campus elections. This situation reflects an exciting atmosphere in campus politics at SIEU.

Factors Influencing Student Voting

Previous discussions have obtained findings that indicate the level of knowledge, a source of political information, and the level of student involvement. As part of this continuing discussion on the objectives of the study, the discussion in this section concerning the factors that influence the student voting.

After examining respondents' knowledge, sources of information, and the level of political involvement, this section will discuss the factors that influence the respondents as a whole according to the position of the main core to less. Among the factors analyzed in this study are group, candidate, current issues, ethnicity, manifesto, and other factors. The analysis is used to determine the factors that influence the respondents as a whole according to the position of the most important to less (rank). This analysis will put the frequency of the highest frequency as the main and lower the opposite.

Referring to Table 8, the candidate becomes the main factor in the choice of respondents. In the 2014/2015 campus elections, candidates included the Residential College President, Chairman of the Association, Members the Supreme Council of Residential College and Association, a former member of the Student Representative Council, a former candidate in previous campus elections, and student activists (SRCEC, 2014). This shows that the association's activities and leadership influence students' political participation. This is an

opportunity for candidates to campaign in campus elections. The position of candidates contesting the election encouraged students to participate in campus elections to elect the best candidate to represent them in the Student Representative Council. Seen from the gender viewpoint, respondents who indicated candidate choice as the main factor in voting were19.2 percent (45) male and 80.8 percent female.

Table 8: Factors Influence Student Voting

Factors	Male	Female	Frequency	Percentage (%)
Group	11	37	48	9.4
Candidate	45	189	234	46.1
Current Issues	17	57	74	14.6
Ethnic	4	12	16	3.1
Manifesto	16	105	121	23.8
Others	3	7	10	2.0
Not Related	0	5	5	1.0
Total	96	412	508	100

Sources: Fieldwork Data, 2015.

The second factor that influences the voting of university students is the use of a manifesto (Table 8). Results show that manifestos influenced the choices made by university students (121 respondents or 23.8 percent). The manifesto is important because the university students believe that the manifestos presented by candidates are best suited to their requirements. Manifesto frequently gained ground among university students fight with the demands and welfare of university students.

The third factor influencing the choice of respondents in the voting university students are current issues with a total of 14.6 percent, or 74 respondents. Whereas for choosing the current issues in terms of gender, male respondents were 23 percent and 77 percent were female respondents. This number shows the current issue gets the attention of the male respondents compared to the candidates and manifesto factors. The current issue is indeed a matter of getting the attention of university students. This is because the current issue is a matter very close and should be known by university students as a means to improve skills and gain information by comparing between the issues that bring goodness and conversely

.

It can conclude that overall factors influencing the voting in SIEU students are a candidate, manifesto, and current issues. However, this option is different between the genders. It was found the female respondents prefer to factor manifesto for first place, followed by the candidate and current issues (Table 8) while the male respondents preferred candidate is the first factor, followed by current issue and the manifesto (Table 8).

Conclusion

The research study conducted in four main findings. First, the results showed that university students have a low level of knowledge of the first aspect of campus elections development. A total of 193 respondents (38 percent of respondents) chose "sometimes" as their answer. This situation shows that students have little interest in keeping up with campus elections and politics because these have little relevance to their daily lives. The next aspect is students' knowledge of the voting process. The results showed that 83.7 percent of respondents knew something about the voting process in campus elections (Table 4). This number is very high and is a positive sign for the implementation of campus elections. If we add to this the number of respondents who had participated in the voting process for campus elections conducted earlier, the resulting number is significant. The second finding is that the main source of political information for students is the SIEU website, followed by newspapers and television. The ease of Internet

access, driven by the availability of wi-fi facilities and subscription mobile Internet data plans, facilitates the access to information. Third, the empirical results found that the number of university students involvement in campus elections is moderate with 154, or 30.3 percent of respondents, being directly involved in campus elections. This amount reflects the limited places to engage directly and circumstances electoral campus that still has not got a place among university students as less important to them. In addition to this, students' perceptions of the electoral process are also moderate. Therefore, much more room for improvement to ensure the electoral process to ensure orderly and transparent. The findings also showed that female students are more likely to engage in mobilizing and playing a significant role in the electoral arena campus. This situation reflects an exciting atmosphere in campus politics at SIEU. Finally, the analysis was able to identify the factors that influence the university students the voting. Overall factors influencing the voting in SIEU students are a candidate, manifesto, and current issues. However, this choice is different between the genders. It was found the female respondents prefer to factor manifesto for first place, followed by the candidate and current issues (Table 8) while with the male respondents, the candidate is the first preferred, followed by current issue and the manifesto (Table 8). This finding means that the choice of male and female respondents have different choices.

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The Influence of Workplace Friendship, Job Involvement, and Organizational Identification on Job Performance: Administrative Staffs of Private Science and Technology Universities in South Taiwan as an Example

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Abstract
Due to Taiwan's lower birth rate resulting in fewer children, the widespread prevalence of higher education, as well as pressure from international competition and limited resources, higher education institutions are now encountering severe challenges, particularly for private science and technology universities. Administrative staffs of private science and technology universities play critical roles in the development of school affairs, and therefore their job performance is important. Past research findings have noted that workplace friendship influences job performance, yet the reason for this is uncertain. This study treats administrative staff of private science and technology universities as samples and includes job involvement and organizational identification as mediators to explain why workplace friendship can enhance job performance. Based on the empirical findings, workplace friendship does directly influence job performance, while it indirectly influences job performance through job involvement and organizational identification. From the research results, this study proposes specific suggestions as reference for organizational leaders of private science and technology universities as well as for academia.

Keywords: workplace friendship, job involvement, organizational identification, job performance, administrative staffs.

Research Motives

Administration and instruction in schools are two major systems of school operations. In order to obtain remarkable academic research and instructional quality, universities must be supported by an administration system with high efficiency and high efficacy. Currently, at universities, administrative staffs are mainly in charge of the management of affairs related to students and teachers. Efficiency and efficacy of a school's administration are not only the force of growth for the schools, but also the source of competitiveness. When an administration system can support teachers' instruction and research, teachers will not be distracted by administrative affairs and thus can enhance their productivity and value added towards instruction and research (Tai, 2006). Administrative staffs provide service not only for teachers, but also for students, parents, and even the public. Thus, administrative staffs' work content is relatively complicated. In order to effectively reduce administrative staffs' work stress and loading, some past research argued that organizations can fulfill organizational goals through team work (Mohrman Cohen, & Mohrman, 1995). Positive workplace friendship enhances team work (Sias & Cahill, 1998), and therefore workplace friendship is important for organizations that require team work.

Workers' interpersonal interaction and workplace friendship make up informal relationships in organizations (Wright, 1978). Positive interpersonal interaction entails confidence, sharing interests, using resources, and sharing information at work. The relationships are more significant than just mere acquaintances (Berman, West, & Richter, 2002). In terms of affection, they provide social support (Kram & Isabella, 1985).

The effect of workplace friendship on job performance has been supported by past research (Francis & Sandberg, 2000; Jehn & Shah, 1997). However, the causes by which workplace friendship enhances job performance are still uncertain. This study includes two mediators to explain why workplace friendship positively influences job performance and makes an empirical research. Research motives are elaborated below.

In the general theoretical model of job involvement, Rabinowitz & Hall (1977) argued that job involvement is the interaction between individuals and situations. It means that job involvement is influenced by the work situation. Riordan & Griffeth (1995) and Nielsen, Jex, & Adams (2000) stated that workplace friendship is a kind of work situation and influences workers. Therefore, there could be a close relationship between workplace friendship and job involvement. This is the reason why this study selects job involvement as a mediator. The first motive of this study is: "Does workplace friendship influence job performance through job involvement?"

Miller, Allen, Casey, & Johnson (2000) argued that organizational identification means that employees believe that they are part of the organization, and that they identify with the organizational missions, visions, values, and goals. When they make decisions, they are concerned about the organizational benefits. Andrews, Kacmar, Blakely, & Bucklew (2008) stated that friendly colleagues in organizations reinforce employees' affection to organizations, which refers to organizational identification. Therefore, it seems that workplace friendship can reinforce organizational identification. When employees identify with organizational culture and organizational goal and values, they make their best efforts to contribute to the organizations and believe that all their sacrifices are worthy. They also show an extremely high degree of loyalty to the organizations (Sharma & Patterson, 1999). Thus, organizational identification can be another mediator between workplace friendship and job performance. This is the second motive of this study.

Research Framework

This study treats workplace friendship as an independent variable, job involvement and organizational identification as mediators, and job performance as a dependent variable to explore the relationship among variables, as shown in Figure 1.

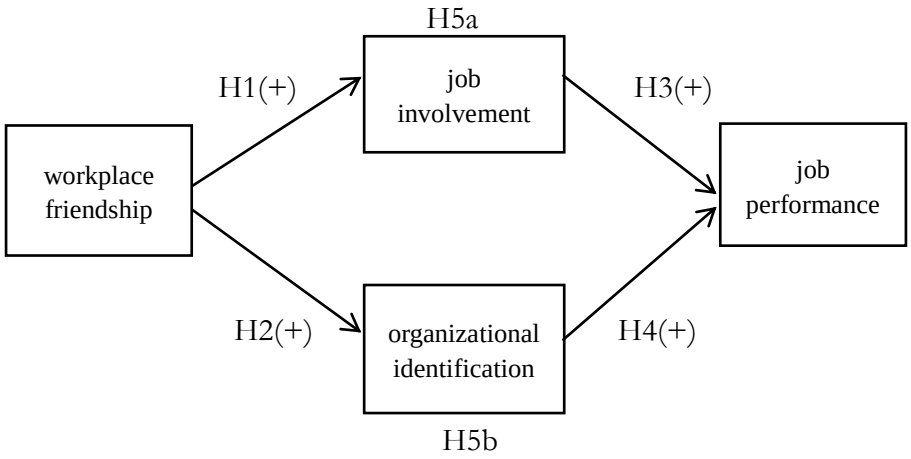

Figure 1. Research framework

Research Hypotheses

Workplace friendship and job involvement

According to past research, workplace friendship benefits organizations and employees (Markiewicz, Devine, & Kausilas, 2000; Sias, Smith & Avdeyeva, 2003). Employees can obtain support and resources provided by colleagues from a good peer relationship (Tse & Dasborough, 2008), thus enhancing the operations of work, lowering stress, increasing job quality (Berman, West, & Richter, 2002), and strengthening employees' satisfaction with their job (Markiewicz, Devine, & Kausilas, 2000). In addition, Sias (2005) stated that when team members' relationship is more positive, they are more likely to provide valuable and useful information in the workplace. In other words, employees exhibit a positive job performance by work information sharing with peers at work (Ross, 1997). On the contrary, when employees lack workplace friendship, their work competence will be reduced, and it influences job progress (Sias, Heath, Perry, Silva & Fix, 2004). Based on this, the study develops a hypothesis below.

H1: Workplace friendship of administrative staffs in private science and technology universities positively influences their job involvement.

Workplace friendship and organizational identification

Mao, Chen, & Hsieh (2009) treated similarity as the basis of workplace friendship. According to the social identity theory (SIT), people are attracted to those with which they feel a similarity since it can enhance their own self-image. People are more friendly with in-group members that exhibit similarity, in comparison to out-group ones (Tajfel & Turner 1986). Hence, workplace friendship classifies organizational members into in-group and out-group members. Based on Mannix & Neale (2005), in-group members have a high degree of mutual support. Thus, employees with workplace friendship give high support to each other.

Atkinson (1958) stated that a job has some chances to satisfy employee needs. Job satisfaction results in employees' organizational identification. Glisson & Durick (1998) demonstrated that colleagues' support leads to job satisfaction. Since employees with workplace friendship offer high support to each other, this results in job satisfaction, and further results in employees' organizational identification. Based on the above, this study develops the next hypothesis.

H2: Workplace friendship of administrative staffs in private science and technology universities positively influences their identification with the organization.

Job involvement and job performance

According to Bakker, Demerouti, & Sanz-Vergel (2014), fatigue and job involvement are associated with important job output and performance. Hence, employees' job involvement significantly influences their job performance. Keller (1997) found that employees' job involvement significantly influence their job performance. When job involvement is higher, job performance will be higher. According to Chen (2006), "job orientation" of job involvement is positively and significantly related to job performance. Kung (2012) studied the relationships among job involvement, organizational change, and administrative efficacy of employees in the district offices of Kaohsiung City and realized that when district office employees' job involvement is higher, their performance of administrative efficacy is also higher. Shimazu, Schaufeli, Kamiyama, and Kawakami (2015) found that job involvement effectively enhances employees' personal life satisfaction and job performance. Based on the above, this study develops the third hypothesis.

H3: Job involvement of administrative staffs in private science and technology universities positively influences their job performance.

Organizational identification and job performance

Organizational identification influences employees' attitude and efficiency at work. When employees highly identify with their own organizations, they have a greater intention to think and act from the perspective of that organization. They are also more willing to contribute more to their organization (Mael & Ashforth, 1992). Cameron (1986) suggested that in the process of promoting organizational operation, information of organizational activities must be consistently and precisely be provided to everyone in the organizations. It is expected that they must certainly recognize the purpose, strategy, and goal of organizational policy in order to establish identification with organizational policy and to have a positive effect on the efficacy of leadership. Lee (2002) studied non-profit organizations and showed that dimensions of organizational identification are significantly related to performance. According to Chien (2003) on the military information publicity system of the general headquarters of the ROC armed forces, there is a medium correlation between members' identification and organizational efficacy. In a study on organizational identification and organizational performance at the Department of Coastal Control, Huang (2006) realized that an increase in members' organizational identification reinforces organizational job performance. Li's (2008) empirical study on the finance industry demonstrated a positive correlation between organizational identification and job performance. Based on the above, this study develops the fourth hypothesis.

H4: Organizational identification of administrative staffs in private science and technology universities positively influences their job performance.

Inference of the mediating effect

Rumens (2016) argued that workplace friendship can be highly connected with improvements of organizational outcome, such as efficiency and performance. When organizational members' network is denser, it means friendships among employees and colleagues are stronger, and they tend to exchange work information (Chien, Chuang, and Yi, 2009). In a situation with high workplace friendship, members are willing to share knowledge and experience and help each other to solve problems at work (Nielsen, Jex, and Adams, 2000). On the contrary, when employees lack workplace friendship, their work competence is reduced, and it influences their job progress (Sias, Heath, Perry, Silva & Fix, 2004). Hsu & Hung (2013) stated that employees' behavioral performance is influenced by organizational climate and personal factors. Workplace friendship enhances cooperation and results in a harmonious work environment. In such an organizational climate, employees have higher job involvement (Riordan & Griffeth, 1995). Friendship at workplace and organizational environment can enhance employees' work through affective support (Saloni, 2014). In addition, Sias (2005) suggested that when relationships with group members are more positive, they are more willing to provide valuable and useful information of work. In other words, they have a higher intention to engage in work and will have better job performance.

Mannix & Neale (2005) stated that in-group members highly support each other. Employees with workplace friendship treat each other as in-group members and highly identify with their organizations (Hsieh & Yang, 2011). These employees support each other and share information, allowing employees to improve job quality. With employees' mutual support and improvement of organizational climate, organizations can increase production (Berman & West, 1998). There is also a positive relationship between organizational identification and job performance (Lee, 2002; Chien, 2003; Huang, 2006; Li, 2008). Hence, workplace friendship influences job performance through organizational identification. Based on the above, this study develops two hypotheses below.

H5a: In the influence of workplace friendship of administrative staffs in private science and technology universities on their job performance, job involvement shows a mediating effect.

H5b: In the influence of workplace friendship of administrative staffs in private science and technology universities on their job performance, organizational identification shows a mediating effect.

Research Method

Research Subjects and Sampling Method

This study focused on science and technology universities in southern Taiwan and selected six of them related to medicine and nursing. It targeted official or long-term administrative staffs who have worked for at least one year as its research subjects. The study did not include teachers who also undertook administration works, assistants of the old system, teaching assistants, instructors, labor technicians, and guards. Administration refers to the work content of administrative affairs, document processing, business planning, official document processing, file management, computers, assigned business (including projects and activities), etc. This study conducted random sampling on these subjects and distributed 350 questionnaires, retrieving back 326 questionnaires. After deleting 30 invalid questionnaires with incomplete responses, this study obtained 296 valid ones, for a valid return rate of 84.6%.

Research Tools

The questionnaire of this study includes two parts as shown below: 1. Personal basic information; 2. Measurement of variables.

1. Personal basic information

It includes gender, age, educational background, service unit, title of work, and working years at the school.

2. Measurement of variables

Variables in this study include workplace friendship, job involvement (including energy, contribution, and concentration), organizational identification (including similarity, cohesion, and loyalty), and job performance (including accomplishment of task, interpersonal interaction, and service evaluation). Measurement is based on the Likert-type five-point scale. It includes five levels: Strongly disagree, Slightly disagree, Fair, Agree, and Strongly agree. The scoring is 1, 2, 3, 4, and 5.

(1) Scale of workplace friendship

This study adopts the scale of friendship prevalence established by Nielsen, Jex, & Adams (2000) since that scale can quantify "depth" of friendship in the workplace. The operational definition of this scale is "employees' perceived quality of friendship in the workplace". The main purpose is to measure administrative staffs' perception of workplace friendship. The scale is based on a single dimension with five items. Higher scores mean that the perception of administrative staffs in private science and technology universities regarding workplace friendship is higher.

(2) Scale of job involvement

The study took Kanungo's (1982) Job Involvement Questionnaire (JIQ) as the tool to measure job involvement. The scale includes ten items. The operational definition of job involvement is "the degree to which a person identifies psychologically with his or her work and the importance of work to one's self image". Higher scores mean that the job involvement of administrative staffs in private science and technology universities is higher.

(3) Scale of organizational identification

The main purpose of this questionnaire is to explore organizational identification of administrative staffs in private science and technology universities. The questionnaire is designed according to Cheney's (1982) three dimensions of organizational identification based on Patchen (1970): Organizational Identification Questionnaire (OIQ). Patchen argued that organizational identification consists of three dimensions, as shown below.

a) Similarity: Individuals' perceived common goals and benefits with other members in

the organization.

b) Cohesion: Connection between individuals' self-concept and organization.

c) Loyalty: Individuals' support and maintenance for the organization.

The original questionnaire included 25 items, and this study reduces it to 12 items. The operational definition of organizational identification is "an attitude in the process of individuals' socialization. It means the degree to which organizational members thinks organizational mission, values, goals are same as theirs". Higher scores mean that the organizational identification of administrative staffs in private science and technology universities is higher.

(4) Scale of job performance

In this study, scale of job performance aims to explore business performance and job outcome of administrative staffs in private science and technology universities. It adopts Wu's (2010) items measuring job performance of the administrative staffs in universities. It includes three dimensions. "Accomplishment of task" includes 7 items. The operational definition is the "administrative staffs' performance and job outcome of executing administrative business or activities, including accomplished goal and task quality". "Interpersonal interaction" includes six items. The operational definition is the "administrative staffs' behavior and attitude of executing administrative business or activity, such as team cooperation, positive interpersonal relationship, and active assistance". "Service evaluation" includes 7 items. The operational definition is the "administrative staffs' self-evaluation of executing administrative business or activity and service receivers' support, identification, and feedback toward their jobs". Higher scores mean that the personal job performance of administrative staffs in private science and technology universities is higher.

Research Results

Reliability and validity analysis

This study elaborates upon the reliability and validity of the measurements of four variables (workplace friendship, job involvement, organizational identification, and job performance), as shown in Table 1. According to this study, Cronbach's α of the four variables are 0.741, 0.750, 0.857, and 0.940, which are all higher than 0.7. It means that the measurements of the four variables show good reliability. Composite reliabilities (CR) are 0.764, 0.786, 0.866, and 0.893, which are all higher than 0.6. Average variances extracted (AVE) are 0.568, 0.577, 0.651, and 0.708, which are all higher than 0.5. It means that the measurements of the four variables show good convergent validity. In addition, the correlation coefficients of two variables are lower than the reliability coefficient for Cronbach's α of individual variables. It means that the measurements of the four variables show good discriminant validity.

Table 1 Reliability and validity analysis

Variables	1	2	3	4	CR	AVE
1.Workplace friendship	1				0.764	0.568
2. Job involvement	0.522*	1			0.786	0.577
3.organizational identification	0.582*	0.356*	1		0.866	0.651
4. Job performance	0.655*	0.609*	0.571*	1	0.893	0.708
Cronbach's α	0.741	0.750	0.857	0.940		

Note: *p < 0.001

Validation method of the mediating effect

This study treats workplace friendship of administrative staffs in private science and technology universities as the independent variable, job involvement and organizational identification as the mediators, and job performance as the dependent variable. It conducts regression analysis by the method of Baron and Kenny (1986) to test the mediating effect, which is based on the following four conditions: first, the independent variable significantly influences the mediator; second, the mediator significantly influences the dependent variable; third, the

independent variable significantly influences the dependent variable; fourth, when the effect of the independent variable on the dependent variable is reduced and is still significant after the mediator is added as the other independent variable, the mediator shows a partial mediating effect; when the effect of the independent variable on the dependent variable becomes insignificant after the mediator is added as the other independent variable, the mediator shows a full mediating effect. In the following, this study respectively analyzes the mediating effects of job involvement and organizational identification.

Validation of the mediating effect of job involvement on the effect of workplace friendship on job performance

According to the method of Baron and Kenny (1986), the validation of a mediating effect includes four steps. The validation result is shown in Table 2.

Workplace friendship influences job involvement

In the first regression model, workplace friendship is treated as an independent variable and job involvement is a dependent variable for regression analysis. According to the results of regression analysis, the standardized regression coefficient is 0.522 and reaches the significance level $p < 0.001$ ($t=10.867$). It means that workplace friendship positively influences job involvement. This matches Condition 1: the independent variable significantly influences the mediator.

Job involvement influences job performance

In the second regression model, job involvement is treated as an independent variable and job performance is a dependent variable for regression analysis. According to the results of regression analysis, the standardized regression coefficient is 0.609 and reaches the significance level $p < 0.001$ ($t=13.152$). It means that job involvement positively influences job performance and matches Condition 2: the mediator significantly influences the dependent variable.

Workplace friendship influences job performance

In the third regression model, workplace friendship is treated as an independent variable and job performance is a dependent variable for regression analysis. According to the results of regression analysis, the standardized regression coefficient is 0.655 and reaches the significance level $p < 0.001$ ($t=15.054$). It means that workplace friendship positively influences job performance and matches Condition 3: the independent variable significantly influences the dependent variable.

Workplace friendship and job involvement both influence job performance

In the fourth regression model, workplace friendship and job involvement are treated as independent variables and job performance is a dependent variable for regression analysis. According to the results of regression analysis, with the mediator of job involvement, the standardized regression coefficient of workplace friendship on job performance reduces from 0.655 (Mode 3) to 0.501 (Mode 4). However, it still reaches the significance level $p < 0.001$ ($t=9.427$). Hence, it matches Condition 4: when the effect of the independent variable on the dependent variable is reduced, but is still significant after the mediator is added as the other independent variable, the mediator shows a partial mediating effect.

Table 2 Regression analysis of the mediating effect of job involvement on the effect of workplace friendship on job performance

Variables	Regression analysis model							
	Dependent variable							
	Job involvement		Job performance		Job performance		Job performance	
	Mode 1		Mode 2		Mode 3		Mode 4	
	β	t value	β	t value	β	t value	β	t value
Workplace friendship	0.522	10.867*			0.655	15.054*	0.501	9.427*
Job involvement			0.609	13.152*			0.405	7.549*
R^2	0.272*		0.371*		0.429*		0.468*	
ΔR^2	-		-		-		0.039*	

Note: *p < 0.001

Validation of the mediating effect of organizational identification on the effect of workplace friendship on job performance

According to the method of Baron and Kenny (1986), the validation of a mediating effect includes 4 steps. The validation result is shown in Table 3.

Workplace friendship influences organizational identification

In the first regression model, workplace friendship is treated as an independent variable and organizational identification is a dependent variable for regression analysis. According to the results of regression analysis, the standardized regression coefficient is 0.582 and reaches the significance level p < 0.001 (t=12.515). It means that workplace friendship positively influences organizational identification and matches Condition 1: the independent variable significantly influences the mediator.

Organizational identification influences job performance

In the second regression model, organizational identification is treated as an independent variable and job performance is a dependent variable for regression analysis. According to the results of regression analysis, the standardized regression coefficient is 0.571 and reaches the significance level p < 0.001 (t=11.843). It means that organizational identification positively influences job performance and matches Condition 2: the mediator significantly influences the dependent variable.

Workplace friendship influences job performance

In the third regression model, workplace friendship is treated as an independent variable and job performance is a dependent variable for regression analysis. According to the results of regression analysis, the standardized regression coefficient is 0.655 and reaches the significance level p < 0.001 (t=15.054). It means that workplace friendship positively influences job performance and matches Condition 3: the independent variable significantly influences the dependent variable.

Workplace friendship and organizational identification both influence job performance

In the fourth regression model, workplace friendship and organizational identification are treated as independent variables and job performance is a dependent variable for regression analysis. According to the results of regression analysis, with the mediator of organizational

identification, the standardized regression coefficient of workplace friendship on job performance reduces from 0.655 (Mode 3) to 0.512 (Mode 4). However, it still reaches the significance level $p < 0.001$ ($t=10.121$). Thus, it matches Condition 4: when the effect of the independent variable on the dependent variable is reduced, but is still significant after the mediator is added as the other independent variable, the mediator shows a partial mediating effect.

Table 3 Regression analysis of the mediating effect of organizational identification on the effect of workplace friendship on job performance

Variables	Regression analysis model							
	Dependent variable							
	organizational identification		Job performance		Job performance		Job performance	
	Mode 1		Mode 2		Mode 3		Mode 4	
	β	t value	β	t value	β	t value	β	t value
Workplace friendship	0.582	12.515*			0.655	15.054*	0.512	10.121*
organizational identification			0.571	11.843*			0.387	5.846*
R^2	0.339*		0.326*		0.429*		0.376*	
ΔR^2	-		-		-		0.031*	

Note: *$p < 0.001$

Conclusion and Suggestions

This study treats administrative staffs of private science and technology universities as the samples, and after validation, it realizes that workplace friendship directly influences job performance. Aside from a direct effect, there is also an indirect effect. In other words, workplace friendship indirectly influences job performance through job involvement. In addition, workplace friendship indirectly influences job performance through organizational identification.

This study supports the viewpoint of the positive relationship between workplace friendship and job performance as argued in past research. Besides, the most significant contribution herein is to adopt job involvement and organizational identification to explain why workplace friendship can reinforce job performance. This study demonstrates that an increase in employees' workplace friendships reinforces their job involvement and thereby enhances their job performance. This study also shows that an increase in employees' workplace friendship reinforces their organizational identification and thereby enhances their job performance. Therefore, employees' workplace friendship is extremely important. Managers must examine employees' workplace friendship, improve and enhance their workplace friendships, and use workplace friendship to enhance employees' job involvement and organizational identification and thereby enhances their job performance.

This study only explores two mediators, job involvement and organizational identification. There are certainly other mediators to explain why workplace friendship can enhance job performance, and thus it is suggested that future researchers can consider other variables such as team cooperation, knowledge sharing, and organizational climate. In addition, this study only explores the positive results of workplace friendship. Job involvement, organizational identification, and job performance are all positive variables. However, researchers in the future can consider whether workplace friendship will not produce negative results. This study argues that if the workplace friendship is not the friendship of the entire organization, but the

friendship of a little circle, managers who fail to make good use of the friendship of a little circle may incur negative results, such as various kinds of confrontations among small separate groups.

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