Technology Acceptance Model Proliferation towards Modified Teaching in Myanmar

Win Win Aung
Faculty of Information Technology Support and Maintenance
University of Computer Studies, Monywa
The Republic of the Union of Myanmar
nng.winwinaung@gmail.com

***Abstract*—As the increasing trend of today's education, teaching/learning opportunities for students have also increased a lot. The Technology Acceptance Model (TAM) is used to predict the user (students) satisfaction in the modern learning environment in Myanmar. Technology based learning methodologies can be useful in uplifting the outcome level of university students, as they are the very first and the most powerful human resources to change the modern new normal living style of a country. In the competitive and fast growing world, the organizations and governments need to create a congenial education environment for new generations. This paper uses 24 Master students' questionnaire results from University of Computer Studies, Monywa as well as their opinions and comments to support the testing model validation concerned with the modified teaching methods based on the TAM. The benefits and drawbacks of using the TAM applied the modified teaching methods in classrooms are also discussed. The universities should focus on the TAM supported activities and up-to-date teaching styles symmetrically to bear the work readiness skilful students.**

Index Terms*— *Technology acceptance model (TAM), learning methodologies, human resources, new normal

I. INTRODUCTION

The learning life balance has emerged as a hot topic in recent periods during the Novel Corona Virus Disease 2019 (COVID-19) pandemic is spreading tremendously all over the world. We do need to change our living styles, happy moments sharing styles, learning styles, buying styles and so on. The social, political and educational sectors of the societies have influenced for the ongoing nature of learning environment. Whilst the teaching/learning challenges have emerged, the opportunities have also continued for the education context with the help of technology. Myanmar is a developing country and also there are many challenges in every sectors compared with developed countries. Learning evolved in the previous decades, activity based learning is comparatively new method of teaching where learning suggest that the student should be given full freedom and opportunity to learn according to their capability and skill in classroom.

Technology Acceptance Model based learning is a methodology where the students can explore what they think and find the possible solutions by combining ideas or individual trying. The role of teacher is just a facilitator for this learning type and the students reliant only on themselves. Moreover, it creates ideal environment for learning because the learner's priority is top most. In the field of education, researchers are inventing latest techniques and methodologies to provide the best outcomes for new generations. The Technology Acceptance Model is a successful teaching model and it has recently used in most of the ASEAN universities. This approach supports a way to investigate learning within students' knowledge and by expanding their skills with activities, helps them how to learn.

Changing learning patterns together with changes in the TAM structure of the education sectors have resulted in a different reality of the 21st century new normal living and managing the daily activities. The universities are increasing their investment in modern technologies to enable better access to information and to gain a competitive advantage. As a result of global competition, the education trends are leading towards costs reduction and productivity enhancements, increasing their dependence on the technology. Technology is the key asset within the educational standards of a nation and needs to be promoted.

It is critically important to understand what causes learners to understand, accept and follow the new normal learning behaviors by realizing the benefits of the TAM. The purpose of this study is to address the benefits that influence the acceptance model of technology concerned with the students' satisfaction measures. This paper is highlighted the headings on (2) Literature Review, (3) Technology Acceptance Model (TAM) Approach in Education, (4) Analysis on TAM Methods Effect on the Learners and (5) Conclusion and Discussion.

II. RELATED WORK

Some of the best practices by combining technology based activities and modified teaching methods in classrooms are discussed in USAID [1]. Defining the learning related areas to the real world problems, building work readiness skills in your existing classes by teaching in a learner-centered manner with the help of

technologies, preparing to coach learners and helping them to be and building the classroom activities by combining coaching, collaboration and time to help learners reflect on how they learn and behave under the control of technology.

The most well-known used model called technology acceptance model is used to prove a theoretical model which explains and predicts the user behavior of information technology [2]. The India's education level is provided by both of public and private sectors under the management of funding coming from the central, state and local levels. Only when an employer thinks a positive work life environment which is based on the technology, he or she can be the productive and provide their best to the organization.

The factors that affect for the employees about the acceptance of information systems security measures were examined with the help of Technology Acceptance Model. The valid responses of 174 employees from United States and Canada were analyzed to proof the affecting structural factors when using Technology Acceptance Model [3]. The extended Technology Acceptance Model is used to predict the user satisfaction by using 84 employees from a large manufacturing company. The difference models of how to construct and what the subjective norm were presented. In order to assist in explaining or predicting the acceptance of computer systems, the models drawn from social and cognitive psychology have been developed [4].

The systematic literature review of the underlying research on TAM in educational context is indicated that the popularity of TAM in the field of technology acceptance in general [5]. The core variables of TAM, perceived usefulness and ease of use have also been proven with various factors are affected the acceptance of learning with technology. The paper intended to provide an overview of the current research efforts on TAM application in the teaching/learning area for a variety of learning domains, technologies and users demographics.

Different acceptance studies in the area have been exploring TAM's applicability for different learning technologies like mobile learning, personal learning environments open-source- LMS moodle and commercial LMS Blackboard in particular have been conducted in [6]. According to [7], mobile learning or m-learning has been the next best thing depending on the mobility of new learner generations, expanding opportunities for timing, location, accessibility and learning context.

Most of the empirical data concerned with TAM has been collected at university students without touching their privacy and ethical rules where the most commonly chosen sample group is 83%. They also predicted that high school students, academics/teachers and employees are the potential target groups in future [8]. Besides an attempt to generalize TAM to other contexts with different student populations, levels of higher education standards as well as programs are also considered by [9]. It also stresses the importance of perceived mobility devices values for the new generations. Furthermore, it has been also shown that it has a positive effect on the academic achievement of the learners. The proposed research models have been built in order to increase TAM predictive validity.

Leveraging data analytics and online tools provide the teachers and faculty insights into students' performance based on the TAM. So it is assumed that technology is helping at learning. Using open learning tools are the main harnessing resources to the community. Moreover, teachers and faculty can focus on the learning outcomes easily. The 21st century students' learning is focused on smarter classrooms with the help of technology and investing in education to simulate and sustain the economy of the country. The learning management system is a more integrated approach. Learning management system is a very attractive method for modern classrooms as the contents are centralized and so all the students have a single source of content, instructions and questions. No more old books and outdated materials are required [10].

III. Technology Acceptance Model (TAM) Approach In Education

The Technology Acceptance Model (TAM) has proven to be a theoretical model in helping to explain and predict the user behavior/thoughts of information technology based education environment. Theory of reasoned action (TRA) bears TAM as an influential extension for future users. Moreover, according to the proposed idea about TAM, it is simply the way to explain why a user accepts or rejects information technology by adopting TRA.

The basic theory of TAM consists of tracking how external variables influence belief, attitude and intention to use. The perceived usefulness and perceived ease of use are the two cognitive beliefs of TAM. Based on this concept, one of the user's actual use of a technology system is directly or indirectly influenced by his/her behavioral intentions, attitude, and perceived usefulness of the system and perceived ease of the system. It also proposes that the intention and actual use are affected by external factors by passing through the

perceived ease of use and perceived usefulness as shown in Figure 1.

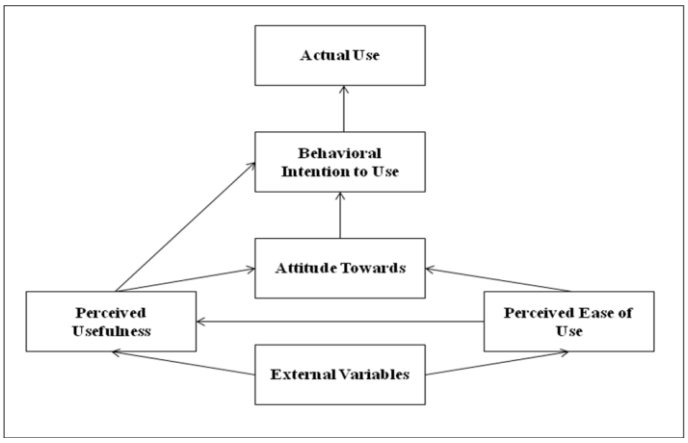

Figure 1. Technology Acceptance Workflow

The Technology Acceptance Model (TAM) can be warranted that the more accepting users are of new systems or technology, the more they are willing to make changes in their practices and use their time and effort to actually start using the system at their education environment. The perceptions of ease of use technology in the teaching/learning context and usefulness are the key factors of teachers/learners intention to adopt a new technology.

A. Research Questions

The research problem that is addressed in this study is to determine what the key behavioral factors are affecting the learner's acceptance of technology model. The specific research questions that are addressed included:

Do the learners' perceptions concerned with the technology measures make sure to fulfill the requirements of teaching aids?

Do the beliefs of the learners about the use of technology supported teaching could greatly change their learning environment?

Does the Technology Acceptance Model can effectively and efficiently support the new normal learning environment for the learners?

The hypotheses that are examined in this study included:

H1: There is a positive relationship in the teaching/learning environment between perceived usefulness and the intention to use technology as the acceptance model.

H2: There is a positive relationship between perceived ease of use and intention to use technology supported teaching aids as the acceptance model.

H3: There are the endless opportunities for the new normal learning environment for the learners with the help of Technology Acceptance Model in the future.

B. Research Objectives

This paper is intended to provide the following useful objectives for all education areas.

- To take the advantage of the new normal teaching/learning environment based on the Technology Acceptance Model
- To uplift the learners' physical and mental fitness in their education level with the help of technology
- To know the actual understanding of the learners on the usage of technology
- To examine the existing teaching approach trending to the modified teaching approach
- To provide and build the best education environment for the learners
- To make sure that technology becomes the useful tool for their learning and doing research areas

C. Research Methods , Participants and Findings

The academic year of 2019-2020 Master students have begun to introduce with 70% online learning (such as Moodle test, searching the related papers concerned with the lectures given by the teachers, preparing presentation for every week of the lecture time, learning online projects based on the related lectures and so on) and lecturing in the classroom is only 30%. As a result of this, they become more depending on technology in order to search the online reference lectures resources rather than the lecture times in classrooms.

The following section highlights the feedbacks from students about the benefits of the acceptance of technology model as a part of their learning life. The survey results are based on 24 students of post-graduate level at University of Computer Studies, Monywa. It can be clearly seen that how IT is influencing in their everyday life and work.

IV. Analysis On The TAM Effects on the Learners

The following tables are used to highlight and discuss why the Technology Acceptance Model (TAM) is a valid model of user satisfaction of the learning environment (their original sentences are described). The questionnaire is issued to the 24 students as the focus group session. Among the 24 students survey, most of them are preferred the technology oriented teaching/learning (only TAM based), some of the students are standing at the traditional teaching styles (without Demanding Technology) and some of them like both types of teaching (TAM plus Traditional). The

domain interest choosing for the analysis is very important in order to improve the predictability of constructs in learning behavior model. Furthermore, the survey results may be very different on the other class students (For example First year, Second year, Third year and Fourth year). The one measure fits all approach to predict the importance of TAM is not easy.

The students describe their satisfaction or not statements are measured based on the words usage such as improved, enjoy, much knowledge, can learn, promoted, skills and mindset of teamwork, familiar, interested in subjects, happy, brainstorming, creation, better, mixed-learning and face-to-face.

TABLE I. THE STUDENTS' SATISFACTION COMMENTS ON THE LEARNING METHOD WITHOUT DEMANDING TECHNOLOGY

Participant Number	Name of Student	Their opinion or comments
1	Ma Khin Htay Win	-Active and hope to do many activities in classroom.
2	Ma Mie Mie Hlaing	-I enjoy doing activities free from using technology. -I get much knowledge from these activities. -My reading skills and presentation skills are improved as teaching method is good.
3	Ma Su Su Aung	-By doing these activities, we can learn, share and discuss about our knowledge. -Also promoted presentation skills and mindset of team work. -Based on the audience feedback and teacher, we can prepare not to do the same mistake in the future.
4	Ma Moe Moe Aung	-I have been improved speaking skills for any activities. -Teaching method is good as it provides much knowledge.

TABLE II. THE TECHNOLOGY ACCEPTANCE MODEL BASED STUDENTS' SATISFACTION COMMENTS

Participant Number (Cont'd)	Name of Student	Their opinion or comments
5	Ma Poe Thiri Lwin	-I have improved presentation and reading skills.
6	Ma Wai Wai Phyo	-Making presentation improve knowledge and reading skill.
7	Ma Myo Thinzar Swe	-Improve reading skill and presentation skill. -Making activities give me knowledge.
8	Ma Myint Myint Moe	Presentation skills and knowledge improved. -Also improve searching and learning skills.
9	Ma Tin Zar Lynn (2)	-Familiar with reading papers and presentation because this subject is always initiated with activities and presentations.
10	Ma Ngu War Khaing	-Getting better at presentations and activities. -I like teaching method.
11	Mg Nyan Chun	-Make us interested in the subjects by using modified teaching methods. -Self-study and other presentation skills are also improved.
12	Ma Sandar Htay (1)	-I have improved presentation and reading skills. -Makes me happy while teaching as it is based on active teaching method.
13	Ma Khin Swe Win Latt	-I have improved paper reading skills and presentation skill. -Doing activities can provide much knowledge.
14	Ma Thiri Phyo	-Doing activities and presentation promote my presentation skills and reading skills. -Brainstorming also improves my idea.
15	Ma Sandar Htay (2)	-By doing these activities, all skills are improved. -I am weak at brainstorming activities and can't solve it still now and ever.
16	Ma Shwe Sin Win	-Can get experience and improve idea creation in a short period of time by brainstorming. -Improved making activities and presentation skills as

		well as reading.
17	Ma Thuzar Hnin	-I can understand easily about the subject with the help of modified teaching method. -Getting better in presentation and widespread knowledge.
18	Ma Zar Chi Oo	-By doing these activities, my presentation skills, reading skills and searching skills have been improved.
19	Ma Nyo Mie Mie Htun	-I prefer doing this activity to traditional teaching method. -Presentation skill and reading skill have improved.
20	Ma Tin Zar Lin (3)	-Improved presentation skill and reading. -I like the teaching style. -I am always very exciting and brainstorming whenever the teacher is made questions. -Obtained much knowledge and thinking.

TABLE III. THE STUDENTS' SATISFACTION COMMENTS ON THE LEARNING METHOD WITH TAM PLUS TRADITIONAL

Participant Number (Cont'd)	Name of Student	Their opinion or comments
21	Ma Yin Mon Theint	-That teaching style has promoted my presentation skill. -Also experienced with blended or mixed learning (face-to-face plus online learning) .
22	Ma Aye Aye Myint	-Easily understand the lessons by learning activities from online and offline. -Enjoy teaching with examples .
23	Ma Tin Zar Lynn (1)	-I like teaching style and improved presentation styles and doing activities.
24	Mg Nyo Min Tun	-Reading skill is improved.

The following Figure 2 displays the number of students who prefer among the three teaching methods: traditional teaching method, TAM plus Traditional and only using TAM. According to the finding, most of the students like the TAM based method.

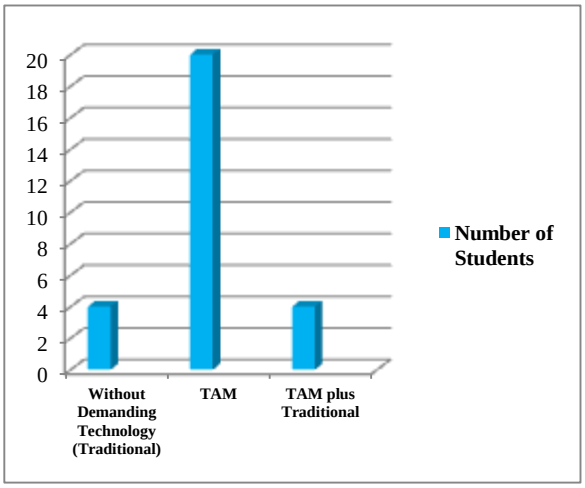

Figure 2. Comparing the Three Teaching Method Types

The following Table 4 depicts the usefulness of Technology Acceptance Model and its weaknesses based on the students preferences.

TABLE IV. ADVANTAGES AND DISADVANTAGES OF TECHNOLOGY ACCEPTANCE MODEL IN EDUCATION

Advantages	Disadvantages
-Enjoy learning via performing classroom activities. -Motivate students to engage at the social work though the social media. -Win-win situation for the entire participating local learners as well as global. -Can access information in anywhere, anytime manner.	-Time consuming with the unlimited online usage for the learners -Misunderstanding among each other when discussing the matters. -Trusted sources detecting is vital for online users. -Ethical behavior of the individual person is hard to examine.

A. Advancing Technology Acceptance Model Transition Towards Modified Teaching in Myanmar

The majority of this research type is mainly done in Asia, in particular Taiwan, Malaysia, China and South Korea, then in Europe, North America, Middles East and Africa. Most of the empirical data results have been collected at the target group of the university students. Also in Myanmar, Technology Acceptance Model targeted on the research in teaching/learning context has become an attractive trend in recent years because of the new normal living conditions beyond the COVID-19.

The Technology Acceptance Model (TAM) is the key role model to understand the human behavior which is

predicted the potential acceptance or rejection of the technology. A wide range of ICT potential users of Myanmar education settings should support the perceived and ease of use of technology. However, although the ICT potential for enhancing the learning/teaching process is intuitively compelling whether receiving or discarding the technology is becoming important. At the very beginning of technology approaching user's daily living, there is a growing necessity for comprehending reasons why the technology should be accepted in Myanmar education in coming decades.

B. Current State of TAM Application in University Education

The related works has been shown that over the years, TAM has emerged and accepted as a leading scientific paradigm for investigating this technology by the teachers, students and stakeholders. This is becoming the only most common ground theory of the learning environment for the universities. The TAM approach is completely introduced since 2017-2018 academic year of University of Computer Studies, Monywa but it became the most popular in 2019-2020 because of the effects of the pandemic. The Master students are the targeted group concerned with the research. During this year, they intensively need to do online presentations, online discussions, online seminars, online learning and online project as the new normal learning styles. So, the TAM is the extending method besides their normal learning environment. The following Figure 3 depicts the current state of TAM acceptance development rate from 2017-2018 to 2019-2020 academic year.

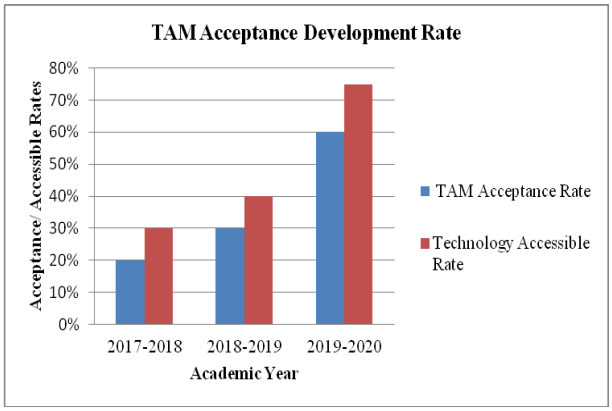

Figure 3. The Current TAM Acceptance Development Rate

It has been shown that over the three years, TAM has reached the most useful technology approach for the students. TAM acceptance rate is comparable with the technology accessible rate during the year 2019-2020. Technology accessible rate is calculated based on the learners' internet accessible rate of the university's Wi-Fi and wired connection.

According to the above tables, the two tables (Table 2 and 3) provide interesting outcomes for all readers engaged the TAM in the domain of educational technology acceptance. New samples could also be used from different educational staff domains and different education levels such as group testing, structural factor analysis or correlation approach to support the research.

V. Conclusion and Discussion

This paper discussed about the inevitable influence of accepting technology in the new education environment with TAM supported activity based learning in Myanmar. Moreover, it can greatly affect the welfare of the current education environment and has been led to the new education system. Furthermore, the tangible hard and intangible soft skills has also installed on the mindset of the students with the help of TAM. So, after finishing their school year, they will be ready to fit in the workplaces. From the above feedback from the students, we can conclude that technology based learning methodology can be useful in the university classrooms. It will be not only helpful in attracting the students toward the classrooms but also useful in uplifting the work readiness skill of the graduations.

The validity of TAM should be focused on many other external factors rather than the usual manner of the user or learners. In contrast, the other studies should include the participation of individual students to consider the effect on Technology Acceptance Model. We can expect the direct and indirect effect of the TAM according to the hypotheses H1, H2 and H3 respectively. It is only the partial support for further fueling to extend the importance of TAM. In addition, there are significant changes to all other determinants of perceived usefulness, with the exception of the advanced IT in education.

Cited References

[1] USAID, "Professional Development Training using MehondSkills2Work Source Book and Toolkits", 2018.

[2] W.A Abdul Nasser and Dr.K.Prabhakar, "Technology Acceptance Model (TAM): Design of Work Life Balance Practices with Special Evidence from Among Women Teachers of Self Financing Colleges (SFC) in Tamilnadu", International Journal of Research in Management & Business Studies, Vol.4, Issue.1, Jan-Mar, 2017.

[3] M.Cynthia Jones , et.al, "Utilizing the Technology Acceptance Model to Assess the Employee Adoption of Information Systems Security Measures", Vol XI, No.1, 2010.

[4] D. Mather, P.Caputi & R.Jayasuriya, "Is the Technology Acceptance Model a Valid Model of User Satisfaction of Information Technology in

Environments where Usage is Mandatory?", Victoria University, Australia, ACIS, 2002.
[5] A.Greni and N. Maranguni, "Technology Acceptance Model in Educational Context: A Systematic Literature Review", Vol. 50, Issue.5, Jul, 2019.
[6] P.Ramirez-Correa, A.Mariano-Melo and J.Alfaro-Perez, "Predicting and Explaining the Acceptance of Social Video Platforms for Learning: The Case of Brazilian YouTube Users, Sustainability", 2019.
[7] R.Scherer and T.Teo, "Technology Acceptance Models: What We Know and What We Still Do Not Know", British Journal of Educational Technology, 2019.
[8] S.Nijjer and S.Raj, "Social Media use in Academia", Journal of Information, Communication and Ethics in Society, JICES-08-2019-0093, 2020.
[9] M.Al-Emran.et.al, "Examining the Roles of Students' Beliefs and Security Concerns for Using Smart Watches in Higher Education", Journal of Enterprise Information Management, JIEM-02-2020-0052, 2020.
[10] G.Garcia Murillo, et.al, "Technology Acceptance Model and Moodle: A Systematic Mapping Study", Information Development, 2020.