

A Research of Social Networks Application on Parent-Teacher Communication

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ABSTRACT: The purpose of this study was to investigate the behavioral intentions of teachers in Kaohsiung using the instant messaging software LINE to conduct parent-teacher communication, and to use the technology acceptance model as a theoretical basis to further propose this research framework and construct a suitable application for the continuous use of LINE. Conduct research model of parent-teacher communication. In addition, the impact of various variables of the technology acceptance model in the model on the "continuous use of instant messaging software LINE" has been studied and the verification results are introduced.

KEYWORDS: Social Networks, LINE, Unified Theory of Acceptance and Use of Technology (UTAUT), Parent-Teacher Communication

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I RESEARCH BACKGROUND

In the past decade, with the rise of the Internet, the popularization of current mobile devices has not only changed people's living habits, but also gradually changed the way of people communication. The Social Network media has become an important new tool for interpersonal communication. The mobile communication software "LINE" has become the primary software for mobile devices in Taiwan. The group function in LINE has become an important channel for group communication, no matter in messaging, emotional contact, group purchase, meeting discussion, etc. All of these group functions can be implemented by using the LINE, which is why it is widely used in modern society.

All along, parent-teacher communication is an important bridge between teachers, parents, and children. Parents can learn about their children's performance in the school, their learning status, their daily routine, and their achievement performance through the process of communicating with teachers. How to improve behavioral problems, especially kindergarten preschool children are in a state of exploration and learning. Separation of anxiety is more intense. Parents also hope that they can understand their children's adaptation problems and interactions with their peers through the process of parent-teacher communication. Therefore, the immediateness, convenience and effectiveness of the communication in the New Technology Action LINE are ways to solve the problems. This study uses the technology acceptance model to explore the willingness of the Social Network media to apply parent teachers' willingness to use, and hopes to explore the new model of traditional parent-teacher communication. Based on the above research motives, the purpose of this study is as follows:

- (1) To explore the factors affecting the willingness of young teachers to use the LINE to apply for parent-teacher communication.
- (2) To understand the attitude and willingness of preschool teachers using the mobile device LINE for parent-teacher communication.
- (3) To explore the preschool teachers from different backgrounds using the mobile device LINE will generate different parent-teacher communication effectiveness.
- (4) Make specific recommendations for educators.

II LITERATURE DISCUSSION

2.1 Social Network community

What is a Social Network community? Social Network community allow a group of people with the same interests and activities to create an online community. This type of community is often based on the Internet, providing users with various channels of communication and interaction (Wikipedia, 2016). The Social Network community service referred to in this study means that teachers can use the LINE of mobile communities to communicate with class parents and class status and apply to the exchange and sharing of information to achieve communication with the parent.

The Taiwan Network Information Center (TWNIC) announced on its website in March 2016 "Taiwan Wireless Internet Use Survey". According to the survey report, the Internet access rate for people over 12 years of age in Taiwan is 67.8%, which is estimated to have reached 14.24 million people in Taiwan. The survey results provided by the "2016 Taiwan Broadband Internet Use Survey" also showed that in the first half of 2016, the estimated Internet access rate in the country was about 19.93 million, and the overall internet rate was as high as 84.8%. On the other hand, the use of instant messaging software accounted for 80.6%, social media accounted for 74.1%, and browse webpage accounted for 53.6% of the top three. It is worth noting that the proportion of users using instant messaging software and Social Network media was higher than 2015. The results of the survey have soared by more than twenty percentage.

In terms of the usage habits of the Social Network media, the proportion of "almost every day on Facebook" was 43.8%, and 39% said that they would open Facebook at least once a day. Secondly, the survey found that in recent years, the social forces led by LINE started to ferment. Because of the instant contact characteristics of LINE APP, it is particularly suitable for communities to develop their own small group characteristics. Often, an individual participates in several LINE groups, to facilitate mutual contact and communication issues, and even gradually extended to an extended commercial interpersonal model, ingeniously integrate commercial advertising behavior into community relations.

If the statistics are based on the number of users on the Internet, the Communicate software community uses up to 49 million Japanese users, followed by Thailand, Taiwan, Spain, and Indonesia. There are approximately 17 million people in Taiwan. According to the demographic ratio at the end of 2015, the density of LINE usage in Taiwan is the highest in the world. Taiwanese people are the craziest for using LINE social communication software, with an average of 7.3 people per 10 Taiwanese people who love to use LINE, which is arguably the best in the world (Survey on Taiwanese Broadband Internet Users, 2016).

LINE is a smartphone Social Network app and Social Network platform developed by NHN Japan Corp. Named LINE, is hope that it can be a linkage to people. Users can make free voice calls, image delivery, or messaging with other users through the Internet, whether in different countries, different carriers, or network companies.

2.2 Mobile communication software LINE communicates with the parent

Thanks to digital technology and social media, the interaction between the parent and teacher has increased in many channels. There are more and more classes for parent-teacher communication using new technologies. Among them, instant messaging software interaction has become the new darling of today's parent-teacher communication because of its free and fast niche and popularity.

In addition to providing one-to-one communication functions, instant messaging software also provides group (broadcast) functions. Teachers or parents can use private communications to communicate individually. They can also use groups to post messages to group members. Wu Qingshan mentioned that users posted messages in the group. Through discussions and emotional exchanges between groups, it can be said that they have already had some functions of the class association (Wu, 2014). In addition, it is often heard that parents form good friends through the frequent interaction of LINE.

At present, there are many studies in the literature on the use of Social Network media for class management or parent-teacher interaction. Among them, Lian (2001) mentions that the elementary school teachers use "electronic contact book" to "immediately interact with parents which makes teachers feel stressed and burdened. Huang Mingzong, Luo Xizhe, Zhong Yuming, Cai Zongmu, Lai Nanhong and Wang Shuhui also mentioned that the elementary school teachers also put forward the same opinions on the use of electronic contact books (Huang, 2010).

2.3 Technology Acceptance Model

There are already many studies on technology acceptance behavior. For research, technology acceptance model (TAM) is a fundamental structure, which, for practical reasons, has to coordinate with different external variables, depending on the selected theme, for analyzing the functions of these variables (Venkatesh, 2000). For years, as research findings accumulate, more and more variables have been proposed for various domains. More recently, Venkatesh and colleagues conducted a comprehensive literature review on these studies and discovered that each of the models these studies proposed has distinctive characteristics and is substantially persuasive in that specific domain. According to the eight models summarized by Venkatesh and colleagues in their literature review, i.e., Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Motivation Model (MM), Theory of Planned Behavior (TPB), Combined TAM and TPB (C-TAM-TPB), Model of PC utilization (MPCU), Innovation diffusion theory (IDT), and Social cognitive theory (SCT) (See Figure 1 and Figure 2), Venkatesh and colleagues proposed their version: Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh & Davis, 2000).

In the new structure, a comprehensive empirical analysis was conducted to compare major theories and models proposed by previous studies. Four core determinants were found to affect user intention and behavior:

performance expectancy (PE), effort expectancy (EE), social influence (SE), and facilitating conditions (FC). These four main determinants were extracted from the eight above-mentioned major concepts/theories related to technology acceptance behavior proposed by Venkatesh et al. (Venkatesh, 2003). Each of the main determinants comprises concepts from multiple theories and models.

III RESEARCH METHODS

Based on the research motivation, purpose of the study, and analysis of the relevant literature, the study modified the Unified Theory of Acceptance and Use of Technology (UTAUT) framework of Venkatesh& Davis. Since there is no time difference in the study, the “experience” influences subjective norms on perceived usefulness and subjective. The specification deletes the disturbance variable of the use intention. The use of the LINE APP by parents and teachers in this study was not mandatory for parents or teachers. Therefore, the “voluntary” interference variable was also deleted.

In addition, in the process of cognitive tools, this study was mainly used to explore the issues within the school class organization. Therefore, only the “clarity of results” was retained to understand the user’s effectiveness in using the mobile community software LINE, and “output quality” was deleted. Taking the science and technology acceptance model as the theoretical basis, a research framework was drawn up to form the research framework of Figure 1 below.

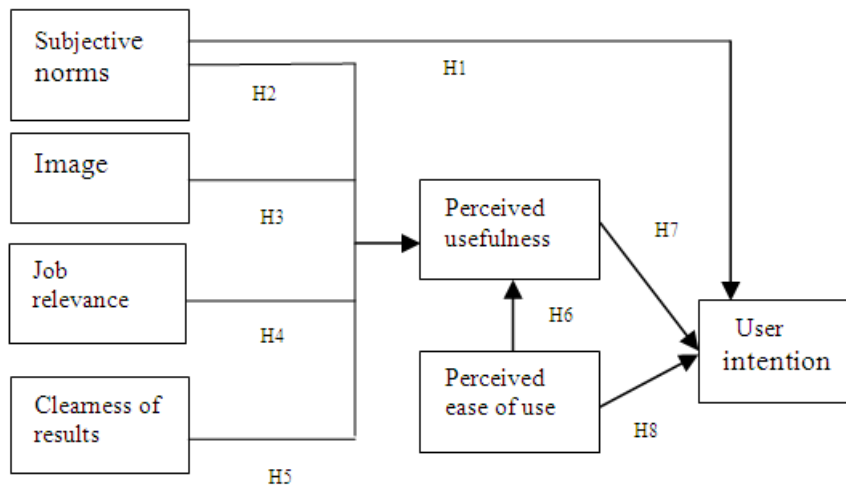


Figure 1:Research mode

3.1 Research Hypothesis

This study hopes to explore the relevance of different personal background variables to the use of perceptual and behavioral intentions for parental communication through LINE. For this reason, we established experimental hypotheses and use the Questionnaire Survey method for empirical analysis. The hypotheses to be examined are as follows:

H1: There is a significant positive correlation between the mobile device LINE users’ subjective norms and behavioral intentions.

H2: There is a significant positive correlation between the mobile device LINE users’ subjective norms and the perceived usefulness.

H3: There is a significant positive correlation between the mobile device LINE users’ image and the perceived usefulness.

H4: There is a significant positive correlation between the mobile device LINE users’ Job relevance and the perceived usefulness.

H5: There is a significant positive correlation between the mobile device LINE users’ clarity of the results and the perceived usefulness.

H6: There is a significant positive correlation between the mobile device LINE users’ Perceived ease of use and perceived usefulness.

H7: There is a significant positive correlation between the mobile device LINE users’ perceived usefulness and user intention.

H8: There is a significant positive correlation between the mobile device LINE users’ Perceived ease of use and user intention.

3.2 Data Analysis

In order to achieve the purpose of this study, literature research methods and questionnaire survey methods were used to conduct research. Based on the results of related literature research, the scale of this study was based on the perceptions of many past research and technology acceptance models that included the Scale of Davis invented in 1989 (Davis,1989). Usefulness and perceptual easiness scales; the technology self-efficacy scale adopted by Liaw(Liaw, 2008); the Attitude Scale used by Teo et al. (2008) in attitudes, and Agarwal and Karahanna (2000) published the use intention scale in terms of users' willingness to use. The above four scales have been used in the previous research papers on technology acceptance models, and a large number of them have been adopted by subsequent researchers (Teo& Zhou, 2014; Chang & Yang, 2013; Wang, et al., 2012; Park, Nam, & Cha, 2012; Teo& Schaik, 2009, etc.) Therefore, these measurement scales must have certain measurement reliability and validity. This research added the "willingness of preschool teachers to communicate with parents via the mobile device LINE" to the study purpose. The reliability of the questionnaire was based on the analysis of internal consistency reliability Cronbach's alpha. When the internal consistency reliability Cronbach's alpha coefficient is higher than .70, it shows good reliability.

3.3 Statistical analysis of questionnaire results

In this study, Kindergarten teachers sent a total of 220 teachers' questionnaires, and 200 valid questionnaires were returned. The effective questionnaire recovery rate was 90.9%.

The facets of this study's regression analysis include: Subjective Norm (SN), Image (IM), Job Relevance (JR), Outcome Definiteness (RD), the four external variables, and the Perceiving usefulness (PU), Perceiving the ease of use (PEU), the willingness to use (IU), and understanding the relevance of various aspects in Pearson's correlation analysis. The eight hypotheses were used for regression analysis. Table II shows the correlation coefficient between subjects' variables. From the data, it is found that when the significant level is 0.01 (two-tailed), each variable has a significant correlation.

3.4 Regression analysis statistics

This study uses statistical methods of SPSS regression analysis to test and verify the hypothesis has reached a significant level. The eight hypotheses are statistically analyzed using regression analysis. The results show that the hypotheses of the various studies have reached a significant level, and that the eight hypotheses in this study can be established. In addition to H6 hypotheses, Kaohsiung kindergarten teachers have a significant positive correlation between the perceived ease of use of the mobile device LINE and the perceived usefulness of the user. This assumes that the P value of .01** is significant, and the rest P values of .001. ***Significant, as shown in Table III

IV CONCLUSIONS AND SUGGESTIONS

In the environment where both early childhood education and science and technology education are gradually being taken seriously, teachers face the scene of education focused on children and parents, and they need to use various channels of communication to actively engage children with the help of modern technology. Parents communicate with each other and establish a harmonious parent-teacher relationship.

The research results are as follows:

1. There is a significant positive correlation between the subjective norms of the users of the LINE users and the behavioral intentions of the users of kindergarten and kindergarten teachers, indicating that the degree of influence of the teachers on the use of LINE in the same community group for parental communication. The higher the intent of their use of LINE is, the more they can perceive the effectiveness of using the LINE to communicate with the parent.
2. There is a significant positive correlation between the subjective norms of users of kindergarten teachers using mobile devices and the perceived usefulness of users. It indicates that the higher the influence of the teachers on the use of LINE in the same social group, the higher the degree of influence of the use of LINE.
3. There is a significant positive correlation between the image of the users of the LINE and the user's perceived usefulness. It means that the teachers who use the LINE in the same social group can enhance their work image, and believe that the use of LINE is more effective.
4. Kindergarten teachers use mobile devices LINE in the users work relevance and user perception usefulness has a significant positive correlation. It indicates that the teachers who use the LINE to parent-teacher communication are more relevant to kindergarten work, and believe that the use of LINE is more effective.
5. There is a significant positive correlation between the Clearness of results of LINE users of kindergarten teachers using mobile devices and the perceived usefulness of users. It indicates that when teachers use the LINE to communicate with the parent in the case of parent-teacher communication, they believe that the use of LINE is more effective.

6. There is a significant positive correlation between the perceived ease of use of LINE users and the perceived usefulness of users. It indicates that teachers are more likely to use the LINE for parent-teacher communication, and they believe that the use of LINE is more effective.

7. The perceived usefulness of LINE users of kindergarten teachers using mobile devices is significantly positively related to their intentions. It indicates that the more effective the preschool teacher's use of LINE is, the more effective the use of LINE is.

8. Kindergarten teachers use the mobile device LINE user's perception of ease of use and user behavior intentions have a significant positive association. It indicates that the easier the preschool teachers use the LINE to communicate with the teacher, the more they think that the use of the LINE will be used.

Therefore, the prediction model proposed by this study can effectively predict and explain the intention of teachers continuing to use the LINE for parent-teacher communication.

In addition, it was also found in the research results that especially teachers' positive attitude towards the use of LINE for parent-teacher communication, and that the use of LINE for parent-teacher communication is the most effective way. The influence of colleagues within the group should not be overlooked. It is recommended that co-workers can set up groups or other mechanisms to maintain close contact so that teachers and parents can have immediate problems when using the social media group tools to communicate problems. The mechanism of mutual discussion and remedy, mutual support among peers can also strengthen the willingness to use.

Secondly, it is recommended that teachers try to establish class group rules, communicate with parents, and formulate class group rules. For example, class group communication time, frequency of communication, and whether conversation content can only involve topics related to parenting, etc. Understanding each other's parents and reaching an unwritten consensus and mutual observance between parents and parents will not only allow them to maintain close contact with parents and understand the performance of children in their homes, but also communicate with each other about the growth of young children.

The results of this study also found that young teachers have higher self-efficacy in using social information platforms. They also believe that the use of it as a parent-teacher communication channel is relatively easy to use. This finding corresponds to past research results (Dutot, 2015&Sipior, 2011). Therefore, it is suggested that if the education authorities wish to successfully implement the LINE for parent-teacher communication, they can apply for more senior teacher information courses or LINE for parent-teacher communication and experience-sharing studies to encourage senior teachers to strengthen new technologies in parent-teacher communication.

Table I: Internal consistency reliability of pre-measurement table Cronbach's alpha coefficient

Scales/facets	Original author	OriginalCronbach's alpha	Research Cronbach's alpha
Subjective norms	Davis (1989)	.94	.95
Image	Davis (1989)	.92	.92
Job relevance	Teo et al.(2008)	.84	.902
Clearness of results	Liaw (2008)	.97	.95
Perceived ease of use	Davis (1989)	.98	.96
Perceived usefulness	Davis (1989)	.94	.95
User intention	Agarwal & Karahanna (2000)	.97	.95

Table II: Display Pearson correlation coefficients between subjects' variables

		Subjective norms	Image	Job relevance	Clearness of results	Perceived ease of use	Perceived usefulness	User intention
Subjective norms	Pearson correlation	1	.879**	.807**	.722**	.795**	.674**	.786**
	significant		.000	.000	.000	.000	.000	.000
	n	200	200	200	200	200	200	200
Image	Pearson correlation	.879**	1	.813**	.723**	.778**	.731**	.737**
	significant	.000		.000	.000	.000	.000	.000
	n	200	200	200	200	200	200	200

Job relevance	Pearson correlation	.807**	.813**	1	.819**	.851**	.739**	.815**
	significant	.000	.000		.000	.000	.000	.000
	n	200	200	200	200	200	200	200
Clearness of results	Pearson correlation	.722**	.723**	.819**	1	.865**	.705**	.770**
	significant	.000	.000	.000		.000	.000	.000
	n	200	200	200	200	200	200	200
Perceived ease of use	Pearson correlation	.795**	.778**	.851**	.865**	1	.803**	.877**
	significant	.000	.000	.000	.000		.000	.000
	n	200	200	200	200	200	200	200
Perceived usefulness	Pearson correlation	.674**	.731**	.739**	.705**	.803**	1	.865**
	significant	.000	.000	.000	.000	.000		.000
	n	200	200	200	200	200	200	200
User intention	Pearson correlation	.786**	.757**	.815**	.770**	.877**	.865**	1
	significant	.000	.000	.000	.000	.000	.000	
	n	200	200	200	200	200	200	200

** . At a significant level of 0.01 (two-tailed), the correlation is significant.

Table III: Hypotheses regression analysis results

Hypotheses	Self-variable	Dependent-variable	β	t	df	p	Supported or not
H1	Subjective norms	User intention	.786	17.888	1	<.001***	Supported
H2	Subjective norms	Perceived usefulness	.795	18.450	1	<.001***	Supported
H3	Image	Perceived usefulness	.778	17.436	1	<.001***	Supported
H4	Job relevance	Perceived usefulness	.851	22.801	1	<.001***	Supported
H5	Clearness of results	Perceived usefulness	.865	24.278	1	<.001***	Supported
H6	Perceived ease of use	Perceived usefulness	.803	18.957	1	<.01**	Supported
H7	Perceived usefulness	User intention	.877	25.664	1	<.001***	Supported
H8	Perceived ease of use	User intention	.865	24.232	1	<.001***	Supported

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