

Taiwanese EFL Learners' Willingness to Communicate in English in the Classroom: Impacts of Personality, Affect, Motivation, and Communication Confidence

Yi-Ti Lin¹ 

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Abstract This research investigates the variables influencing willingness to communicate (WTC) in English as a foreign language (EFL) context in Taiwan. A hypothesized EFL WTC model with six layers focusing on factors related to individual differences was proposed and the EFL WTC model was reinterpreted as a serial mediation model. Ten latent variables, including openness to experience, conscientiousness, agreeableness, extraversion, neuroticism, international posture, motivation, self-perceived communication confidence, EFL WTC, and frequency of using English in the classroom, were used to construct the model. Stratified random sampling was adopted and a questionnaire was administered to 701 university students in Taiwan. The results of structural equation modeling indicated that the EFL WTC model was an adequate fit to the Taiwanese context and validated the reinterpretation of the model as a serial mediation model. The findings supported the interrelationships among different variables and provided a different perspective on WTC in an EFL context.

Keywords Affect · Big Five personality traits · Communication confidence · EFL · Motivation · Willingness to communicate

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✉ Yi-Ti Lin
ytlm@mail.tku.edu.tw

¹ Department of English, Tamkang University, 151 Yingzhuang Rd., Tamsui Dist., New Taipei City 25137, Taiwan

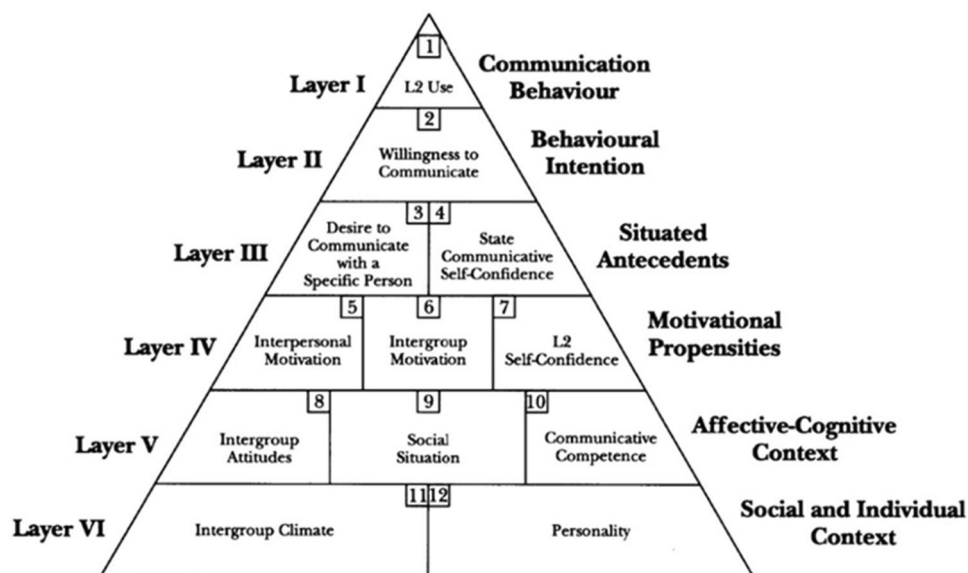
Introduction

Willingness to communicate (WTC) is considered an indicator for successful English learning outcomes, and other factors, such as personality factors, affective factors, motivation, and cognitive factors, are found to closely associate with WTC in English as a second (ESL) or a foreign language (EFL) contexts (Dörnyei 2005, 2006; MacIntyre et al. 1998). Studies on variables associated with WTC have received considerable attention over the years because WTC is believed to play an important role in actual communication in English (MacIntyre 1994; MacIntyre and Charos 1996; MacIntyre et al. 1998, 2001; Oz et al. 2015).

Earlier WTC research originated from MacIntyre et al.'s (1998) heuristic model of variables influencing WTC (Fig. 1) in ESL context. The model includes six layers of variables that have consequential impacts on one another. Social and individual context (layer six) concerns with the relatively stable personality traits and intergroup climate. Affective-cognitive context (layer five) deals with the intergroup attitudes, social situation, and communicative competence. Motivational propensities (layer four) include the partly trait and partly state variables, such as motivation and self-confidence. Situated antecedents (layer three) consist of situated factors, such as communicative confidence when using a second language (L2) and the desire to communicate with others in L2. Behavioral intention (layer two) concerns with WTC. On the top is communication behavior (layer one) as the ultimate goal of using L2.

Over the years, the concept of L2 WTC has extended into EFL contexts. Different paths relating different variables to L2/EFL WTC have been proposed and supported. Self-perceived communication competence (SPCC) and lack of communication apprehension are often found as the

Fig. 1 Heuristic model of variables influencing WTC (MacIntyre et al. 1998)



most immediate variables influencing WTC (MacIntyre and Charos 1996; Peng 2015; Peng and Woodrow 2010; Yashima 2002; Yashima et al. 2004); this association has not been challenged thus far. However, this is not the case with other variables, such as personality, affect, and motivation. The direct influences of distal variables, such as personality and attitudes on L2 WTC, are still inconclusive and researchers have pointed out the indirect impacts of distal variables through mediating variables, such as motivation and communication confidence (Ghonsooly et al. 2012; MacIntyre and Charos 1996; Yashima et al. 2004; Oz 2014; Oz et al. 2015).

Hence, the mediation effect of proximal variables between distal variables and L2 WTC has become more evident (MacIntyre and Charos 1996; Oz et al. 2015). For example, in MacIntyre and Charos's (1996) study, personality as a distal variable is found to indirectly influence L2 WTC and communication frequency through the mediation of language-related attitudes, motivation, and perceived competence. Oz et al. (2015) also pointed out that motivation does not directly influence EFL WTC but rather serves as a mediator between factors contributing to L2 WTC.

Nevertheless, previous research focuses on the association of and between variables on L2 WTC; the possibility of viewing the heuristic model of L2 WTC as a serial mediation model has yet to be explored. Therefore, adapting the heuristic model and considering the limited use of English on a daily basis, this research focuses on individual difference factors that may influence EFL WTC in the classroom and hypothesizes an EFL WTC model as a serial mediation model including six layers: individual context, affective context, motivational propensities,

situated antecedents, behavioral intention, and communication behavior. Another reason for conducting this research is that WTC research in Taiwanese context is still scant; current research contributes to the regional distinctions of the existing literature and provides pedagogical and research implications which may help to enhance English learning in similar EFL contexts.

Review of the Literature

Willingness to Communicate in English

Elaborating on the concept of WTC for first language communication, MacIntyre et al. (1998) proposed the heuristic model of L2 WTC; subsequent models of WTC have been tested by other researchers. Previous research has taken different perspectives on factors influencing WTC, with some focusing on personality traits and academic achievement (Oz 2014; Oz et al. 2015) and increased competence with age and anxiety level of genders (Baker and MacIntyre 2000; MacIntyre et al. 2002). Some integrated the affective aspects of the learning context to include international posture as the antecedent variable of the WTC model (Munezane 2013; Peng 2015; Yashima 2002; Yashima et al. 2004), and the situational aspects to differentiate WTC in and out of classrooms (Peng 2013, 2015; Peng and Woodrow 2010).

While different WTC models based on literature or exploration have been tested and validated, most were selective in the variables influencing WTC. However, as an inseparable and integral part of an individual's learning process, special attention should be paid to both trait and

state variables because they complement one another in determining an individual's L2 WTC and language learning outcome (MacIntyre et al. 1999; Xie 2011).

Personality Traits

Research has shown that personality factors have significant impacts on various learning-related behaviors (Costa and McCrae 1992; Gregersen and MacIntyre 2014; MacIntyre and Charos 1996). The Big Five personality traits (Costa and McCrae 1992) are widely used to describe human personalities in five broad dimensions: extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience. Different personality traits associate with different aspects of learning. MacIntyre and Charos (1996) have identified the impact of personality traits on language learning and suggested that extraversion leads to a decrease in language anxiety; openness to experience may be helpful for the learner to feel more confident; and agreeable people are more willing to interact and communicate with people using L2. Oz (2014) found that extraversion, agreeableness, and openness to experience were significant predictors of WTC in English.

As for other research, personality traits are not always directly associated with WTC, but have an indirect impact on variables influencing WTC. Ghonsooly et al. (2012) pointed out that openness to experience influences international posture, which then influences learners' WTC. In the heuristic model of WTC (MacIntyre et al. 1998), personality traits are treated as antecedent factors on the bottom layer. Research found that openness to experience and conscientiousness were positively associated with intrinsic motivation, and extraversion, conscientiousness, and neuroticism were related to extrinsic achievement motivation (Komarraju and Karau 2005; Komarraju et al. 2009; Hart et al. 2007). These findings confirmed that personality may have direct or indirect association with WTC, and in many cases, the impacts of personality on WTC are mediated through attitudes, motivation, communication competence, and a lack of communication apprehension. As an indispensable part of language learning, Big Five personality traits are the most distal variable in the individual context (layer six).

International Posture

L2 WTC research often refers to integrativeness and attitudes on the learning situation as affective variables influencing L2 WTC (MacIntyre et al. 2002; MacIntyre and Charos 1996). From Gardner's (1985) socio-educational model, integrativeness and attitudes toward the learning situation effectively explained learners' desire to be part of the target language community. However, in an EFL context where English learning is used mostly in the

classroom, it is unlikely to develop integrativeness toward native English speakers and their communities (MacIntyre 1994; Peng and Woodrow 2010; Yashima 2002).

In search of a more appropriate variable for the EFL context, Yashima (2002) proposed international posture, which includes interest in foreign or international affairs, willingness to go overseas to stay or work, and a readiness to interact with intercultural partners, as an affective variable influencing EFL learners' motivation and communication behavior. International posture has also been tested by subsequent research and shown to be a significant affective factor influencing EFL WTC (Ghonsooly et al. 2012; Oz et al. 2015; Peng 2015; Yashima 2002). Therefore, this research adapted international posture to represent affective context (layer five).

Intrinsic and Extrinsic Motivation

Motivation is an important factor in language learning, but people have different motivations for learning English. Some are motivated because they want to become part of the community (integrative); some are motivated because they foresee the rewards of learning the language (extrinsic); and others are motivated for self-satisfaction (intrinsic). Similarly, different motivational factors have been adapted in L2 WTC research for specific purposes, such as integrative motivation (Gardner and Lambert 1959, 1972; MacIntyre et al. 2002; Munezane 2013), motivational intensity and desire to study L2 (Ghonsooly et al. 2012; Oz et al. 2015; Yashima et al. 2004), intrinsic and extrinsic motivation (Peng and Woodrow 2010), instrumental orientation and ideal L2 self (Oz et al. 2015), and ideal L2 self and ought-to L2 self (Munezane 2013).

In an EFL context where English is confined mostly to the classroom and the purpose of learning English is mainly for academic and career advancement, the theoretical framework using intrinsic and extrinsic motivation seems more appropriate (Wen and Clément 2003; Peng and Woodrow 2010). Based on self-determination theory, motivation can be described as a continuum, with amotivation at one end, intrinsic motivation at the other, and extrinsic motivation falling in the middle (Deci and Ryan 1985; Ryan and Deci 2000; Deci et al. 2001; Noels 2001). Later, Noels et al. (2000) proposed that to sustain learning, besides learning for self-pleasure (intrinsic motivation), learners must be persuaded that learning the language has some personal importance to them (extrinsic motivation). As a result, an individual possesses both intrinsic and extrinsic motivations when learning English. Peng and Woodrow (2010) also used intrinsic and extrinsic motivation as a set of collective motivation in their WTC research in Chinese context. For similar reasons, this research also focuses on the micro perspective of EFL WTC in the

classroom, and thus intrinsic and extrinsic motivations are used to represent motivational propensities (layer four).

Self-perceived Communication Confidence in English

Communication competence and communication apprehension are two variables most closely related to L2 WTC (Baker and MacIntyre 2000; MacIntyre and Charos 1996; MacIntyre et al. 1998; McCroskey and Richmond 1987). Some researchers view communication competence and apprehension as separate variables affecting L2 WTC (MacIntyre 1994; MacIntyre et al. 2002; Oz et al. 2015), while others view the combination of perceived competence and lack of communication apprehension as a higher order construct called self-perceived communication confidence (SPCC) in using L2 (MacIntyre and Charos 1996; Peng and Woodrow 2010; Wen and Clément 2003; Yashima 2002; Yashima et al. 2004). This research adapted SPCC in English as a combined construct including self-perceived language competence (SPLC) and self-perceived communication apprehension (SPCA).

SPLC is one of the crucial determinants of L2 WTC; it is how an individual assesses his English ability and the social skills he possesses to successfully convey and exchange messages with others (MacIntyre et al. 1998; McCroskey and Richmond 1987). On the other hand, SPCA is a feeling of anxiousness when communicating in English. Communication apprehension is often caused by learners' inadequacy to successfully convey and express their thoughts (Horwitz et al. 1986; MacIntyre and Gardner 1989). An ideal state for EFL WTC would be to have a higher level of SPLC and a lower level of SPCA as situated antecedents (layer three).

Frequency of Using English in the Classroom

The ultimate purpose of learning English would be to use English as a means of communication. In an EFL context where the frequency of using English on a daily bases is quite low, English is mostly confined to classroom settings. Previous research has pointed out WTC in different contexts, for example, in and out of the classroom, and with different interlocutors (Fushino 2010; Peng 2013, 2015; Peng and Woodrow 2010; Yashima et al. 2004). WTC shows an individual's intention in communicating in English and the ultimate goal is often measured by the frequency of using English (MacIntyre et al. 1998; MacIntyre and Charos 1996). Therefore, considering the EFL context, the frequency of using English in the classroom is on the top layer of the hypothesized EFL WTC model.

Methodology

Participants

A total of 701 EFL learners (male, $n = 381$, 54.4%; female, $n = 320$, 45.6%) from a comprehensive university in northern Taiwan participated in this study. The participants were undergraduates from 18 to 24 years old, studying at the College of Liberal Arts, Science, Engineering, Business and Management, Foreign Languages and Literatures, International Studies, Education, and Global Development. They had at least 8 years of formal English education prior to entering this university and two required English courses, freshman English and sophomore English in this university. The students are required to take an English exit exam to show that they have least an intermediate level of English proficiency. The university is the third largest university, and as a second-tier university, the student population may represent average-achieving university students in Taiwan. Therefore, stratified random sampling was used to ensure that participant selection was appropriate for the research purpose.

Instruments

The instrument used in this study was a questionnaire consisting of ten latent variables: agreeableness, openness to experience, conscientiousness, extroversion, neuroticism, international posture, motivation, SPCC, EFL WTC, and frequency of using English in the classroom. The variables representing each layer were adapted and modified from previous research to suit the EFL context. The items were on a six-point Likert scale and translated into Chinese. The selection and number of items for each variable were based on literature and confirmatory factor analysis (CFA) results.

Agreeableness

Three items ($\alpha = 0.76$) were chosen from the agreeableness dimension of the Big Five personality model (Goldberg 1990). Agreeableness assesses how cooperative, helpful, and trusting an individual is toward other people.

Openness to Experience

Three items ($\alpha = 0.69$) were chosen from the openness to experience dimension of the Big Five personality model (Goldberg 1990). Openness to experience assesses an individual's degree of curiosity, imagination, and flexibility.

Conscientiousness

Three items ($\alpha = 0.88$) were chosen from the conscientiousness dimension of the Big Five personality model (Goldberg 1990). Conscientiousness refers to how hard-working and determined an individual is toward his/her goals.

Extraversion

Three items ($\alpha = 0.90$) were chosen from the extraversion dimension of the Big Five personality model (Goldberg 1990). Extraversion refers to how outgoing and responsive an individual is toward social interactions.

Neuroticism

Three items ($\alpha = 0.87$) were chosen from the neuroticism dimension of the Big Five personality model (Goldberg 1990). Neuroticism refers to how emotionally unstable and anxious an individual is when facing challenges.

International Posture

Three items ($\alpha = 0.94$) were adapted from Yashima's (2002) study to measure an individual's attitude toward communicating and interacting with foreigners in English.

Motivation

Two subscales of motivation (Noels et al. 2000)—intrinsic motivation (three items, $\alpha = 0.94$) and extrinsic motivation (three items, $\alpha = 0.84$)—were included. Intrinsic motivation measures learners' sense of satisfaction and extrinsic motivation measures the impacts of external regulation on learners' motivation in learning English.

Self-perceived Communication Confidence

SPCC (MacIntyre and Charos 1996) included two subscales: SPLC (three items, $\alpha = 0.89$) and SPCA (three items, $\alpha = 0.91$). SPLC measures communication competence and SPCA measures learners' communication apprehension in English.

EFL WTC

Four items ($\alpha = 0.95$) measuring EFL WTC (McCroskey 1992) were adapted to assess EFL learners' WTC in four communication contexts: public speaking, talking in meetings, talking in small groups, and talking in dyads.

Frequency of Using English in the Classroom

Three items ($\alpha = 0.81$) were adapted from Yashima et al.'s (2004) frequency of using English inside the classroom.

Hypothesized Model

Based on related WTC literature, a hypothesized EFL WTC model with six layers of variables was proposed as a serial mediation model (Fig. 2). The EFL WTC model focuses on factors of individual differences and takes out the social interaction elements in the heuristic model to better represent learners in this EFL context. Variable representing each layer have been tested in previous research and thus adapted according to the literature. The serial mediation path goes from personality traits to international posture, international posture to motivation, motivation to SPCC, SPCC to EFL WTC, and finally EFL WTC to frequency of using English in the classroom. Two research questions are as follows:

1. What are the interrelationships among personality traits, international posture, motivation, SPCC, EFL WTC, and frequency of using English in the classroom?
2. Is the hypothesized EFL WTC model, as a serial mediation model, a good fit for Taiwanese university students?

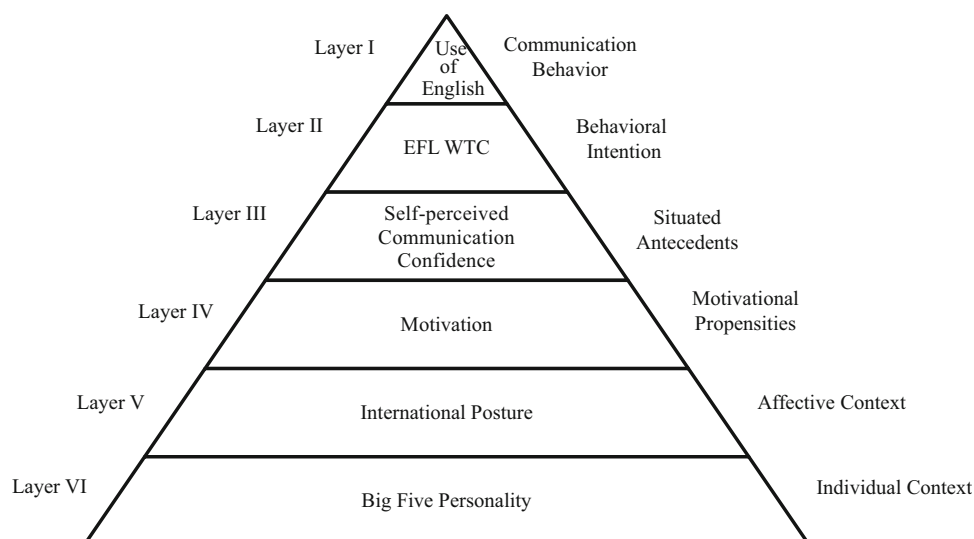
Procedures

A questionnaire was administered to the participants consisting of basic demographic data and ten variables measuring Big Five personality traits, international posture, intrinsic motivation, extrinsic motivation, SPLC, SPCA, EFL WTC, and frequency of using English in the classroom. The questionnaire was distributed to the participants by their English instructors and completed in class. Participation was voluntary and optional; the decision to participate did not affect their course grades. The identities of the participants remained confidential.

Data Analysis

Descriptive statistics including means, standard deviations, internal consistency, and correlations among variables were calculated using SPSS 21 program. Composite reliability (CR) and average variance extracted (AVE) were carried out for the reliability and the validity of the measurement model. SEM was estimated using the maximum-likelihood method in the Amos 20.0 software program (Arbuckle 2011). The fit of the model was assessed with non-significant χ^2 statistics, CFI, GFI, TLI, NFI higher than

Fig. 2 Hypothesized EFL WTC model



0.90, and RMSEA less than 0.08 to show a good fit to the data (Anderson and Gerbing 1998; Byrne 1994, 1998; Hu and Bentler 1999; Tucker and Lewis 1973). However, non-significant χ^2 statistics are unlikely considering the large number of participants; thus, if the χ^2 is significant, the other indices are used to determine the goodness-of-fit.

Results

Analyses of Correlations Among the Variables

The means, standard deviations, and Pearson correlation coefficients among the variables showed that the majority of items were significantly correlated to each other ($p < 0.05$), except for the insignificant correlations between neuroticism and other variables (Table 1).

Testing the Measurement Model

The measurement model was first tested using CFA. The results indicated that the latent variables of the hypothesized EFL WTC model were adequate (Table 2). CR was carried out to measure the degree to which the measured variables reflect the common latent variable. The standardized loadings of the measured variables on the latent variables were highly reliable (> 0.70) and statistically significant ($p < 0.001$), except for SPCC (CR = 0.59, $p < 0.001$), which is still significant and adequate. AVE for all latent variables were appropriate to the standards of acceptable values suggested (Fornell and Larcker 1981; Hair et al. 2010). Overall, the results showed a satisfactory goodness-of-fit to the data and suggested that the hypothesized model was a reasonable representation of a serial mediation of EFL WTC.

Testing the Structural Model

The hypothesized model was tested using SEM and showed a good fit to the data (Table 3). The χ^2 was 1198.77, $p = 0.00$ (CMIN; degrees of freedom (df) = 353, $N = 701$); however, as mentioned earlier, with such a large number of participants, a non-significant χ^2 is unlikely. Thus, GFI = 0.90, CFI = 0.94, TLI = 0.93, NFI = 0.92, and RMSEA = 0.060 are considered in determining the good fit of the model. The SEM (Fig. 3) indicated a serial mediation path from agreeableness to international posture (regression coefficient = 0.17), openness to experience to international posture (regression coefficient = 0.40), and conscientiousness to international posture (regression coefficient = 0.18); from international posture to motivation (regression coefficient = 0.83); from motivation to SPCC (regression coefficient = 0.79); from SPCC to EFL WTC (regression coefficient = 0.92); and from EFL WTC to frequency of EFL use (regression coefficient = 0.83). All the regression weights and squared multiple correlations were statistically significant. However, extraversion and neuroticism were not significant predictors of international posture.

The three personality factors—agreeableness, openness to experience, and conscientiousness—were moderately correlated to one another, but their influences on international posture vary, with openness to experience as a more influential variable than that of agreeableness and conscientiousness. For motivation, intrinsic motivation (standardized regression weight = 0.87) contributed more than extrinsic motivation (standardized regression weight = 0.70). SPCC received different degrees of contribution from SPLC (standardized regression weight = 0.81) and SPCA (standardized regression weight = -0.46). The results revealed that SPLC contributed more to SPCC than

Table 1 Means, standard deviations, and zero-order correlation matrix ($N = 701$)

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Agree1	4.51	0.94	1													
2. Agree2	4.40	0.84	0.62**	1												
3. Agree3	4.85	0.88	0.56**	0.49**	1											
4. Open1	4.52	0.96	0.33**	0.34**	0.38**	1										
5. Open2	4.23	1.17	0.24**	0.24**	0.25**	0.47**	1									
6. Open3	4.67	1.00	0.32**	0.35**	0.37**	0.46**	0.37**	1								
7. Cons1	4.10	1.10	0.22**	0.23**	0.19**	0.29**	0.17**	0.25**	1							
8. Cons2	4.02	1.04	0.27**	0.28**	0.23**	0.31**	0.16**	0.27**	0.79**	1						
9. Cons3	4.18	0.98	0.30**	0.34**	0.29**	0.31**	0.19**	0.26**	0.69**	0.69**	1					
10. Extrav1	4.11	1.08	0.46**	0.44**	0.31**	0.24**	0.14**	0.34**	0.30**	0.33**	0.33**	1				
11. Extrav2	4.30	1.15	0.41**	0.43**	0.28**	0.24**	0.15**	0.35**	0.22**	0.25**	0.28**	0.68**	1			
12. Extrav3	4.10	1.07	0.46**	0.48**	0.31**	0.27**	0.17**	0.38**	0.30**	0.33**	0.33**	0.87**	0.72**	1		
13. Neuro1	3.05	1.35	- 0.12**	- 0.14**	- 0.02	0.04	- 0.01	- 0.09*	- 0.13**	- 0.15**	- 0.16**	- 0.29**	- 0.25**	- 0.31**	1	
14. Neuro2	3.36	1.26	- 0.05	- 0.07*	0.05	0.14**	0.10**	- 0.03	0.00	- 0.03	- 0.08*	- 0.24**	- 0.23**	- 0.24**	0.69**	1
15. Neuro3	3.04	1.20	- 0.10**	- 0.14**	- 0.04	0.08*	0.10**	- 0.07*	- 0.07*	- 0.07*	- 0.10**	- 0.25**	- 0.21**	- 0.27**	0.72**	0.72**
16. IP1	4.24	1.31	0.31**	0.32**	0.27**	0.39**	0.30**	0.31**	0.29**	0.31**	0.32**	0.27**	0.27**	0.27**	- 0.05	0.07*
17. IP2	3.98	1.40	0.26**	0.30**	0.18**	0.32**	0.26**	0.25**	0.28**	0.32**	0.29**	0.24**	0.25**	0.25**	- 0.06	0.09*
18. IP3	4.10	1.39	0.30**	0.32**	0.23**	0.35**	0.26**	0.28**	0.27**	0.31**	0.31**	0.29**	0.30**	0.29**	- 0.09*	0.04
19. Intrinsic	4.45	1.24	0.32**	0.37**	0.35**	0.40**	0.30**	0.36**	0.32**	0.32**	0.34**	0.29**	0.29**	0.28**	- 0.02	0.05
20. Extrinsic	4.91	0.90	0.30**	0.34**	0.34**	0.35**	0.20**	0.32**	0.31**	0.30**	0.30**	0.24**	0.26**	0.26**	0.04	0.11**
21. SPLC	3.80	1.15	0.28**	0.35**	0.21**	0.35**	0.24**	0.27**	0.32**	0.34**	0.34**	0.25**	0.24**	0.24**	- 0.11**	- 0.01
22. SPCA	3.35	1.28	- 0.08*	- 0.15**	- 0.04	- 0.10**	- 0.10**	- 0.14**	- 0.11**	- 0.09**	- 0.14**	- 0.11**	- 0.15**	- 0.10**	0.30**	0.26**
23. WTC1	3.49	1.33	0.21**	0.28**	0.18**	0.30**	0.22**	0.22**	0.27**	0.30**	0.29**	0.27**	0.23**	0.25**	- 0.10**	0.00
24. WTC2	3.55	1.36	0.22**	0.28**	0.18**	0.31**	0.23**	0.24**	0.23**	0.26**	0.25**	0.24**	0.23**	0.24**	- 0.08*	- 0.01
25. WTC3	3.47	1.36	0.19**	0.26**	0.16**	0.30**	0.22**	0.24**	0.22**	0.28**	0.27**	0.24**	0.24**	0.24**	- 0.08*	0.01
26. WTC4	3.52	1.45	0.21**	0.27**	0.20**	0.29**	0.24**	0.23**	0.20**	0.23**	0.24**	0.19**	0.22**	0.20**	- 0.08*	0.02
27. EngUse1	3.52	1.17	0.22**	0.26**	0.21**	0.33***	0.24**	0.21**	0.37**	0.36**	0.34**	0.25**	0.18**	0.24**	- 0.06	0.05
28. EngUse2	3.42	1.34	0.17**	0.23**	0.16**	0.27**	0.21**	0.16**	0.29**	0.34**	0.30**	0.21**	0.14**	0.21**	- 0.02	0.08*
29. EngUse3	3.78	1.36	0.14**	0.22**	0.16**	0.33**	0.23**	0.22**	0.28**	0.29**	0.25**	0.19**	0.19**	0.19**	- 0.05	0.06

Table 1 continued

	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1. Agree1															
2. Agree2															
3. Agree3															
4. Open1															
5. Open2															
6. Open3															
7. Cons1															
8. Cons2															
9. Cons3															
10. Extrav1															
11. Extrav2															
12. Extrav3															
13. Neuro1															
14. Neuro2															
15. Neuro3	1														
16. IP1	- 0.01	1													
17. IP2	0.01	0.81**	1												
18. IP3	- 0.03	0.86**	0.87**	1											
19. Intrinsic	- 0.01	0.66**	0.60**	0.61**	1										
20. Extrinsic	0.07	0.48**	0.43**	0.44**	0.69**	1									
21. SPLC	- 0.03	0.60**	0.60**	0.61**	0.53**	0.40**	1								
22. SPCA	0.32	- 0.33**	- 0.32**	- 0.37**	- 0.21**	- 0.11**	- 0.36**	1							
23. WTC1	- 0.08	0.54**	0.55**	0.57**	0.53**	0.35**	0.66**	- 0.40**	1						
24. WTC2	- 0.06	0.55**	0.56**	0.57**	0.52**	0.35**	0.64**	- 0.44**	0.87**	1					
25. WTC3	- 0.06	0.54**	0.56**	0.57**	0.51**	0.31**	0.61**	- 0.44**	0.84**	0.92**	1				
26. WTC4	- 0.02	0.57**	0.57**	0.59**	0.53**	0.35**	0.65**	- 0.38**	0.78**	0.80**	0.78**	1			
27. EngUse1	0.01	0.54**	0.54**	0.54**	0.53**	0.39**	0.52**	- 0.19**	0.54**	0.49**	0.49**	0.50**	1		
28. EngUse2	0.02	0.52**	0.52**	0.54**	0.48**	0.33**	0.57**	- 0.26**	0.55**	0.52**	0.52**	0.49**	0.62**	1	
29. EngUse3	0.01	0.60**	0.57**	0.60**	0.60**	0.37**	0.62**	- 0.31**	0.57**	0.53**	0.54**	0.57**	0.56**	0.59**	1

p* < 0.05, *p* < 0.01

Table 2 Factor loadings for the measurement model ($N = 701$)

Factor and item	Standardized factor loading	S.E.	t	AVE	CR
Agreeableness				0.56	0.79
Agree 1	0.81				
Agree 2	0.77	0.07	15.98		
Agree 3	0.66	0.08	16.30		
Openness to experience				0.44	0.70
Open 1	0.76				
Open 2	0.58	0.09	11.68		
Open 3	0.63	0.09	13.44		
Conscientiousness				0.72	0.89
Cons 1	0.88				
Cons 2	0.89	0.05	24.43		
Cons 3	0.78	0.05	24.19		
Extraversion				0.77	0.91
Extrav 1	0.91				
Extrav 2	0.76	0.03	26.18		
Extrav 3	0.95	0.03	38.02		
Neuroticism				0.71	0.88
Neurot 1	0.83				
Neurot 2	0.83	0.04	24.61		
Neurot 3	0.87	0.04	24.60		
International posture				0.82	0.93
IP 1	0.94				
IP 2	0.86	0.03	31.32		
IP 3	0.91	0.034	36.12		
Motivation				0.62	0.77
Intrinsic	0.87				
Extrinsic	0.70	0.03	19.49		
SPEFLCC				0.43	0.59
SPLC	0.81				
SPCA	-0.46	0.06	-11.59		
EFL WTC				0.79	0.94
WTC 1	0.91				
WTC 2	0.90	0.03	39.88		
WTC 3	0.89	0.03	35.50		
WTC 4	0.86	0.03	32.92		
Freq of English use				0.56	0.79
EngUse 1	0.71				
EngUse 2	0.74	0.06	19.08		
EngUse 3	0.79	0.08	16.97		

All standardized factor loadings are significant ($p < 0.001$)

Table 3 Model fit indices

Structural Model	χ^2	df	χ^2/df	GFI (> 0.90)	CFI (> 0.90)	TLI (> 0.90)	NFI (> 0.90)	RMSEA (< 0.08)
	1198.77***	353	3.40	0.90	0.94	0.93	0.92	0.060

*** $p < 0.001$

that of SPCA. The final path from EFC WTC to frequency of EFL use in the classroom was significant, showing EFL WTC as a strong predictor of the frequency of using English in the classroom. The EFL WTC model as a serial mediation model showed a good fit to the data for Taiwanese university students.

Discussion

The results of the hypothesized EFL WTC model indicated that the variables and the paths were adequately established. The results echoed previous research in validating the associations of the variables (Ghonsooly et al. 2012; MacIntyre and Charos 1996; MacIntyre et al. 1998; Oz et al. 2015; Peng 2015; Yashima 2002; Yashima et al. 2004). Moreover, our EFL WTC model extended previous models by including six layers of variables and validated the reinterpretation of the model as a serial mediation model.

Agreeableness, conscientiousness, and openness to experience as positive predictors of international posture were in line with previous research. Openness to experience has a direct influence on international posture (Yashima 2002; Yashima et al. 2004; Ghonsoolye et al. 2012) and an indirect influence on EFL WTC through the mediation of attitude (Ghonsoolye et al. 2012). Those holding an openness to new experiences tend to have a high interest in international affairs and a readiness to interact with foreigners. Thus, they may possess a positive attitude on engaging in new and unique intercultural experiences, making friends with foreigners, and living and working abroad in the future.

People who are conscientiousness are more organized and self-disciplined; they may have a better cognitive processing of learning a foreign language. This is similar to MacIntyre and Charos's (1996) finding that indicated a path from conscientiousness to attitudes toward language learning. It is suggested that devising appropriate steps and constructing a well-structured learning environment would lead to positive attitudes on the learning situation and eventually to successful EFL WTC through mediating variables such as motivation and communication confidence.

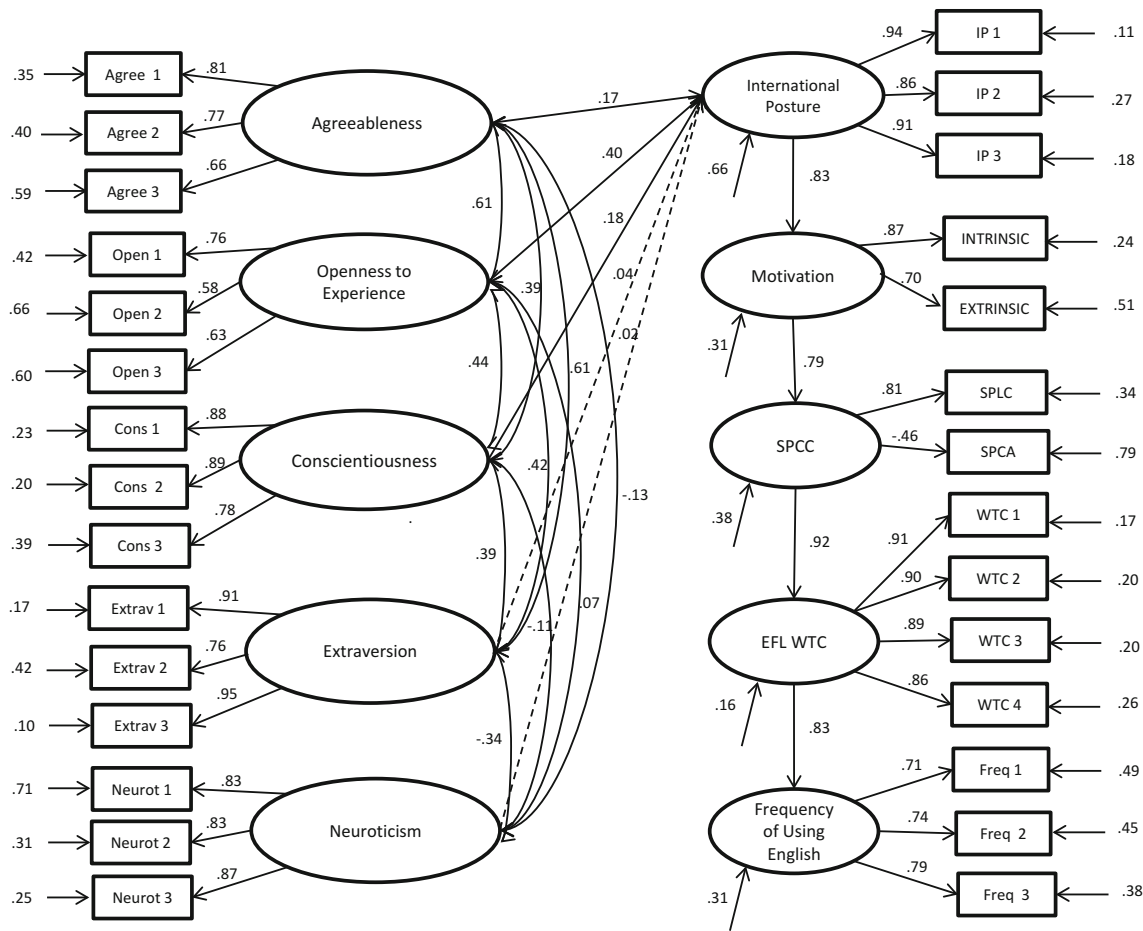


Fig. 3 Structural model for EFL WTC

In accordance with MacIntyre and Charos’s (1996) finding, agreeable people are friendly, helpful, and trusting. They care about others’ feelings and prefer to keep harmony with other people; they are also more likely to have positive interaction with members of an L2 group. This is also true for the EFL context, where agreeable individuals are in favor of interacting with foreigners and offering assistance whenever possible.

The strong association of international posture to motivation pointed to the possibility that EFL learners are more aware of the existence of an international community and relating themselves to foreigners in this international community can be realized through communication in English (Oz et al. 2015; Yashima et al. 2004). As mentioned by Yashima et al. (2004), those who are internationally oriented tended to be more motivated to study the L2 even though they do not have the opportunity of using English on a daily basis. This is also the case in an EFL context where learners’ use of English is confined mostly in the classroom, they still have the motivation to learn English once they develop an international perspective.

The results replicated previous research (Peng and Woodrow 2010; Yashima 2002; Yashima et al. 2004) in finding motivation to be an important factor that directly influences communication confidence and indirectly influences EFL WTC. This suggests that being motivated does not equal readiness to communicate in English. EFL learners need confidence in their ability to interact in English; a lack of anxiety is also an important influential factor (Peng and Woodrow 2010).

Of the two indicator variables, extrinsic motivation ($M = 4.91$, $SD = 0.75$) was found to be a stronger motivator than intrinsic motivation ($M = 4.45$, $SD = 1.25$). A stronger extrinsic motivation for EFL learners is not surprising as previous research has shown (Noels et al. 2000) because the purpose of studying English is mostly for academic achievement and career advancement. Nevertheless, intrinsic motivation contributes more to the overall motivation construct (Deci et al. 2001). This implies the key to constituting strong motivation in learning English still relies heavily on internalizing the belief that learning English is beneficial (extrinsic motivation) and transforming that belief into a self-determined action (intrinsic

motivation). This finding also echoes previous research (Noels et al. 2000; Peng 2015), which pointed out that it is important to relate instrumental rewards to personal importance; thus, for identified regulation, extrinsic motivation may be internalized and become self-driven.

A high level of motivation will result in a high SPCC because if an individual is motivated in studying English, then the efforts put forth would possibly enhance his language confidence (Peng and Woodrow 2010; Yashima et al. 2004). Learners feel it is important to make an effort to learn English for academic purposes, and because success or failure in learning English is closely related to their goals, such a belief will be internalized and transferred to the behavior of investing time and energy in studying English. When they study hard, they have more confidence in their English abilities and feel less anxious about communicating in English.

For SPCC, the pattern with a positive contribution of SPLC and a negative contribution of SPCC is also found in previous research (Fushino 2010; Wen and Clément 2003; Yashima et al. 2004). The negative impact of apprehension brings to light its negative influences and the possible inhibition of communication in English. Similar to the findings from previous research, the most ideal state would be to have a high SPLC and a lack of SPCA (Wen and Clément 2003; MacIntyre and Charos 1996; Peng and Woodrow 2010; Yashima 2002; Yashima et al. 2004).

The results also revealed that SPCC is significantly related to EFL WTC as a direct antecedent. This is in line with the results from previous research suggesting communication confidence as an antecedent variable of L2 WTC (Fushino 2010; Peng and Woodrow 2010; Yashima 2002). If an individual perceives himself as a competent speaker with a low degree of apprehension when using English as a means of communication, then he may be more willing to use English to communicate.

The finding of a positive path from EFL WTC to frequency of using English in the classroom confirmed previous research in proposing WTC as the direct antecedent in predicting the frequency of using English (MacIntyre et al. 1998; Peng 2015; Yashima et al. 2004). Individuals with a higher EFL WTC may be more motivated and confident, with higher SPLC and lower SPCA, and may have established a stronger tendency to use English for communication in the classroom.

Because this research focused on the individual differences of EFL WTC in the classroom and intended to test the serial mediation effect of the EFL WTC model, the layers were modified to individual aspects with only one variable for each layer and other social interaction factors that may account for EFL WTC were excluded. It is suggested that future studies take potential factors into consideration and formulate models with different paths. In

addition, the findings from this research are confined to EFL learners with intermediate English proficiency levels in Taiwan and cannot be generalized to other contexts. Future research on the influences of WTC on the actual use of English and in different EFL contexts is suggested for further development.

Conclusion

This research provides empirical support to the heuristic model and validated the mediation effect to account for EFL WTC. The six-layered EFL WTC model focusing on individual differences partly adapts the heuristic model to show Taiwanese EFL learners' WTC in the classroom. The findings of this research validated the mediation effects of affective factors, motivation, language competence, and communication anxiety on EFL WTC that have been raised but have not been tested by previous researchers.

Educational practitioners should be aware that although personality traits may not have direct influence on WTC, learners with positive attitudes, motivation, and communication confidence can certainly enhance their intention of using English. Hence, educators can create learning environments that stimulate learning behavior and reinforce learners' flexibility, persistence, cooperativeness, and self-discipline in learning English. Then, with positive attitudes and strong motivation, learners can develop better language competence and be confident and willing to use English as a means of communication. Also, cultivating an international posture that allows learners to envision an international community where they can actually use English for communication is essential for achieving the ultimate goal of using English to communicate with people from different language and cultural backgrounds (MacIntyre et al. 1998; Yashima 2002).

Enhancing learners' WTC is an indispensable effort for practitioners and researchers in pursuit of effective pedagogies and theorizing EFL WTC and this research serves as a bud in the flourishing array of L2 WTC for the other potential mediating factors that may account for successful authentic English communication.

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