The Role of Motivation on Student Plans to Further Study Chinese

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Abstract

The data used in this study came from 1,226 grade 6 - undergraduate students who participated in STARTALK Chinese programs in the summer of 2014. These Chinese language learners came from 47 states across the U.S., most of whom were middle school and high school students. Student responses to a survey administered at the end of STARTALK programs were analyzed using multiple regression analyses. The findings were as follows: a) Among all the student characteristics included in this study (i.e., gender, grade level, prior experience of learning Chinese, student perception of instructional practices, student motivation), student motivation was the strongest predictor for their plans to further study Chinese. b) Student motivation fully mediated the relationship between target language use and student plans to further study Chinese. c) Student motivation partially mediated the association between comprehensible input and student plans to further study Chinese.

Introduction

Student motivation plays an important role in student learning, especially for language learning. Abundant research indicates that motivation is significantly and positively associated with student academic achievement (Deci & Ryan, 2000; Gottfried, 1985, 1990; Ryan & Deci, 2009; Wigfield & Eccles, 2000; Wigfield, Eccles, Fredricks, Simpkins, & Schiefele, 2015). Gottfried (1985, 1990) found that student motivation significantly contributed to student scores in standardized achievement tests and student perception of academic competence. This held true for students ranging from grade four through grade eight and across the domains of reading, math, science, and social studies. Therefore, students with high motivation were likely to achieve better scores and see themselves as competent, whereas students with lower motivation were likely to end up with poor scores on achievement tests and see themselves as less competent.

In a similar vein, motivation has been well documented as an important factor in language learning (Csizer & Dörnyei, 2005; Dörnyei, 2001; Gardner, 1985; Masgoret & Gardner, 2003; Ushioda & Dörnyei, 2012). In a meta-analysis of over seventy empirical studies on the association between motivation and second language learning, Masgoret and Gardner (2003) found that motivation had a large effect size on student second language achievement.

Most of the existing research on language learning motivation, however, has mainly focused on students learning commonly taught languages, such as Spanish, French, German or English as a second/foreign language. Little is known about the role of motivation for students learning Chinese as a second/foreign language in the U.S. With the rapid economic growth in China, student interest in learning Chinese is surging in the U.S. As a result, more primary and secondary schools are offering Chinese classes. According to the 2011 Census Bureau report (Ryan, 2013), Chinese is the third most spoken language in the U.S. Since Chinese is a relatively difficult language for most language learners, given what researchers know about motivation's relationship with language

learning, motivation may play a particularly important role for Chinese language learners.

The purpose of this study was to explore the role of motivation among Chinese language learners from grade 6 through post-secondary education in the U.S., by analyzing the 2014 STARTALK summer program data. More importantly, this study also explored the associations among instructional practices, student motivation, and their impacts on student plans to further study Chinese after the STARTALK program.

Student Motivation

Student motivation, such as intrinsic motivation and extrinsic motivation, plays an important role in student learning. The predictive power of motivation on student academic achievement is widely documented (Deci & Ryan, 2000; Gottfried, 1985, 1990; Ryan & Deci, 2009; Wigfield & Eccles, 2000). In the field of educational psychology, self-determination theory has informed the research on intrinsic motivation and extrinsic motivation (Deci & Ryan, 2000). According to this theory, human beings have a natural desire to learn and develop through interaction with social and cultural environments. From this perspective, intrinsic motivation is conceptualized as an individual's natural enjoyment of a task, whereas extrinsic motivation is conceptualized as doing an activity for reasons not inherent in the activity itself (Ryan & Deci, 2009). In other words, with intrinsic motivation people are actively engaged in a task due to the pure pleasure and enjoyment that arise from doing the activity, but with extrinsic motivation people participate in an activity for reasons not inherent in the activity itself, instead they do it for reasons such as earning a reward. For example, an eighth-grader who loves fantasy stories would read the Harry Potter book series voraciously because doing so would give her satisfaction and enjoyment. By contrast, a student studying for a final exam in math may do this because she wants to demonstrate she is a good student or because she believes doing well in math will be useful for her future career.

In the past three decades, motivation has been well documented as an important factor in language learning (Csizer & Dörnyei, 2005; Dörnyei, 2001; Gardner, 1985; Masgoret & Gardner, 2003; Ushioda & Dörnyei, 2012). Gardner's (1985) socioeducational model is probably one of the most influential theoretical models used to describe the role of motivation in second language learning. According to this model, a student's motivation is conceptualized as his/her desires to learn the second language and is hypothesized to be the major driving force for students' second language achievement. The influence of motivation on second language achievement has been empirically tested and supported. Masgoret and Gardner (2003) conducted a meta-analysis of over seventy empirical studies on the association between motivation and second language learning. They concluded that motivation had a larger effect size (.29 to .39) on student second language achievement, compared with other student characteristics such as attitudes toward the learning situation, integrative orientation, and instrumental orientation.

Most of the existing research on language learning motivation, however, mainly focuses on students learning commonly taught foreign languages, such as Spanish, French, German, or English as a second/foreign language. Little is known about the role of motivation for those who learn Chinese as a second/ foreign language in the U.S. The few studies that examine motivation of Chinese language learners focus on college students only (Wen, 1997, 2011). As more and more primary and secondary schools in the U.S. are offering Chinese classes, there is a need to investigate the role of motivation among middle-school and high-school Chinese language learners. Since Chinese is a relatively difficult language for most language learners, given what researchers know about motivation's relationship with language learning, motivation may play a particularly important role for middle-school and high-school Chinese language learners.

Relationship between Instructional Practices and Motivation

Research in second language acquisition indicates that effective instructional practices, such as use of target language and comprehensible input, help students develop language competence (Ellis, 1994; Krashen, 1985). The use of target language has been acknowledged by ACTFL as the key for language learners to develop language proficiency. In the ACTFL position statement, it recommends that at least 90% of classroom interaction should be in the target language. The World Readiness Standards for Learning Languages (The National Standards Collaborative Board, 2015) further highlight the importance of authentic, meaningful classroom interaction in the target language to enhance student language competence and cultural competence.

The concept of comprehensible input was first put forward by Stephen Krashen (1985) who hypothesized that language learners acquired language by hearing and understanding the language inputs slightly above their current competence level. Moreover, Krashen (1982, 1985) posited a link between comprehensible input and student motivation. For instance, in his affective filter hypothesis, Krashen stated that comprehensible input in the presence of a low affective filter (e.g., enhanced motivation or attitude) was one of the major causal variables in second language acquisition. In other words, comprehensible input and motivation jointly contributed to success in second language acquisition.

In the motivation literature, effective instructional practices are hypothesized to enhance student motivation (Guthrie, Wigfield, & You, 2012; Jang, Kim Reeve, 2012; Jang, Reeve, & Deci, 2010). Guthrie, et al. proposed an engagement model in which student motivation mediated the relationship between classroom instructional practices and student behavioral engagement (e.g., persistence, effort). More specifically, these researchers posited that effective instructional practices contributed to student motivation, which in turn had positive impact on student behavioral engagement and academic achievement. The relationship between instructional practices and motivation, however, is rarely examined in the context

of second language acquisition. In this study, I explored the relationship among instructional practices, motivation, and student plans to further study Chinese after STARTALK programs.

STARTALK Programs

STARTALK is a national initiative to enhance the teaching and learning of strategically important world languages in the U.S., such as Arabic and Chinese. The goal of STARTALK is to increase both the number of Americans speaking these critical languages and the number of qualified teachers of these critical languages. Informed by the current research in world language education, STARTALK programs adopt the following principles in their student programs: Implementing a standards-based and thematically organized curriculum; facilitating a learner-centered classroom; using the target language and providing comprehensible input for instruction; integrating culture, content, and language in a world language classroom; adapting and using age-appropriate authentic materials; and conducting performance-based assessment (STARTALK, 2015). These principles serve as guidelines for language teaching in each classroom.

In the summer of 2014 STARTALK funded 90 student programs across the U.S. in 10 critical languages, including Arabic, Chinese, Dari, Hindi, Portuguese, Persian, Russian, Swahili, Turkish, and Urdu. In total 4,825 K- undergraduate students enrolled in these summer programs in 2014. Among these students, 2,843 K-undergraduate students enrolled in Chinese programs, including 689 K-5 students and 1,226 grade 6-undergraduate students. At the end of each student program, a survey was administered to students electronically to gather information on student demographic characteristics, language learning beliefs, student evaluation of their summer learning experiences, and student plans to further study Chinese after STARTALK programs.

This study analyzed the data from 1,226 grade 6-undergraduate students who participated in STARTALK Chinese programs in the summer of 2014. The purpose of this study was to

investigate the associations among Chinese language learners' summer learning experiences, motivation, and student plans to further study Chinese after STARTALK programs. More specifically, I investigated the following research questions:

1) Were student demographic variables (gender, ethnicity, grade level) associated with their plans to further study Chinese?
2) Did student perception of STARTALK instructional practices predict their plans to further study Chinese, after controlling demographic variables?
3) Did student motivation predict student plans to further study Chinese, after controlling demographic variables and student perception of instructional practices? If so, which variable among all the independent variables was the strongest predictor of student plans to further study Chinese?
4) Did student motivation mediate the relationship between student perception of instructional practices and their plans to further study Chinese?

Method

To address these research questions, I used multiple regression analysis as the analytical approach in this study. The dependent variable was student plans to further study Chinese after STARTALK programs. The independent variables were the following: a) Student demographic information (gender, grade level, prior experience in learning Chinese); b) Student motivation; c) Student perception of instructional practices (i.e., target language use, comprehensible input, feedback from teachers and peers, and classroom materials).

Participants

The data used in this study came from the 1,226 Chinese language learners who responded to the survey. These Chinese language learners came from 47 states across the U.S, most of whom were middle school and high school students. Student demographic

characteristics are presented in Table 1. About 60% of the participants were female and 40% were male. Two thirds of the students reported that they learned Chinese before participating in the 2014 STARTALK summer programs.

Table 1. Characteristics of student participants (N=1,226)

Student characteristics	Total	Percent
Gender		
Male	480	39.2%
Female	729	59.5%
Grade levels		
6th grade	134	10.9%
7th grade	148	12.1%
8th grade	138	11.3%
9th grade	180	14.7%
10th grade	209	17%
11th grade	230	18.8%
12th grade	145	11.8%
University students	30	2.2%
Prior experience in learning Chinese		
Yes	807	65.8%
No	413	33.7%

Instrumentation

Student responses to the 2014 STARTALK survey were analyzed to investigate the research questions. The 2014 STARTALK survey was designed to collect student demographic and language experience information as well as student language learning beliefs and student evaluation of instructional practices in STARTALK programs.

Student demographic information was collected, including gender, prior experience in learning Chinese, and grade level. Gender

was dummy coded, with males coded as 0 and females coded as 1. Students who reported that they learned Chinese before participating in the 2014 STARTALK programs were coded as 1 and those who reported that they had not learned Chinese before participating in the 2014 STARTALK programs were coded as 0. Student grade level was treated as a continuous variable, ranging from 6 through 16.

Student plans to further study Chinese after STARTALK programs were measured using their responses to the survey item "what are your immediate plans to study the language you learned after this summer?" There were six answer options, including no plans for further language study and plans to engage in language study in different settings. Student responses were coded on a 0 - 5 scale. The mean and standard deviation of student plans to study Chinese are presented in Table 2.

Table 2. Means, standard deviations, and zero-order correlations of variables for all student participants (n = 1,226)

Variables	Mean	SD	1	2	3	4	5
1. Use target language	7.42	.86					
2. Feedback	6.76	1.14	.43**				
3. Compre-hensible input	3.42	.67	.28**	.32**			
4. Materials	6.86	1.5	.43**	.50**	.32**		
5. Motivation	25.02	2.94	.36**	.38**	.31**	.38**	
6. Plan to study Chinese	1.27	.80	.14**	.12**	.16**	.12**	.25**

**Correlation is significant at the 0.01 level (2-tailed).

Student motivation was conceptualized from self-determination theory (Deci & Ryan, 2000; Ryan & Deci, 2009) and was measured by survey items tapping student language learning beliefs, including three items on intrinsic motivation (sample item "I enjoy learning foreign languages") and four items on extrinsic motivation (sample item "learning a new language will help me get a better job in the future"). Students responded to these items, using a four point Likert scale ranging from "strongly agree" to "strongly

disagree." The subscales for intrinsic motivation (Cronbach α = .78) and extrinsic motivation (Cronbach α =.74) both demonstrated suitable internal consistency. Since this study was not intended to compare the relative contribution of intrinsic motivation and extrinsic motivation, the composite scale was used in all analyses for this study. The mean and standard deviation of student motivation are presented in Table 2.

Student perception of target language use was measured using two items, including "the target language was used in the classroom most of the time" and "I had many opportunities to speak the target language." Students responded to these two items, using a four point Likert scale, ranging from "strongly agree" to "strongly disagree." The correlation between these two items is $r = .49$ ($p < .01$). The mean and standard deviation of student perception of target language are presented in Table 2.

Student perception of comprehensible input was measured using one item: "I could understand most of what was happening in the classroom." Students responded to this item using a four point Likert scale, ranging from "strongly agree" to "strongly disagree." Because the use of target language and comprehensible input are theoretically related to one another, the correlations between the three items were computed. The item for comprehensive input "I could understand most of what was happening in the classroom" had a correlation of .20 ($p < .01$) with the first item for target language use "the target language was used in the classroom most of the time." Similarly, the same item "I could understand most of what was happening in the classroom" had a correlation of .29 ($p < .01$) with the second item for target language use "I had many opportunities to speak the target language." The mean and standard deviation of student perception of comprehensive input are presented in Table 2. The correlations are also presented in Table 2.

Student perception of feedback from teachers and peers was measured using two items: "I received feedback from my teacher that was helpful to me" and "I received feedback from my classmates that was helpful to me." Students responded to these two items using a

four point Likert scale, ranging from "strongly agree" to "strongly disagree." The correlation between these two items is $r = .46$ ($p < .01$). The mean and standard deviation are presented in Table 2.

Student perception of materials used in class was measured using two items: "the books and other written materials we used in class were helpful" and "multimedia resources (computer, the internet, videos, DVDs) were available to help my learning." Students responded to these two items using a four point Likert scale, ranging from "strongly agree" to "strongly disagree." The correlation between these two items is $r = .41$ ($p < .01$). The mean and standard deviation are presented in Table 2.

Taken together, the measures on target language use, comprehensible input, feedback from teachers and peers, and classroom materials were used as proxies for instructional practices in STARTALK classrooms.

Procedure

In the summer of 2014, the survey was administered to students at the end of STARTALK programs. Each program administered the survey electronically, following instruction on the STARTALK program director guide. Students responded to the survey online and their responses were automatically sent to STARTALK central office for further analysis.

Data Analyses

I used multiple regression analysis to analyze the associations among student perception of instructional practices, student motivation, and their plans to further study Chinese. More specifically, I used hierarchical multiple regression to partition the total variance in the dependent variable (i.e., student plans to further study Chinese) accounted for by the three sets of independent variables respectively, including student demographic variables, student perception of instructional practices, and student motivation. Furthermore, a series of multiple regression were utilized to test whether student motivation mediated the relationship between student perception of instructional practices and student plans to

further study Chinese, following Baron and Kenny's (1986) approach to test mediation.

Results

Descriptive Statistics

Means, standard deviations, and correlations among the independent variables and the dependent variable are presented in Table 2. Results reveal that all the correlations were statistically significant and range from r = .12 to r = .43. An important finding was that among all the independent variables, student motivation showed the strongest correlation with the dependent variable, r = .25, suggesting that student motivation may play a stronger role than the other independent variables in explaining student plans to further study Chinese.

Multiple Regression Analyses

Results of hierarchical multiple regression analyses are reported in Table 3. My first research question was whether student demographic variables (gender, ethnicity, grade level) were associated with student plans to further study Chinese. To answer this question, student demographic variables were entered into the regression equation, including gender, grade level, and prior experience in learning Chinese (model 1). As shown in model 1 in Table 3, the four predictors explained 5% of the variance in student plans to further study Chinese, $R^2 = .05$, and the overall regression equation was statistically significant, $F_{3, 1101} = 19.94$, $p < .001$. However, not all the variables were equally important in the regression equation. Student grade level was significantly associated with student plans to further study Chinese, $\beta = .19$, $p < .001$, suggesting that as student grade level increased, they were more likely to further study Chinese even after the STARTALK programs. More specifically, one grade level increase was associated with .19 standard deviation increase in their plans to further study Chinese, even after controlling for gender and prior experience. Similarly, student prior experience in learning Chinese was significantly associated with student plans to further study Chinese, $\beta = .08$, $p < .01$. This finding indicated that students who had prior experience in learning Chinese were more likely to

further study Chinese after the STARTALK programs. However, gender was not statistically significant.

My second research question was as follows: Did student perception of STARTALK instructional practices predict their plans to further study Chinese, after controlling demographic variables? To answer this question, student perception of STARTALK instructional practices were entered into the regression equation, including use of target language, feedback from teachers and peers, comprehensible input, and materials used in class, in addition to student grade level, gender, and prior experience in learning Chinese (model 2). The results of model 2 are presented in Table 3. The four instructional practice variables led to an increase of .02 in explained variance (R^2). This increase in explained variance was statistically significant, $F_{4, 1097} = 6.97$, $p < .001$. However, not all the instructional practices were significantly associated with student plans to further study Chinese. Among the four instructional practices, only comprehensible input was significantly associated with student plans to further study Chinese, $\beta = .10$, $p < .01$. This finding suggests that one standard deviation increase in comprehensive input was associated with .10 standard deviation increase in student plans to further study Chinese after the STARTALK programs. This finding held true even after controlling all the other variables in the model.

My third research question was as follows: Did student motivation predict student plans to further study Chinese, even after controlling demographic variables and student perception of instructional practices? If so, which variable among all the independent variables was the strongest predictor of student plans to further study Chinese?

Table 3. Multiple regression analyses results

Variables	Model 1	Model 2	Model 3
Constant	.38	-.54	-1.07
Gender	.03	.04	.02
Grade	.19***	.16***	.14***
Prior experience	.08**	.08**	.07**
Use target language		.04	.01
Feedback		.03	.01
Comprehensible input		.10**	.07*
Class materials		.02	.00
Motivation			.18***
R^2	.05***	.07***	.09***
R^2 change		.02***	.02***

*p < .05, **p < .01, *** p < .001

To answer this question, student motivation was entered into the regression analysis, in addition to the other variables already in the regression model, including grade level, gender, prior language learning experience, use of target language, comprehensible input, teacher and peer feedback, and materials used in class (model 3). The results of model 3 were presented in Table 3. Student motivation led to an increase in explained variance (R^2) of .02. This increase in explained variance is statistically significant, $F_{1, 1096} = 28.79$, $\beta = .18$, $p < .001$. This finding suggested that one standard deviation increase in student motivation was associated with .18 standard deviation increase in student plans to further study Chinese. This finding held true even after controlling for all the other variables in the model. More importantly, among all the independent variables, student motivation was the strongest predictor for student plans to further study Chinese.

Mediation Analyses

My last research question was as follows: Did student motivation mediate the relationship between student perception of STARTALK instructional practices and their plans to further study Chinese? Based on current motivation research (Guthrie, Wigfield & You, 2012), my hypothesis was that student motivation would

mediate the relationship between student perception of STARTALK instructional practices and student plans to further study Chinese. In other words, student language learning experiences influence their motivation, which in turn drives their immediate plans to further study Chinese. To answer this question, a series of regression equations were utilized, following Baron and Kenny's (1986) approach to test mediation. The first step in testing mediation was to regress the mediator (student motivation) on independent variables (e.g., use of target language and comprehensible input). The second step was to regress the dependent variable (student plans to continue studying Chinese) on the independent variables (e.g., use of target language and comprehensible input). The third step was to regress the dependent variable (student plans to continue studying Chinese) on the mediator (student motivation) and the independent variables (e.g., use of target language and comprehensible input).

In order to establish mediation, the following conditions should be satisfied (Baron & Kenny, 1986): In step one, the independent variables (e.g., use of target language and comprehensible input) should significantly influence the mediator (student motivation), which is illustrated in path *a* in Figure 1. In step two, the independent variables (e.g., use of target language and comprehensible input) should significantly influence the dependent variable (student plans to continue studying Chinese), which is illustrated as path *c* in Figure 1. In step three, the mediator (student motivation) should significantly influence the dependent variable (student plans to continue studying Chinese), which is illustrated as path *b* in Figure 1. Perfect mediation holds if the independent variables are no longer statistically significant in step three. Partial mediation holds when the effects of independent variables are still statistically significant but smaller in step three when compared with the effects in step two.

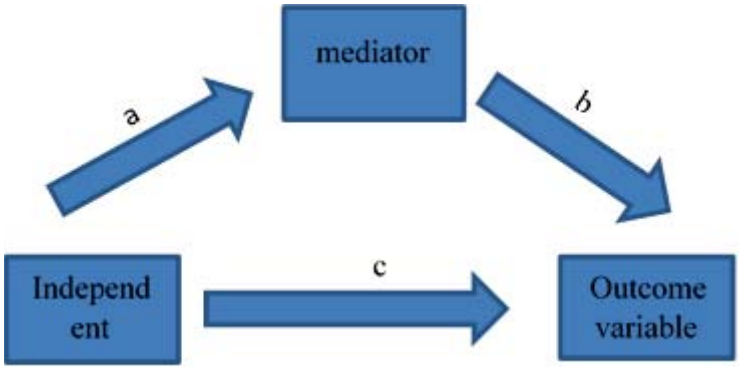

Figure 1. Test of mediation paths. Reprinted from "The Moderator-mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations," by R. M. Baron and D. A. Kenny, 1986, *Journal of Personality and Social Psychology, 51,* 1176.

The results of the mediation analyses are presented in Table 4. In the first step of the mediation analysis, the four instructional practices were entered into the regression equation to predict the mediator – student motivation. The results of the first step analyses indicated that all four instructional practices significantly predicted student motivation, $\beta_{\text{target language}} = .18$, $\beta_{\text{feedback}} = .16$, $\beta_{\text{comprehensible\_input}} = .15$, $\beta_{\text{class\_material}} = .16$, $R^2 = .24$. Thus, path *a* in Figure 1 was established.

In the second step of mediation analysis, the four instructional practices were entered into the regression model to predict the dependent variable—student plans to further study Chinese. The results of the second step analyses indicated that only target language use and comprehensible input significantly predicted student plans to further study Chinese, for target language, $\beta_{\text{target language}} = .07$, and for comprehensive input, $\beta_{\text{comprehensible\_input}} = .11$, $R^2 = .04$. Therefore, two paths from the independent variables (i.e., target language and comprehensible input) to the dependent variable were established.

In the third step of mediation analysis, student motivation and the four instructional practices were entered into the regression model to predict the dependent variable—student plans to further

study Chinese. The results of the third step analysis indicated that the effect of target language use was fully mediated by student motivation, since target language use was no longer statistically significant in the model, $\beta_{\text{target language}} = .03$ (ns). In contrast, the effect of comprehensible input was partially mediated by student motivation, $\beta_{\text{comprehensible\_input}} = .07$, $R^2 = .07$. As for the mediator, student motivation still had substantial and significant influence on student plans to further study Chinese, $\beta_{\text{motivation}} = .21$, $p < .001$.

Table 4. Mediation analyses results

	Dependent Variable (DV)		
	Step 1	Step 2	Step 3
	Motivation	Plans to further study Chinese	Plans to further study Chinese
Independent Variable			
Constant	12.30	-.03	-.73
Use target language	.18***	.07*	.03
Feedback	.16***	.03	-.01
Comprehensible input	.15***	.11***	.07*
Class materials	.16***	.03	.00
Motivation			.21***
R^2	.24***	.04***	.07***

*$p < .05$, **$p < .01$, *** $p < .001$

Discussion

The primary objective of this study was to investigate the relationship between Chinese language learners' motivation and their plans to further study Chinese after STARTALK programs. An important finding obtained in this study was that among all the student characteristics (i.e., gender, grade, prior language learning experiences, student perception of instructional practices, student motivation), student motivation was the strongest predictor for student plans to further study Chinese. This finding is consistent with

mainstream educational psychology theories regarding the influence of student motivation on students' achievement-related choices, effort, and academic performance (Wigfield & Eccles, 2000). Motivation researchers believe that student motivation is significantly associated with student course selection and grades (Durik, Vida, & Eccles, 2006). The finding obtained in this study contributes to the motivation literature by demonstrating the important role of student motivation for middle school and high school Chinese language learners in the U.S.

More importantly, the mediation analyses further reveal the dynamic mechanism underlying the relationship between Chinese language learners' summer learning experiences and their plans to further study Chinese. Specifically, student motivation fully mediated the relationship between target language use and student plans to further study Chinese. Similarly, student motivation partially mediated the relationship between comprehensible input and student plans to further study Chinese. That is, student language learning experiences, such as comprehensible input and target language use, contributed to student motivation, which in turn influenced their plans to further study Chinese. The mediating role of student motivation is documented in educational psychology literature (Guthrie, et al., 2012; Jang, 2008). For instance, Guthrie, et al. proposed an engagement model in which student motivation mediated the relationship between classroom instructional practices and student behavioral engagement (e.g., persistence, effort) which in turn contributed to student academic performance. The findings obtained in this study indicate that student motivation seems to be the vital link between effective instructional practices in world language classrooms and student engagement in language learning.

This finding adds to the literature by providing empirical evidence to support the importance of target language use and comprehensible input in teaching Chinese as a foreign/second language in the U.S. This finding has pedagogical implications as well. When developing curricula for Chinese language learners, it is important to emphasize target language use and comprehensible input in every aspect of classroom activities, since these instructional

practices can contribute to student motivation and their active engagement in learning Chinese.

While the results of this study shed light on the important role of motivation for Chinese learners, it is not appropriate to draw causal claims about the relationship between student motivation and student plans to further study Chinese, considering the correlational nature of this study. Just like any other studies, this study has its limitations. First, the STARTALK survey was administered only at the end of the summer programs, it is unclear about student motivation profiles before they joined these programs. It is possible that the student participants in this study self-selected to attend the STARTALK programs because they were already highly motivated in learning Chinese before their participation in the summer programs. Therefore, in the absence of student motivation profiles at the beginning of STARTALK summer programs, it is not appropriate to make causal claims on the effects of instructional practices on student motivation. An experimental study with pre- and post- measures on student outcome variables (e.g., motivation) or an intervention study involving the comparison of control students vs. STARTALK students on measures of student outcome variables (e.g., motivation) will be able to evaluate the effectiveness of STARTALK programs on student outcome variables, including motivation. Secondly, the results of this study need to be replicated in other language groups. For instance, the role of motivation should be examined for middle school and high school students learning Arabic, Russian, Hindi, Portuguese, and other less commonly taught languages in future research. Considering the paucity of motivation research in the less commonly taught languages in the U.S., research in this direction presents a promising future.

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