Do Popular Students have Outstanding Academic Achievement and Academic Attitude? - The Relation between Popularity and Academic Achievement and Attitude of Chinese High Schools

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ABSTRACT

Social status has been shown to influence school functioning. The purpose of this study is to investigate the influence of popularity on academic achievement and academic attitude in Chinese high schools. This paper examined the relation between popularity and academic achievement and academic attitude in a Chinese high school with 16 girls and 14 boys by using correlation analysis and linear regression analysis. The inconsistent result indicates that both sociometric popularity and perceived popularity are positively associated with high academic achievement. Only sociometric popularity is highly associated with better academic attitude. The findings reflect different academic cultures and values in varied cultures and highlight the importance of popularity in academic success.

Introduction

Students' popularity is vital to the development of students. Studies have shown that popularity associates with students' academic achievement and it affects students' motivation (e.g. Schwartz, Gorman, Nakamoto & McKay, 2006)

Thus, it is important to understand popularity as it influences students' achievement and attitude towards study. Researchers gave popularity two different definitions. There are two types of popularity in the literature: sociometric popularity and perceived popularity (Parkhurst&Hopmeyer, 1998). Specifically, students who are identified as having high sociometric popularity (social acceptance) are known to be sociable, friendly, and likable. By contrast, students who have high perceived popularity tend to be relatively more aggressive, dominant, and uncooperative.

The past research indicated that associations existed between different levels of popularity and academic achievements and attitudes. (Zook&Russotti, 2012) It has been found that the students who have high sociometric popularity function well in school whereas students who have have perceived popularity usually perform poorly on academic work and are likely to exhibit aggression.(Troop-Gordon,Visconti&Kuntz, 2011)
For example, some students that exhibits high sociometric popularity in school are likely to be responsible for multiple activities and successful in the academic field simultaneously while some students that have high perceived popularity might reject schools and absent frequently (Dawes&Xie 2017; Mikas & Szirovitza, 2017)

However, further empirical studies are needed to investigate the relation between popularity and academic performance and attitude among Chinese high school students due to inconsistent findings in Chinese secondary schools. There is a positive correlation between sociometric popularity and academic achievement and attitude and a negative correlation between perceived popularity and academic achievement and attitude, while Niu, Jin, Li and French (2016) has found that in the Chinese secondary school setting, the correlation of both perceived and sociometric popularity and academic achievement and attitude is positive. In a Chinese high school setting, academic achievement is generally strongly emphasized more than in western high schools. Academic performance is also associated with the popularity hierarchy and social status in school. Thus, the result of the relation between popularity and academic

achievement and attitude may vary from the prior studies that set in western secondary schools. (Titkova, Ivaniushina & Alexandrov, 2013)

In the following sections, a review of the literature of popularity and academic achievement will be presented. Following the prior literature, a theoretical framework, rationale of the study, and research method and design of the study will be presented. Discussions and implications will then follow.

Literature review

1.Theoretical framework

1.1 popularity

Two influential definitions of popularity proposed were sociometric popularity and perceived popularity (Parkhurst & Hopmeyer, 1998). The two popularities are associated with different characteristics.

Typically, popularity can be defined in two major ways: sociometric popularity and perceived popularity. First, sociometric popularity refers to likability among students. Students who possessed high sociometric popularity are widely liked and accepted and are characterized as cooperative and trustworthy.

Specifically, they usually do not start fights nor any unpleasant behaviors proactively. The sociometric popularity commonly is obtained by a nomination procedure and it is categorized into four distinct clusters according to the nomination (Bruyn&Boom, 2005; Coie et al., 1982): (1) sociometrically popular: the children who receive many positive nominations (2)controversial: the children who receive many positive nominations and many negative nominations (3) neglected: the children who receive few nominations and (4) rejected: the children who receive many negative nominations.

Moreover, another dimension of popularity is perceived popularity. Perceived popularity refers to the popularity that is recognized by other students. Perceived popularity correlates with social prestige, possession, and characteristics of being dominant and aggressive.

The opposite to children high on sociometric popularity, students high on perceived popularity can not take teasing and tend to be aggressive. The students who are both high on sociometric popularity and perceived popularity combine the consistent characteristics with the findings of two distinct popularity.

LaFontana and Cillessen (1999) assessed the relation between sociometric popularity and perceived popularity. Only a moderate relationship between the two popularities has been found due to the significant differences between the traits of perceived popularity and sociometric popularity.

1.2 academic attitude

Most studies on student motivation has adopted value-expectancy theory (eg. Andersen&Ward, 2013). Value-expectancy theory refers to an educational theory that explains students' motivation, selection, and persistence. (eg. Ball, Huang, Rikard&Cotten, 2016)

Within the framework of Value-expectancy theory, many researchers (eg. Eccles & Wigfield, 2002; Wigfield & Eccles, 2000) specified academic attitude in terms of three factors: (1) interest: the intrinsic value (2) perceived competence: the perception of abilities (3) utility: the perception of usefulness.

2.Prior empirical studies on popularity's effect on academic achievement and academic attitude

Many prior empirical studies have examined the relation of popularity to academic achievement and motivation. Sociometric popularity affects academic achievement positively and perceived popularity affects academic achievement negatively. (Schwartz, Gorman, Nakamoto & McKay, 2006) Students who are being liked by their peers tend to

be more academically motivated and thus have higher academic achievement. However, children who exhibit high perceived popularity are related to high level of aggression that leads to academic disengagement and unexplained absences. They seek peer acceptance by maintaining their aggressive behaviors, resulting in poor academic performances.

Mikas and Szirovitza (2017) investigated how gender may affect the relationship between popularity and academic achievement and academic motivation among 15-year-old students. Results indicated that, the sociometric popularity of children is related to individual academic achievements. Although it has been found that the relations are relatively similar to both female and male, few differences exist. The most academically successful groups were the popular group of females and the controversial group of males. However, the rejected students have poor academic performance considering both genders. The literature claimed that peer acceptance boosts self-esteem and satisfaction in students and thus leads to better academic achievement while low school affirmation leads to negative relation with academic achievement.

Moreover, Gordon, Visconti, and Kuntz (2011) found that high perceived popularity leads to a decline in academic performance and is linked to aggression and school maladjustment. Children with high perceived popularity tend to minimize the importance of being successful in the academic domain and thus disengage from school. However, they obtain high levels of self-satisfaction and social status due to being popular despite performing poorly in the academic domain and thus leading to further decline in school functioning. Therefore, possessing high perceived popularity gradually decreases the level of school adjustment and results in poor academic achievement and academic motivation.

3. Open Issues

Nevertheless, inconsistent results were shown in different cultures 'school contexts (Titkova, Ivaniushina & Alexandrov, 2013). Studies in Chinese secondary school implied that Academic achievement would be positively associated with popularity as well as social preference in Chinese adolescence(Niu, Jin, Li&French, 2016). In the Chinese high school context, the importance of academic achievement is greatly emphasized compares to western secondary schools (Pomerantz, Ng, & Wang, 2008). Further, Chinese students tend to demonstrate a relatively low autonomy from parents and school and tolerance of aggression. Therefore, these factors contribute to substantially different results in Chinese secondary schools. The result of the study suggested that prosocial behaviors and academic success were both associated with perceived popularity and sociometric popularity due to varied values of different cultures.

Since western academic cultures are significantly different from Chinese academic cultures. The relation between popularity and academic achievement and attitude is inconsistent in prior studies. Therefore, future studies are required to assess the relation in the Chinese secondary school context.

Methods

1. Participants

Participants in this study were 30 tenth grade students aged 15-16 who come from four classes at a public high school school in Beijing, China. Genders was well balanced with 16 girls (53.33%) and 14 boys (46.67%)

2. Measures

2.1 Sociometric popularity

Sociometric popularity refers to the likability among peers. In this study, it is acquired by a nomination procedure. All participants were asked to nominate 5 students who they most like to hang out or cooperate with and 5 students who

they least like to hang out or cooperate with. Cross genders and classes nominations were allowed. The nominations were provided with an order from most like to least like with a scale ranging from 5 (most like) to 1 (least like). Each student's sociometric popularity score was determined by subtracting least like to hang out or cooperate from sum of the most like to hang out and cooperate nominations. For example, if a student is nominated for most like to play or cooperate with twice and least like to play or cooperate for once, this student's score would be 5+5-5=5.

2.2 Perceived popularity

Perceived popularity is the popularity that is perceived by peers. It is defined as being respected by other children and perceived as "popular". In the study, it is obtained by the same nomination procedure as sociometric popularity. All participants were asked to nominate 5 students who they think are the most popular and 5 students who they think are the least popular. Cross genders and classes nominations were allowed. The nominations were provided with an order from most popular to least popular with a scale ranging from 5(most popular) to 1(least popular). Each student's perceived popularity score was determined by subtracting least popular nominations from most popular nominations. For example, if a student is nominated for most popular for twice and least like popular, this student's score would be 5+5-5=5.

2.3 Academic achievement

Academic achievement was measured by students' final exam score. The subjects include math, Chinese, English, and three other selective subjects. The final exam score ranging from 0 to 750.

2.4 Academic attitude

Academic attitude is composed of interest, perceived competence, and utility. It was assessed using items from motivated strategies for learning questionnaire (MSLQ; Pintrich&Garcia, 1991) Using a 4-point scale from 1(not at all true of me) to 4(very true of me), students were asked to indicate how much they think each item is true for them. In order to measure students' interest, students were asked to indicate how much they agree with "learn knowledge that is challenging", "satisfying to learn new knowledge", and "I am very interested in the knowledge that I learn . To assess the perceived competence, students were asked to indicate how much they agree with "satisfying to get a good grade" and "wanting to get a good grade than other students". To measure utility, students were asked to indicate their agreement with "I will be able to use what I learn in this course" and "It is important for me to study".

3. Procedure

Data was collected during the end of the 2020-2021 school year. Students first completed a questionnaire that included 22 questions. The questionnaire was given by Wenjuanxing form in the WeChat group chat of the tenth-grade students. Students were asked to answer questions pertaining to their study and nominate students' names as well as providing their final-exam score. Firstly, students were instructed to provide their names, genders, and student ID. Then, they were instructed to choose the option that represent them most accurately and provide 5 students' names for each nomination question.

Results

Descriptive statistics

Table 1. Means and Standard Deviations for Popularity, Final Exam Score, and Academic Attitude

	Minimum	Maximum	Mean	Std. Deviation
sociometric popularity score	-8.00	21.00	6.4333	6.40949
perceived popularity score	-7.00	15.00	3.1333	5.41120
final exam score	505.50	707.00	616.8333	49.92604
interest	8.00	16.00	12.6000	2.06113
perceived competence	8.00	12.00	9.7000	1.39333
utility	5.00	8.00	6.5333	0.093710
Valid N (litwise)	30			

Table 1. presents the means and standard deviations of popularity, academic attitude, and the final exam scores. As seen in the table, the highest sociometric popularity score is 21 and the lowest is -8. The mean of sociometric popularity is 6.4333(SD=6.40949). By contrast, the average perceived popularity score is relatively lower than the sociometric popularity score. The highest perceived popularity score is 15 and the lowest is -7. The mean of perceived popularity is 3.1333(SD=5.41220). The highest final-exam score is 707.00 and the lowest final-exam score is 505.50 and the average final exam score is 616.8333 (SD=49.92604). The mean of interest, perceived competence, and utility is 12.6000(SD=2.06113), 9.7000(SD=1.39333), and 6.5333(SD=0.93710) correspondingly.

Table 2. Independent Samples T-Test for Final Exam Score, Popularity, Academic Attitude by Genders

Group Statistics

	student genders	N	Mean	Std. Deviation	Std. Error Mean
sociometric popularity score	female	16	6.0625	6.59766	1.64942
	male	14	6.8571	6.40741	1.71245
perceived popularity score	female	16	1.6250	4.30310	1.07577
	male	14	4.8571	6.161263	1.64703
interest	female	16	12.3125	1.85180	.46295
	male	14	12.9286	2.30265	.61541
perceived competence	female	16	9.5000	1.15470	.28868
	male	14	9.9286	1.63915	.43808
utility	female	16	6.2500	.77460	.19365
	male	14	6.8571	1.02711	.27451
Final exam score	female	16	609.3750	41.71111	10.42778
	male	14	525.3571	58.36306	15.59818
	female	16	28.0625	2.83945	.70986
	male	14	29.7143	4.30436	1.15039

Independent Samples Test

		t-test for Equality of Means					95% Confidence Interval of the Difference	
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
final exam score	Equal variances assumed	-0.871	28	0.391	-15.98214	18.34753	-53.34753	21.60106
	Equal variances assumed	-0.852	23.200	0.403	-15.98214	18.76278	-54.77736	22.81307
sociometric popularity score	Equal variances assumed	-.334	28	.741	-7.9464	2.38243	-5.67482	4.08553
	Equal variances assumed	-.334	27.670	.741	-7.9464	2.37762	-5.66759	4.07831
perceived popularity score	Equal variances assumed	-1.683	28	.104	-3.23214	1.92095	-7.16703	0.70274
	Equal variances assumed	-1.643	22.853	.144	-3.23214	1.96723	-7.30312	.83884
interest	Equal variances assumed	-.812	28	.424	-.61607	.75877	-2.17034	.93820
	Equal variances assumed	-.800	24.951	.431	-.61607	.77010	-2.20227	.97013
perceived competence	Equal variances assumed	-.836	28	.410	-.42857	.51257	-1.47853	.62139
	Equal variances assumed	-.817	22.985	.422	-.42857	.52464	-1.51391	.65677
utility	Equal variances assumed	-1.842	28	.076	-.60714	.32962	-1.28233	.06804
	Equal variances assumed	-1.807	24.006	.083	-.60714	.33594	-1.30047	.08619
academic attitude	Equal variances assumed	-1.256	28	.220	-1.65179	1.31549	-4.34645	1.04288
	Equal variances assumed	-1.222	22.018	.235	-1.65179	1.35178	-4.45506	1.15149

To assess whether genders have significant differences in academic performance, academic attitude, and popularity, I conducted independent two-sample t-tests, with final exam score, interest, perceived competence, utility, sociometric popularity, perceived popularity, and academic attitude as the test variables respectively, and with genders as the grouping variable. As the results of independent two-sample t-tests are shown above in Table 2., the mean of the male's final exam score is 625.3571(N=14, SD=58.36306), and the mean of females final exam score is 609.2750(N=16, SD=41.71111). Thus, the average male final exam score is higher than the female final exam score. Consistent with academic performance, in terms of academic attitude, interest, perceived competence, and utility, male students' scores are higher than female students' scores in moderation. Moreover, males have a higher mean of sociometric popularity while females have a higher mean of perceived popularity. However, genders do not have a significant difference in popularity, academic performance, and academic attitude in this study.

Correlations

To examine whether popularity is correlated with the final exam scores, I conducted a bivariate correlation analysis on sociometric popularity and final exam scores and a bivariate correlation analysis on perceived popularity and final exam scores. The correlations coefficients of popularity and final exam scores ranged from 0.501 to 0.592. The result indicates that there were significant positive correlations between both perceived popularity($p=0.001$) and sociometric popularity($p=0.005$) and the final exam score.

Next, I examined the correlations of popularity and academic attitude. The correlation coefficients of popularity and academic attitude ranged from 0.277 to 0.464 and the correlation coefficients of sociometric popularity and three dimensions of academic attitude ranged from 0.301 to 0.439. Sociometric popularity is significantly correlated with academic attitude. Specifically it is correlated with interest and utility significantly and moderately correlated with perceived competence. The correlations between perceived popularity and academic attitude ranged from 0.024 to 0.370. Perceived popularity is significantly correlated with interest($p=0.044$) whereas it is not significantly correlated with academic attitude.

To assess whether perceived popularity is associated with sociometric popularity, I conducted a bivariate correlation analysis on sociometric popularity and perceived popularity. Results have shown that sociometric popularity is not correlated with perceived popularity($p=0.069$).

Regression

Table 3. Linear Regression Analysis on Popularity and Final Exam Score
Coefficients

Model	Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1 (Constant)	586.117	11.920		49.170	0.000
perceived popularity score	4.413	1.489	0.478	2.964	0.006
sociometric popularity score	2.653	1.201	0.341	2.210	0.036
student genders	-.391	14.987	-0.004	-0.026	0.979

a. Dependent Variable: final exam score

To examine whether popularity has significant effects on academic achievement, I conduct a linear regression with sociometric popularity and perceived popularity as the independent variables and the final-exam score as the dependent variable. The result of the linear regression model was summarized in Table 3. As shown, popularity has significant effects on students' academic performance(p=0.001). One unit change in sociometric popularity can lead to a final-exam score increase of 2.653 points(B=2.653, p=0.036). One unit change in sociometric popularity can result in a final-exam score increase of 4.413 points(B=4.413, p=0.006) Nevertheless, perceived popularity can account for students' academic performance more than sociometric popularity. Overall, the linear regression model can predict students' academic performance. As the result shown, the R square is 0.453, indicating that perceived popularity and sociometric popularity can account for a 45.3% variation of student's academic performance.

Table 4. Linear Regression Analysis on Popularity and Academic Attitude

Coefficients

Model	Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1 (Constant)	26.513	1.007		26.316	0.000
perceived popularity score	.053	.126	.079	.420	.678
sociometric popularity score	.241	.101	.426	2.379	.025
student genders	1.289	1.267	.180	1.018	.318

a.   Dependent Variable: academic attitude

Next, in order to examine whether popularity has significant effects on academic attitude, another linear regression was conducted with student genders, sociometric popularity, and perceived popularity as the independent variables and students' academic attitude as the dependent variable. The result of the linear regression model was presented in Table 4. As shown above, popularity has significant effects on student's academic interest (p=0.046). One unit change in sociometric popularity can lead to the students' academic interest increase in 0.241 points(B=0.241, p=0.025). Moreover, the model indicates that different genders can result in different academic attitudes significantly as well. However, the effects on interest were nonsignificant for perceived popularity(p=0.678). The linear regression model can predict students' academic attitudes overall. As shown, the R square is 0.261, indicating that perceived popularity and sociometric popularity can account for a 26.1% variation of student's academic attitudes.

Discussion

Sociometric popularity and perceived popularity

This study investigated the relation between popularity and academic performance and academic performance and academic attitude in Chinese high schools. First, our results indicated that the correlation between sociometric popularity and perceived popularity was 0.336, which was not significant. The results suggested that these two constructs are correlated to some extent because they both measure students characteristics. Some characteristics are overlapped since Chinese students' understanding of being popular is linked with being kind and friendly, but they do differ. The major difference between sociometric popularity and perceived popularity is that sociometric popularity measures likability from individual's perspective while the latter measures consensual popularity.

Popularity and academic achievement

Moreover, our results indicated that controlling for student gender, both sociometric popularity and perceived popularity have significant influences on student academic performance. Higher popularity is associated with the increased final-exam score in the study. Perhaps Chinese high schools value the importance of academic achievement more than western high schools due to Confucius tradition and Chinese students tend to face a greater academic competence (Niu, Jin, Li&French, 2016). Popularity in Chinese secondary schools is mostly judging by students' academic achievement. Students who have a good grade are generally considered popular. While sociometric popularity is more likely to link with students' social abilities, perceived popularity is highly related to academic performance among Chinese adolescents. In other words, high academic achievement has positive influences the perceived popularity among Chinese adolescents substantially. Simultaneously, high academic achievement has a mutual effect on students' perceived popularity since it boosts self-esteem and self-confidence. In addition, previous studies indicate that high sociometric popularity can increase prosocial behaviors and result in better school adjustment, leading to better performance at schoolwork.

Popularity and academic attitude

Compared to perceived popular students who achieve better academic results, sociometric popularity is significantly associated with academic attitude. Chinese high schools tend to have a more intense academic culture(Pomerantz, Ng, & Wang, 2008). Therefore, popularity is often obtained by being good at schoolwork and helping others with school work, which contributes to high sociometric popularity. Furthermore, since popularity in Chinese adolescents require conformity of harmonious values and prosocial behaviors, sociometric popular students usually have positive academic attitudes. Additionally, students who are sociometric popular are being liked by their peers and thus they are more academically motivated, leading to better academic attitude. In terms of each dimension of academic attitude, the results have confirmed that both sociometric and perceived popular students have greater academic interests. However, popular students do not necessarily have higher perceived competence. Perhaps the popular students who have high academic achievement tend to have greater peer pressures and academic competence, thus their self-perceptions of academic abilities are not significantly linked with popularity. Moreover, sociometric popularity is significantly correlated with utility.

Limitations and future directions

A limitation of this study is that the sample size was small with only 30 participants from a relatively smaller school. So, the nominations might be limited due to smaller friend groups and some results might not be accurate due to the

small sample size. Moreover, some participants are reluctant to nominate the least like students. A future direction for researchers would be sampling from a larger school and obtaining nominations from a variety of friend groups by a rating process.

Another limitation of the study is that the intermediate effects were not taken into account when analyzing. Academic attitude has an intermediate effect on academic attitude and popularity might also affect one another. Thus, the final result might also alter due to the mutual effects of the variables. Future studies should use a different analytical method that considers the intermediate effects of the variables.

Conclusions and implications

In summary, the present study indicates that both females and males in Chinese high schools with high popularity have higher academic achievement. Specifically, both popularities are correlated with high academic performance due to the academic culture that emphasizes the importance of academic achievement in Chinese high schools. Nevertheless, only sociometric popularity is significantly associated with better academic attitude while perceived popularity is significantly related to better academic performance.

Despite the limitations of the study, this study provides insight into the social impact on academic success in varied cultural contexts. By focusing on the popularity's relation with academic success in Chinese high school, we can have better understandings of the values in different learning environments and the importance of social status's role in development of students. Future educators should be aware of popularity's effect on academic development of student as social status can contribute to academic development.

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