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# The influence of senior secondary school teachers on students' achievement in Gao-Kao

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#### Abstract

This study examines the role and influence of teachers on the achievement of students in Gao-Kao (Chinese College Entrance Examination) in China. Every year, millions of Chinese students participate in Gao-Kao. However, not all the students join higher education institutions due to limited opportunity for higher education. Through semi-structured interview with undergraduate students, this study examines the role and influence of teachers on the achievement of students in Gao-Kao in China. In order to understand the participants' experiences and realities, the notion of Gao-Kao and the ways on how teachers influence students' achievement must be understood. Gao-Kao has been an important milestone for Chinese students. Since its resumption in 1977, the exam has been the dominant means of admission in Chinese higher education institutions. As part and parcel of the teaching-learning process, teachers significantly contribute to students' achievement in Gao-Kao through engaging students to the teaching-learning process, guidance and evaluation, role modeling as well as motivation. The study will be informative to educators interested in students' academic achievement in national and other similar types of examinations.

Keywords: Gao-Kao; teacher's influence; student's achievement; senior secondary school; China

# The influence of senior secondary school teachers on students' achievement in Gao-Kao

#### 1. Introduction

According to the Chinese Teachers Law issued on 31 October 1993, teachers are professionals with the right and obligation to teach, educate, and offer guidance and evaluation to students (Xu & Mei, 2009). This enables senior secondary school teachers to guide students' learning and help them prepare for Gao-Kao (Chinese College Entrance Examination) to pursue their study in Higher Education Institutions (HEIs). On the other hand, Gao-Kao is one of the most important examinations for Chinese students (Wang, 2009). Gao-Kao adopted a "three + X" structure, in which three refers to the three basic subjects (Chinese, Math and one foreign language) and X stands for an integrated competence test such as integrated arts or integrated sciences (Gu, Li, & Wang, 2009). For the majority of provinces, a perfect Gao-Kao score is 750 points, with 150 points for each mandatory subject test and 300 points for the X component (Yang, 2009). Whereas, some provinces such as Jiangsu and Henan provinces use different points, 480 and 900 points respectively. Since its resumption in 1977, the examination has undergone some changes which greatly impacted the process of teaching-learning in schools. Yet, reforms are being made including a reform to minimize the effects of English subject in Gaokao score (China Daily, 2013). Success in Gao-Kao is very important step in the students' life to join HEIs (Yu, 2012). Chinese HEIs accept most of their students based on this competitive exam. Moreover, getting high mark in this exam enables students to join better HEIs and program of studies. China has about 2,358 regular HEIs in which most of them are administered by provincial and other local authorities whereas only 111 are administered by central ministries (Yiming, 2010).

Phillipson and Phillipson (2012) stated that the factors that influence student's academic achievement may include cognitive ability, students' motivation, efforts and self-confidence, as well as academic engagement, socio-economic status, parents, teachers, peers and culture. This indicates that students' success in Gao-Kao could be the result of comprehensive efforts from different stakeholders or factors. However, as teachers are professionals with the rights and obligations for the teaching-learning process (Xu & Mei, 2009), it is believed that they have a paramount influence on students' academic achievement. Accordingly, different researchers studied the role of teachers in students' academic achievement in different approaches and from different perspectives. Wright, Horn, and Sanders (1997) many years ago found that teachers do make a difference in students' achievement. Pennings, Tartwijk, Wubbels, Claessens, van der Want, and Brekelmans (2014) also noted that good relationships between teachers and students are important for student motivation and their academic achievement.

Likewise, Yang (2004) presented that the support of teachers to students is associated with students' academic achievement. Although these and other researchers explored the relationships between a teacher and students' academic achievement, a qualitative research is still needed to understand how teachers influence students' academic achievements. Therefore, in order to enable educators in general and teachers in particular to plan, organize, and deliver quality instruction and strengthen their support in a manner that improve students' learning, this study examines how teachers influence students' achievement in Gao-Kao. The following are the central questions in this research: What is the role of senior secondary school teachers in students' achievement in Gao-Kao? How do senior secondary school teachers influence students' achievement in Gao-Kao? The term "Gao-Kao achievement" is used in this study to indicate a score that can enable students to join first tier universities in China. Chinese HEIs are categorized into three main tiers in which the best and national key universities make the first tier universities.

Answering the above central questions will enable the study to meet its specific objectives: (1) to identity and analyze the role of teachers in students' achievement in Gao-Kao; and (2) based on the finding of the study to come up with ideas that could promote the achievement of students in Gao-Kao. Although students'

achievement in Gao-Kao is the central concern of this study, it is believed that students' academic achievement is important in different levels and other countries. It is also argued that the fundamental role of a teacher in different levels and countries is similar (if not, the same). Although it may not be generalizable, the study to some extent could be considered as explanatory to other examinations such as regular school or university examinations, and to other countries especially developing countries where there are inadequate educational institutions.

#### 2. Perspective on how teachers influence students' academic achievements

Martins and Veiga (2010) emphasized the role of modern educational systems in transforming social hierarchies into academic hierarchies centered within a school. These academic hierarchies are revealed in different school variables mainly in human resources because it is unlikely to talk about the role of a school without mentioning the role of a teacher. According to Kurnianingsih, Yuniarti, and Kim (2012), the quality of teachers determines the quality of teaching-learning process and class interaction which eventually influence the quality of the students and their learning outcomes. A teacher is an indispensable part of the teaching-learning process with various roles and experiences including facilitation and mediation of classrooms (Toshalis & Nakkula, 2012); guidance and evaluation (Xu & Mei, 2009; Stanulis & Ames, 2009); and motivation of students (Cole, Feild, & Harris, 2004).

Van Uden, Ritzen and Pieters (2013) stated that student engagement is an important precursor for learning and has been shown to be related to better academic achievement. Hu, Hung, and Ching (2015) also explained that the idea behind student engagement is to allow students learn by interacting with their peers and teachers. A teacher is a professional who is responsible for facilitating the teaching-learning activities by various means. It is argued that the process of knowledge transmission in China was directly from teachers to students and its delivery was carefully sequenced for students to memorize, repeat and understand (Lu, Jiang, & Throsell, 2012). However, China is working to replace such old type of teaching strategies with modern student-centred strategies through different reforms and mechanism. For example, China's National Plan for Medium and Long-term Education Reform and Development (2010) states that schools with weak teaching abilities should be strengthened by improving teachers' proficiency level and introducing different teaching strategies such as inquiry learning.

According to Freire (2010), teaching is a human act which requires equal participation of the teacher and students. Both the teacher and the students learn through action and reflection while the teacher mediates the classroom interaction to make the learning environment conducive (Toshalis & Nakkula, 2012; Price & Oliver, 2007). Participatory learning is collaborative where everyone contributes to the teaching-learning process (Hooks, 2010; Zabit, 2010; Tongsakul, Jitgarun, & Chaokumnerd, 2011). Students use their different talents and experiences to help one another and learn from each other collaboratively. Collaboration occurs when students share their diverse thoughts and perspectives in the form of questions, answers, comments, etc. Frequently, the teacher is required to gather additional information in order to supplement what is provided in the program and to effectively mediate between the students and the lesson. However, teachers need to modify their teaching strategy to become a two-way learning process by allowing frequent questioning or suggestions from the students (Bhutto, 2011). In this way, the teacher becomes a partner or co-worker in the process of teaching-learning, and teaching becomes a complex process of cooperation and inter-communication rather than one-way communication from the teacher to the students (Hooks, 2010; Freire, 2010). This is because undiversified instructional strategies and long monologues get students bored and lack focus in the teaching-learning process (Daschmann, Goetz, & Stupnisky, 2013). Hence, this might cause students not to prepare well for any academic evaluation including the Gao-Kao.

The Chinese Teachers Law states that teachers have the right not only to educate but also to offer guidance to students in their studies and development (Xu & Mei, 2009). In order to make teaching very effective, teachers should guide students to improve their learning habit and become more disciplined. This can be done

through guidance and motivation in a systematic ways rather than forcing the students to accept the teachers' ideas of what and how students should learn, study or behave. Guiding students involves more than using certain words and a particular tone. It involves awareness, attitude, body language, and actions that reflect love and caring for the students. Moreover, it needs presenting the students examples of positive behaviors and activities in a carefully prepared and designed manner, and praising the positive sides of students. According to Stanulis and Ames (2009), teachers should develop an environment of high expectations where students move from dependence to independence in doing certain tasks. This helps students to spend the time needed to learn complex ideas and solve problems by themselves, and it moves the students from guidance to independence.

A teacher is responsible to evaluate the performance of students. Nonetheless, both the teacher and students should look the evaluation as a source of insight and help instead of an occasion for reward and punishment (Shepard, 2000). This will help both the teacher and students to gather information about students' learning, progress and future trends, and to look ways for solutions. It can also help teachers to know which concepts need further focus or remedial instruction (Su & Wang, 2010). Then this promotes self-assessment of students which increases responsibility of their own learning and assessment and makes the teacher-students relationship more collaborative. As a result, this influences the academic achievement of students.

Many researchers found that motivation is an important factor that influences students' academic achievement (Shih & Gamon, 2001; Tella, 2007; Williams & Williams, 2011). As Cole et al. (2004) explained that motivation to learn influences the decision-making processes determining the direction, focus, and level of efforts individuals apply to a learning activity. Motivation greatly predicts students' achievement (Pangeni, 2013). Williams and Williams (2011) on the other hand stated that a teacher is one of the five key factors that influence student motivation; the rest are student, content, method/process, and environment. It is also believed that teachers have great contribution to the other four factors that influence students' motivation. Hence, it is argued that teachers play a dominant role in students' motivation. However, students' motivation tends to be stronger, more resilient, and more easily sustained when it emerges from internally held goals rather than from externally applied coercion (Toshalis & Nakkula, 2012). Similarly, Katz, Kaplan, and Buzukashvily (2011) argued that students who engage in academic activities because of less adaptive motivations such as a sense of duty, desire to please, and avoidance of punishment, tend to have less academic achievement. Thus, it is argued that teachers should find ways to build a sense of internal motivation based on interest, enjoyment, and a purpose to learn and understand. Then this helps students to learn better and have higher academic achievement in various examinations including the Gao-Kao.

A teacher's role consists of many culturally defined roles in which every word spoken and action carried out by a teacher has many meanings to students (Pettersson, Tina, Postholm, Flem, & Gudmundsdottir, 2004; Lunenberg, Korthagen, & Swennen, 2007). Therefore, a good teacher is a model for students in building positive emotions and nurturing positive cultural expectations, dedication, motivation and confidence (Koç, 2012), which could enable the students to work harder and get higher academic achievement.

# 3. Methodology

#### 3.1 Setting and Participants

The research will be qualitative study, drawing on phenomenology to study the phenomena from the perspective that experienced it (Wiersma & Jurs, 2004). As this research focuses on the experiences of students on how their senior secondary school teachers influenced their Gao-Kao achievement, a qualitative research design will be used to explore the contextual conditions and understand the phenomena in a broader sense for creating understanding and critical analysis (McNabb, 2008).

The participants of the study were 15 new undergraduate students randomly selected from Beijing Normal University (BNU), one of the first tier universities in China. BNU was selected by purposeful sampling due to its

diversity of students which could represent a broader group of cases for the study (Teddlie & Yu, 2007; Wiersma & Jurs, 2004). According to Beijing Normal University Students' Records (2013), in 2013, BNU had admitted about 1900 undergraduate students from 31 provinces of China. Moreover, undergraduate new students were selected deliberately because they had taken Gao-Kao recently (within that year) and achieved a score that can enable them to join first class university, BNU. Out of the 15 respondents, 9 were female whereas the rest were male students. The respondents were from 6 provinces of China.

#### 3.2 Methods

Qualitative data were collected through interview. In-depth face-to-face semi-structured interview was used to collect data from the 15 participants since interview provides opportunity for in-depth probing, and elaboration and clarification of terms (Wiersma & Jurs, 2004; Bryman, 2008). The interview was held in English in order to get first-hand information and opportunity for flexibility and comparability of questions for both the researchers. However, as one of the researchers has mastery of Chinese language, Chinese was also used in dealing any language barrier during the interview. An interview protocol was prepared containing interview questions, purpose of the study and instructions. Participation to the study was voluntary.

Data collected for the study is presented and analyzed in explanatory and descriptive methods to provide meaningful interpretation and discussions (McNabb, 2008). Specifically, the study provides answers to the two complementary research questions. The presentation and analysis of the results are therefore categorized into themes based on the findings of the research. Finally, the data is rewritten with reference to the literature review and empirical studies.

#### 4. Results and Discussions

Teachers influence the academic achievement of students in Gao-Kao in different ways. Many of the students explained that they studied senior secondary school in a better school with better teachers compared to their vicinity. A respondent who joined BNU from Hubei province said:

I studied my senior secondary school in Shijia Zhuange High School in Hubei province. The school was one of the best senior secondary schools in the city. Even though the school had comparably good resources, the teachers were its best asset. Therefore, having these teachers on my side contributed for my hard work and finally success in Gao-Kao.

The respondents emphasized that good school usually indicates quality teachers who work with dedication for the benefit of their students especially during the time when students are preparing for Gao-Kao exam. According to the findings of the interview, teachers' influence on the achievement of students in Gao-Kao can be summarized in the following themes.

# 4.1 Participatory Teaching-Learning

The students described that their senior secondary school teachers influenced their Gao-Kao achievement through participatory teaching-learning; a teaching strategy that engages all students (Hooks, 2010). Many teachers use different activities and pedagogical principles to make their class participatory. According to the respondents, teachers help the achievement of students by explaining their subject matter clearly with the supplementation of different teaching materials and examples. One of the respondents with a Gao-Kao score of 648 from Jilin province noted:

I always remember my physics teacher. His presentation of lectures was excellent and his examples were interesting and related to our daily life. That is why I liked physics so much, worked hard and scored high in my Gao-Kao exam in that subject.

The students indicated that through posing questions and class discussion, their teachers were promoting

students participation and were making the subject matter simple and clear to understand (Daschmann et al., 2013). This indicates that making learning interesting and culturally relevant by engaging students greatly helps students learning and their academic achievement (Freire, 2010). It is argued that this includes modifying the lecture method and making it two-way learning process (Bhutto, 2011). Such process starts during planning and preparation of the teacher on what is to be done in a period, week or year, and how. During planning and preparing to teach a subject matter, teachers have to consider their students, content, and available time, and the type of teaching methods and aids to be used according to the specific objectives of the topic. Thus, the teaching-learning process serves the purpose of the students (Freire, 2010; Toshalis & Nakkula, 2012; Van Uden, et al., 2013); because students learn better, faster and remember longer when they are actively involved in the teaching - learning process (Hooks, 2010; Freire, 2010). This in turn helps students to score higher in Gao-Kao.

The students explained that their senior secondary school teachers, especially during their last year of preparation for Gao-Kao, provided them with different academic support including extra classes and lectures related to Gao-Kao questions. This was clearly stated by an interviewee:

It is true that all teachers cannot be good in class for various reasons, but even the worst teacher can attend students' queries outside the class because the teacher can take time and think calmly. In my last year of study for Gao-Kao, I used to discuss with all my teachers not only in class but also outside of the class. Whenever I had any doubt, I used to see my teachers in their office and discuss my queries with them.

This issue could be related to the fact that a teachers is a mediator between the students and the lesson (Toshalis & Nakkula, 2012; Price & Oliver, 2007), and a guide for students (Xu & Mei, 2009). However, entertaining students outside of the class individually might hinder cooperative learning where students share their diverse thoughts and perspectives in the form of questions, answers, comments, and other forms of dialogue.

### 4.2 Guidance and Evaluation

Teachers guide their students on how to prepare for Gao-Kao based on the experience of previous years' examinations. The respondents believe that Gao-Kao questions are slightly different from one year to the other. Therefore, the direction and guidance that that their teachers offered them were interesting and helpful for their achievement. The teachers' support and guidance in giving different Gao-Kao related questions and extra lectures were motive for the students' achievement. This shows that teachers have commitment and persistence to help their students and guide them toward learning and to make good choices for their future life (Xu & Mei, 2009; Stanulis & Ames, 2009). However, besides to the teachers' commitment, it is up to the students to be proactive to use their teachers as much as possible by referring different materials and asking different questions because students are not only the rational consumers or primary beneficiaries of the class activities but they are also important part of the teaching-learning (Van Uden et al., 2013). Therefore, teachers' intervention to guide students' needs careful evaluation as to when and how to intervene. It is argued that teachers need to intervene only when students have not made a suitable choice that corresponds with the students' skills, interests, and abilities. In addition, the guidance by teachers should be with the consent of students to enable them to foster a positive attitude towards self-regulating and guidance (Stanulis & Ames, 2009). Teachers should not always be the peace makers or drivers for the students, but a guide to positive behaviors so that the students can take the lead. Then this could increase the responsibility of students towards learning and their Gao-Kao achievement.

The response from the students indicated that teachers used different types of questions such as home works, class-works and tests to assess the progress and readiness of students for Gao-Kao. These questions were also prepared by considering the classroom learning and similar Gao-Kao questions. This implies that teachers evaluate students' motivation, participation and level of intellectual development for the coming big exam using similar questions in class; it also shows the student-teacher two-way communications in a form of feedback, correction and other class discussions by considering the assessment as a source of insight and development

(Shepard, 2000). Simultaneously, teachers also use these different assessments to evaluate the effectiveness of their lessons including the quality of the activities, the lesson plan prepared, the teaching techniques applied and the teaching aids used in achieving the intended objectives. This enables to assess the progress of the students towards acquiring a satisfactory Gao-Kao score because it is argued that knowing the progress helps both the students and teachers to identify and fulfill what is left, and to work on the common mistakes of the students (Su & Wang, 2010).

#### 4.3 Motivation

The participants stated that teachers' motivation was an important drive for their Gao-Kao achievement. Teachers cultivate a learning habit and self-responsibility within their students. However, the students emphasized that motivation of students starts in class with encouraging each and every student to be part of the teaching-learning process (Hooks, 2010); this can be in the form of asking or answering questions, giving comment or in any other form of exchange of ideas. Many of interviewees indicated that they learned their senior secondary school away from their parents. Therefore, their teachers were their main source of motivation based on the students' academic and personal conditions. The students emphasized that their teachers gave them moral and confidence to prepare well for the examination which was a driving force for their Gao-Kao achievement. One of the respondents clearly explained this as follows:

I studied my senior secondary school in Hubei province while my parents live in Shandon province. During the school time I was only meeting with my family on the phone. It was obvious that being with my parents could be a great advantage for me. However, my teachers were giving me all the support that I should have got from my parents. My teachers encouraged me that I should do my best in my studies in order to make my future better. Simultaneously, they advised me to schedule my time and allow time for entertainment so that I should not be bored because of study only. Then I got the notion that everything I do is for me, not for my family. Therefore, I decided to work hard, and this was probably the deciding factor for my Gao-Kao achievement.

The respondents noted that motivation goes parallel with learning of students. It is when teachers teach their subject matter effectively with full participation of students that the students will be motivated to learn. Simultaneously it is when students learn better that they will be ready enough to answer any question including Gao-Kao questions. According to the result of the interview, teachers motivate students to do their best in their studies in order to make their future better. When this internal motivation reaches at its peak and students realize that what their teachers do is for their benefit, the distinction between internal and external forms of motivation becomes vacant to the teachers and unclear to the students (Toshalis & Nakkula, 2012). This is because teachers push hard on the students for more readings and more assignments; and the students work hard with more hope and more desire for success. However, the distinction point is whether students are really enjoying the overall teaching-learning or not. If students are bored, then it is time for the teachers to assess and revisit the internal motivation of the students because if students are bored they are less likely to be attentive in the class (Daschmann et al., 2013) and do better in Gao-Kao.

Cultivating internal motivation and interest in students to learn by themselves was an important factor for their success in Gao-Kao because it enabled students to become aware that everything they do may affect their future life. This reflects the idea that students' awareness about Gao-Kao and the future associated with it could enable them to work hard and participate actively. As motivation predicts achievement (Pangeni, 2013), students need and interest to participate out of less adaptive or external motivation enabled them to succeed in their Gao-Kao examination (Katz et al., 2011; Toshalis & Nakkula, 2012).

## 4.4 Role Modeling

Some teachers are role models to their students in different ways; and these role model teachers influence

the academic achievement of students in Gao-Kao. According to the respondents, a model teacher is someone who is tolerant, responsible, confident, unbiased, self-disciplined, resourceful, and committed to work. Model teachers mainly influenced students to go to higher education institutions (HEIs) in two ways: the way the teachers joined HEIs themselves and by cultivating great interest of students in their subject matter. These were done through sharing experiences of the teacher to the students; and by carefully designing the teaching-learning process according to the needs and interests of students and translating knowledge and skills taking individual difference into account. A respondent stated:

My senior secondary school chemistry teacher was my role model. The teacher gave me confidence in my study and mastery in the subject matter. I like his way of teaching which was full of humor and I want to be like him. Hence, my chemistry grade was the best which contributed a lot to the increase of my Gao-Kao score.

Students learn not only the explicit academic part, but also copy the methods, actions, dedication and discipline of their teachers. Most importantly, they want to be like their favorite teacher. On the other hand, teachers knowingly or unknowingly influence the learning, discipline, and future life of their students. This may be part of the curriculum or unknowingly part of the habitual action or behavior of the teachers. If students are attracted to their teacher mainly because of academic capability and discipline, they become more interested to the teacher's subject matter and tend to work hard. This shows that every word spoken and action carried out by a teacher has many influences to students (Pettersson et al., 2004); and these words or actions influence the learning and discipline of students, even when the teacher is displaying inappropriate behavior. If teachers complain that education is worthless, this can confuse students why they should prepare for their Gao-Kao exam. Students might also wonder if their teachers are not happy with being educated, why they need to work hard for education. Conversely, teachers as role models promote the emotional aspect of students (Koç, 2012) which enables the students to strive for better achievement.

### 5. Conclusions

Getting a high Gao-Kao score that could enable them to join a first tier university is an important (if not the most important) milestone for senior secondary school students in China. Despite the fact that different students may have different experiences about how their teachers influenced their Gao-Kao achievement, teachers are one of the influential factors in students' Gao-Kao achievement. Though the study did not include the voices of teachers, it revealed that teachers influence students' achievement in Gao-Kao in a various interconnected ways. The influence of teachers happens by nurturing participatory teaching-learning and internal motivation as well as guidance and evaluation of the studies and progress of students. Moreover, the study found out that teacher as role models influence students' achievement in Gao-Kao. Teachers' academic excellence and personal behavior inspire students. When students are attracted by their teachers mainly due to their teaching-learning strategies, the students also get attracted to the subject matter; and this helps for students' learning and success in Gao-Kao. Nevertheless, as there is no detailed literature related to the influence of a teacher as a role model in students' academic achievement, this needs further study and investigation.

All the factors that influence students achievement in Gao-Kao are interconnected to each other and it is impossible, if not difficult, to practice one influencing factor without the other. It is unrealistic to motivate students with a teaching-learning process that leads to students' boredom (Daschmann et al., 2013). Similarly, teachers could not be role models to their students unless the students are inspired by the teachers because a model teacher motivates students to developed positive thinking (Koç, 2012).

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