Cheating or Not - What are Chinese CS Students Thinking about Complex Learning Situations?

Luo Qin
Abstract

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The goal of this paper is to understand Chinese CS students' views about cheating in complex learning situations. Especially, I focus on how to define some cheating behaviors and how to react when seeing others cheating. In this paper, I both use quantitative and qualitative methods to collect and analyze data. In detail, I use questionnaire and interview to collect data; I use statistical way and phenomenography to analyze the collected data. In this way, I can research these complex cheating situations objectively and in depth. Finally, I find that the results are not optimistic and many students do not have clear conceptions about these complex cheating behaviors. The methodology and the results in this paper can help others who want to research in this area in the future.
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1. Introduction

Student cheating is very common in many universities. This is a serious problem that affects education quality. Sheard and Dick [16] quote Graham, Monday, O'Brien, Steffen, Newstead, Franklin-Stocks and Armstead's [11, 14] data that "Over the last decade, several large studies have found alarmingly high levels of cheating, with 88% to 92% of students reporting to have engaged in some form of academic misconduct." In that paper, compared with exam cheating, more students admit that they take part in minor plagiarism and get unacceptable assistance. Besides this, Lipson and McGavern [12] find that from majority of undergraduate students' views, exam cheating is serious but some collaboration in homework is trivial, even when it has been prohibited. They also find that homework cheating is not only the form of cheating done by most of students; it is also the form of cheating which students do with the greatest frequency. Franklyn-stokes and Newstead write a table about undergraduate students' ratings of 22 types of cheating behaviors for seriousness and frequency. [10]

<table>
<thead>
<tr>
<th>Behaviour</th>
<th>Seriousness</th>
<th>Rank</th>
<th>Frequency</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Allow copying (coursework)</td>
<td>3.44</td>
<td>19</td>
<td>40.41</td>
<td>9</td>
</tr>
<tr>
<td>2. Cribs (examination)</td>
<td>5.45</td>
<td>2</td>
<td>8.24</td>
<td>19</td>
</tr>
<tr>
<td>3. Fabricating references</td>
<td>2.97</td>
<td>22</td>
<td>47.78</td>
<td>4</td>
</tr>
<tr>
<td>4. Lying (examination)</td>
<td>4.86</td>
<td>7</td>
<td>18.97</td>
<td>14</td>
</tr>
<tr>
<td>5. Copying coursework with knowledge</td>
<td>3.50</td>
<td>17</td>
<td>46.60</td>
<td>6</td>
</tr>
<tr>
<td>6. Lying (coursework)</td>
<td>3.94</td>
<td>14</td>
<td>39.89</td>
<td>10</td>
</tr>
<tr>
<td>7. Essay banks</td>
<td>4.64</td>
<td>9</td>
<td>18.39</td>
<td>15</td>
</tr>
<tr>
<td>8. Impersonation (examination)</td>
<td>5.78</td>
<td>1</td>
<td>2.39</td>
<td>22</td>
</tr>
<tr>
<td>10. Writing after examination ends</td>
<td>3.02</td>
<td>21</td>
<td>42.50</td>
<td>8</td>
</tr>
<tr>
<td>11. Copying coursework without knowledge</td>
<td>5.42</td>
<td>4</td>
<td>14.48</td>
<td>17</td>
</tr>
<tr>
<td>12. Advance information (examination)</td>
<td>5.43</td>
<td>3</td>
<td>7.53</td>
<td>21</td>
</tr>
<tr>
<td>13. Inventing data</td>
<td>3.52</td>
<td>16</td>
<td>47.24</td>
<td>5</td>
</tr>
<tr>
<td>14. Group work</td>
<td>3.95</td>
<td>13</td>
<td>51.29</td>
<td>3</td>
</tr>
<tr>
<td>15. Library</td>
<td>4.75</td>
<td>8</td>
<td>34.67</td>
<td>11</td>
</tr>
<tr>
<td>16. Paraphrasing without references</td>
<td>3.35</td>
<td>20</td>
<td>57.32</td>
<td>1</td>
</tr>
<tr>
<td>17. Copying without references</td>
<td>3.45</td>
<td>18</td>
<td>52.83</td>
<td>2</td>
</tr>
<tr>
<td>18. Collusion (examination)</td>
<td>5.28</td>
<td>6</td>
<td>8.02</td>
<td>20</td>
</tr>
<tr>
<td>19. Copying (examination)</td>
<td>5.36</td>
<td>5</td>
<td>14.27</td>
<td>18</td>
</tr>
<tr>
<td>20. Altering data</td>
<td>3.97</td>
<td>12</td>
<td>42.93</td>
<td>7</td>
</tr>
<tr>
<td>21. Doing another's coursework</td>
<td>4.32</td>
<td>10</td>
<td>15.37</td>
<td>16</td>
</tr>
<tr>
<td>22. Collusion (coursework)</td>
<td>4.11</td>
<td>11</td>
<td>24.11</td>
<td>13</td>
</tr>
</tbody>
</table>

Researchers send students questionnaires and ask them what they know and what they think of these cheating cases. After collecting students' answers, researchers figure out the data in column 2 and 4 by using three-way analysis of variance. Finally, by comparing the data, researchers get these behaviors' sequence for seriousness and frequency.
From students’ views, cheating behaviors in examination such as impersonation and cribs are very serious but seldom used. On the contrary, cheating in group and in using reference is more frequent. Because these minor, not typical cheating is more likely to happen and easy to be ignored, I pay more attention to it in this paper.

So far, most research papers are about Western students’ cheating problems: analyzing their acceptance of cheating behaviors and finding factors to cause or prevent cheating, but only few papers are about Eastern students (such as Chinese students’). Compared with Western students, Chinese students have different cultural and education background which may affect their judgment and reaction to cheating. Lipson and McGavern [12] find 50% of 891 students surveyed feel that cheating is more likely to happen in computer programming courses. So in this paper, I choose Chinese Computer Science (CS) students as research object and wish to find more useful information.

About concrete situations, I research about cheating in group and in using materials. In many universities, students often submit their assignments or lab reports in pairs or groups. Most of students admit that compared with exam cheating, cheating in group is more common. Unlike exam cheating, cheating in group lacks of supervision and it is hard to be detected by teachers. Besides this, punishment of cheating in group is light. Because all group members only submit one assignment, it is possible for some students who do nothing to pass course finally.

Besides cheating in group, using materials incorrectly are also common. When teachers always teach same content, insist on using same materials, ask students to do same assignment and use same questions in exam year after year, students will remember these old materials, assignments and exam questions, and then use them in new periods. In detail, students can only remember old exam questions and answers without understanding, and then rewrite them in new exams to get credits. In assignments or lab reports, they can borrow other students’ old assignments or reports to submit without any modification.

These situations are not typical cheating behaviors such as taking papers with answer to exam hall for copy and it is hard for all students to have clear and unified cognition about them. So it is necessary to do some researches about how to define these cheating behaviors and how to react when seeing them. In order to research these problems in depth, I both use quantitative and qualitative methods to collect and analyze data. In detail, I first use quantitative method to produce questions which will be used in interview and then uses qualitative method to find the answers to these questions.

I am a Chinese student who has studied Computer Science Education. In my two years here, sometimes I found some of Chinese CS students cheating. The reasons are complex and multiple. First, in China, students are encouraged to help others. It is common to give assignments to others for reference. Besides this, Chinese students emphasize friendship and always support some help to their friends, even though some help may be defined as cheating by Western teachers. Second, many Chinese students did not receive much education about cheating in China. Of course, they know some typical cheating in exam, but about some complex situations,
they are always confused and sometimes may cheat unconsciously. Third, CS students have more conditions to cheat. Because assignments are always submitted by electronic version, it is possible to copy others’ codes by USB disk. In Computer Science Education course, I have learned some knowledge about education and I want to use the knowledge to do some researches about cheating. This is why I am interested in this topic.

The reminder of the paper is structured as follows. In the next section, I describe some background information and introduce others’ previous papers. Section 3 is about this paper’s methodology. The concrete analysis to collected data is in section 4. Section 5 is about some discussion and conclusion. The final section is about references.
2. Background

Because cheating is so common and serious, many educators have done some researches in this area and want to solve this problem. However the number of these papers is much, there are still some standards to classify them.

First is research object. Many educators do not choose all students in college or university as research objects and they always have some particular preferences. For example, Sheard and Dick in their paper choose IT students as research object. [16] Brown chooses business students as research object. [4] In the two papers, researchers both choose students in the same major, because many people feel that cheating behaviors are more common in IT and business courses. Besides major, Whitley, Nelson and Jones in their paper focus on gender difference in cheating attitudes and behaviors. [17] They find compared to women, men report more favorable attitudes toward cheating and more cheating behaviors. Some other researchers focus on comparing students having different nationalities. Diekhoff, Labeff, Shinohara and Yasukawa in their paper compare 392 American students and 276 Japanese students to reveal both cross-cultural differences and similarities in cheating behaviors and attitude. They find that compared to American students, Japanese students report a higher incidence rate of cheating on exams, a greater tendency to neutralize (i.e., justify) cheating, and a greater passivity in their reactions to the observed cheating of others. [6] In a word, researchers always choose object by using special standards such as major, gender, nationality, because cheating is a complex problem, choosing particular objects can conclude more meaningful results.

Second is research content. Like research object, many people notice different contents about cheating. Some of them focus on how to define and classify different cheating behaviors. Sheard and Dick in their paper [16] classify cheating behaviors into 4 categories: exam cheating, major plagiarism, minor plagiarism and unacceptable assistance. Some of them research about cheating reasons. Sheard and Dick in their paper [16] list reasons for cheating and not cheating. The reasons for cheating include being afraid of failing, too much work, being lazy; the reasons for not cheating include priding in their work, moral value, fearing of being found out. In another paper “Determination of Factors which Impact on IT Students’ propensity to cheat”[15], Sheard and Dick classify reasons for cheating into two categories: internal factors including poor time management, lack of preparation, lack of skills to find resources and external factors including equipment failure, software problems, lack of appropriate resources. Besides these, there are also some papers about students’ and teachers’ reactions to others’ cheating behaviors. Lipson and McGavern in a study of cheating at MIT [12] investigate how students, teaching assistants and faculty react when cheating is suspected. They find undergraduate students overestimate the percentage of faculty who do not take any action on homework cheating. Different people may notice different aspects of cheating problem including classifying cheating behaviors, finding cheating reasons and investigating people’s reactions to others’ cheating behaviors.

Third is research method. Research method contains two parts: data collection method and data analysis method. About first one, it is common to use questionnaire survey for collecting lots of people’s views, because this has many advantages. First, it can break through the constraint of
time and place; investigate a large number of people at the same time. Second, this way facilitates doing quantitative research on the survey results. Third, this way is anonymous and people can express their real thinking. Forth, it can save time, energy and cost. For example, Sheard and Dick in their paper [16] use this method to investigate 112 IT students; Lipson and McGavern in a study of cheating at MIT [12] investigate 891 undergraduates, approximately 490 faculty, and 481 graduate teaching assistants by using questionnaires. Besides using quantitative method to collect data, some researchers use qualitative way to collect data. For example, Love [13], in a qualitative study, interviews three male and three female students who were in Master’s programs in health education, rehabilitation counseling, and community counseling to find the factors of cheating. Compared with questionnaire, using interview can elicit people’s experience, perceptions, views and attitudes. In this way, interview can support in-depth probe.

About data analysis method, this is related to method of collecting data. After using quantitative method to collect data, researchers always use statistic way to analyze the collected data. For example, Sheard and Dick in their paper [16] use factor analysis technique to analyze collected data; Lipson and McGavern in a study of cheating at MIT [12] also use statistic way to get their conclusions. After using qualitative method to collect data, researchers always classify the collected data by using qualitative analysis. For example, Love [13], in his paper, reveals 13 categories of factors that encourage students to avoid cheating and 5 sets of factors to cause cheating. More contents about methodology of this paper are in the next part.
3. Methodology

3.1 Quantitative Research

In education course, Berglund has introduced quantitative research that quantitative research is grounded on “…the assumption that features of the social environment constitute an objective reality… collecting numerical data on observable variables. (Gall, Borg & Gall, 1996)” [1] Berglund, Daniels, Pears in their paper, also write about quantitative research that “quantitative research is based on the assumption that the truth is objective and neutral, and corresponds in this way to research in science and technology.” [2] In Wikipedia net, it writes that “Quantitative research is the systematic scientific investigation of quantitative properties and phenomena and their relationships. The objective of quantitative research is to develop and employ mathematical models, theories and/or hypotheses pertaining to natural phenomena.” [19] In detail, quantitative research combines two parts. The first part is data collection; the second part is data analysis. Cheating is a big and complex problem, it is important to collect quantitative data and choose some methods which are suitable to analyze collected data.

Questionnaire is good quantitative method to collect data. Fincher and Petre [8] in their book “Computer Science Education Research“, write that “Questionnaires (or surveys), then, are a method of data collection within ‘survey research’, as are structured interviews. They have the potential to generate large volumes of data at relatively low collection cost.” By using questionnaires, researchers can easily get large number of data, because all questions are fixed in questionnaires and people only need to choose one from many available answers. Unlike interview, questionnaire does not cost much time. Many people can fill out questionnaires at the same time.

In many papers about cheating, researchers always use questionnaires to collect data. Sheard and Dick [16] in their paper “Influences on Cheating Practice of Graduate Students in IT Courses: What are the factors?” use questionnaires to collect data for classifying cheating behaviors and reasons. Lipson and McGavern [12] in a study of cheating at MIT, also use questionnaires to collect undergraduates, faculty and graduate teaching assistants views on cheating. So using questionnaires to collect data is common in cheating field.

After collecting large number of data, the second part is to analyze it. Statistical way is a good way to analyze collected quantitative data. In Wikipedia net [20], it writes “This data can then be subjected to statistical analysis, serving two related purposes: description and inference. Descriptive statistics summarize the population data by describing what was observed in the sample numerically or graphically. …frequency and percentage are more useful in terms of describing categorical data (like race). Inferential statistics uses patterns in the sample data to draw inferences about the population represented, accounting for randomness.” There are two examples which can explain these two different statistical methods. Descriptive statistics are to describe some phenomenon numerically. For instance, by using it, researchers can find how many percentages of students will keep silent when seeing others cheating and how many of them will not. By using inferential statistics, researchers can find relationship between two
parameters such as assets and life. For example, poor people tend to have shorter lives than affluent people.

### 3.2 Qualitative Research

In education course, Berglund also has introduced qualitative research that it is grounded on “... the assumption that individuals construct a social reality in the form of meanings and interpretations ... studying ... intensively in natural settings. (Gall, Borg & Gall, 1996)” [1] Berglund, Daniels, Pears in their paper quote Denzig and Lincoln’s words that “qualitative research is multi-method in focus, involving an interpretive approach to its subject matter, this means that the qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them(ibid., p. 2)” [2] In Wikipedia net, it writes that “Qualitative research is a field of inquiry applicable to many disciplines and subject matters. Qualitative researchers aim to gather an in-depth understanding of human behavior and the reasons that govern such behavior.” [18] Similar to quantitative research, qualitative research also has two parts. First is to collect qualitative data and second is using some methods to analyze collected qualitative data.

Interview is good qualitative method to collect data. Fincher and Petre in their book “Computer Science Education Research” [8] write that “Interviews are guided dialogues, valuable in eliciting subjects’ experiences, perceptions, opinions, attitudes, intentions, and beliefs. They allow subjects to respond in their own words, to explain behaviors in terms of their own values, goals and expectations, to assign their own meanings, and to provide clarification.” In cheating field, researchers seldom collect students’ views in this way. In many papers, they just use questionnaires to collect data and classify different cheating behaviors or reasons. But in fact, interview is necessary to be used in cheating field. For example, many students will keep silent when seeing others’ cheating in group. In questionnaires, their choices are the same but actually their reasons may be different: some students think it is nothing of their business; some other students do not want cheating students to be punished by teachers. So using interview to collect students’ views about cheating is necessary and only using questionnaires can not reflect students’ real thinking in depth.

After collecting qualitative data, the next step is to analyze the data. Phenomenography is a good qualitative method. Marton and Booth [7] discuss the idea of phenomenography: “The unit of phenomenographic research is a way of experiencing something, [...], and the object of the research is the variation in ways of experiencing phenomena. At the root of phenomenography lies an interest in describing the phenomena in the world as other see them, and in revealing and describing the variation therein, especially in an educational context [...].” So phenomenography is a qualitative, empirical based research method and its aim is to describe a group of people’s different understanding to a certain phenomena. Many people use this method in education field. Berglund and Wiggberg use it in how students learn CS in different way [3]; Eckerdal and Thuné [7] use it in novice java programmers’ conceptions of “object” and “class”; Daniels, Berglund, and Pears [5] use in grading systems. But few people use it in cheating area.
3.3 My Research

3.3.1 My Use of Quantitative Research
In this paper, I send questionnaires to 24 Chinese CS students in Uppsala University and get their answers about cheating in some complex learning situations. This questionnaire is based on some previous studies such as: “Undergraduate academic dishonesty at MIT” [12], “Influences on Cheating Practice of Graduate Students in IT Courses: What are the factors?” [16] and the project in Computer Science Education. But I put particular emphasis on some minor cheating situations.

The questionnaire is about how to understand some cheating situations and reactions. It contains both open and closed questions to cover as many as possible answers. It also lists some similar situations and asks students to choose their answers. The essence of these similar situations is the same but only few parts are different. So using this way is easy to find students’ different understanding. Besides this, I do not directly ask students whether they take part in some cheating actions because many students may want to protect themselves and will not talk real situations out. All students’ answers are anonymous and in this way students can express their real thinking.

After getting large number of data, the second part is to analyze collected data. I use statistical way to analyze data and find some meaningful contents. This analysis way belongs to descriptive statistics and its aim is to describe distribution of Chinese CS students’ views on cheating. Especially, I compare Chinese CS students’ different views about some similar situations and produce some questions which will be asked in interview. In a word, this part can establish a bridge to connect quantitative research and qualitative research.

3.3.2 My Use of Qualitative Research
In this paper, the qualitative research also has two parts. First is collecting qualitative data by using questions produced in questionnaires and second is using some methods to analyze collected qualitative data and answering the previous questions. Interview is chosen as the method to collect qualitative data.

I interview 14 Chinese CS students in Uppsala University and ask them the questions which are produced in questionnaires before. Some Chinese students are interviewed in English and the others are interviewed in Chinese. All these students’ words are recorded by tape. After that, English records are directly written down; when I use Chinese to interview students, first their words are transcribed into English and then recorded. Like questionnaire, all students’ answers are anonymous and I only use numbers to represent them.

Fincher and Petre [8] write that “Interviews are guided dialogues”, about setting questions, after a main question, there are some followed questions in the interview to elicit students’ more conceptions. Because students have their own ways to understand questions and sometimes their answers may be far away from cheating, using followed questions can prevent their answers leaving topic.
After using interview to collect students’ conceptions, the next step is to analyze their words. Phenomenography is suitable for this paper. There are some reasons: first, the data for phenomenography is collected through interviews and I have interviewed 14 students; second it reveals variation in a group of persons’ understanding to a certain phenomena and this paper is about how Chinese CS students understand cheating in complex learning situations.

In detail, I use phenomenography to analyze Chinese CS students’ words in interview and classify their words into different categories. The categories describe students’ different understanding about cheating in complex learning situations and they are related to each other in logic. Some categories can embrace others because they are from a wider perspective. Finally, I use the categories to answers previous questions in the interview.

### 3.4 My Data

My data includes three parts: collected quantitative data, questions produced by statistic analysis and collected qualitative data. About quantitative data, I get it from questionnaires directly and calculate percentage of every available answer. Table 2 below shows some collected quantitative data from questionnaires.

<table>
<thead>
<tr>
<th>Some complex learning situations</th>
<th>Not cheating</th>
<th>Trivial cheating</th>
<th>Serious cheating</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Someone does nothing in group but get credits</td>
<td>10%</td>
<td>45%</td>
<td>45%</td>
</tr>
<tr>
<td>b. Someone does few but not core things in group.</td>
<td>70%</td>
<td>30%</td>
<td>0%</td>
</tr>
<tr>
<td>c. Totally copy others’ previous ‘pass’ assignments and submit them.</td>
<td>0%</td>
<td>17%</td>
<td>83%</td>
</tr>
<tr>
<td>d. Modify few parts of others’ previous ‘pass’ assignments, then submit them.</td>
<td>17%</td>
<td>71%</td>
<td>12%</td>
</tr>
<tr>
<td>e. Borrow some useful information or ideas from others’ previous assignments and then finish assignment individually.</td>
<td>92%</td>
<td>8%</td>
<td>0%</td>
</tr>
<tr>
<td>e. Remember old exams’ questions and answers without understanding and then use them in new exams.</td>
<td>50%</td>
<td>46%</td>
<td>4%</td>
</tr>
</tbody>
</table>

Table 2 present the students’ acceptability about some cheating situations. Each row presents the percentage of students who think a situation as cheating or not. The leftmost column indicates the situations; the remaining right columns are about distribution of students’ views on these situations.
situations.

By analyzing collected quantitative data, I produce some interesting questions. For example, how do students understand the issue of cheating in group work? I then use these questions in interview and collect related students’ answers.

The last one is collected qualitative data which is students’ thinking in interview. After collect it, I then use phenomenography to classify and get some categories. Finally, I use these categories to answer the previous questions produced by questionnaires. There is an example below.

**Interviewer:** How do you understand the issue of cheating in group work?

**Student1:** Well, in my opinion, one person does nothing in the group or he only does the presentation. It’s cheating.

In conclusion, in this paper, I combine quantitative and qualitative methods together to collect and analyze data. In detail, I first use statistical way to analyze the quantitative data from questionnaire and then produce some meaningful questions. Second, I use these questions in the interview and then classify students’ different views by using qualitative method: phenomenography. Finally, I use the results to answers the previous questions in the interview. These are different from other papers’ methodologies in cheating field. The figure 1 below describes each step in this work.

![Figure 1. Flow chart of this paper’s research](image)

In the figure 1, the first two steps belong to quantitative research: data collection method (questionnaire) and data analysis method (statistic way); the last two steps belong to qualitative research: data collection method (interview) and data analysis method (phenomenography). Above each arrow, there are my data: quantitative data, questions and qualitative data.
4. Results

The questions below addressed by me can be divided two parts. First is about how students define some complex learning situations, cheating or not. In my introduction part, I have written that some minor cheating is more likely to happen and many students often ignore it, so in this part, questions’ contents are about how to define cheating in group and cheating in using materials. Second part is about people’s reaction when seeing others cheating behaviors. This is also important because others’ reaction can affect students’ behaviors to a great extent. If everyone is tolerant about others’ cheating behaviors, there will be more cheating students. This part has two sub-parts: students’ reactions and teachers’ reactions from students’ views.

4.1 Cheating in Group

After using questionnaires and interviews to collect data about cheating in group, the next step is to analyze the data and find some interesting and meaningful things. From the results, I find an interesting situation that many students have different views on some similar phenomenon. So what are students’ views and which reasons to cause it? It is necessary to research.

After collecting the data from questionnaire, I use statistical method to analyze it. First, I calculate number of the students who choose same available answer; second, I use percentage to present the results; third, I compare with every available answer and finds whether there are some meaningful things such as divergence; finally, if meaningful things are found, I will produce some questions which will be used in interview.

<table>
<thead>
<tr>
<th>Complex learning situations in group</th>
<th>Not cheating</th>
<th>Trivial cheating</th>
<th>Serious cheating</th>
</tr>
</thead>
<tbody>
<tr>
<td>f. Someone does nothing in group but get credits.</td>
<td>10%</td>
<td>45%</td>
<td>45%</td>
</tr>
<tr>
<td>g. Someone does few but not core things in group.</td>
<td>70%</td>
<td>30%</td>
<td>0%</td>
</tr>
</tbody>
</table>

In the table 3, the second and third rows present students’ views on two similar actions: first one is doing nothing in group; second one is doing few things in group. The essence of them is the same: students do not finish their work in time and their workload does not reach average standard. To be surprised, many students have different conceptions about these two similar actions. 90% of students think the first one as cheating and 70% students think second one is not cheating. So, how do students understand the issue of cheating in group work? It is necessary to do some researches.

After getting this question, the next work is to use it in interview and analyze results by phenommenography. Finally, there are four different categories about students’ conceptions of cheating in group.
Table 4 Four Categories about students’ conceptions about how to define cheating in group

<table>
<thead>
<tr>
<th>A1 Cheating as help</th>
<th>Thinking cheating as a kind of help.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2 Notice work results</td>
<td>Students think doing nothing but getting credits in group as cheating.</td>
</tr>
<tr>
<td>A3 Notice work process</td>
<td>As above, students notice members’ work attitude such as attendance rate.</td>
</tr>
<tr>
<td>A4 Notice cheating reasons</td>
<td>As above, students focus on others’ cheating reasons: objective or subjective.</td>
</tr>
</tbody>
</table>

Table 4 presents four categories about how students define cheating in group. The leftmost column indicates students’ views by few words and the rightmost column uses sentence to describe their views more clearly.

A1 Cheating as help:
The Students have no clear standard to define cheating. They do not think doing nothing in group as a kind of cheating. If some students help cheating student to finish his work, this is a kind of help.

Interviewer: How do you understand the issue of cheating in group work? Can you illustrate it by some examples?
Student2: This is hard to distinguish. Because you are all in one group, from teacher’s perspective, the work is group work…But because the students have been divided in each group, from teacher’s view, he may don’t care the cheating behaviors.
Interviewer: So in your opinion, teachers only notice...?
Student2: In our universities, teachers only notice the results.

Interviewer: So what about doing nothing in group or asking others to help him to do the group work?
Student7: I don’t think it’s a kind of cheating and it’s just asking others for help.
Interviewer: So, you mean the person doesn’t do his work and asks others to help him; this action is not cheating but a kind of help.
Student7: Yes.

From the students’ perspective, they think cheating as a kind of help and they do not distinguish these two different actions. It is necessary to help other members in the same group but which help is allowed, they do not have a clean standard. Besides this, they think group work is the whole one and teachers only notice final results. So it is not important to emphasize individual workload.

A2 Notice study results:
In this category, students think doing nothing in group but getting credits as cheating. Their conceptions are different from students’ views in first category and they have some judgments to define cheating in group.

Student3: If in a group there are many students but only one student does things, this is a kind of cheating.
**Student5:** I think, for example, if a group member doesn’t do anything in group, that’s of course consider as cheating. I mean that he does nothing but get credits. That is obviously cheating.

**Student8:** In my opinion, I think, for example, if one group member doesn’t do anything for the assignment but just ask other members to do it. So, I think this can be a kind of cheating.

From these students’ perspective, they focus on work results. If someone does nothing in group, this is a kind of cheating. Besides this, it is necessary to notice individual workload, however finally the whole group will only submit one project.

**A3 Notice study process:**
In this category, students have more flexible judgment to define cheating. Besides others’ final work results, they also notice students’ studying process such as attending group meeting or discussing, besides this, they will also focus on whether students have some concrete cheating behaviors.

**Student6:** First is to see the student’s attendances at group meetings.

**Student12:** Some students don’t do their work by themselves but copy others’ work from internet.

**Student14:** For example, there are 3 persons in a group but only 2 of them do work. The third student does nothing or little work. And he seldom attends group meeting and discussion. Because finally, all group members get a mark together, he will still pass the course.

**Student13:** However some students don’t have enough abilities, they will discuss with others and try to do some work which they can do. I think this situation is acceptable.

**Interviewer:** Even if they don’t finish their work...

**Student13:** Yes, even if they don’t do much work.

From the students’ views, besides individual work results, they more focus on studying process. They will notice whether students really take part in group work and try their best to do their own work. If one student tries his best to do work, even if he is not able to finish it but get credits finally, the action is also allowed by these students.

**A4 Notice cheating reasons:**
In the last category, the students both notice studying results and process. Reasons here mean conditions which lead students to cheat. There are two categories: objective and subjective reasons. For example, if a student cheats because of being lazy, this is subjective reason; if a student is ill and does not finish his own work finally, this is subjective reason. So in this category, the students’ judgment is the most flexible and they will consider from more aspects.
**Student10:** Cheating in group... For example, there are some students to work in a group. One student does much more work but others do less work. Finally, they submit the group work together. So maybe the other students are lazy and the action is a kind of cheating....Maybe your good friend has some important things to do, so maybe he will do little work in group. If you know the reasons, you can judge his actions...If a strange student can tell me the reasons which let him do little work in group; I will also judge his actions according to the reasons. And if he is just lazy and wants to play, I think he is cheating.

From the students’ views, they will also judge others’ cheating behaviors in group according to reasons. This means the students will consider both objective aspects (workload and studying process) and subjective aspects (reasons). If reasons are reasonable, students will be more tolerant; on the contrary, if reason is just lazy, students will be stricter. Compared with other students’ views, these students’ views are more flexible.

By analyzing the data from questionnaire, I get one question: how do students understand cheating in group? By analyzing the data from interview, I find 4 different categories of students’ conceptions about defining cheating in group. The former students have no or simple standards to judge cheating behaviors; on the contrary, the later students have multiple and more flexible standards.

After classifying these four categories, I can explain the surprising situation above. If someone does nothing in group, that means he has no work results and no study process. To some extent, this action shows the student’s attitude is passive. So more students think this action belongs to cheating. If someone does few things, at least he takes part in group work and has his own work results. However, finally his workload does not reach at average level, his attitude is more active and his action will be tolerated by more students. That is why many students have different views on these two similar actions.

It is obvious that students’ views in the last category are more flexible. The views are useful to define cheating in group. At the same time, the views can support educators some guidelines to prevent cheating in group. For example, teachers should also notice students’ studying process and their cheating reasons, besides their final workload. In this way, teachers’ judgment will be more flexible.

**4.2 Cheating in Using Materials**

**4.2.1 Using Others’ Previous Assignments**

After analyzing the data about cheating in group, I do some researches about cheating in using materials. About it, the most common situation is using others’ previous assignments, because teachers always use same materials and ask students to do same assignments year by year. If one student does not finish his work in time, he can still do the same assignments until he finishes it, however at the same time, new students have different assignments. This situation can support chances for cheating students to use others’ previous pass assignments.
After seeing the data from questionnaires, the results are confusing. Many students have different conceptions to these similar situations.

**Table 5. From students’ views, to what extent does using others’ assignments belong to cheating?**

<table>
<thead>
<tr>
<th>Situations about using others’ previous assignments</th>
<th>Not cheating</th>
<th>Trivial cheating</th>
<th>Serious cheating</th>
</tr>
</thead>
<tbody>
<tr>
<td>h. Totally copy others’ previous ‘pass’ assignments and submit them.</td>
<td>0%</td>
<td>17%</td>
<td>83%</td>
</tr>
<tr>
<td>i. Modify few parts of others’ previous ‘pass’ assignments, then submit them.</td>
<td>17%</td>
<td>71%</td>
<td>12%</td>
</tr>
<tr>
<td>j. Borrow some useful information or ideas from others’ previous assignments and then finish assignment individually.</td>
<td>92%</td>
<td>8%</td>
<td>0%</td>
</tr>
</tbody>
</table>

The table 5 presents students’ views on using others’ assignments. The leftmost column indicates three similar actions. But students’ reflections in three right columns are much different. 83% of students think copying others’ assignments is serious cheating; 71% of students think modifying some parts of others’ previous assignments for submitting is trivial cheating; 92% of students do not think borrowing others’ ideas is cheating. The essence of these three actions is the same and there is only little difference about how to use others’ previous assignments. So what are students’ views on using others’ previous assignments? This is worth researching.

The question is then asked to students in interview and results are analyzed by phenomenography. Finally, there are four different conceptions about using others’ previous assignments.

**Table 6. Four different conceptions about using others’ previous assignments**

<table>
<thead>
<tr>
<th>B1 Copying assignments are totally tolerant.</th>
<th>It is allowed to copy others’ previous assignments for passing courses.</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2 Students need understand others’ assignments before copying them.</td>
<td>It is allowed to use others’ assignments but students need to understand the contents and convert them into students’ own knowledge.</td>
</tr>
<tr>
<td>B3 Partly using others’ assignments is allowed.</td>
<td>Students can partly use others’ previous assignments, especially their thinking. Students also should add their new ideas and create something.</td>
</tr>
<tr>
<td>B4 Using others’ assignments is forbidden.</td>
<td>Students should not use others’ previous assignments totally because of keeping thinking independent.</td>
</tr>
</tbody>
</table>

Table 6 presents four categories about how students define cheating in using others’ assignments. The leftmost column indicates students’ views by few words and the rightmost column describes their views by using more words.
B1 Copying assignments are totally tolerant:
In the category, students think it is allowed to copy others’ previous assignments, because they have to pass course and some assignments are too hard. Besides this, some of them emphasize teachers’ duty. In their opinion, teachers’ unfair evaluation is the main reason which causes them to copy others’ previous assignments.

Student2: Actually, in our university, there is no choice but to use others’ previous assignments. I must use them because sometimes the assignments are the same, others pass it but I fail. And I don’t know the reasons. And this situation is according to different teachers. Maybe some teachers are more fair and others are much slack about evaluating assignments. So I have no choice but to use others assignments.

Student13: The assignments here are helpful to our study. If they are too hard, you can ask assistants for help. But there are still some very difficult assignments such as data mining’s assignments and we can’t finish them even if asking assistants for help. So we have to use others’ assignments but this action is detected by teacher. Finally, we give up this course. So it’s possible that assignments are indeed too hard to induce cheating.

From the students’ views, they do not distinguish between copying assignments and borrowing others’ thinking. The most important thing for them is to pass course and get credits. So they are credit-based students. Besides this, they always ascribe their actions to external factors such as teachers’ unfairness and too hard assignments. So copying others’ previous assignments is allowed by them.

B2 Students need understand others’ assignments before copying:
In this category, students also think it is allowed to use others’ assignments. They do not distinguish between copying assignments and borrowing others’ assignments. But they emphasize understanding others’ assignments before submitting them. This is the difference between them and students in first category.

Student1: I think people can use the previous assignments but before they submit the assignment, they need to understand the previous assignments and to practice by themselves again, before submitting the assignments.

In this category, students have both credit-based conceptions and ability-based conceptions. On one hand, they allow submitting others’ assignments; on another hand, they also emphasize understanding others’ assignments. In detail, they have more credit-based conceptions and less ability-based conceptions, because they just emphasize understanding others’ assignments but ignore having their own thinking. Understanding others’ thinking is enough for them.

B3 Partly using others’ assignments is allowed:
In this category, students allow to use others’ previous assignments partly, especially others’ thinking. They can clearly distinguish between copying assignments and borrowing others’ thinking. The former one means that students do not learn anything and have a bad studying
attitude. The cheating students do not take their time and add their own things to others’ assignments. The later one means students can learn others’ thinking and create their own things. They have a studying process. So these two actions are much different: the former one is cheating but the later one belongs to normal studying process.

**Student6**: This depends on different situations. Totally copying others’ assignments without any modification, this action is complete cheating. If the student only borrows others’ ideas but he adds his own creative thinking which is majority, this action is normal study and doesn’t belong to cheating.

**Student9**: There are two situations. If you use others’ assignments as reference to get some ideas and finish the work by yourself, this is ok because you can learn the knowledge and understand the work; if you just copy others’ assignments or simply modify some unimportant things, and then submit the assignments, this action belongs to cheating.

**Student11**: If the student copies others’ previous assignments and only modifies some names, I think it is a kind of cheating. But the solving ways of a problem can be many and seeing others’ assignments can help me to understand this problem better. And then I can have my own way to solve this problem.

**Interviewer**: So you mean that some creative things are necessary.

**Student11**: Yes. And I think this action is not cheating. If 80% of your assignment is similar with others’ assignments, I think this is cheating behavior certainly.

The students in third category focus on getting knowledge and improving their abilities, however they still partly allow using others’ previous assignments. They emphasize creating and keep their own thinking independently after seeing others’ previous assignments. So they have more ability-based conceptions and less credit-based conceptions.

**B4 Using others’ assignments is forbidden:**
In the last category, students are stricter in using others’ previous assignments. In their opinion, all these actions are cheating. Obviously, totally copying others’ assignments is quite serious cheating and borrowing others’ ideas is less serious. They believe if you have right results from others’ assignments, your thinking will be narrowed by them. It is hard to do some creative work. Finally, students will not have their own thinking.

**Student4**: I think this way is not good. First it’s not good for students’ abilities. The aim of doing assignments is to learn knowledge. So the students should learn by themselves and when meeting problems, they can read books and go to internet to find some information. This is the learning process. When you see others’ assignments, you will know the correct answers at once, and you won’t experience the learning process.

**Interviewer**: Anything more?

**Student4**: On the other hand, this way may cause suspicion of cheating.

**Student5**: I think both of them are cheating. Obviously, totally copying others’ assignments is
a quite serious way of cheating, and borrowing others’ ideas of course depends on what you mean about “borrow”. If “borrow” means totally using others’ ideas without thinking, it’s bad cheating, also. I think both of them are cheating, one is much serious and the other is less serious and taking a bit of cheating.

**Student8:** I think both of them are cheating because obviously if totally copying others’ assignments, of course it can be cheating. But if you just borrow the main idea or the basic idea and then I will do some creative work, but practically you can’t do that since if you have already right results of others, your thinking will be narrowed by them. It’s hard to do some creative work.

Students in this category emphasize thinking independently. From their views, it is not good to use others’ thinking for avoiding meeting problems, because finding and solving problem is also a kind of learning process. So these students are ability-based. Their aim of doing assignments is to learn knowledge but not only for getting credits.

After analyzing the data from questionnaire, one question is asked by the paper: what are students’ views on using others’ previous assignments? I then use it in the interview to look for answers. Finally, I find four different views on using others’ previous assignments. They are different in many aspects. First, students’ aims are different. The former students are more credit-based and the later students focus more on learning knowledge and improving their abilities. So they are more ability-based. Second, they have different tolerance about using others’ assignments. The former students are more tolerant but later students are stricter.

After classifying these four categories, I can explain the surprising situation above. About totally copying others’ assignments, students in first category receive this action because they are most tolerant and accept totally copying others’ assignments. Besides these students, students in second category also accept this action because they are similar to the students in first category and from their views students only need to understand others’ assignments before copying. Students in third category do not agree this action, because they think some changes and new thinking are necessary. Students in last category do not agree either because they are most strict.

About modifying few parts, students in first and second categories will accept it; students in third category think it as trivial cheating; students in forth category think it as serious cheating because they are strict and think the essence of these actions are the same (dishonesty).

About borrowing others ideas, students in first, second and third categories all accept it and only students in forth category do not accept it. There is a table below which can illustrate this situation. The leftmost column indicates the three similar behaviors about using others’ assignments; the three rightmost columns are about distribution of students’ conceptions.

From the table, it is clear to see that only students in third category change their views according to different situations. This change is the same as the change in table 5: 83% of students think copying others’ assignments is serious cheating; 71% of students think modifying some parts of
others’ previous assignments for submitting is trivial cheating; 92% of students do not think borrowing others’ ideas from their assignments is cheating. So we get answers that students in category 3\textsuperscript{rd} are in the majority of all students and they have different conceptions about using others’ pervious assignments.

Table 7. Distribution of students’ conceptions about using others’ previous assignments

<table>
<thead>
<tr>
<th>Situations about using others’ previous assignments</th>
<th>Students in 1st category</th>
<th>Students in 2nd category</th>
<th>Students in 3rd category</th>
<th>Students in 4th category</th>
</tr>
</thead>
<tbody>
<tr>
<td>k. Totally copy others’ previous ‘pass’ assignments and submit them.</td>
<td>Not cheating</td>
<td>Not cheating</td>
<td>Serious cheating</td>
<td>Serious cheating</td>
</tr>
<tr>
<td>l. Modify few parts of others’ previous ‘pass’ assignments, then submit them.</td>
<td>Not cheating</td>
<td>Not cheating</td>
<td>Trivial cheating</td>
<td>Serious cheating</td>
</tr>
<tr>
<td>m. Borrow some useful information or ideas from others’ previous assignments and then finish assignment individually.</td>
<td>Not cheating</td>
<td>Not cheating</td>
<td>Not cheating</td>
<td>Serious cheating</td>
</tr>
</tbody>
</table>

Knowing these four categories and their distribution is helpful for teachers to prevent students cheating in assignments. First, teachers can clearly tell their students that using others’ assignments may lead to cheating. At the same time, they should encourage students to think independently because using others’ assignments will constrain students’ thinking. Second, educators can set some concrete regulations to punish similar cheating behaviors. In this case, there will be more and more students thinking independently.

4.2.2 Using Old Exam Papers without Understanding

Besides using others’ previous assignments, another situation is using old exam papers without understanding. Because some teachers always use same questions in exams every year, it is possible for students to remember old exam papers without understanding to pass new exams. Whether this situation belongs to cheating from students’ views? I firstly use questionnaires to collect students’ answers.

Table 8. How do students think about using old exam papers without understanding?

<table>
<thead>
<tr>
<th>Situation about using old exam papers</th>
<th>Not cheating</th>
<th>Trivial cheating</th>
<th>Serious cheating</th>
</tr>
</thead>
<tbody>
<tr>
<td>e. Remember old exams’ questions and answers without understanding and then use them in new exams.</td>
<td>50%</td>
<td>46%</td>
<td>4%</td>
</tr>
</tbody>
</table>

The distribution of students’ views is presented in table 8. The leftmost column is about situation and the right columns present the percentage of students who think this situation as not cheating, trivial cheating or serious cheating. From the table, we can see that half of students do not think this action as cheating but there are still nearly half of students who think this action belongs to
trivial cheating. So many students have different views about the same situation. It is necessary to do some deep researches about this situation.

The question “How do you think of passing examinations by remembering old exam papers without understanding?” is then used in interview to find students’ real thinking. Finally, three different categories of students’ views are found by using phenomenography.

Table 9 Three different conceptions of using old exam papers without understanding

<table>
<thead>
<tr>
<th>C1 Accepted attitude</th>
<th>Students do not think this situation is cheating. This is teachers’ responsibilities. Reciting old exams is also a kind of labors.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C2 Flexible attitude</td>
<td>This depends on different questions. Some questions only need students to recite but others need them to understand.</td>
</tr>
<tr>
<td>C3 Disapproving attitude</td>
<td>This is a kind of cheating and students should really understand knowledge.</td>
</tr>
</tbody>
</table>

In table 9, there are three categories about how students define cheating in using old exam papers. The leftmost column indicates students’ attitude by few words and the rightmost column describes their views clearly by some sentences.

**C1 Accepted attitude:**
In this category, students do not think using old exam papers without understanding as cheating. They have several reasons. First, teachers should take responsibility and if they do not reuse old exam questions, this problem will not happen. Second, students have taken their time and energy to recite old exam papers. This is a kind of labors and the essence of it is the same as remembering textbooks’ contents. Third, this action is different from other typical cheating behaviors, because students do not take old exam papers to examination hall for copying.

**Student2:** This is not a kind of cheating. The questions in exams are set by teachers... Even though I only recite the questions without understanding, teachers can set different questions. So when I meet the same question, why don’t I write down the answers in old exam papers?

**Student6:** This is not a kind of cheating and reciting is also a kind of labor. Reciting the contents in textbooks and remembering old exam papers are the same about their essences. Understanding or not is not related to cheating but students’ abilities.

**Student12:** I don’t think this is a kind of cheating.

**Interviewer:** Why?

**Student12:** However you don’t really understand the old exam papers, you have remembered them by yourselves. Students cost time to remember the old exam papers but not from copying.

**Interviewer:** So you mean this is also students’ labor.

**Student12:** Yes, they recite the old exam papers by their effort. So I don’t think this is a kind
of cheating. And we can only say there are some problems about exam patterns.

**Student14:** This is not cheating. You don’t take the old exam papers to examination hall for copying. And you just have a look at them and find which questions were set by teachers before. And teachers will give you some old exam papers for reference. It’s hard to read and recite a book with 600 or 700 pages.

These students have some features. First, they notice more about process but not results. If one student has taken much time and energy to recite, that is enough. Understanding or not is not related to cheating but students’ abilities. Second, they emphasize external factors such as teachers’ duties or heavy work for preparing exams. Third, they distinguish this action from other cheating behaviors because they do not have concrete and typical cheating behaviors. So they do not think this action belongs to cheating.

**C2 Flexible attitude:**
In the category, students think this depends on different questions in examination papers. For some definition questions, students can remember them, because there is only one answer. For some other questions, students need to understand them and do some creative work; otherwise, this is a kind of cheating.

**Student8:** It’s hard to say. It depends on the different problems or the questions on the examination papers. For example, there is something you must recite by heart and it’s not a kind of cheating, right? But for some questions, you need to do creative and analyzing work and if you just recite the previous results, it’s a kind of cheating. For this kind of question, you should understand and then work.

These students’ views are intermediate. On one hand, they admit it is necessary to remember some questions in old exams such as definition questions; on another hand, they do not deny that it is possible to cause cheating if students just recite some other questions which need to be understood. This is the difference between these students and the students in first category.

**C3 Disapproving attitude:**
In the last category, students think this action as a kind of cheating. They emphasize understanding. After students understand old questions and knowledge, they are the students’ own things. Only reciting and using them in new exams belongs to cheating.

**Student1:** I think in most cases that is cheating. You must..., if you use the old examination papers and use the old answers before you go to enter into the examination room. You need to understand old questions and old answers.... First of all, if before the person uses the old answers of old examination papers, he can answer the question by themselves and after that they can check whether the answer is right or not. And the second method is he can use the old examination papers and use the old questions but he can find another answer according to the same question. So that is also another method to let him learn more things. Then just use the old examination papers.
Interviewer: So you mean using old exam papers just like a kind of practice before exam.
Student1: Yes, before the exam, they can practice and understand the questions. So it’s not cheating. But if they do not do that, just copy the answers, it’s cheating.

Student9: Yes, it’s a kind of cheating....The old exam papers have some functions.... it tells you which contents are necessary for you to understand...Besides the practice, the old exam papers are also a kind of reference to review our knowledge.

Student11: In my opinion, this is a kind of cheating.... And for some students, they can’t understand some contents and have to use this way to pass exams.... We can see them (old exam papers) as practice and understand them fully.

The students notice the results and emphasize whether others really understand and learn knowledge. Besides this, they always see old exam papers as a kind of practice or reference but not tools to pass exams. These are the differences between their views and former students’ views.

After interviewing students and analyzing their words, it is clear to see that many students have totally different views: some of them think using old exam papers without understanding is a kind of cheating; others do not think so. That is why students have great divergence of views in questionnaire. Besides these, many students in every category think teachers should change questions of exams in some extent every year. At this point, major students’ views are unified.

Student2: About same questions, I don’t think it’s necessary but teachers can set same contents of questions and only change some parameters.
Interviewer: So you think the important contents are necessary to be tested every year.
Student2: Yes, just modify the patterns of questions in exams.

Student6: ...it is reasonable that there are same parts in exams every year. But to a certain degree, we need some modification in patterns. And this way is helpful to encourage students to study and let them learn more contents such as reading more books and more related information.

Student8: But for something, it would better if we change the way of asking if we use the same thing. I mean we want to try to use the same contents but different ways to ask.

Student9: I don’t think it is necessary (to reuse old exam papers) because this way can lead to some cheating problems. Every year, the exam papers should have some changes.

Student11: I don’t think it’s necessary to set total same questions. Teachers can test the same knowledge from different ways.

From the students’ words, I find that the student 2, 6 are in first category, the student 8 is in second category and the student 9, 11 are in third category. They are from different categories.
but have similar thinking: teachers can test core knowledge every year, because core knowledge is important and fixed in courses, but questions’ pattern need to be changed to avoid cheating.

The analysis above can give educators some information. First, students still have different views about using old exam papers. Second, one of good ways to avoid cheating in exams is to change questions in some extent every year and this can be the start point for educators to prevent students cheating.

4.3 Students’ Reaction to Others’ Cheating Behaviors

After analyzing how students define cheating, next work is about students’ reaction when seeing others cheating. It is necessary to research, because a good external environment can effectively prevent students cheating; on the contrary, if everyone is tolerant about others’ cheating behaviors, undoubtedly, this will lead more students to cheat.

Similarly, I use questionnaires to collect data and find students’ reaction to others cheating.

\textbf{Table 10. Students’ reaction to others’ cheating behaviors in group and in using materials}

<table>
<thead>
<tr>
<th>Learning situations</th>
<th>Reaction Help cheating students or follow them</th>
<th>Keep silent</th>
<th>Remind them to not be detected</th>
<th>Alarm them and ask them work individually</th>
<th>Tell to teachers who teach the course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do nothing or little in group work.</td>
<td>20%</td>
<td>38%</td>
<td>0%</td>
<td>38%</td>
<td>4%</td>
</tr>
<tr>
<td>Use others’ previous ‘pass’ assignment, and submit it.</td>
<td>8%</td>
<td>38%</td>
<td>25%</td>
<td>29%</td>
<td>0%</td>
</tr>
<tr>
<td>Remember old exam papers without understanding to pass new exams.</td>
<td>8%</td>
<td>71%</td>
<td>8%</td>
<td>13%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Table 10 presents students’ reaction to some cheating situations. Each row presents the percentage of students who choose the same reaction. The leftmost column indicates some learning situations and rightmost columns are about many different reactions.

From the table, I find that students always keep silent or alarm cheating students when seeing cheating actions in these situations. About doing nothing or little in group, 38% of students will keep silent and 38% of students will alarm cheating students; about using others’ assignments, 38% of students will keep silent, 54% of students will remind or alarm cheating students; about reciting old exam papers without understanding, 71% of students will keep silent. But very few of them will tell cheating behaviors to teachers. Why do many students have no or light reactions? It is necessary to do some researches.
I then use the question: “When seeing others cheating in group or in using materials, what will you do and why?” in interview and analyze the collected data by phenomenography. Finally four categories of students’ reaction are found.

Table 11. Four categories of students’ reaction when seeing others’ cheating in group and about using materials

<table>
<thead>
<tr>
<th>D1 Help cheating students</th>
<th>Students will help cheating students especially their friends to pass the course</th>
</tr>
</thead>
<tbody>
<tr>
<td>D2 Keep silent</td>
<td>They will keep silent at most time because they just think from individual perspective.</td>
</tr>
<tr>
<td>D3 React according to group behalf</td>
<td>As above, if the cheating behaviors affect group work, they will react but not much seriously.</td>
</tr>
<tr>
<td>D4 React according to regulations</td>
<td>As above, if the cheating students do not correct their cheating behaviors, they will react according to the regulations.</td>
</tr>
</tbody>
</table>

Table 11 presents four categories about how students react when seeing cheating in group or using assignments. The leftmost column indicates students’ reactions simply and the rightmost column describes their reactions by using more words.

D1 Help cheating students:
In this category, students do not think cheating as a big problem and their reaction can be affected by friendship easily. If cheating students are their friends, they will be more tolerant and even help them to pass course.

Student2: Yes, it’s better to help others to pass than not... Of course, only when we are familiar with each other, I will let him to cheat; if I don’t know him, why should I allow him to cheat?
Interviewer: If a stranger student wants to cheat in group, what will you do?
Student2: No way.
Interviewer: Can you explain your reactions concretely?
Student2: “Sorry, I don’t finish it either.” Or “I don’t know this, either”. I will use this way to prevaricate.

So the students in this category often provide conditions for cheating students such as helping them to finish their work. They emphasize friendship and always have different standards according to the relationship between them and cheating students. At the same time, they ignore morality or university’s regulations, their reaction will not be constrained by them.

D2 Keep silent:
In this category, students always keep silent when seeing others’ cheating behaviors. This is different from the students’ thinking in first category. In the first category, students will do something to help cheating students but students in this category prefer to keep silent.
Student1: I think most of the students do not want to hurt their friends. It’s really bad thing to alarm cheating students. It will hurt friendship between students. So they always keep silent.

Student5: In my group, if it doesn’t affect me much, I probably won’t do anything. Study is their own business and it’s not for me to judge what they should do, as long as nothing to do (affect) with me.

Student9: Actually, I won’t do anything. About distributing work, there are some points to notice. First is the relationship of group members; second, even if some students do nothing in group, the teachers won’t do anything. So I will do nothing.

Interviewer: So you will keep silent.

Student9: Yes.

Student11: First, I think the cheating student’s morality is not good. If you want me to prevent others cheating, I won’t do.

Interviewer: So you will keep silent.

Student11: Yes, usually, I will keep silent.

Interviewer: So what are your reasons?

Student11: The reason is my character. I am quiet and shy. And it’s hard for me to stop others’ cheating behaviors.

Interviewer: So your character leads you to keep silent.

Student11: Yes, I think character is the main reason.

The four students represent four reasons which lead them to keep silent. First, they do not want to hurt their friends. Second, in some students’ opinions, if cheating behavior does not affect them much, they probably will not do anything. They have no duty to judge what others should do and students should be responsible for themselves. Third, some students keep silent because they think teachers will not do anything. Forth, because of their own characters such as being quiet and shy, they will keep silent and do not want to prevent others cheating.

However these students have many reasons, they have a common point: just thinking from individual perspective. In detail, there are two categories: first, they think for themselves and emphasize their own benefit; second, they think for their friends and they do not want to hurt their friends. Besides these, many students in China always do assignments individually and they have fewer collective conceptions. This may be why many of them only think from individual perspective.

Student1: For Chinese teachers, I think they will give every student one assignment to do, but not give several students one assignment and let them do it in group.

Student4: In China, students always do their assignments individually.

Student5: ...And maybe the Chinese culture focuses more on individual work instead of team
work and many of assignments which the Chinese teachers give are individual assignments instead of group work. And like many foreign countries, the Swedish people focus quite a lot on team work.

If students always work individually, they have few chances to collaborate with other group members and in this case, they may not consider for the whole group. This is the cultural reason.

**D3 React according to group behalf:**
In this category, students will keep silent when seeing others’ cheating behaviors, but if cheating behaviors affect group work, they will alarm cheating students. So they are different from the students in second category.

*Student7:* My reactions are the same.

*Interviewer:* Why?

*Student7:* From my view, if the cheating behaviors affect the group work, I will point them out; if not, I will keep silent because of friendship or relationship.

*Student10:* So you are afraid that this way may affect group work.

*Interviewer:* Yes, but I can point out his cheating behaviors indirectly. For example, I can talk with the cheating student: “You can do more things.”

*Student12:* In my opinion, there are two kinds of cheating in group work. First is copying others’ work second is do nothing but get credits. About first situation, I will alarm them not to affect group work. About second situation, I will keep silent or ignore their behaviors.

*Student14:* I won’t have serious reactions. And I just alarm them and persuade them to not cheat. But I won’t tell their behaviors to teachers.

*Interviewer:* Why?

*Student14:* All Chinese students including me emphasize saving others’ faces. And I don’t want to react so serious. The cheating in group is not so serious and if the student’s cheating behaviors don’t affect the group work, I won’t tell teachers. And if I tell the cheating behaviors to teachers, they won’t let the student pass this course.

The students will do some actions when others’ cheating behaviors affect group work. They will point out cheating behaviors indirectly or in private. But finally, they will not react seriously such as telling teachers the cheating behaviors, because they want to save others’ face and they are afraid if cheating behaviors are detected by teachers, the cheating students will fail in this course. Flowerdew, in his paper “A cultural perspective on group work”, also points out “In accordance with Confucian tenets... peers, and especially superiors, must always be accorded ‘face’ and not caused to lose it through overt and public criticism.” [9]

So students in third category will think from group perspective and if cheating behaviors affect group work, they will point out the cheating behaviors. But at the same time, because of cultural reasons, they want to save others’ face and will not react seriously.
D4 React according to regulations:
In the last category, the students will react seriously and from their views, university’s regulations are more important. Students’ reactions should follow regulations but not personal feeling.

**Student 6:** First, I will discuss this problem with other group members in public. Second, all group members fix a deadline and before this deadline, the cheating student must correct his wrong behaviors. And if the student doesn’t correct his cheating actions, he will be expelled from our group.

**Interviewer:** So whether you will take some serious actions such as telling teachers?
**Student 6:** I don’t think telling teachers as a kind of serious action and this is a normal way to solve problems. There are many regulations in university, so when we deal with problems, we should follow them.

From these students’ views, regulation is primary and they do not think telling teacher as serious reaction. This is a normal way to solve problem. So they are different from the former students, because they often think from regulation perspective.

After analyzing these four categories, we can find that students’ reactions become more and more serious; their points of view are from individual, group to regulation. At this time, I can explain why so many students keep silent or just alarm cheating students. The reason is that most of them are in second and third categories. They are easy to be affected by friendship, individual characters and Chinese culture factor.

Obviously, students in last category can effectively prevent others’ cheating because in their opinion, regulation is primary and all reactions should follow university’s regulations. They do not provide any conditions for cheating students. How to let more students have this view? This relies on teachers’ long-range education.

### 4.4 Teachers' Reaction from Students' Views

Besides analyzing students’ reaction, the next work is to find teachers’ reaction from students’ views. This is also very important, because students’ anticipation about teachers’ reaction will affect their behaviors much. If students do not think teachers will punish them seriously, they may be more likely to cheat; on the contrary, if teachers will react much seriously and give them more punishment, fewer of them will cheat.

Same as above, I use questionnaires to collect data and find teachers’ reaction from students’ views.
Table 12 From students’ views, teachers’ reaction to cheating behaviors

<table>
<thead>
<tr>
<th>Learning Situation</th>
<th>Reaction</th>
<th>None</th>
<th>Discuss with or warn students</th>
<th>Ask students to re-do assignment</th>
<th>Give grade penalty on assignment</th>
<th>Tell to department header or Committee on Discipline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do nothing or little in group work.</td>
<td>13%</td>
<td>50%</td>
<td>29%</td>
<td>4%</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Use others’ previous ‘pass’ assignment, and submit it.</td>
<td>13%</td>
<td>21%</td>
<td>50%</td>
<td>12%</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Remember old exam papers without understanding to pass new exams.</td>
<td>58%</td>
<td>17%</td>
<td>21%</td>
<td>4%</td>
<td>0%</td>
<td></td>
</tr>
</tbody>
</table>

Table 12 presents teachers’ reactions to cheating situations, from students’ views. Each row presents the percentage of students who think teachers will do same reaction. The leftmost column indicates some learning situations and right columns are about teachers’ different reactions from students’ views.

From the table, it is clear to see that over half of students think teachers will give cheating students no or light punishment. About doing nothing or little in group, 50% of students think teachers will discuss with or warn cheating students, 29% of students think teachers will ask cheating students to re-do assignment; about using others’ previous assignments and submitting them, 21% of students think teachers will discuss or warn cheating students, 50% of students think teachers will ask students to re-do assignment; about reciting old exam papers without understanding, 58% of students think teachers will have no reaction. Why do most of students think teachers will only give cheating students no or light punishment? It is necessary to do some researches in depth.

The question: “How do you wish teachers to react when they detect cheating in group or assignments?” is used in interview and the results are analyzed by phenomenography. Finally, three categories of students’ conceptions about teachers’ reaction are found.
<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1 Think teachers as kind educators</td>
<td>Teachers’ primary aim is education and helping students to learn more knowledge but not punishment.</td>
</tr>
<tr>
<td>E2 Think teachers as flexible executors</td>
<td>Teachers will deal with cheating problems according to different situations.</td>
</tr>
<tr>
<td>E3 Think teachers as followers of regulations</td>
<td>Teachers will react according to regulations but not think from students’ perspectives or teachers’ own feelings.</td>
</tr>
</tbody>
</table>

In the table 13, there are three categories of students’ views on teachers’ reactions. Each row presents one category. The leftmost column indicates the reactions simply and the rightmost column describes the reactions by using more words.

**E1 Think teachers as kind educators:**
In this category, students think teachers’ primary aim is educating and helping students to learn more knowledge but not punishment. So they may educate students by discussing. Teachers will not give students serious penalties because they love students and do not want to hurt them.

*Student 1:* ...after they find students cheating, they can educate the students and ask him to not do the cheating again. But I do not want to point him to punish the students, because punishment is not good, I don’t like it.

*Interviewer:* So from your views, teachers prefer light punishment to serious penalty when seeing cheating behaviors.

*Student 1:* Yes, the teachers prefer light punishment. Usually, teachers are also human beings. As the mention, teachers also have their instinct to protect, to love their students. So usually, they don’t want to hurt their students. And I think, also the aim of the punishment is not punishment itself. But the teachers want the students to redo the assignments and to understand the whole assignments.

*Interviewer:* And finally, learn the abilities and knowledge.

*Student 1:* Yes, improve their abilities.

*Student 4:* I think they will talk with the group members and ask some situations. Maybe they will alarm cheating students.

*Interviewer:* In your opinion, whether they will give the cheating students some serious penalties?

*Student 4:* I think they may not do.

*Interviewer:* Why?

*Student 4:* The teachers’ aim is to let students learn more knowledge but not punishment.

*Interviewer:* So, which actions do teachers always use, in your opinion? Remind students?

*Student 4:* Yes, or alarm him.

*Student 8:* I think the school likes light punishment: the teacher will discuss with students first. I think it’s quite good because maybe it will let student realize that it’s not good to cheat and
student will redo the assignments again. Hopefully, maybe he or she will give up cheating in the future, so it’s quite good. But for the serious punishment, actually I don’t approve of it because all of the teachers want to help students to learn things instead of judging or just punishing them. So I think all of the teachers will give their students one more chance to do it.

**Interviewer:** Whether teachers may tell students’ cheating behaviors to the department leaders.

**Student13:** Teachers may just say like this, but in fact they won’t.

**Interviewer:** Why?

**Student13:** They just threaten you.

From the students’ views, they always see teachers as nice educators. Teachers are very kind. They always will give cheating students more chances. Even if some teachers say that they will tell cheating behaviors to the department leaders, in fact this is just threat. But the students ignore morality and regulations. In their opinions, most of cheating students will correct their behaviors after receiving teachers’ education. This may be too ideal.

**E2 Think teachers as flexible executors:**
In this category, students think teachers will deal with cheating problems according to different situations. If they detect cheating in exams, they will punish students seriously; about cheating in group or assignments, they will not react so serious and sometimes may ignore it.

**Interviewer:** Whether teachers prefer light punishment when seeing cheating in group or on assignments, in your opinion?

**Student3:** Maybe some teachers ignore the cheating problems in group or on assignments.

**Student5:** Of course, it depends on individual situation. I hope teacher can ask students to redo the work, not very serious, or maybe discuss with students to see what the problem is, maybe let the grade be lower, discuss with cheating students. If it’s very serious cheating, of course teacher should report to the department or some other ones.

**Student9:** I think...if cheating students are caught in exams, this will affect whether they can get diplomas; if cheating in group, teacher at most will let you fail in this course and you can still graduate.

From these students’ views, teachers always have different standards according to different cheating situations. They like flexible executors but not just educators. They will deal with cheating situations flexibly. In this case, students may receive some serious punishments only when they cheat in exams.

**E3 Think teachers as followers of regulations:**
In the last category, students think teachers as strict followers of regulations. They will react according to university’s regulations but not think from students’ perspectives or their own
feelings. The students think there is no difference between cheating in group, assignments and in exams, because the essence of them is dishonesty.

**Student 6**: I think so far the education conceptions are similar in every country and there is no difference in culture. Chinese teachers’ reactions should be the same as Western teachers’ reactions. And teachers can deal with problems according to universities’ regulations but not follow their personal feelings and tendencies….cheating in group and exams are the same in seriousness. If the cheating behaviors are detected, the students should receive the same serious penalties.

**Student11**: Teachers will deal with the cheating behaviors according to regulations. 
**Interviewer**: So what about their concrete punishments? 
**Student11**: First, they will alarm cheating students. And if serious, they will ask cheating students to repeat their courses. At most serious situations, they may expel the cheating students from university.

About teacher’s reaction, the students’ conception is different from the former students’. First, regulation is teachers’ primary standard but not their personal feelings or tendencies. They will not consider much from students’ perspective. Second, teachers do not distinguish cheating in exams, group and assignments. If cheating behaviors are detected, students should receive same serious penalties. Teachers have the same standard according to different situations. At most serious situations, they will use much serious punishments such as expelling the cheating students from university. In a word, from these students’ views, teachers are strict followers of regulations.

We can find that students in the first and second categories predict teachers will not react seriously when seeing students’ cheating, because they are very kind and may ignore these kinds of cheating. But students in last category have serious prediction. The results can answer why most of students think teachers will just give cheating students light punishment in group or assignments, because most of them are in first or second categories, but few belong to last category.

Obviously, in this situation, some students in first and second categories may be more likely to cheat because they do not think teachers will punish them seriously. This is not good for teachers to prevent students cheating in group or using materials. So it is important for educators to let more students recognize that cheating in group or assignments is also serious and cheating students will also receive some serious penalties. On the other hand, whether students really underestimate teachers’ reactions, this still needs more researchers to collect teachers’ ideas and compare them with students’ views to get answers.
5. Conclusion

5.1 My Findings

5.1.1 Research Object
Different from other papers, in this paper I choose Chinese CS students as research object. This is meaningful. First, there are lots of Chinese international students in universities. Knowing their views can effectively help them be far away from cheating. Second, there are many papers about cheating but few of them are about Chinese students. Chinese students have different cultural background and they receive different education in China. So knowing their thinking can fill gap and provide some basis for other educators who want to research in the same field. Third, it is recorded that cheating problem is more serious among CS students. So choosing CS students as research object can let this paper have more representation.

5.1.2 Research Method
In this paper, I combine quantitative and qualitative methods to collect and analyze data. This is a new research method. There are many educators who use quantitative methods in cheating field. For example, they use questionnaires to collect data and then show results in percentage. In this way, results are obvious but sometimes not deep. There are also some educators who use qualitative methods in cheating field. In this way, they can research in depth but where their questions used in interview are from? Sometimes, readers may suspect whether there is enough data to support these questions. In this paper, I effectively solve this problem and combine the two methods together. I first use statistical way to analyze the quantitative data from questionnaire and then produce some meaningful questions. Second, I use these questions in the interview and then classify students’ different views by using qualitative method: phenomenography. Finally, I use the results to answer the previous questions in the interview.

5.1.3 Research Contents
To solve student cheating problem, in this paper I focus on two main phenomena: cheating in group and cheating in using materials, because some minor and not typical cheating is more likely to happen and many students often ignore it.

5.1.4 Research Results
About cheating in group, there are four categories about students’ conceptions: thinking cheating as help, focusing on study results, noticing study process and cheating reasons; about using others’ previous assignments, students also have different conceptions from totally using others’ assignments to forbidding using them; about using old exams without understanding, arguments are still existed: some students think this situation is cheating but others do not think so. From the results, we can see that students have different understanding about how to define cheating in group and in using materials. Many of them have confused views on these problems and always ignore the seriousness of them. More work is needed to do for dealing with these problems.

Besides defining cheating behaviors, students also have different reactions when seeing others’
cheating. Many of them just think for themselves or their friends but ignore group behalf and regulations. From students’ views, there are three categories of teachers’ reactions: kind educators, flexible executors and strict followers of regulations. Many students predict that teachers will not react seriously because they are very kind and may ignore these kinds of cheating. A good external environment can effectively prevent cheating; on the contrary, if many students are tolerant about others’ cheating behaviors and do not think teachers will react seriously; undoubtedly, this will lead more cheating behaviors.

5.2 What Should We Do?

5.2.1 What Should Students Do?
First, before study in university, students should see regulations carefully. Because many students have different cultural background, some behaviors are common in their countries but may be defined as cheating by teachers here. Second, if students are not sure whether the behavior belongs to cheating, they should not do it first and must talk with their teachers. Teacher’s participation guarantees that students are away from cheating. Third, students should take part in group work actively. Final result is not only standard to define cheating. Forth, students should keep thinking independently. Thinking is also a process of studying and using others’ assignments may cause cheating or narrow students’ own thinking. Fifth, when seeing others’ cheating behaviors, students should prevent but not only keep silent.

5.2.2 What Should Teachers Do?
First, teachers should have more methods to test students. For example, they can exam students face to face. If students do nothing in group or copy others’ assignments, they will be detected easily. In face to face exams, teachers can flexibly ask students questions and test their real abilities. Second, teachers should always change question patterns. Reusing same questions or setting same assignments year by year will cause more cheating. Third, teachers should pay more attention to some minor cheating behaviors such as cheating in group or in using materials, because these cheating behaviors are more common. Forth, teachers should ensure that their punishment is related to regulations but not from their own feeling.

5.2.3 What Should Universities Do?
First, universities should formulate detailed regulations and policies about student academic misconduct. There are many concrete cheating behaviors and universities should try their best to cover them. Second, they should set more education courses for telling students necessity to avoid cheating. Educating students is better than punishing them.
6. Reference


