Key factors influencing Chinese students' academic achievements in UK higher education: English language proficiency and culture integration

Introduction:

The study aims to provide insight into the life experiences of Chinese students in the UK, focusing on two factors that influence their academic performance: English language proficiency and cultural integration. The IELTS exam, which tests students' proficiency in speaking, writing, listening, and reading, is widely recognized by educational institutions, authorities in English-speaking countries, and employers around the world as a standard measure of English ability (IELTS, 2024). For this reason, this paper will use IELTS score bands as a way to assess students' language proficiency.

As for the second factor, a study by Isobel Kai-Hui Wang (2018) on the transitional experiences of Chinese students in UK higher education found that the most difficult challenges they face during their early adjustment include academic, psychological, and social difficulties. Additionally, cultural differences are another significant hurdle for Chinese students when studying in the UK. This applies to both undergraduate and postgraduate students. Furthermore, Bianchi and Martini (2023) highlighted that the social integration of international students plays a crucial role in their overall well-being. Therefore, culture integration will be chosen for the second factor to be investigated in this study.

This research will focus on the perspectives of Chinese students and employ a mixed-methods approach to collect and analyze data from a Chinese IELTS English language training center, where students prepare for and pass the IELTS examination to meet university entry requirements. The study will then conduct longitudinal research over the next four months, tracking the students' progress through the end of their first academic term. This period will also coincide with the students' experience of cultural shock in the host country. The students' academic performance will be measured using the average grade point of their first term's achievements.

The following research questions will be posed:

1. Is the higher IELTS score Chinese students get to achieve a better further academic performance in UK universities?
2. Is IELTS a determinate factor to Chinese oversea students' academic performance?
3. Is culture integration a determinate factor to Chinese students' academic performance?
4. Is language the barrier for Chinese students to their perception having greater difficulty in integrating the society and the university community?

Research Methodology

It is essential to understand the key concepts underpinning the philosophy of this research, including epistemology, ontology, axiology, and methodology. Crotty (1998) asserts that ontology forms the foundation of a study. According to Strantakeos (2014), ontology is the science of being and describes the nature of

reality. The most common ontological perspectives are realism and relativism (Crotty, 1998), while Strantako (2013) highlights that social research typically revolves around two ontologies: realism and constructionism. Reichardt and Cook (1979) argued that different philosophical paradigms and methods can be compatible. Pragmatism, which allows researchers the flexibility to choose the methods best suited for addressing their research questions, is a practical approach to research. It focuses on finding solutions to real-world problems. Therefore, pragmatism is an appropriate philosophy for this study, as it allows for an objective view of students' perspectives.

Given the philosophical foundation of this research, a mixed-methods approach will be employed. This study will utilize a quantitative research paradigm alongside qualitative methods to provide a comprehensive understanding of the research problem (Creswell, 2005). When combined, quantitative and qualitative methods offer a more in-depth and holistic analysis (Tashakkori & Teddlie, 1998). Greene (2007) suggests that mixed methods are particularly effective for exploring complex social issues and phenomena.

Several advantages of mixed-methods research have been identified by scholars (Newman & Benz, 1998; Martens, 2003). First, different methods can serve distinct purposes within the same study. Second, the combination of quantitative and qualitative data allows for more robust comparisons and validation of results. Third, qualitative data can help explain quantitative findings in greater depth. Fourth, a

mixed-methods approach enriches the overall data set, improving the depth of analysis.

Integrating both qualitative and quantitative data provides a more comprehensive understanding of complex phenomena and effectively addresses the research questions, but these concerns can be mitigated by the fact that mixed-methods research allows for a more well-rounded approach, compensating for weaknesses in any single method (Bryman, 2016). The use of multiple research methods to validate findings is referred to as triangulation. Triangulation will be applied in this study to combine qualitative and quantitative results. Mackey and Gass (2005) argue that triangulation not only strengthens the data but also enhances the validity and reliability of the research, reducing potential researcher bias.

- **The use of a longitudinal**

The longitudinal research method is widely used in both quantitative and qualitative studies. This study will employ a longitudinal approach, and this section will explain the rationale for its use, as well as provide a detailed discussion of both quantitative and qualitative longitudinal methods.

Menard (2002) defines the longitudinal approach as a useful method for collecting data over two or more time periods, allowing researchers to analyze the same or comparable questions across these periods. This method is most commonly used medical studies, where it enables researchers to track certain symptoms or

Hermanowicz (2013) emphasizes that longitudinal qualitative interviews can be conducted with the same individuals or groups over time, enabling researchers to collect data on specific changes that occur in their circumstances. Similarly, Farrall (2006) highlights that qualitative longitudinal research allows researchers to investigate changes over time, uncover the causes of these changes, and reveal how these changes unfold at both individual and group levels.

The rationale for selecting a longitudinal research approach in this study lies in the study's nature and its duration. Given that the research spans over more than three months, it is necessary to follow participants through two rounds of interviews: one after their arrival in the UK and another after they have experienced culture shock and completed their first academic term. The second-round interviews will focus on the students' cultural experiences and their academic performance in the first term. Thus, the longitudinal approach is essential for this research, as Pettigrew (1990) argues that longitudinal research is particularly effective for analyzing change over time. Pettigrew outlines four key reasons for using a longitudinal approach: (1) the embeddedness of temporal connections within the study, (2) the importance of analyzing changes across past, present, and future contexts, (3) the need to explore the context and actions involved, and (4) the provision of a holistic analysis of changes within a contextual framework.

- **Research design**

This research will adopt a mixed-methods approach, combining both qualitative and quantitative methodologies. The qualitative aspect will involve longitudinal semi-structured interviews, with primary research data being collected through two phases of in-depth interviews over a four-month period.

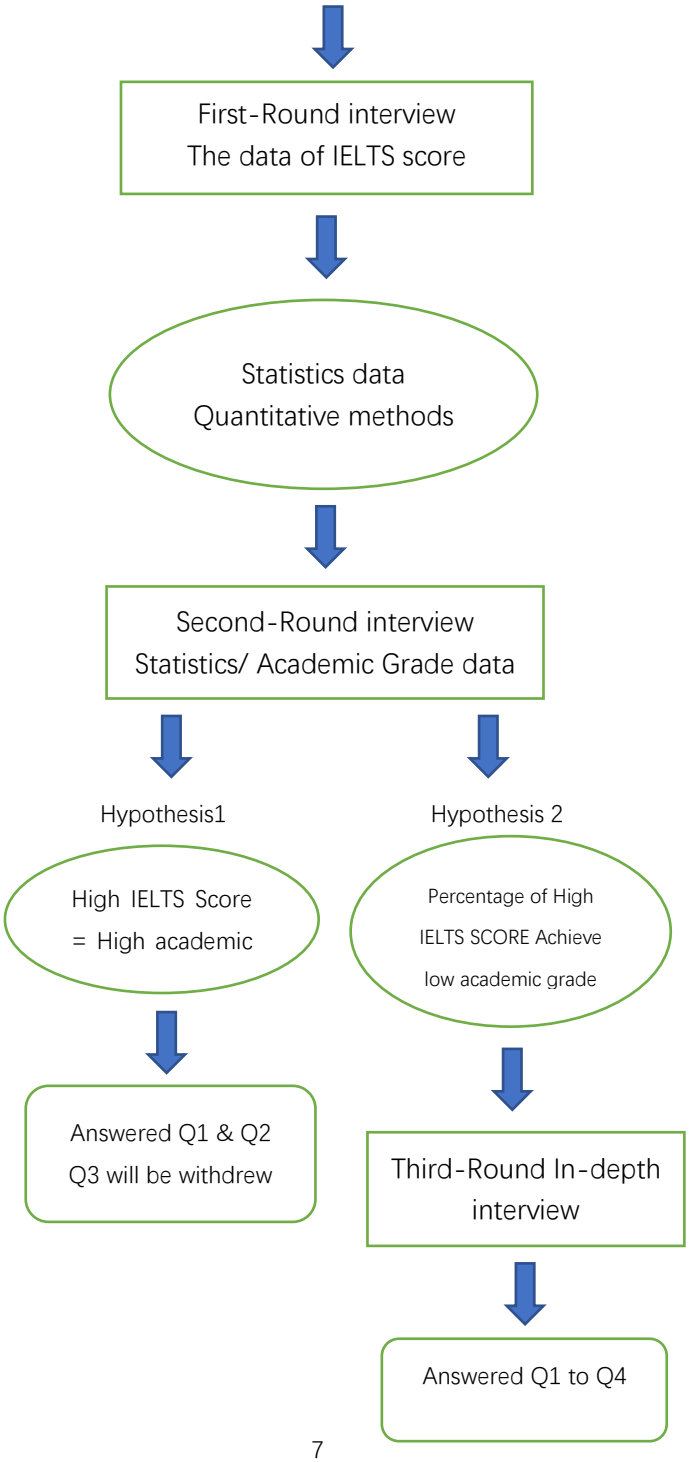
In the initial stage, the quantitative research method will be used to gather data on the number of students taking the IELTS examination at the training institution in China. Annually, the institution enrolls approximately 160 to 200 students. The first-round interview will focus on collecting the students' IELTS scores for subsequent analysis. The second-round interview will assess their academic achievements, and this stage will also incorporate mixed methods to explore their experiences in the UK, particularly in relation to cultural integration.

If the second-round interview results reveal that students who achieved high IELTS scores perform poorly academically, a third in-depth qualitative interview will be conducted to investigate the underlying reasons behind these outcomes.

The research process is outlined as follows:

The total Number of students	IETLS Score Band			
	6.0	6.5	7.0	7.5

* The Minnal UK High education entry score is 6.0. Postgraduate: 6.5 (minimum 6.0 in each component)



Sampling

A good sample is considered a miniature version of the population from which it is drawn, essentially a smaller representation of the larger group. The best samples are representative, or serve as a model of the population. A sample is representative if important characteristics (e.g., age, gender, health status) are distributed similarly to their distribution in the larger population (Kish, 1965).

Sampling designs consist of two components: the sampling scheme and the sample size (Miaoulis & Michener, 1976). The sampling scheme refers to the strategies used to select units (e.g., people, groups, settings, or events), while the sample size indicates the number of units chosen for the study. In mixed-methods research, both the sampling scheme and sample size need to be considered for both the qualitative and quantitative phases of the study.

Onwuegbuzie and Leech (2007) identified twenty-four sampling schemes for researchers to use in both qualitative and quantitative research. They categorize these schemes into two main types: random sampling schemes and non-random sampling schemes.

Muijs (2004, pp. 38-41) points out that "unbiased sampling techniques are those that are random." However, he also notes that sampling techniques, except for simple random sampling, cannot be considered entirely unbiased, even if they are random. In this study, the sampling participants will not be selected randomly, as they belong to a specific group of students attending a particular Chinese English training institution, preparing to

study in the UK. The nature of this study confines the sampling scheme to non-random sampling. However, the researcher will take steps to minimize bias throughout the research process.

Sample Size

This study will involve two stages of sampling. The first stage will focus on a quantitative research approach, with a sample size of 30 participants. The primary objective of this stage is to examine the relationship between English language proficiency (measured by IELTS scores) and academic achievement. To achieve this, the researcher will employ a descriptive research design to identify factors that influence students' academic performance. The first-stage sample will consist of 30 students who are potential IELTS test candidates and are preparing to study in the UK in the near future.

Previous studies have used sample sizes ranging from 50 to 150 participants (e.g., Fox et al., n.d.; Vázquez & López, 1997). Several researchers (such as Yıldırım & Şimşek, 2006; Baykul, 1999; Ross, 2004) suggest that reasonable sample sizes for quantitative studies range from 30 to 500, depending on the total number of participants in the study. A sample size can be relatively small while still ensuring a certain degree of reliability (Bonett, 2002).

For qualitative research, the appropriate sample size typically ranges from 6 to 12 participants (Kish, 1965). Kish (1965) also asserts that a sample of 20 to 50 elements is necessary, with 30 to 200 elements being sufficient when the attribute of interest occurs

between 20% and 80% of the time, and the distribution approximates normality. Therefore, for the second stage, which will involve in-depth interviews, the sample size will be 12 students.

For the third round of interviews, there will be no predetermined sample size. As qualitative research methods often focus on gaining an in-depth understanding of a phenomenon, they are not primarily concerned with generalizing findings to a larger population. Instead, they aim to explore the “how” and “why” of specific issues, processes, situations, or social interactions. In-depth interviews in qualitative research are inductive and emergent in nature, focusing on meaning and heterogeneity, rather than hypothesis testing (Dworkin, 2012).

Ethical considerations

This research will outline the ethic policy of the University of Wales Trinity Sait David and the BERA Guidelines 2024-Ethical guidelines for educational research.

Dineer and Crandall (1978) identified three main arears of ethical aspects for researchers to consider when contact research which are harm to participants, invasion of privacy and lack of informed consent. Bryman (2016) also addressed that treat participants with anonymity and confidentiality is crucial.

Gaining informed consent

The informed consent process has to be open information to the participation (Christians, 2002). The risks or benefits of the participation and what will the data be used as information given to the participations (Mishna, Antle & Regehr, 2004).

The participants must have the rights to self determination (Cohen 2011,p.77) they can make their own decision if they will or not take part of the study. In this study involves teacher and students in China where the students are traditionally obeying the teachers' instructions, therefore the researcher will emphasize to the student participants that they can withdraw the interview at any time.

The research involved description of consent form and all the participants rights related information will be written in both English and Chinese.

The university will be informed about the confidentiality of this research, as well as the procedures for data collection, storage, and dissemination. Prior to commencing the data collection process, permission will be obtained from the University of Wales Trinity Saint David.

To ensure ethical compliance, a consent form and an information sheet outlining the research objectives and the tasks students will be asked to perform will be provided to participants. These documents will be distributed via a group chat application, as well as in paper form, ensuring that all participants are fully informed. The forms will also clearly state that participants have the right to withdraw from the study at any time.

All participants will be required to sign the consent form before the interviews begin. Additionally, they will be given the opportunity to raise any concerns or questions they may have regarding the study. Participants will also be informed about the purpose of the research and made aware that the findings will contribute to a doctoral thesis.

Protecting privacy: Anonymity and confidentiality

Participants in researches and studies are allied upon by researchers willing to give their options in the investigation. when the identity of the participants is not exposed, then the participants are most likely to give genuine response to questions (Boruch & Cecil, 2016). Therefore, annoying and confidentiality place an important role in research as they contribute to the high-quality results. When carrying out both quantitative and qualitative research, anonymity and confidentiality is very importance.

In this research, each participants' privacy will be protected, the forms they signed and the personal data this research gathered will be guaranteed stored safely on the university' Drive. Some of the data would be destroyed after the research finished. In this research because it involves longitudinal research, it is invertible to the researcher to see participants' name. the participants will need to be identified to conduct the following rounds of interviews.

Research Tools

In this research the following research tools will be used to collect research data.

- **Questionnaires**

  Drever (1962) defines a questionnaire as "a series of questions dealing with some psychological, social, educational, or other topics, which are sent or given to a group of individuals with the objective of obtaining data regarding specific issues; sometimes employed for diagnostic purposes or to assess personality traits."

Oppenheim (1992) emphasizes that a questionnaire is a vital instrument for data collection in research.

According to Oppenheim (1992), there are various types of questionnaires: **mail questionnaires**, which are sent to respondents for completion and return; **self-administered questionnaires**, where respondents complete the questionnaire themselves, often under the supervision of someone in an official position; and **group-administered questionnaires**, which are designed for use with groups of respondents, such as children, who complete the questionnaire together under the guidance of a teacher.

In this study, an **online questionnaire** will be used during the first stage of data collection. This phase focuses on quantitative research and aims to gather data on the IELTS band scores obtained by the participants in their IELTS examination.

- **Questionnaire Design**

A well-designed questionnaire requires careful planning and thoughtful consideration from the initial stage of its development (Roopa & Rani, 2012). Depending on the purpose of the study, various types of questions can be applied. These include:

1. **Contingency questions** (or cascade format), where responses to one question determine the subsequent question(s) presented to the participant.
2. **Matrix questions**, which are used to ask multiple questions that share the same set of response options, making it easier for respondents to provide answers.

3. **Closed-ended questions**, which limit respondents to a fixed set of responses, allowing for easier data analysis.
4. **Open-ended questions**, which provide respondents with the freedom to answer in their own words, offering richer and more detailed data.

There will be a mixed type of questions will be created for the online questionnaires which will include Yes/No questions, Multiple choice, and preference level on a scale from 1 to 10 indicating agree to strongly disagree. Roopa S, Rani MS (2012)

- **Pretesting Questions**

According to Roopa S, Rani MS (2012), there are some reasons why take a pretesting

A. **To determine whether the questions are properly framed:** Ensure that the questions are clear, concise, and capable of eliciting the desired information from respondents.

B. **To verify whether the wording of the questions will achieve the desired results:** The language should be precise and unambiguous to avoid confusion and ensure that responses are relevant and accurate.

C. **To assess if the questions are placed in the best order:** The sequence of questions should follow a logical flow that feels natural to respondents and ensures a smooth survey experience.

D. **To ensure the questions are understood by all classes of respondents:** The questions should be clear to diverse respondents, regardless of their background, education, or experience, ensuring they all interpret them in the same way.

E. **To evaluate whether additional or specifying questions are needed or some should be eliminated:** Review whether any questions need clarification or elaboration, or if any questions are unnecessary or redundant.

F. **To ensure that instructions to interviewers are adequate:** Clear and thorough instructions should be provided to interviewers to ensure consistency in how the questionnaire is administered.

There are basic steps involved in pretesting a questionnaire, which include selecting a sample to administer the questionnaires and then analyzing the results. In this study, the researcher will use a pilot group for the pretesting process. The pilot group will consist of a small subset of the target population, allowing the researcher to assess the clarity, wording, and flow of the questionnaire before administering it to the full sample. Arain, M., Campbell (2010) of 1% of the total participants to pretesting the questionnaire.

- **Interview**

There are four types of interviews commonly used in social sciences. The first is the structured interview, the second is the open-ended (unstructured) interview, the third is the semi-structured interview, and the fourth is the focus group interview (Hyman et al., 1975).

Interviews create an environment where the interviewer and interviewee are on an equal emotional level. In this setting, the "depth" of the subject matter allows for a profound exploration of the interviewee's emotions, facilitating an examination of their truthfulness and sincerity in responses (Hyman et al., 1975).

The semi-structured interview, in particular, offers flexibility and allows for in-depth exploration, making it the ideal choice for this research.

Data analysis methods

Table 1: Contrast between quantitative and qualitative research

Quantitative	Qualitative
Numbers	Words
Point of view of researcher	Points of view of participants
Researcher distant	Researcher close
Theory testing	Theory emergent
Static	Process
Structured	Unstructured
Generalisation	Contextual understanding
Hard, reliable data	Rich, deep data
Macro	Micro
Behaviour	Meaning
Artificial settings	Natural settings

Source: Bryman & Bell 2011: 410.

This research will collect two types of data: Quantitative and Qualitative, for those two types of data, I will analyse them separately.

- **Qualitative Data analysis**

  Framework Analysis will be used to analysis the interview data for this research, framework analysis has 5 key stages.: Familiarisatio, Identifying a thematic framework, Indexing, Charting, Mapping and Interpretation. Lacey A. and Luff D. (2007)

  In this study the data will be tape recorded interviews, and handwriting questionnaire open ending questions, will be transcript. After transcription, I will organize the

research data into retrievable sections and coding them, with the coding number I will easy to trace them when I need to check up the original materials. After the coding I will use computer software to analysis the data, NVivo is on the world's largest qualitative research software.

- **Quantitative Data analysis**

There are some methods for quantitative data analysis:

	Exploratory data analysis	confirmatory data analysis
Univariate data	*presenting frequencies* tables Graphical forms *Measuring location* Mean Median Mode *Measuring dispersion* Range and interquartile Standard deviation *Measuring change* Index number	*Estimating from samples* Confidence interval (p) *Forecasting* Time series analysis
Bivariate data	*Presenting frequencies* Cross tabulations Scatter diagrams Stem plots	*measuring association* Pearson's coefficient (P) spearman's rank coefficient (NP) *Measuring difference* Chi squared (X^2) test (NP) Student *t*-test (P)

Note: P = Parametric technique NP = Non-parametric technique

Figure 1.3 type of quantitative analysis by data type: Hussey .J. Hussey. R. (1997)

Using statistical methods today means applying a statistical computer program. The widely sued packages are SPSS, SAS, Minitab and many others.

References

Arain, M., Campbell, M. J., Cooper, C. L., & Lancaster, G. A., 2010. BMC Medical Research Methodology, 10, 67. Available at: https://doi.org/10.1186/1471-2288/10/67.

Bayman, A. and Bell, E., 2011. *Business Research Methods*. 3rd ed. Oxford: Oxford University Press.

Bonett, D. G., 2002. Sample size requirements for testing and estimating coefficient alpha. *Journal of Educational and Behavioral Statistics*, 27(4).

Boruch, R. F., & Cecil, J. S., 2016. *Assuring the confidentiality of social research data*. University of Pennsylvania Press.

Bryman, A., 2016. *Social Research Methods*. Oxford: Oxford University Press.

Carduff, E. K., 2013. Developing qualitative longitudinal methods for understanding the experience of metastatic colorectal cancer. PhD thesis, University of Edinburgh.

Chen, Y. & Sun, C., nd. Language proficiency and academic performance.

Christensen, P., & Prout, A., 2002. Working with ethical symmetry in social research with children. *Childhood*, 9, pp. 477-497.

Cotton, F. & Conrow, F., 1998. An investigation of the predictive validity of IELTS amongst a group of international students studying at the University of Tasmania. *EA Occasional Paper*, 1, pp. 72-115.

Creswell, J. W., 2005. *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. 2nd ed. Upper Saddle River, NJ: Pearson Education.

Dooey, P. & Oliver, R., 2002. An investigation into the predictive validity of the IELTS test. *Prospect*, 17, pp. 36-54.

Elder, C., 1993. Language proficiency as a predictor of performance in teacher education. *Melbourne Papers in Language Testing*, 2, pp. 68-85.

Gani, A., 2017. The logistics performance effect in international trade. *The Asian Journal of Shipping and Logistics*, 33(4), pp. 279-288.

Greene, J. C., 2007. *Mixed Methods in Social Inquiry* (Vol. 9). John Wiley & Sons.

Hyman, H. H., et al., 1975. *Interviewing in Social Research*. University of Chicago Press: Chicago.

Kish, L., 1965. *Survey Sampling*. New York: John Wiley and Sons, Inc.

Miaoulis, G., and Michener, R. D., 1976. *An Introduction to Sampling*. Dubuque, Iowa: Kendall/Hunt Publishing Company.

Mishna, F., Antle, B.J., & Regehr, C., 2004. Tapping the perspectives of children: Emerging ethical issues in qualitative research. *Qualitative Social Work*, 3, pp. 449-468.

Onwuegbuzie, A. J., Jiao, Q. G., & Bostik, S. L., 2004. *Library anxiety: Theory, research, and applications*. Lanham, MD: Scarecrow Press.

Reichardt, C. S., & Cook, T. D., 1979. Beyond qualitative versus quantitative methods. In: T. D. Cook and C. S. Reichardt, eds., *Qualitative and Quantitative Methods in Evaluation Research*. Beverly Hills, CA: Sage, pp. 7-32.

Roopa, S. & Rani, M. S., 2012. Questionnaire designing for a survey. *Journal of the Indian Orthodontic Society*, 46(4), pp. 273-277.

Ross, H., & Chen, Y., 2015. Engaging Chinese international undergraduate students in the American university. *Learning and Teaching*, 8(3), pp. 13–36.

Shari, L. D., 2012. Sample size policy for qualitative studies using in-depth interviews. *Springer Science+Business Media, LLC*. Available at: https://doi.org/10.1007/springer.

Tashakkori, A., & Teddlie, C., 1998. *Handbook of Mixed Methods in Social and Behavioral Research*. Thousand Oaks, CA: Sage.

Martens, D. M., 2003. Mixed methods and the politics of human research: The transformative-emancipatory perspective. In A. Mackey, A. and Gass, S., eds., *Common Data Collection Measures: Methodology and Design*, pp. 43-99. Lawrence Erlbaum.

Newman, I., & Benz, C. R., 1998. *Exploring the Interactive Continuum: Qualitative-Quantitative Research Methodology*. Carbondale: University of Illinois Press.