Surveying the EFL Learning Beliefs of Engineering Students in China's Higher Education: Implications for Curriculum Development

Ying WANG

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Background and importance

Learners' beliefs can impact their learning strategies and overall success in EFL (e.g. Yasmin, 2021; Mulualem et al., 2022).

EFL education

English learners' beliefs vary in different contexts (e.g. Matsumoto, 2015; Sato and Storch, 2022).
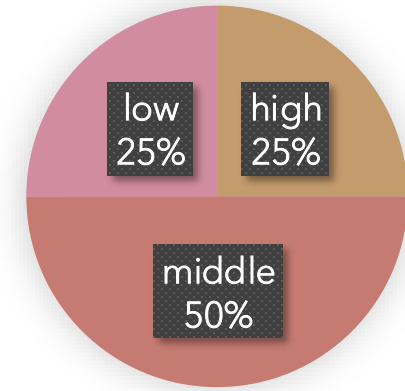
Implications for China's EFL education

My research

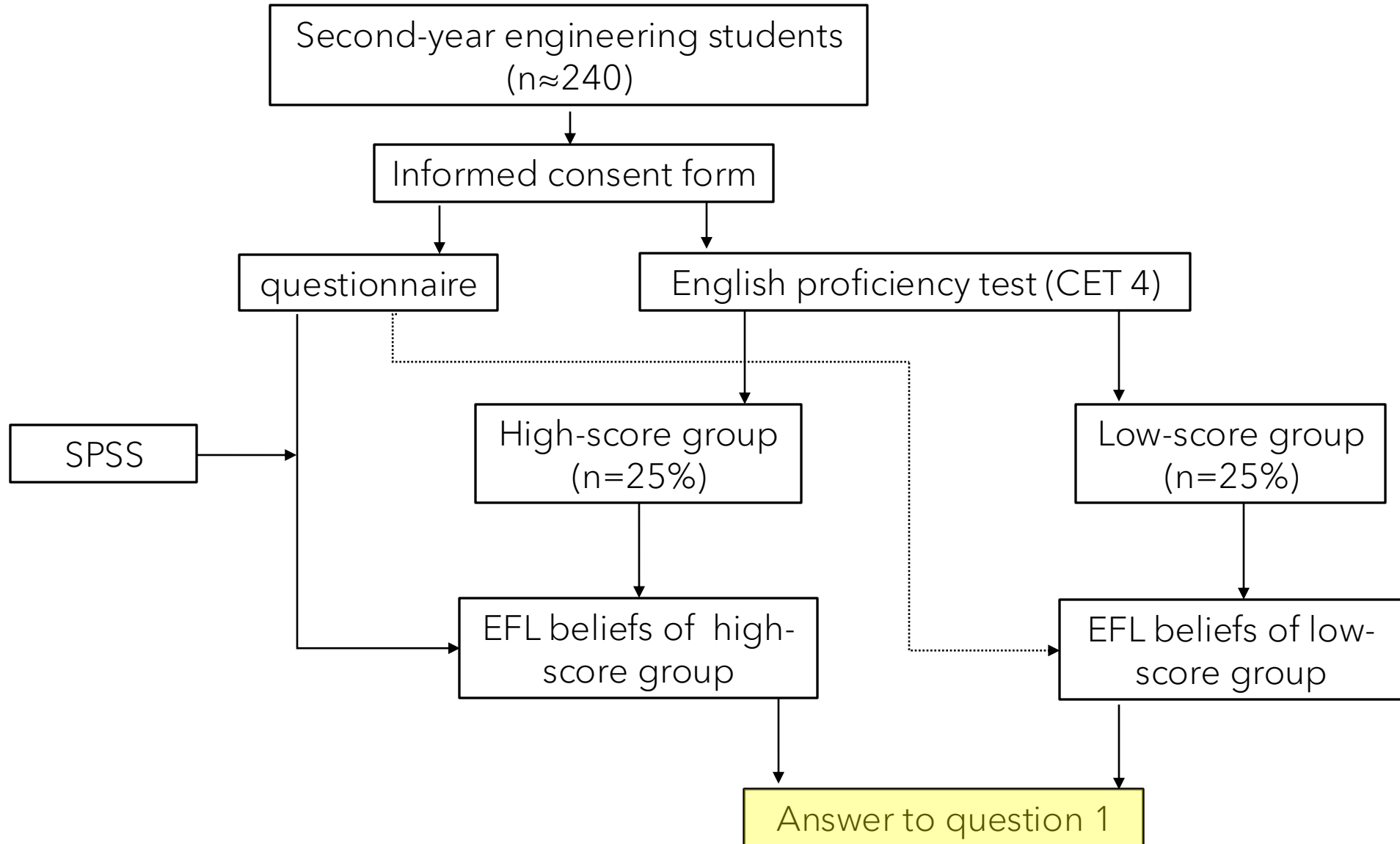Reference for ELT in China's higher education

Research questions

- RQ1. To what extent do EFL learning beliefs differ between high-English-proficiency and low-English-proficiency engineering students in China's higher education?

- RQ2. What are the respective factors that influence the learning beliefs of the two groups?

- RQ3. What do EFL teachers understand about learner beliefs and to what extent do they act on learner beliefs in their teaching?

Methodology

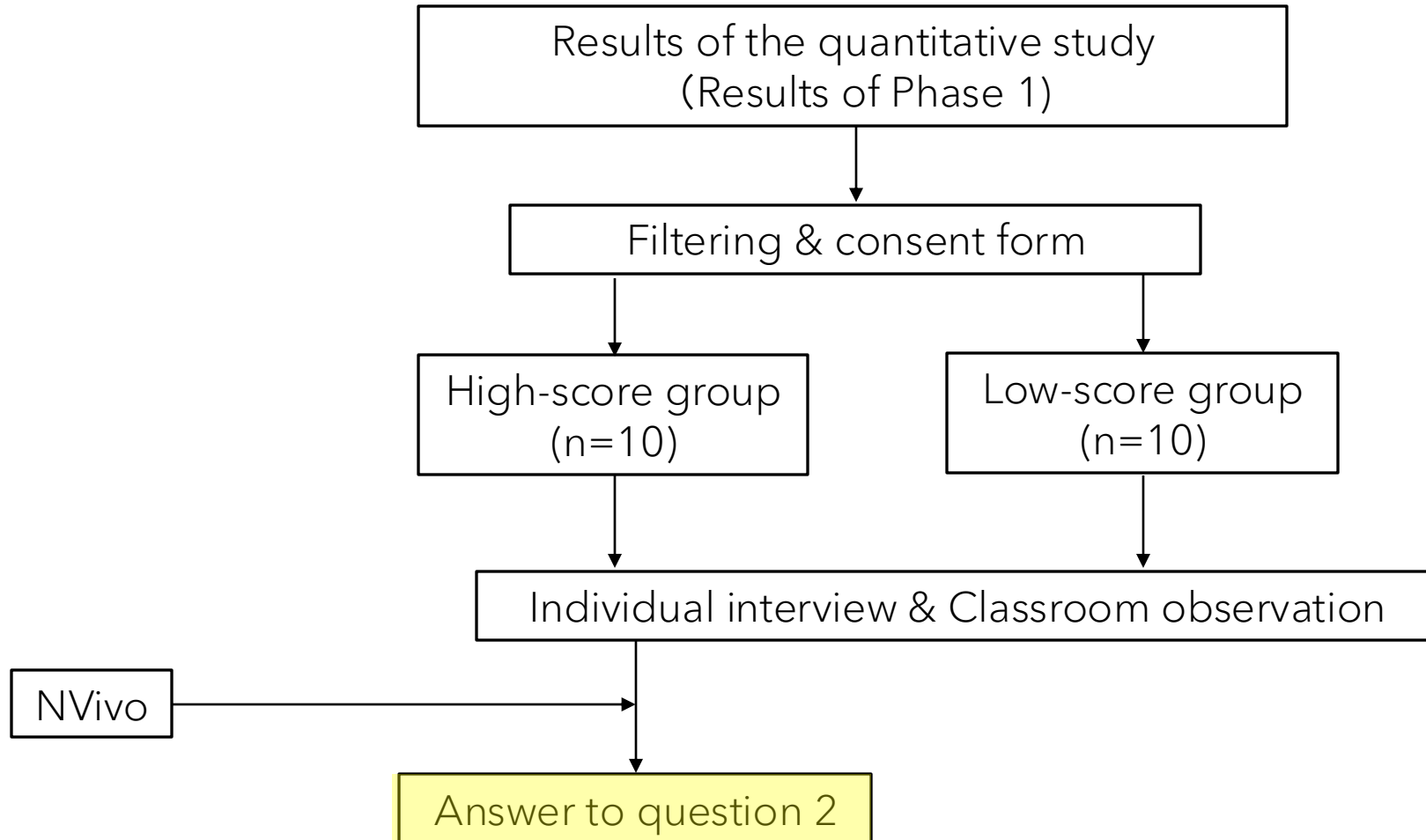# Methodology

Phase 2: qualitative methods

Results of the quantitative study
(Results of Phase 1)

Filtering & consent form

High-score group
(n=10)

Low-score group
(n=10)

Individual interview & Classroom observation

NVivo

Answer to question 2

Methodology

Phase 3: qualitative methods

Teachers
(n=6)

Focus group interview

NVivo

Answer to question 3
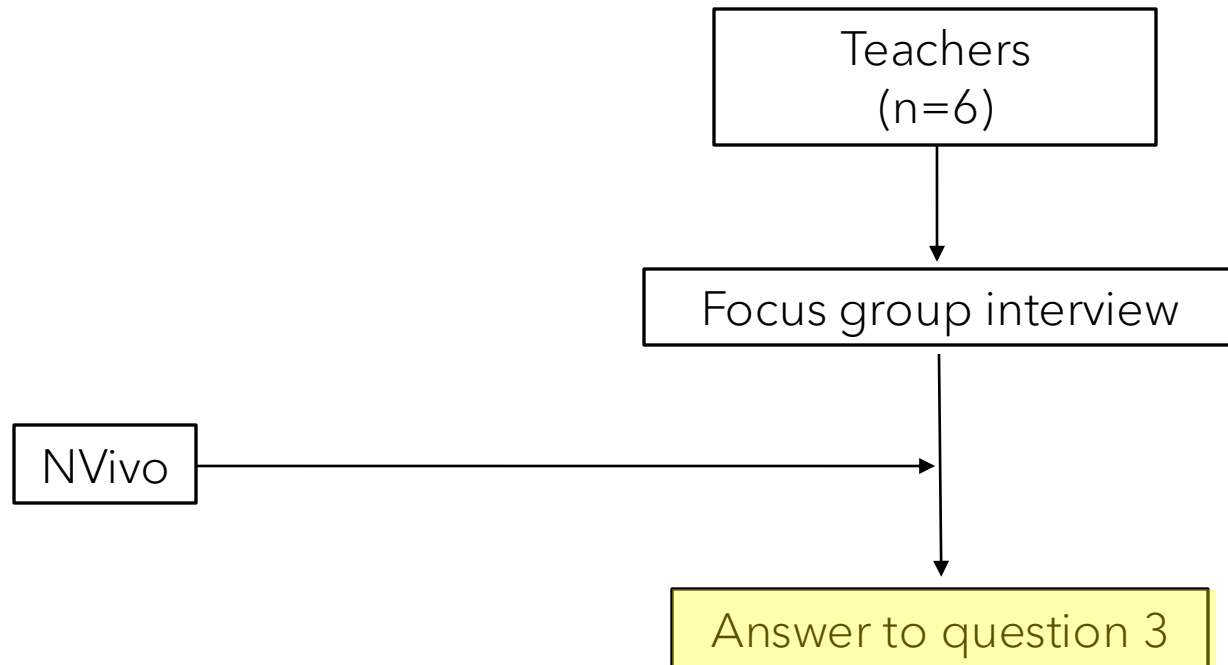
Appendix 1 questionnaire

Section B: English Language Learning Practices

Please indicate how frequently you engaged in the following activities during the last semester by ticking the box.

Never	Almost Never	Sometimes	Often	Almost Always	Always

a. Nature of English Language Learning (9 items)

1. I participate in activities to learn about English-speaking cultures.
2. I spend time learning new English vocabulary.
3. I practice English grammar exercises.
4. I read English texts in detail.
5. I translate texts between Chinese and English.
6. I practice English listening materials.
7. I review and memorise English materials.
8. I engage in English-speaking activities
9. I complete English writing tasks.

b. English Language Learning Strategies (9 items)

10. I practice English with native speakers when possible.
11. I practice speaking by reading English texts aloud.
12. I try to understand unfamiliar English words from the context.
13. I read English materials beyond course requirements.
14. I listen to English audio content outside of class.
15. I participate in English discussions in class.
16. I use English for communication outside of class.
17. I write in English for personal purposes (notes, diary, letters).
18. I watch English video content outside of class.

c. First Language Use in English Learning (5 items)

19. I use Chinese while learning English vocabulary.
20. I translate English texts into Chinese while reading.
21. I take notes in Chinese during English listening.
22. I prepare my content in Chinese before speaking in English.
23. I prepare my content in Chinese before writing in English.

d. English Learning Motivation (6 items)

24. I practice speaking English with others.
25. I prepare for English examinations.
26. I use English for international communication.
27. I search for English job-related materials.
28. I read about different cultures in English.
29. I use English to access new information.

e. Self-efficacy in English Learning (6 items)

30. I attempt challenging English learning tasks.
31. I try different ways to solve English learning problems.
32. I evaluate my English learning progress.
33. I complete English learning tasks independently.
34. I discuss cultural topics in English.
35. I read materials about my major in English.

Additional Comments

Please use this space to share any additional thoughts about your English learning experience that were not covered in the questionnaire:

_____

_____

_____

Thank You Note

Thank you for taking the time to complete this questionnaire. Your participation is greatly appreciated and will contribute significantly to our understanding of English language learning in engineering education.

For Research Use Only

Date: _____

Questionnaire ID: _____

Appendix 2
semi-structured individual interview

Appendix 2: Outline of one-on-one interviews

Purpose of the interviews:
The interviews aim to find out the factors influencing the formation of the participants' beliefs about English Language learning in terms of their experience of learning a foreign language, the socio-cultural environment, the family environment and the learning environment.

Interview method and duration:
Face-to-face interview, approximately one hour per participant (open to adjustment)

Language :
Chinese

Interview tools:
voice recorder, notebook

Outline of structured interview:

1. Foreign Language Learning Experiences
 i.   When did you start learning English, and how have your beliefs about learning English evolved since then?
 ii.   Reflecting on your primary, middle, and high school experiences, how did these shape your current beliefs about English learning?
 iii.   How do you perceive your ability to use English in daily communication, understanding cultures, and within your professional field?
 iv.   What challenges do you face in learning English, and how do you plan to overcome them?
 v.   What are your future plans regarding English learning after graduation?

2. Socio-cultural environment
 i.   How is English learning perceived in China? How does this affect you personally?
 ii.   Are there any cultural or societal factors that influence your motivation to learn English?
 iii.   How does the emphasis on English in engineering education and the technology industry influence your attitude toward learning English?
 iv.   In what ways does social media and internet culture affect your English learning? (e.g., English content on WeChat, Bilibili, or other platforms?
 v.   How does the way your peers learn English influence your own learning?
 vi.   What role does English play in your future career plans within China's engineering industry?
 vii.   How do you think China's international relationships and global engineering cooperation affect the importance of English learning?
 viii.   To what extent do you think your regional location (city/province) influences your attitudes towards English learning?

3. Family environment
 i.   How do your parents' educational backgrounds and occupations influence your approach

to learning English?
 ii.   Can you share specific instances where your parents' expectations or encouragement impacted your English learning journey?
 iii.   What languages are predominantly used in your family, and how does this affect your English learning?

4. Learning environment
 i.   How do your teachers communicate the objectives, content, and methods of English learning at the university level?
 ii.   Describe the balance between teacher-led instruction and student participation in your English classes.
 iii.   How do current English tests (e.g., final exams, CET tests) influence your learning strategies and motivation?
 iv.   If your exam results are unsatisfactory, how do you reflect on and adjust your learning methods?
 v.   Can you share specific examples of how you and your classmates engage with English both inside and outside the classroom?

Appendix 3
classroom observation

Appendix 3: Classroom Observation Form

Basic Information:

- □ Date: _____   □ Time: _____
- □ Duration: _____   □ Major: _____
- □ Number of students: _____   □ Room: _____

Qualitative Notes:

Key Incidents: _____
_____

Notable Student Behaviours: _____
_____

Teaching Strategies Observed: _____
_____

Additional Comments: _____
_____

Observer's Reflection: _____
_____

Next Steps/Follow-up: _____
_____

Appendix 4 focus group interview

Appendix 4: Outline of focus group interview

Purpose of the interview:
This interview aims to explore in depth the factors affecting the formation of engineering students' beliefs about English language learning and identify ways to help them establish reasonable beliefs from the perspectives of teachers. Insights into teachers' educational backgrounds, teaching experiences, and understanding of university English teaching will be gathered.

Interview Method and Duration:
Face-to-face focus group interview, approximately 1.5 to 2 hours.

Interview Method and Duration:
6-8teachers

Language :
Chinese

Interview Tools:
Voice recorder, notebook.

Discussion Topics:

1. Understanding of Engineering Students' EFL Learning Beliefs
   i.   How do you perceive the English learning beliefs of your engineering students? Could you provide specific examples?
   ii.   What common beliefs or misconceptions have you observed, and how do they manifest in students' learning behaviors?
   iii. In what ways does the engineering background influence their beliefs and approaches to learning English?

2. Factors affecting beliefs
   i.   Based on your teaching experience, what factors most significantly affect engineering students' beliefs about English language learning?
   ii.   How do students' beliefs about the nature of English language learning (e.g., complexity, necessity) influence their approach to learning? What factors shape these beliefs?
   iii. What beliefs do students hold about effective English language learning strategies, and how do these beliefs impact their learning practices? What influences these beliefs?
   iv.   How do students perceive the role of their first language in learning English, and what factors affect these beliefs? How do you address these perceptions in your teaching?
   v.   What factors contribute to high or low motivation among engineering students, and how do you address these in your teaching?
   vi.   How do students' beliefs about their own abilities (self-efficacy) in learning English affect their learning outcomes? What factors contribute to shaping these beliefs?

3. Teaching Strategies and Challenges
   i.   What teaching strategies do you find most effective for addressing the English learning beliefs of engineering students?
   ii.   What challenges do you face in teaching English to these students, and how do you overcome them?
   iii. How can you help students establish reasonable beliefs about English learning to improve their ability to use English?

4. Education Policy Information
   i.   What policy information on English teaching is provided by your university and education policymakers or government authorities?
   ii.   How do these policies, at both the institutional and governmental levels, influence your approach to teaching English?
   iii. Can you share any experiences where these policies have directly impacted your teaching or your students' learning beliefs?

5. Opportunities and Additional Insights
   i.   What opportunities do you see in teaching English to engineering students that could enhance their learning experience?
   ii.   Share any additional thoughts or insights you might have regarding improving English language learning for engineering students.

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Thank you! ☺