Lab for Future Learning

An exploration of how to help high school students within the Chinese education system better prepare for the future.

A service and systems oriented design diploma project by Chen Huang
The Oslo School of Architecture and Design | Spring 2024

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Abstract

Nowadays, the Chinese education system, particularly at the high school level, is very industrial and primarily focuses on developing certain competencies and skills in students to attain desired grades and secure admission to prestigious universities. However, this single-minded focus neglects the fact that unpredictable futures demand greater preparedness and adaptability to a variety of crisis situations.

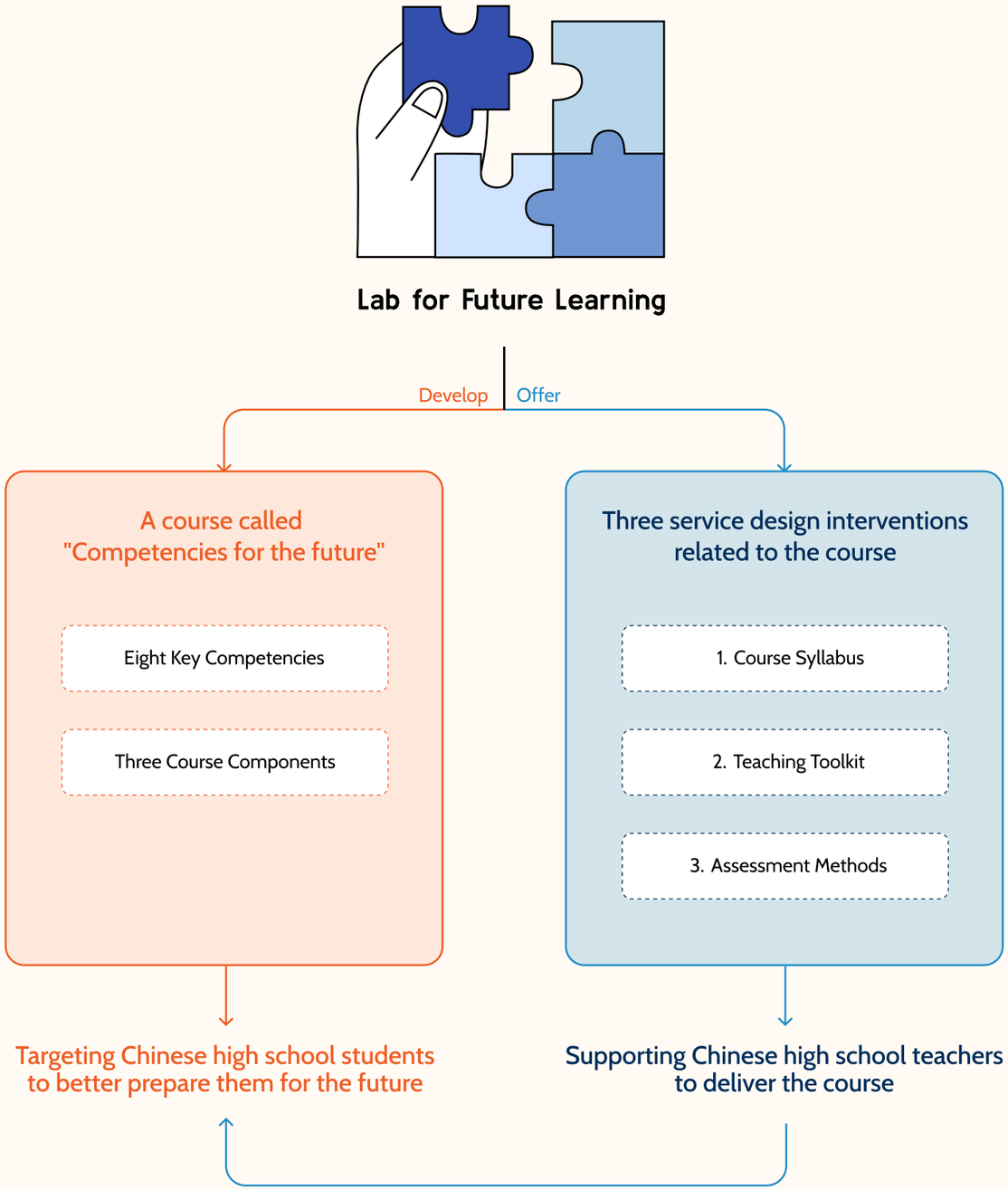
This results in many high school students being more like “machines”, proficient in many skills molded by the Chinese education system, rather than individuals with a clear vision and corresponding strategies on how to navigate the complexities of their future lives. It is critical to facilitate students' all-round development by equipping them with a more comprehensive skill set.

This project combines service and systems oriented design approaches. It starts by holistically understanding the Chinese high school education system across different levels, including educational models, human behaviors, and mindsets. Through this holistic understanding, I landed on the problem statement: ***How might we bring transformative changes to the industrial model within the Chinese education system to better prepare high school students for unpredictable futures?*** This is followed by employing human-centered perspectives and co-creation approaches to explore potential possibilities.

The Lab for Future Learning is this project's design proposal. It is a proposed course development oragnization that offers an innovative course designed to equip Chinese high school students with eight key competencies for the future (Robinson & Aronica, 2015). It includes a digital platform that offers three service design interventions: a syllabus, a teaching toolkit, and a number of assessment methods to assist high school teachers in effectively delivering this course. The illustrations on the right show a summary of my final design deliveries.

This project aims to better prepare Chinese high school students for the complex future. It emphasizes the importance of facilitating collective efforts to co-create conditions for potential changes and foster long-term development of values. Additionally, it brings fresh perspectives to the ongoing dialogue on the Chinese high school education system, fostering deeper reflection on the existing education model.

Overall, this diploma is not a solution targeted at solving specific problems or substitute existing educational content. Rather, it is a design exploration introducing new potential values to the current Chinese education context. Implementing this design proposal will require further development and refinement, involving more collaborative efforts with stakeholders.



Summary of final design deliveries

Contents

01

INTRODUCTION

This chapter outlines my motivation, design approach, overall design process and key methodologies used throughout.

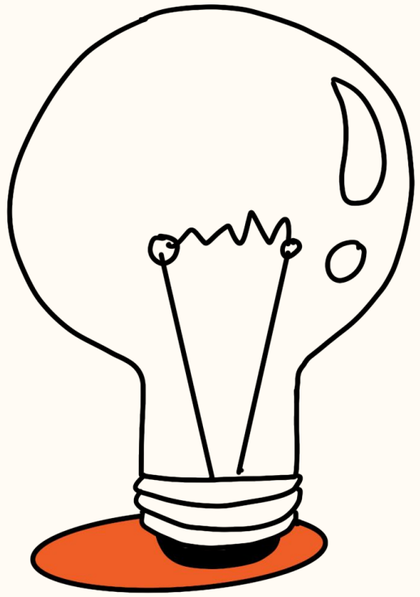
Motivation

When I was in high school, the pressure to get into universities was very high and the competition was intense. Success, for a student, was narrowly defined as achieving high grades in important examinations or receiving offers from prestigious schools. My parents encouraged me by expressing how proud they would be of me if I "succeeded". My teachers and school programs equipped me with various skills aimed at increasing my chances of standing out in examinations.

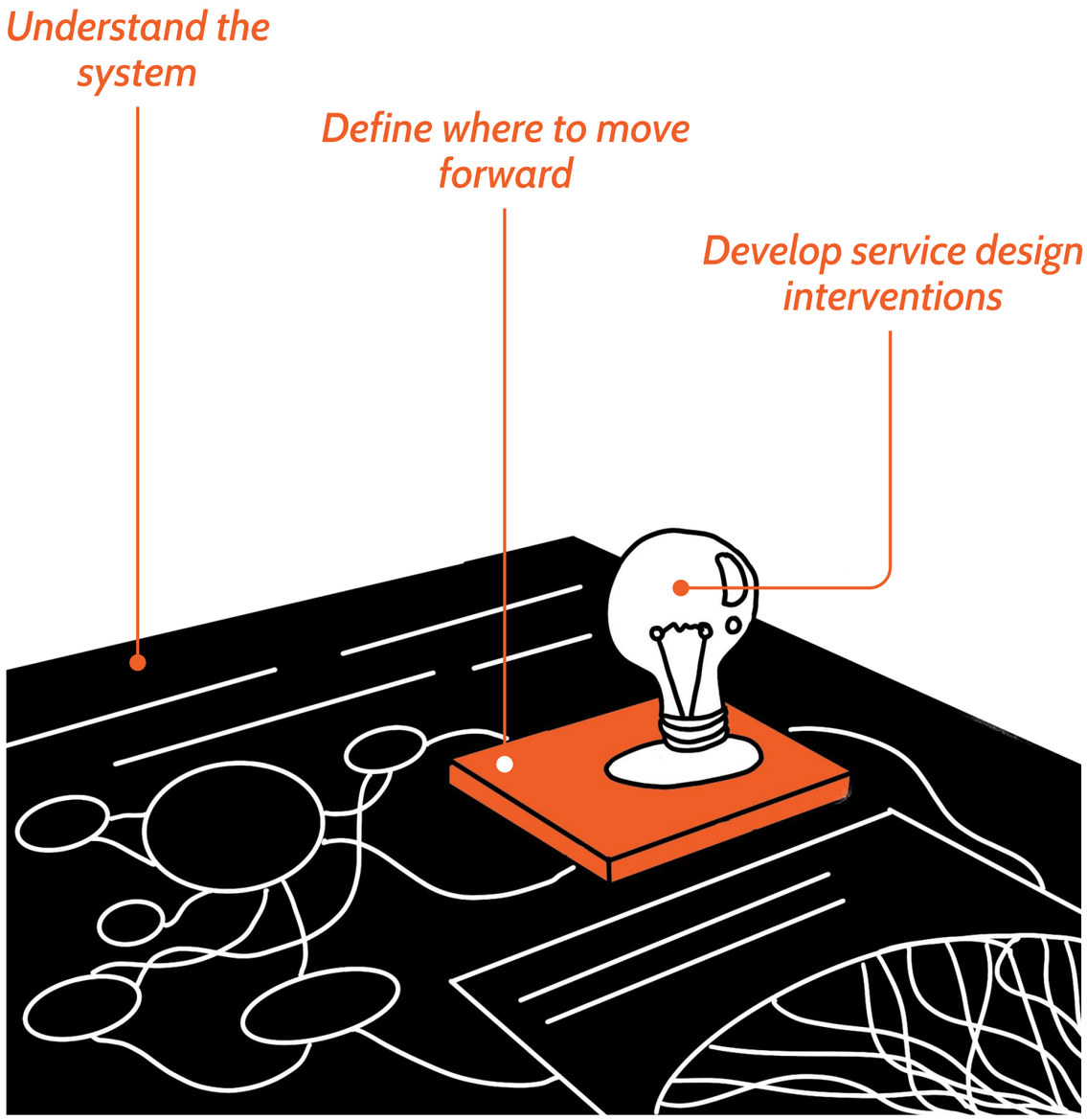
During that period, questions such as “What major do you really like?”, “What are you passionate about?”, and “What kind of person do you want to be in the future?” were absent.

During my time studying in my dream university, these lingering questions resurfaced. However, the exam-focused skills I had mastered failed to guide me in finding answers; instead, they left me feeling even more lost and confused. At the time, I thought that maybe by working harder, I would eventually figure them out. Chasing higher scores and trying to meet the standards of “success” that society and the education system define for students only deepened my confusion about my own future. Consequently, I changed my major many times and struggled with the question of "what kind of person I want to be" until now.

This personal experience motivated me to delve deeper into the Chinese education system as part of my master thesis at AHO, to understand why it operates the way it does and why many people share similar feelings and struggles. I aim to utilize my expertise in service and systems oriented design to explore these questions and propose potential interventions.



Design approach



This project combines Systems Oriented Design and Service Design approaches.

Systems Oriented Design

“Systems Oriented Design is a design methodology and design practice that is especially geared towards understanding and working with complex systems. The most central ability for systemic designers is to negotiate and weigh multiple contradictory requirements, needs, parameters, and at its best, to generate win-win solutions” (Sevaldson, 2022).

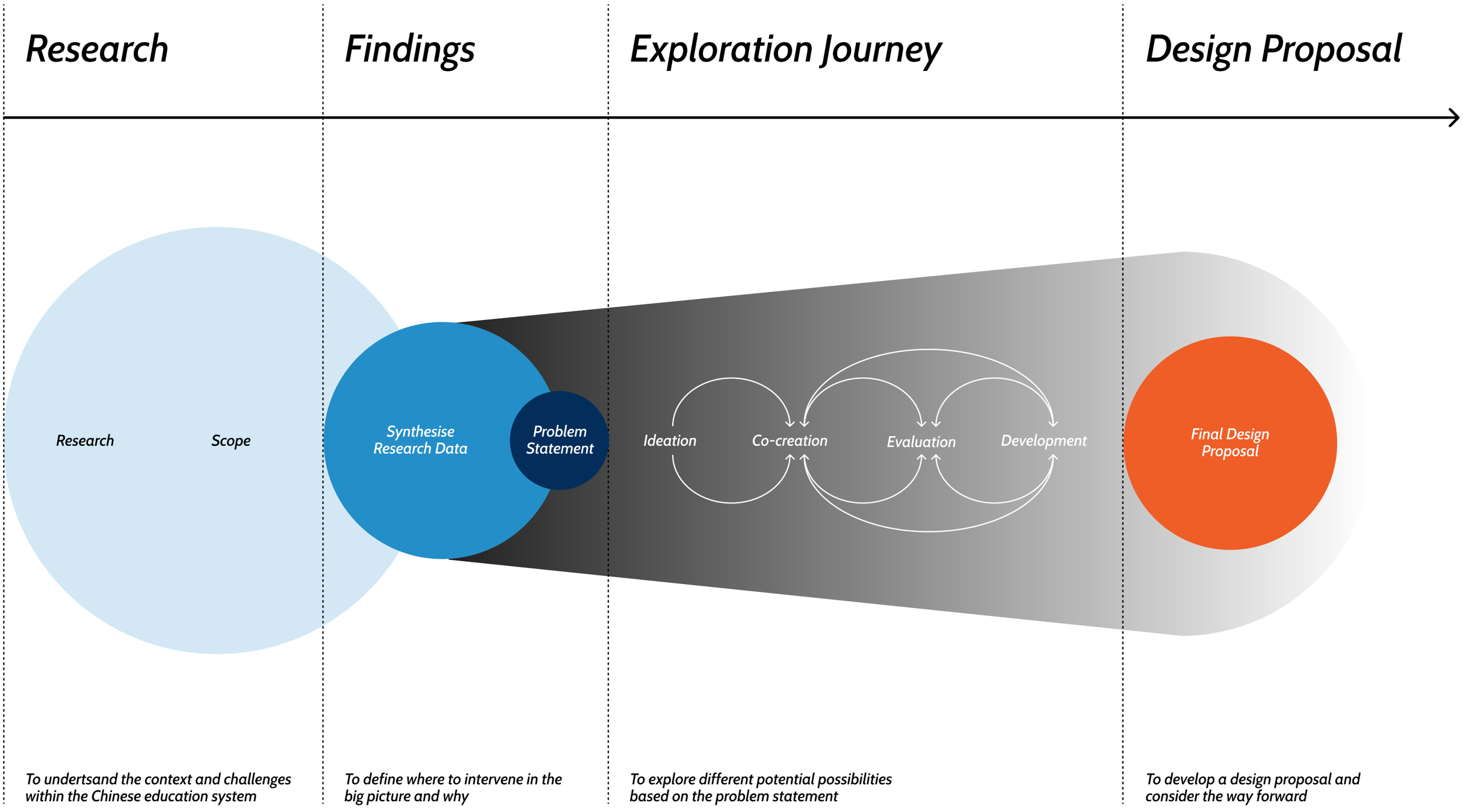
During the research phase, I applied the SOD mindset to learn and understand the complexity of the Chinese education system. Employing a holistic perspective enabled me to explore various scales and aspects of findings, while utilizing mapping and visualization techniques facilitated the analysis of interconnections among them. For instance, I examined how educational models influence people's behaviors and mindsets, as well as how breakthrough interventions impact existing systemic dynamics. With these understandings, I could determine where to intervene in the big picture and develop interventions with the potential for positive systemic impact.

Service Design

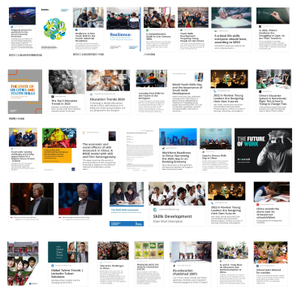
Service Design is a human-centred and creative approach to service innovation (Meroni & Sangiorgi, 2012). I was inspired by Service Ecosystem Design, which aims to facilitate the emergence of desired forms of value co-creation (Vink et al., 2020).

During the explore and design phase, I applied human-centered perspectives from Service Design approaches to empathetically consider how design can respond to the needs of the target group. Additionally, I utilized the Service Ecosystem Design perspectives to facilitate collective design with stakeholders within the Chinese education system, aiming to create long-term value.

Overall process



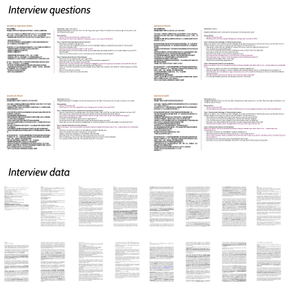
Methods



Here are the key methods used during this project.

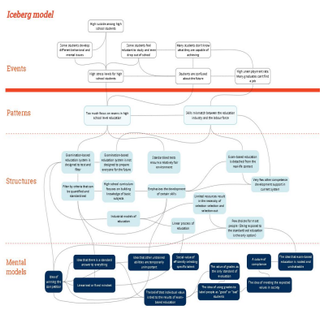
Desk research

To understand the context of the global and Chinese education systems, I explored a range of related resources: reports, books, articles, news, podcasts, videos, and educational designs, among others.



Interviews

I conducted online interviews with two high school students, three adults who attended high school in China, two parents, and two high school teachers to learn about various perspectives within the Chinese high school education system.

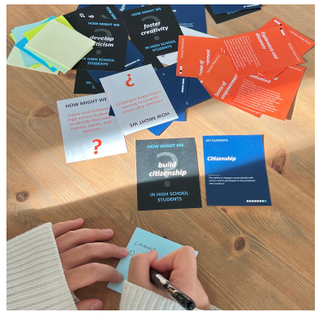


Iceberg model analysis

This exercise helped me analyze the root causes of challenges for high school students within the Chinese education system and uncover hidden social structures and mental models driving these issues.

Synthesis insights via visualisation

I used drawings to synthesize key insights and frame a problem statement. This enabled me to reflect on the connections between them and consider how to move forward.

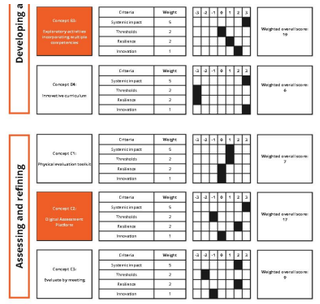


Workshops

I had three ideation workshops, one co-creation workshop, five verification workshops, and two discussion sessions throughout my entire design exploration journey. My design proposal was co-created, developed, iterated and shaped through these workshops.

Mapping

I used various mapping techniques to structure information. For example, affinity mapping was used to cluster ideas according to different themes. It facilitated a holistic analysis of the data and enabled me to integrate promising idea fragments into service concepts.



Evaluation

Using the Impact and Threshold Analysis (Sevaldson, 2013) and the Pugh Matrix("Decision-matrix method", 2022), I evaluated the different concepts in terms of systemic impact, threshold of implementation, resilience, and innovation.

Testing for feedback

I presented my final design proposal and three service design interventions to some stakeholders to seek feedback and discuss their future development.

02

RESEARCH

This chapter covers the relevant research context, how I narrowed my focus to Chinese high schools and identified the target group. Additionally, it presents my initial brief.

Global context

Why is education so important?

Education is a human right, a powerful driver of development, and one of the strongest investments for reducing poverty and improving health, gender equality, peace, and stability. It delivers large, consistent returns in terms of income and is the most important factor to ensure equity and inclusion (The World Bank, 2023).

For societies, education drives long-term economic growth, spurs innovation, strengthens institutions, and fosters social cohesion. For individuals, it promotes employment, earnings, health, and poverty reduction (The World Bank, 2023).

A global trend in education

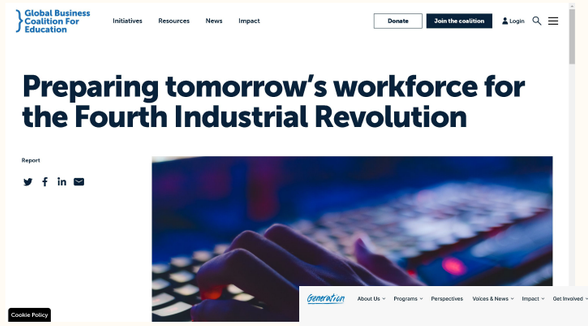
Teach youth new skills to adapt to the future

The world is changing rapidly. Looking back, the Covid-19 pandemic has reminded the world how suddenly a crisis can appear. Living and thriving in such a future will require a greater preparedness and adaptability to a variety of crisis situations.

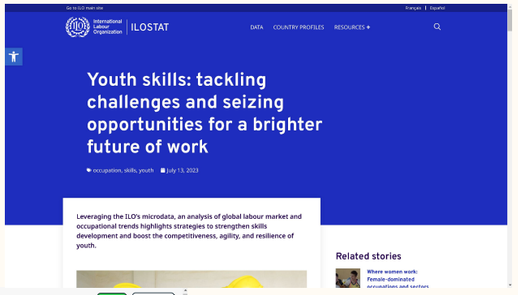
Nowadays, the Fourth Industrial Revolution is set to fundamentally transform the way modern societies are organized, and technological advances — especially in artificial intelligence and automation — may lead to serious job displacement and skills shortages (Global Business Coalition for Education, 2020).

Leading institutions such as the World Bank are calling for the education sector to rise to the challenge of moving beyond traditional subjects to help youth develop the necessary skills to prepare for unknown and uncertain futures (see screenshots to the right).

Different suggestions regarding the preparation of important skills for youth have been put forward. Overall, a more comprehensive and holistic skill set appears to be crucial.

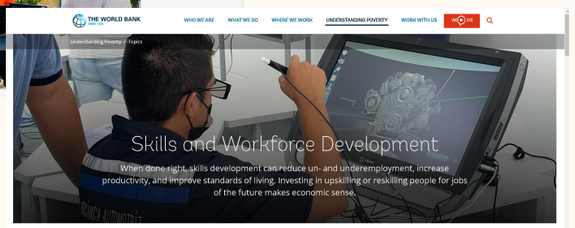


(Global Business Coalition for Education, n.d.)



(Achkar, 2023)

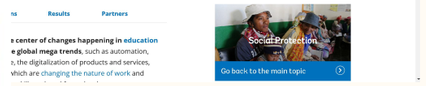
(Generation, n.d.)



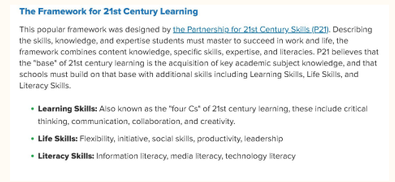
(The World Bank, 2023)

Skill Categories	Definition	Examples
Workforce Readiness	Foundational to individuals' entry and success in the workplace, ranging from initial job search to maintaining continuous employment	Literacy, numeracy, digital literacy, resume writing, self-presentation, time management, professionalism, etiquette, social norms
Soft Skills	Personal attributes, social skills, and communication abilities that support interpersonal relationships and interactions with others	Communication, critical thinking, creative thinking, collaboration, adaptability, initiative, leadership, social emotional learning, teamwork, self-confidence, empathy, growth mindset, cultural awareness
Technical Skills	Knowledge and capabilities to perform specialized tasks	Computer programming, coding, project management, financial management, mechanical functions, scientific tasks, technology-based skills, and other job-specific skills (e.g., nursing, farming, legal)
Entrepreneurship	Knowledge and abilities that support success in creating and building a workplace opportunity or idea	Initiative, innovation, creativity, industriousness, resourcefulness, resilience, ingenuity, curiosity, optimism, risk-taking, courage, business acumen, business execution
Youth Resilience	Capacity to bounce back from adversities	Growth mindset, optimism, ability to find meaning in life, motivation, stress management, disaster preparedness, and so on

(Global Business Coalition for Education, 2020)



(The World Bank, 2023)



(Jenna, n.d.)

(Davis, 2019)

Image source: https://www.edutopia.org/article/benefits-high-school-psychology-class

Image source: https://gbc-education.org/wp-content/uploads/sites/2/2022/03/Resilience-New-Youth-Skill-for-the-Fourth-Industrial-Revolution.pdf

Skills development is at the center of changes happening in education and labor markets amid the global mega trends, such as automation, the digitalization of products and services, and a shrinking labor force, which are changing the nature of work and skills demands.
— (The World Bank, 2023)

The development of youth skills is more critical today than ever before.
— (Generation, n.d.)

Governments are seeking to strengthen skills development systems and promote lifelong learning to support workforce competitiveness, agility and resilience in the face of future shocks, and longer-term transformative trends.
— (Achkar, 2023)

Chinese context

Challenges in Chinese education system

Emerging and potential skills mismatch

China is transitioning to advanced industries and services, and experiencing demographic shifts and escalating wages. While these shifts have dramatically reshaped the demand for skills, the education sector has not yet adequately responded in terms of skills supply. While the number of graduates from the country's education system has rapidly expanded, employers find graduates poorly suited to new skills needs, leading to the emergence of skills mismatch (Ra et al, 2015).

The challenges arising from skills mismatch have placed substantial pressure on industries and the society. Many graduate suffer from the negative effects of educational mismatch, such as unemployment, lower wages, lower job satisfaction, or loss of human capital. Meanwhile, enterprises report difficulties in finding suitable skilled workers, despite high wages (Ra et al, 2015).

Too much emphasis on tests

China's education system is highly exam-oriented. On one side, it aims to ensure equal opportunities for all. However, the exam-oriented education system lays a one-sided emphasis on scores, which distorts students' learning purpose and motivation, makes too much of the tactics of doing exams, over-intensifies the training, and neglects the cultivation of students' comprehensive ability (Meng et al., 2021).

It causes extreme stress for students because tests are regarded as a means to prove their worth (Kirkpatrick & Zang, 2011), resulting in many students developing various behavioral and mental issues, even leading to suicide (Zhao, 2014).

These two challenges are closely interconnected as shown in the illustration below. When the education system places excessive emphasis on examination results, it loses sight of the skills truly crucial for students to prepare for the future and the abilities society actually requires from them. This has led to the problem of skills mismatch existing in today's society. Furthermore, these challenges are in line with the global trend: it's crucial to develop adaptive and new skills among youth.

Challenges in Chinese education system

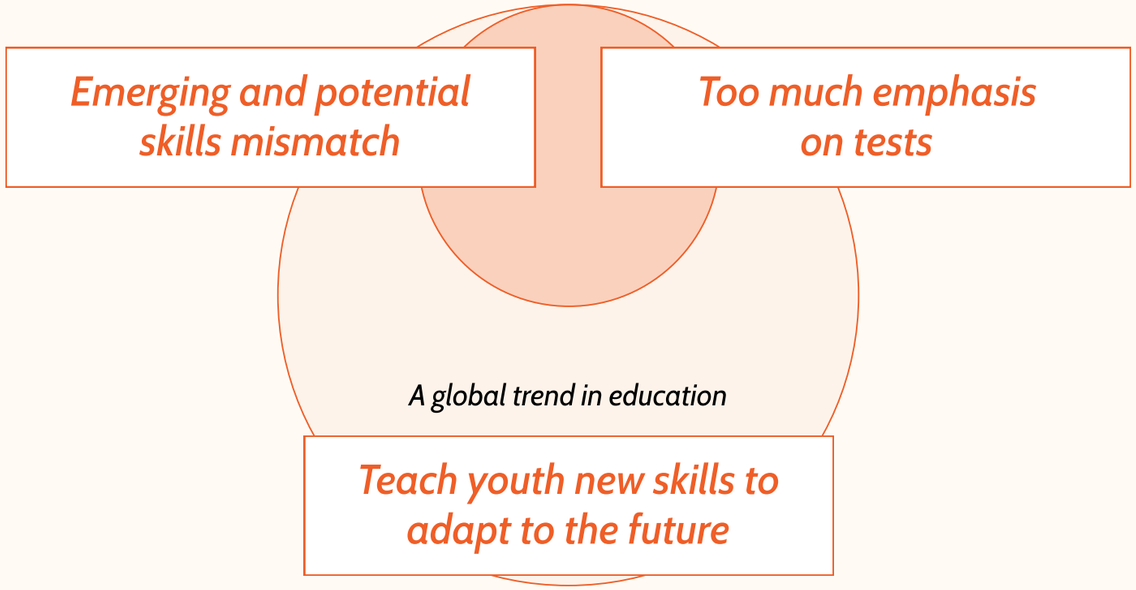


Image source: https://www.scmp.com/comment/insight-opinion/article/2108721/chinas-rigid-college-entrance-exam-failing-tests-equality

China is moving up the value chain, and its educational institutions need to prepare students better for the actual skills needed as they enter the workforce.
— (Experts Discuss Skills Gap in China, n.d.)

Traditional Chinese education actively 'harms' children because it basically ignores their uniqueness, interests, and passions, leading to homogenization.
— (Tatlow, 2014)

A meaningful education, which focuses more on assisting each kid in growing than on pressuring them to get high test scores, is hampered in China by an overemphasis on test results.
— (Tatlow, 2014)

Focus: High school level

Framework of Chinese education system

Outcome of this exam will "determine" many students' future

National Higher Education Entrance Examination (GaoKao)

	Schooling	Age
PHD programme	22	27
	21	26
	20	25
Master's programme	19	24
	18	23
	17	22
University (bachelor's degree) and vocational college	16	21
	15	20
	14	19
	13	18
Senior secondary school	12	17
	11	16
	10	15
Junior secondary school	9	14
	8	13
	7	12
Primary school	6	11
	5	10
	4	9
	3	8
	2	7
	1	6
Pre-school and kindergarden		5
		4
		3

Source: OECD (2015), OECD Economic Surveys: China, OECD Publishing, Paris, http://dx.doi.org/10.1787/eco_surveys-chn-2015-en.

At the end of the last year of high school in China, students are required to take the National Higher Education Entrance Examination, commonly known as the Gaokao. The results of this exam directly influence the schools and majors to which students can gain admission. For many high school students, this examination holds significant importance.

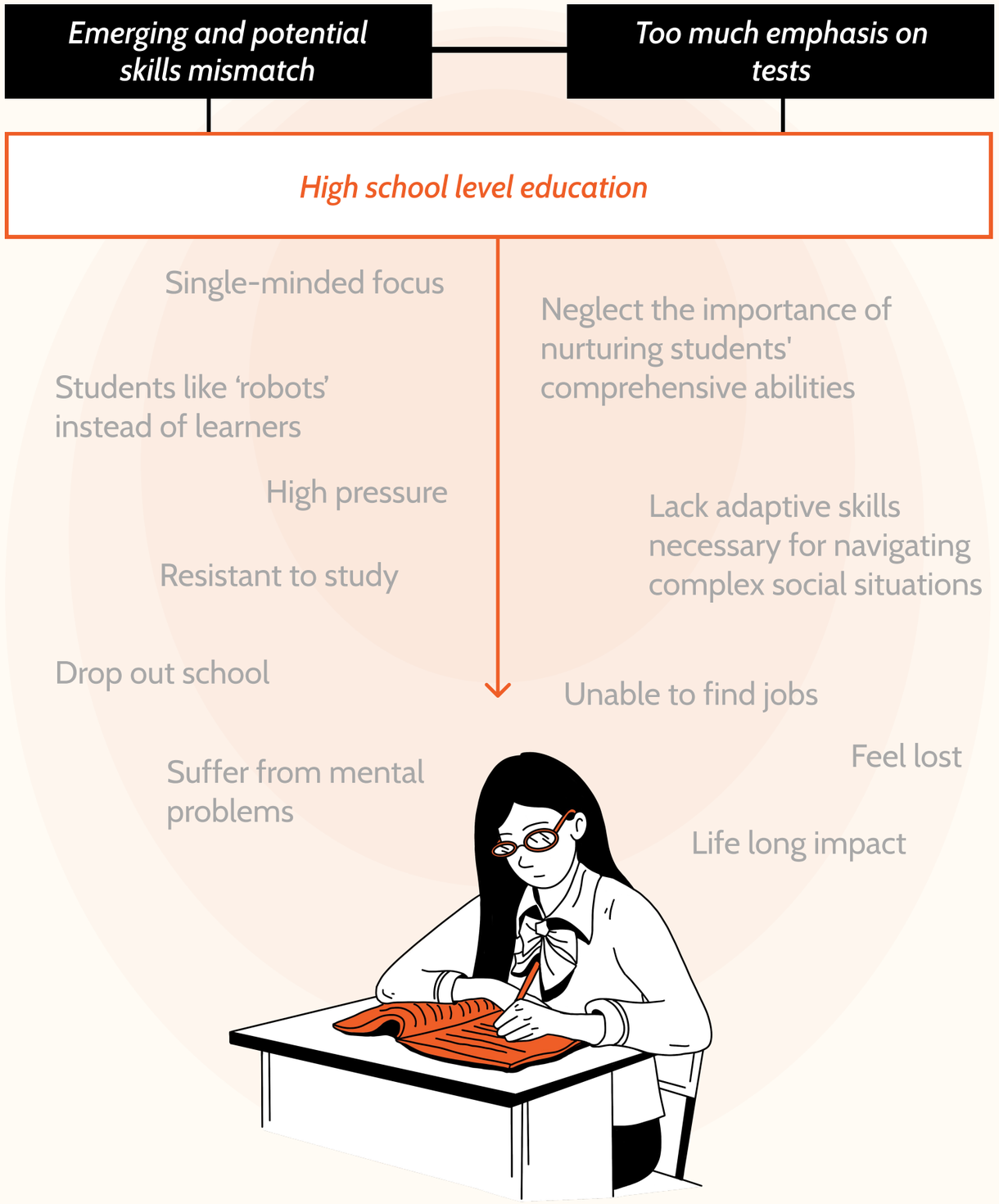
Focus: High school level

The issues raised by these two challenges are magnified at the high school level

The National Higher Education Entrance Examination is very important. Its results dictate which schools and major students can gain admission to. Consequently, the high school curriculum in China is primarily structured to help students excel in the exam and achieve the desired grades. The learning environment has also become highly competitive.

However, this single-minded focus neglects the importance of nurturing students' comprehensive abilities, which are essential for their holistic development as individuals and their long-term future.

This has resulted in many high school students becoming more like 'robots' molded by the Chinese education system, adept at exam success but lacking in adaptive capabilities. As a consequence, many high school students develop mental problems while studying, are unable to find jobs in the future due to a deficiency in relevant skills, and are confused about life, among other challenges.



Target group

High school students in China, who are around 15-18 years old

Chinese high school students were identified as target group. Because the Chinese education system tends to impact high school students more than other age group students, and that impact can be more negative than positive for many people.

Initial brief

Understand the root causes of the two main challenges high school students are facing within the Chinese education system.

Design interventions to facilitate transition, aiming to assist Chinese high school students in better preparing for the future.

*A design intervention refers to design processes that intervene in and interrupt existing status quos, leading towards altered (desired) states (IGI Global, n.d.).

03

This chapter outlines how I synthesized the research data into four key insights that reveal the root causes of systemic symptoms, as well as where to intervene in the big picture. It concludes with a problem statement.

FINDINGS

Iceberg model map

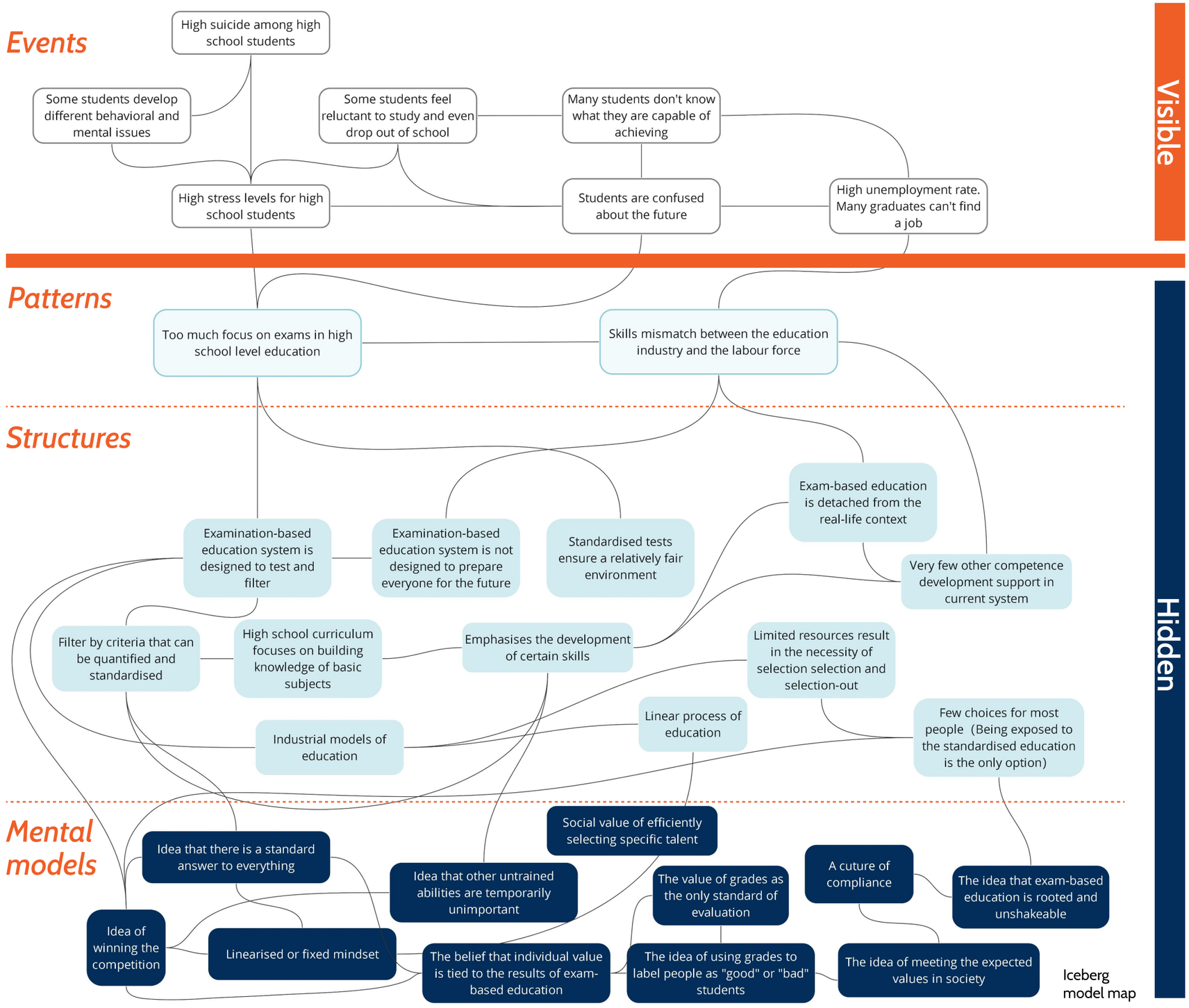
What are the root causes of two challenges within the Chinese education system?

I interviewed two high school students, three adults attending high school in China, two parents, and two high school teachers to better understand the two challenges I identified in my desktop research. The first challenge is the "skills mismatch between the education sector and the labor force". The second is that "Chinese education system focuses too much on exams".

The richness of the research data highlights the system's complexity, prompting me to employ the iceberg model method (Farrugia, 2021) for data synthesis.

This mapping tool, enabled me to probe the root causes of systemic symptoms. I began by referring to the two main challenges as the patterns, as they are happening all the time. In the subsequent mapping process, I investigated the visible events occurring and the invisible social structures and mental models shaping these two patterns. I ended up identifying four key insights.

The following pages present what I found and unpack the four main insights that surfaced.

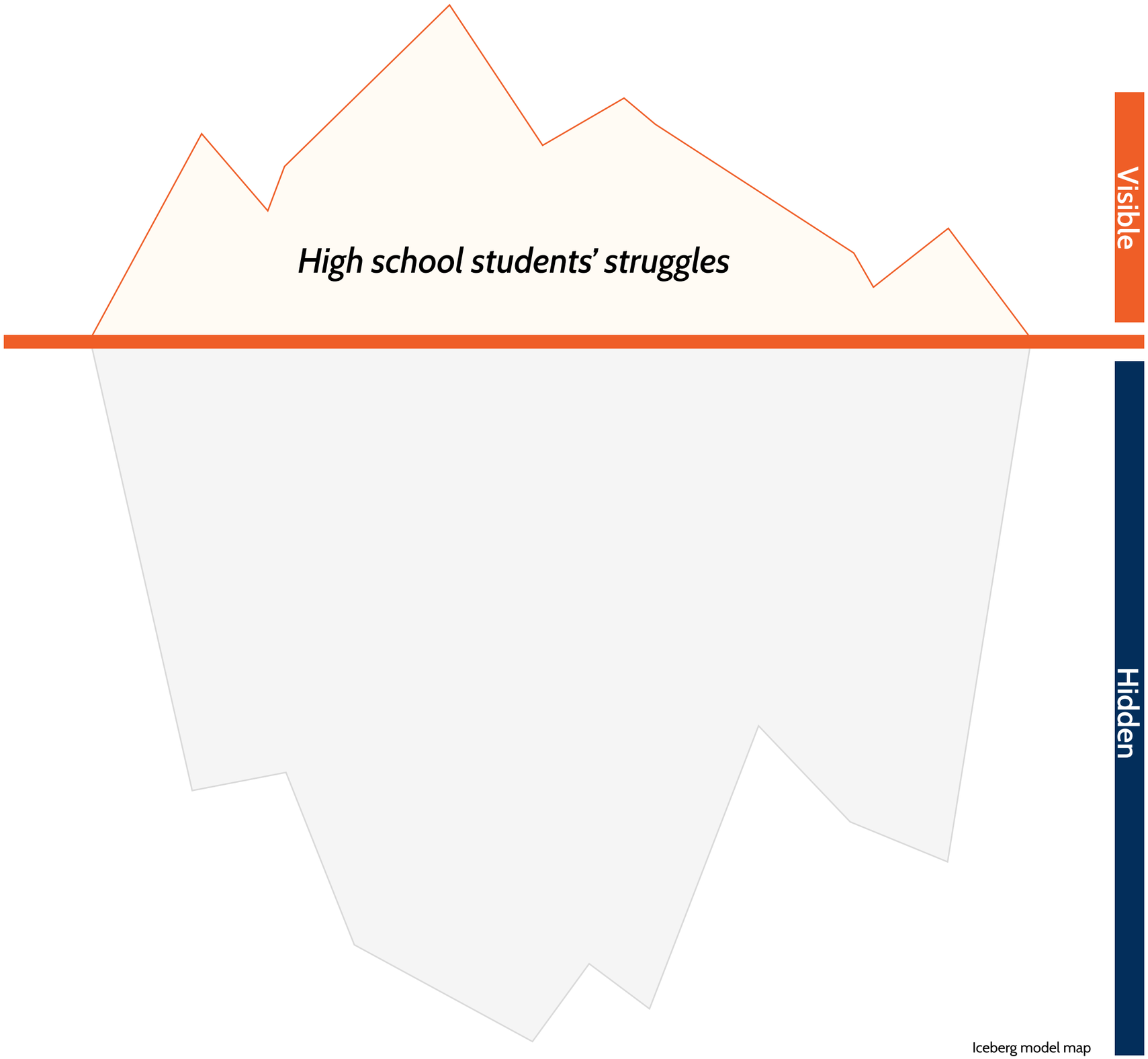


Iceberg model map

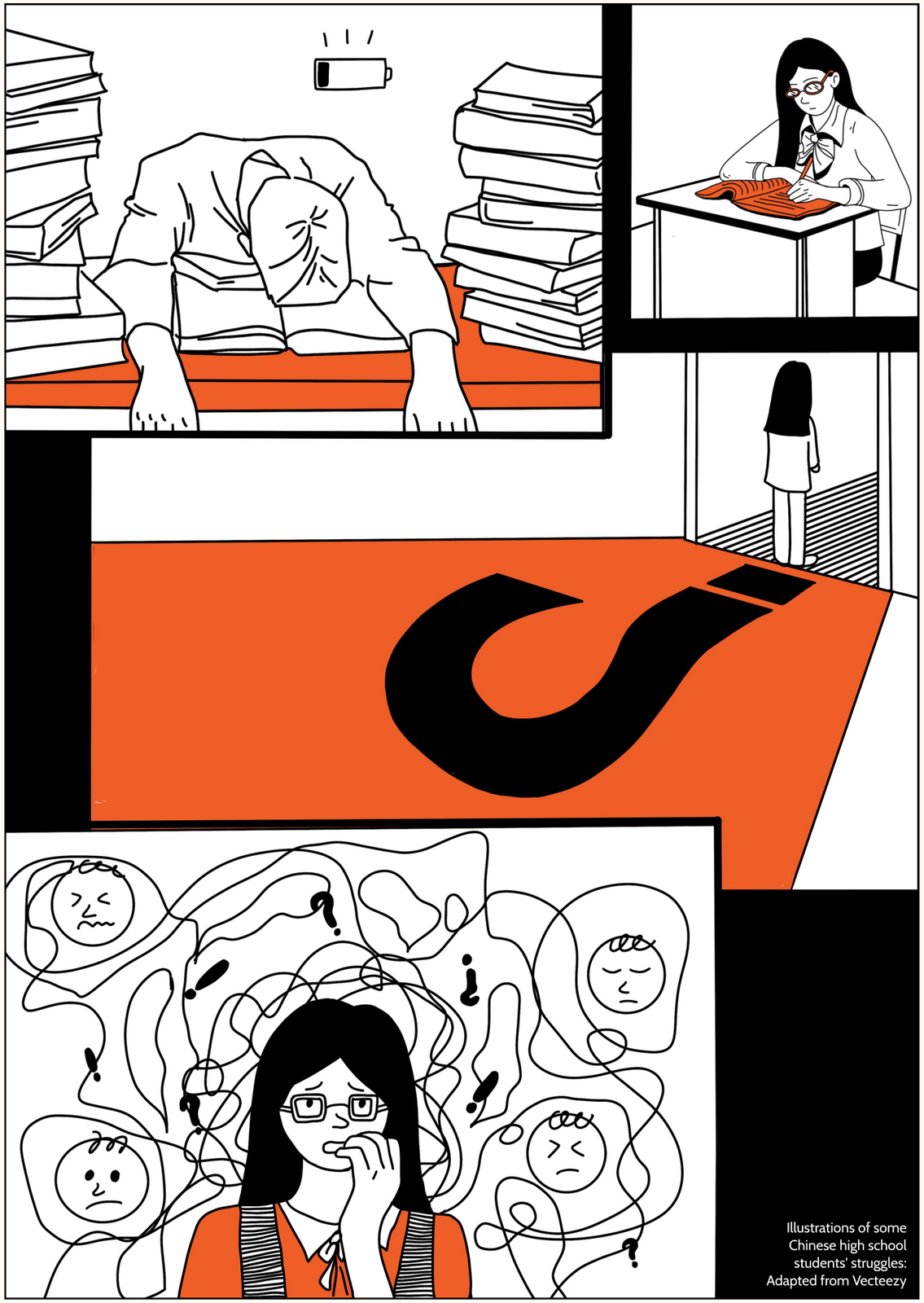
What's above the waterline?

Because of the two patterns that have been happening over time within the Chinese high school education system, many students are experiencing some different struggles. For example, a lack of ability to explore one's own value and confidence loss, feeling lost about the future, being under high pressure, or even developing mental issues, and so on.

The following page provides a quick glimpse into the lives of Chinese high school students, shedding light on their struggles and thoughts.



Iceberg model map



Illustrations of some Chinese high school students' struggles: Adapted from Vecteezy

The unhappy part is too little time for rest and recreation. I live at school, studying from 7 am to 9:50 pm, leaving me sleep-deprived. Even during holidays, it's all about homework, with little energy or time for fun.
— Interviewee. High school student A.

To be honest, I don't know what I'm suited for or what my strengths are. I enjoy reading novels, but I'm not sure how that could be useful for my future.
— Interviewee. High school student B.

When I was in high school, my imagination about what to do in the future was very limited, confined to the divisions of academic subjects.
—Interviewee. Adult C.

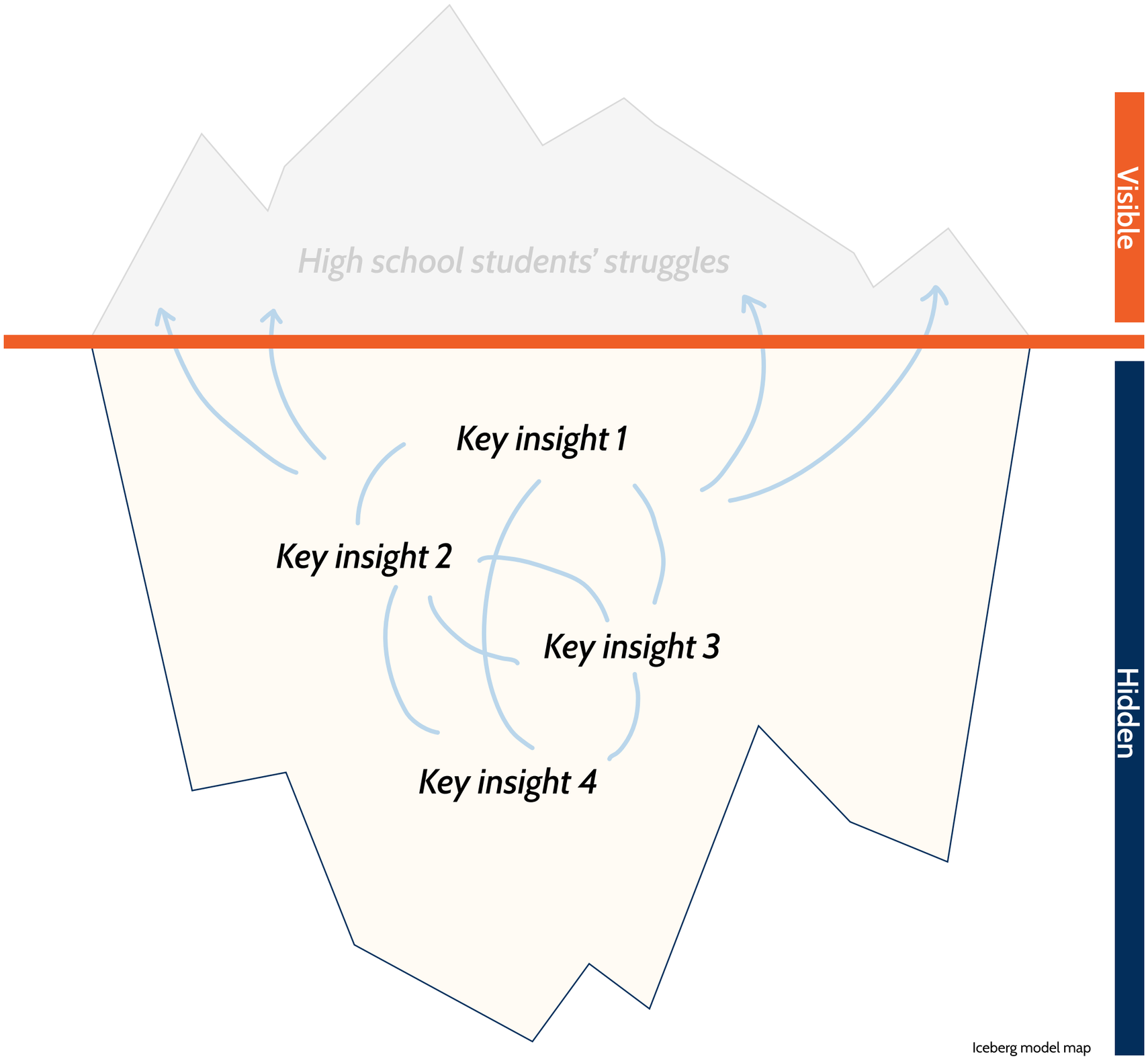
I haven't really thought about my future career path or what different types of jobs involve, including the required skills. No one has brought it up, so I don't feel the need to rush into it.
—Interviewee. High school student B.

Some times I feel stressed and worried that I won't be able to perform well in the final and most important entrance examination.
— Interviewee. High school student A.

Then, what's below the waterline?

What causes and shapes the diverse struggles of Chinese high school students in learning and envisioning their futures? By integrating the iceberg model analysis with other research, I identified four key design insights.

The following pages guide through these insights, revealing the intrinsic connections between them.



Iceberg model map

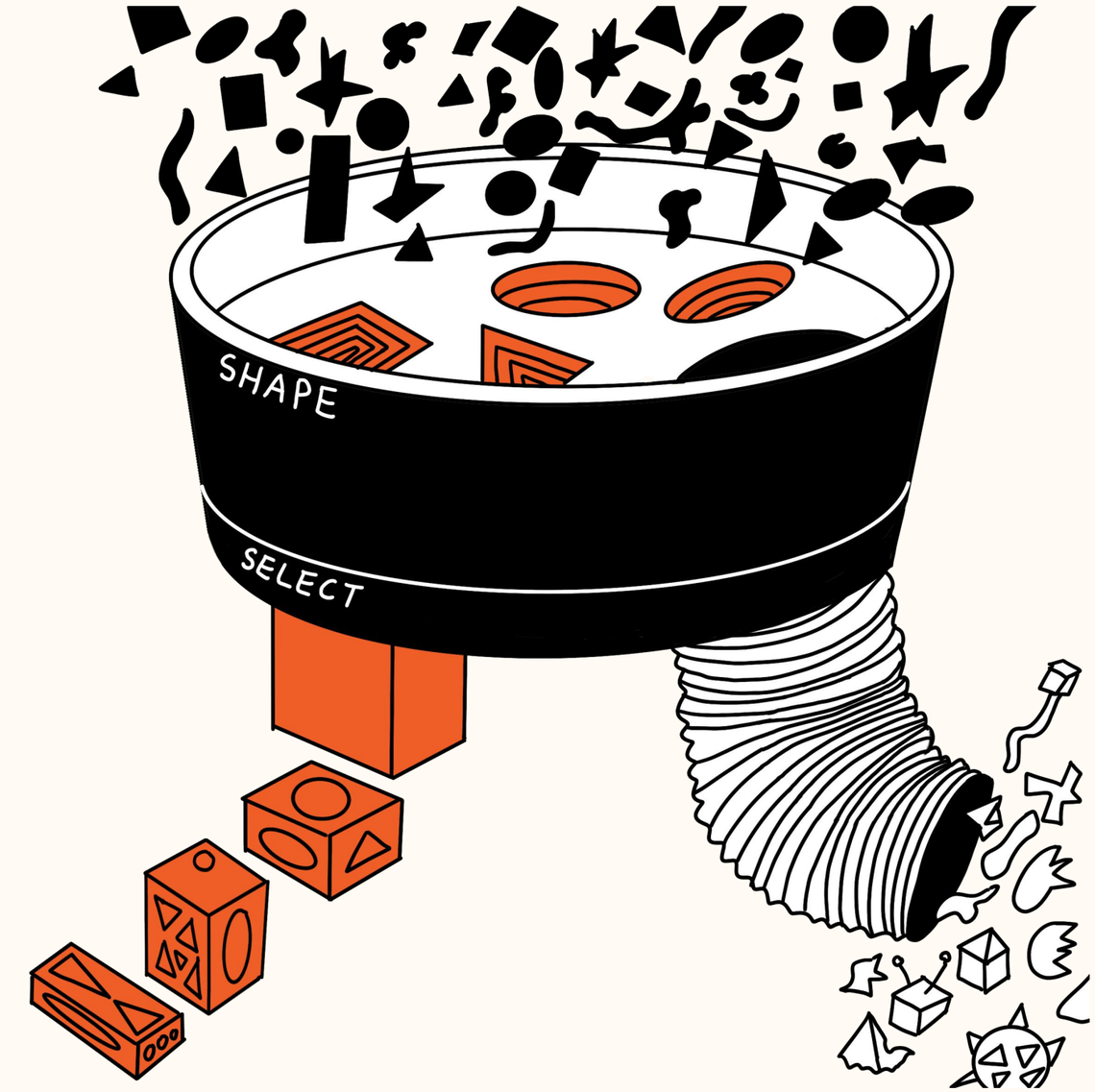
Key insight 1

Chinese high school education is designed to test and filter students. This leads to a greater focus on developing competencies that can be quantified, compared, and efficiently improved.

Society relies on the high school-level education system to efficiently train and select individuals who can contribute well to the country's development. However, the focus is not on helping students discover their personal value or promoting development from an individual perspective to prepare for the future. The current educational system is inspired by the mass industrial manufacturing education model, which was designed to mold students to certain requirements.

This skews the system to emphasise targeted competencies that are relevant, all of which must be quantified and standardized. For example, logical thinking ability can be efficiently trained and improved by solving mathmatical problems. Evaluating a student's ability in this regard can be done through a lot of math tests. By comparing the grades of math tests, students with better logical thinking abilities can be identified and selected. The same applies to the understanding of basic subjects, learning capabilities, and so on.

Key insight 1 illustration



> *Dominant culture of education has come to focus on not teaching and learning, but testing.*
> — (Robinson & Aronica, 2015)

> *Many crucial skills, such as communication, are lacking in high school education. Sitting at the desk doing test papers was my high school memory.*
> — Interviewee. Adult B.

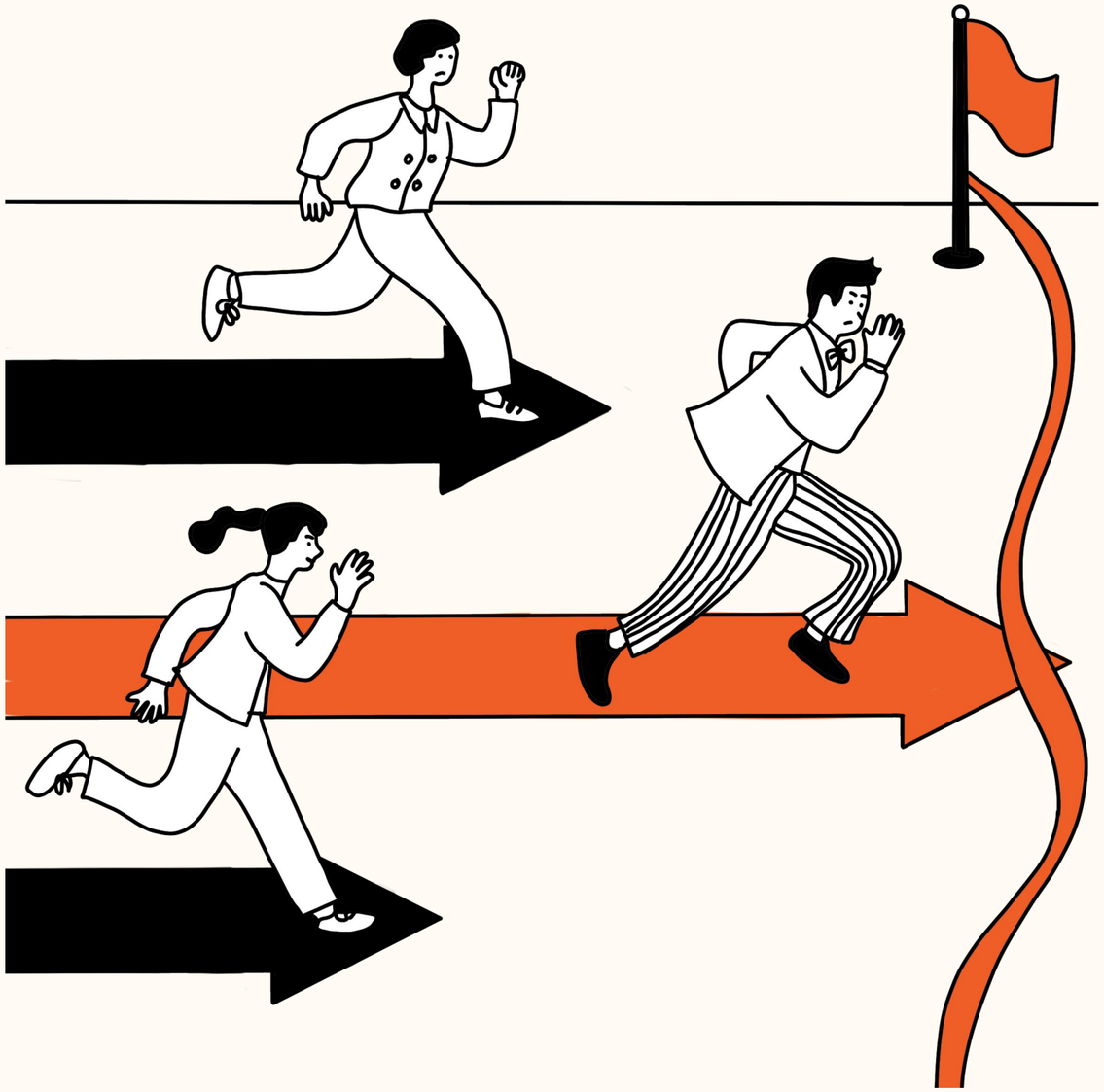
Key insight 2

Most of the time and energy is invested in *winning the competition* rather than *developing students as individuals.

The Chinese high school education system contains a large number of standardized tests. These are used to efficiently measure students' learning progress and predict their performance on high-stakes tests. Often schools develop different forms of comparison to enhance students' academic performance or motivate them to work harder. For example, class differentiation and corresponding teaching resource allocation is based on student academic performance.

Currently, competition through testing has become the norm in Chinese high school education settings. Good or bad grades gradually become the only criteria for evaluating individual students' abilities and personal growth. These norms create a situation where very few students are guided to develop and explore their personal values and aspirations. Most students simply try their best to survive the current competitive environment that surrounds them.

Key insight 2 illustration: Adapted from Matsu



The bad part during high school was that it was too competitive. I studied super hard to maintain my 'good student' label.
— Interviewee. Adult A.

Some parents don't know their child's strengths. When horizontal comparisons, such as scores and rankings, come into play, many parents become more anxious than the students.
— Interviewee. Parent & Therapist.

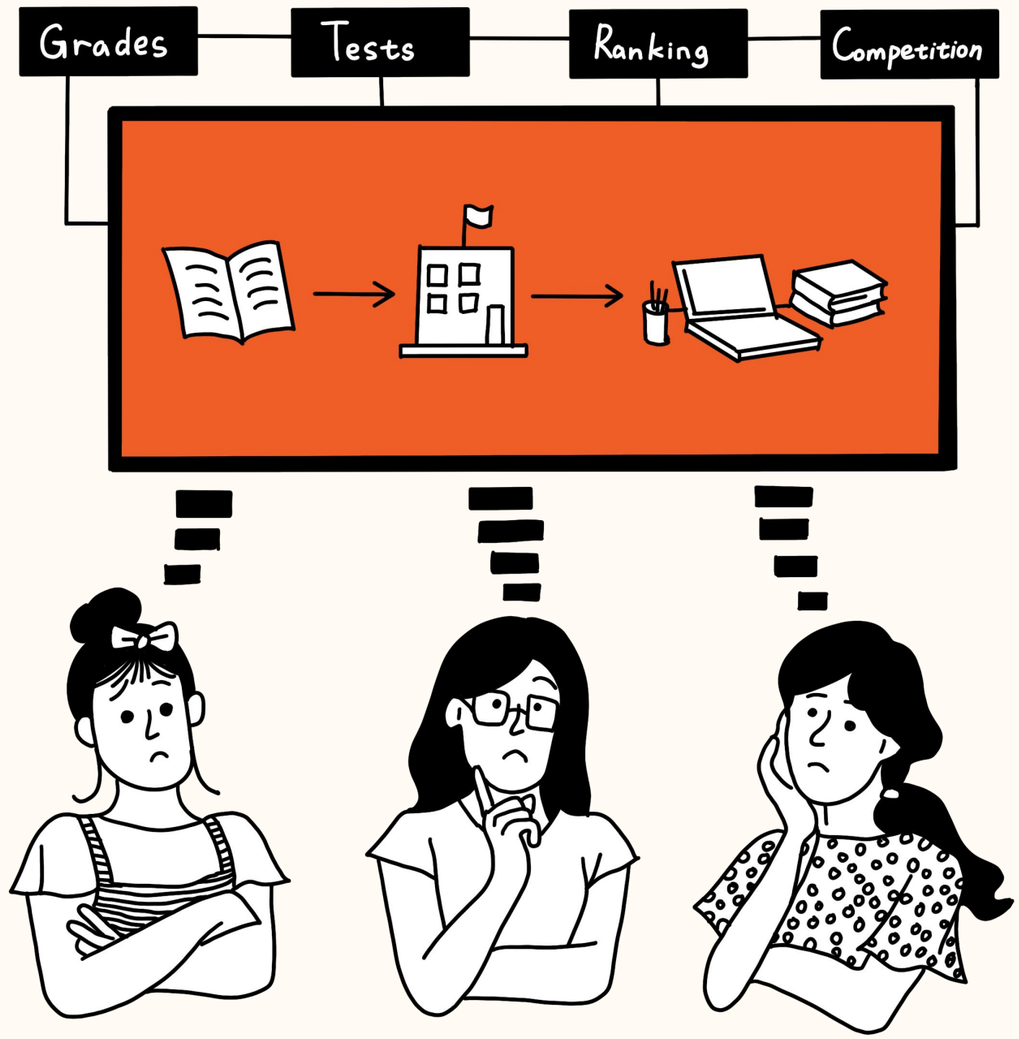
Key insight 3

Single and standardized approaches to assessment promote fixed and linear thinking. This limits curiosity, imagination and creativity.

The system continuously and purposefully cultivates specific competencies and employs fixed, standardized methods to select individuals. As a result, a significant amount of competition emerges as a normative frame and mindset. Those within the system, including students and parents, unconsciously and gradually adopt the same competitive mindset. For instance, many students' attention is focused solely on plugging knowledge that will be assessed. Many students learn to believe that everything must have standardized answers: being a good student is equated with entering a good university after high school.

In such environments, imagination and creativity regarding broader possibilities become neglected and limited. Individuals who don't align with test-based education also end up feeling alienated. Only a few would think: even if they didn't perform well in the education system, they can still pursue alternative paths and gain success or become engaged in meaningful jobs.

Key insight 3 illustration: Adapted from Emma



The horror of test-based education is that it makes you think that there is always a set rule for the world. If you don't follow that rule, you're out.
— Interviewee. Adult B.

Parents and society nowadays like to ask children 'what job are you going to do in the future' rather than 'what kind of person will you be in the future'.
— Interviewee. Parent & Therapist.

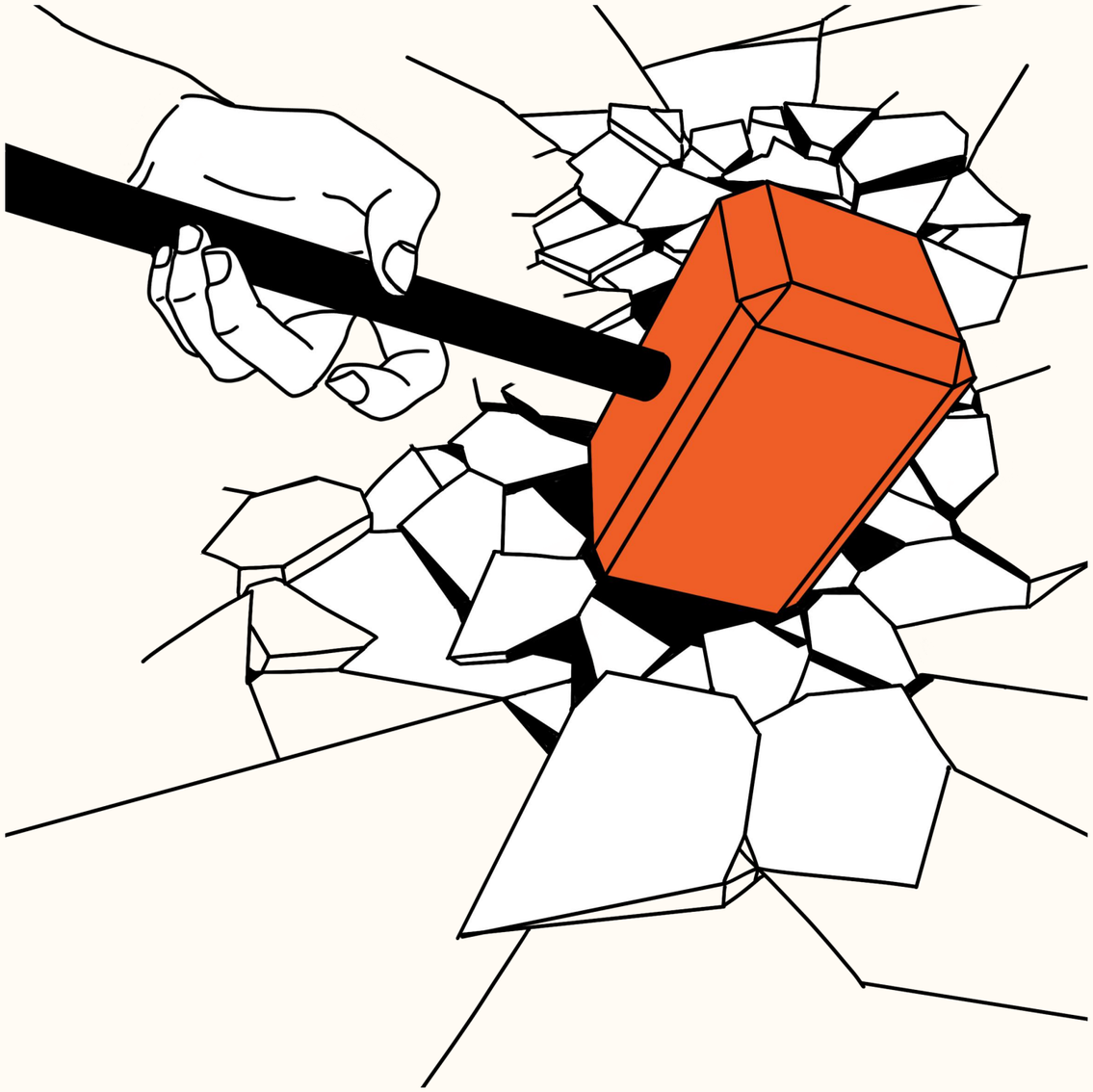
Key insight 4

Some changes have been made to the industrial model of high school education in China to better prepare students for life after school.

There has been some discussion and reflection in society about the models and drawbacks of the existing high-school education system. Although test-based education remains mainstream, some efforts have been made to reform high school education, mainly in particularly developed areas such as Beijing, Shanghai, Shenzhen. The goal is to discard the bad parts of test-based education and to have more space for students to develop essential-qualities-oriented education.

Here are some examples: The Ministry of Education has attempted to reform the college entrance examination system in Zhejiang Province to promote the all-round and individual development of students. In Shanghai, a high school has completely transformed the traditional classroom teaching model by introducing students to real-life situations for exploring and solving problems. A high school in Beijing no longer focuses on grades, but rather divides the assessment measurements into academic level, endeavour and engagement in collaboration.

Key insight 4 illustration



Our school is at the forefront of educational reform. I am lucky to be able to be involved in educational innovation. It's meaningful.
— Interviewee. High school teacher A.

We are not talking about abandoning the test entirely, but integrating it with quality education and cultivating students in multiple aspects.
—Interviewee. High school teacher B.

Key insights summary

Here is the summary of four key insights and how they are connected

Education model level

Key insight 1

Chinese high school education is designed to test and filter students. This leads to a greater focus on developing competencies that can be quantified, compared, and efficiently improved.

Behaviours level

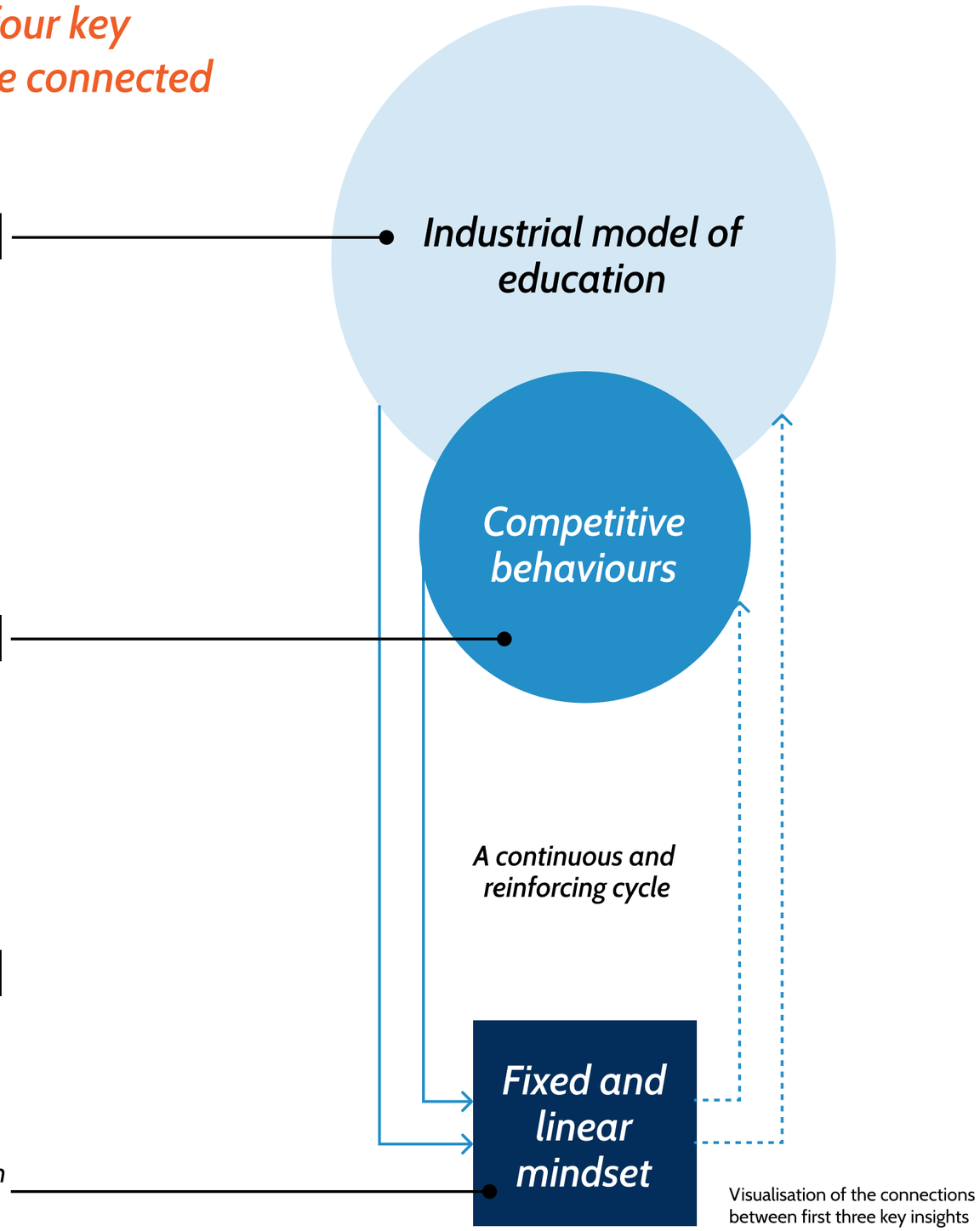
Key insight 2

Most of the time and energy is invested in winning the competition rather than developing students as individuals.

Mindset level

Key insight 3

Single and standardized approaches to assessment promote fixed and linear thinking. This limits curiosity, imagination and creativity.



Visualisation of the connections between first three key insights

The first three levels of key insights are closely related and mutually reinforcing. When the Chinese high school education system operates in an industrialized manner, using standardized and liner procedures to "shape" students in a certain way and to filter for the "best outcomes". It creates an atmosphere that encourages competition pushing the students to work harder, and become the outstanding winners of the system. This lead to students developing competitive behaviours where everyone tries to survive or win the competition over and over again. The mindset of individuals within the system, including the students, also become fixed and linear.

In turn, this ingrained mindset directly or indirectly drives to competitive behaviours becoming an ever repeating pattern. This further reinforces the operating model of the education system, making it seemingly unbreakable. Eventually, it becomes a continuous and reinforcing cycle that is difficult to change.

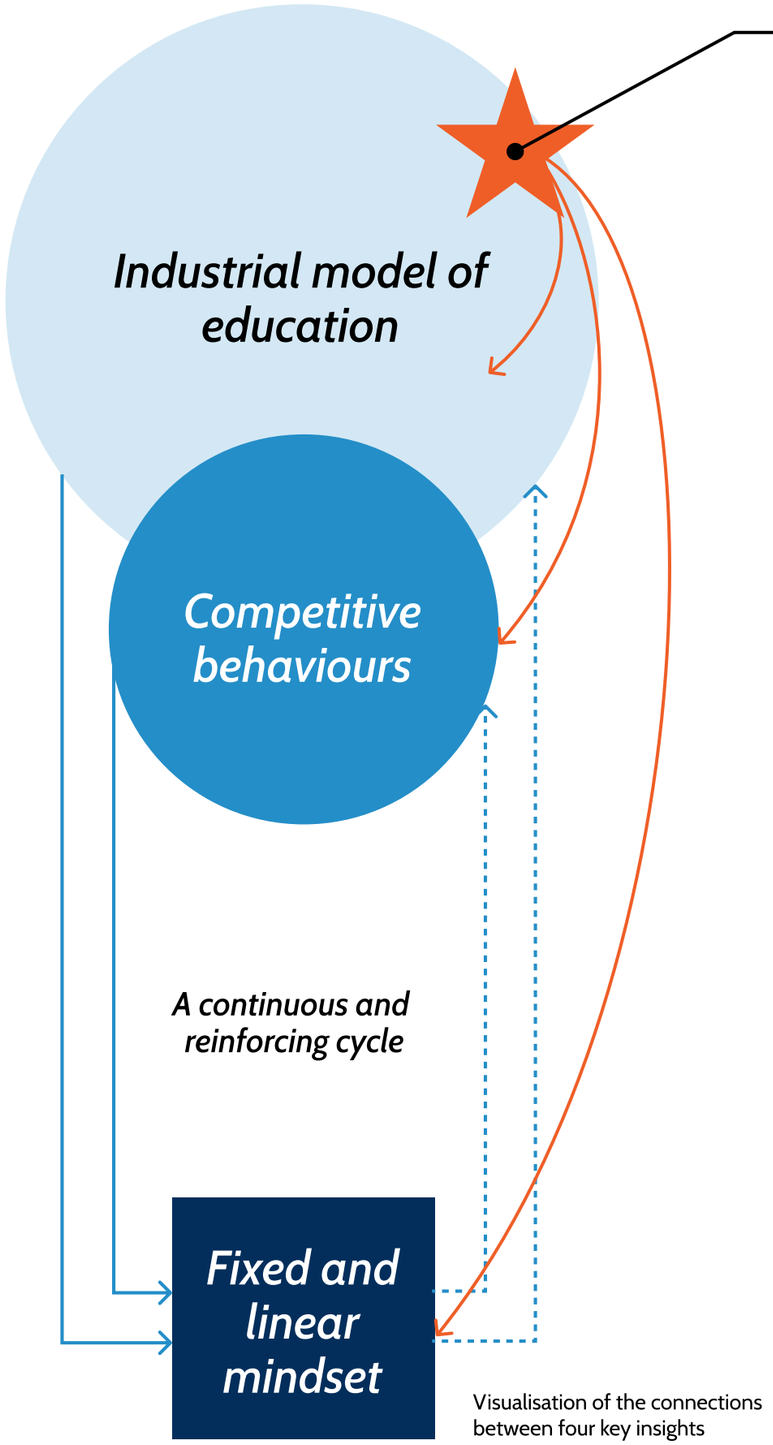
Overall, these elements within Chinese education system all prevent helping high school students better prepare for the unpredictable future. Because the competitive mindset in the system is very shortsighted, it does not fit the needs of the students of cultivating more lon-term developmental skills. Also it doesn't help students build the ability to deal with uncertainty and complexity.

Key insights summary

However, the fourth key insight is about some breakthrough interventions that affect the whole systemic dynamic. These interventions range from education policies to individual schools experimenting with different education theories, curriculum frameworks, and evaluation methods. These changes occur at different levels, demonstrating a collective awareness that the current model of Chinese high school education holds a potential to become better at helping students to connect to and prepare for the future. There are many parts of the current model that have plenty of potential to be adjusted.

Nevertheless, changing the current system is a long-term investment. It's unlikely to see immediate results of these interventions. Furthermore, certain trials and changes are only applied on a small scale and do not have a significant impact.

In general, these breakthrough interventions show a strong tendency to reduce competitive behaviours and shift fixed mindsets by bringing innovative changes to the existing educational model, making school a place to learn and grow once again.



Visualisation of the connections between four key insights

Breakthrough interventions

Key insight 4

Some changes have been made to the industrial model of high school education in China to better prepare students for life after school.

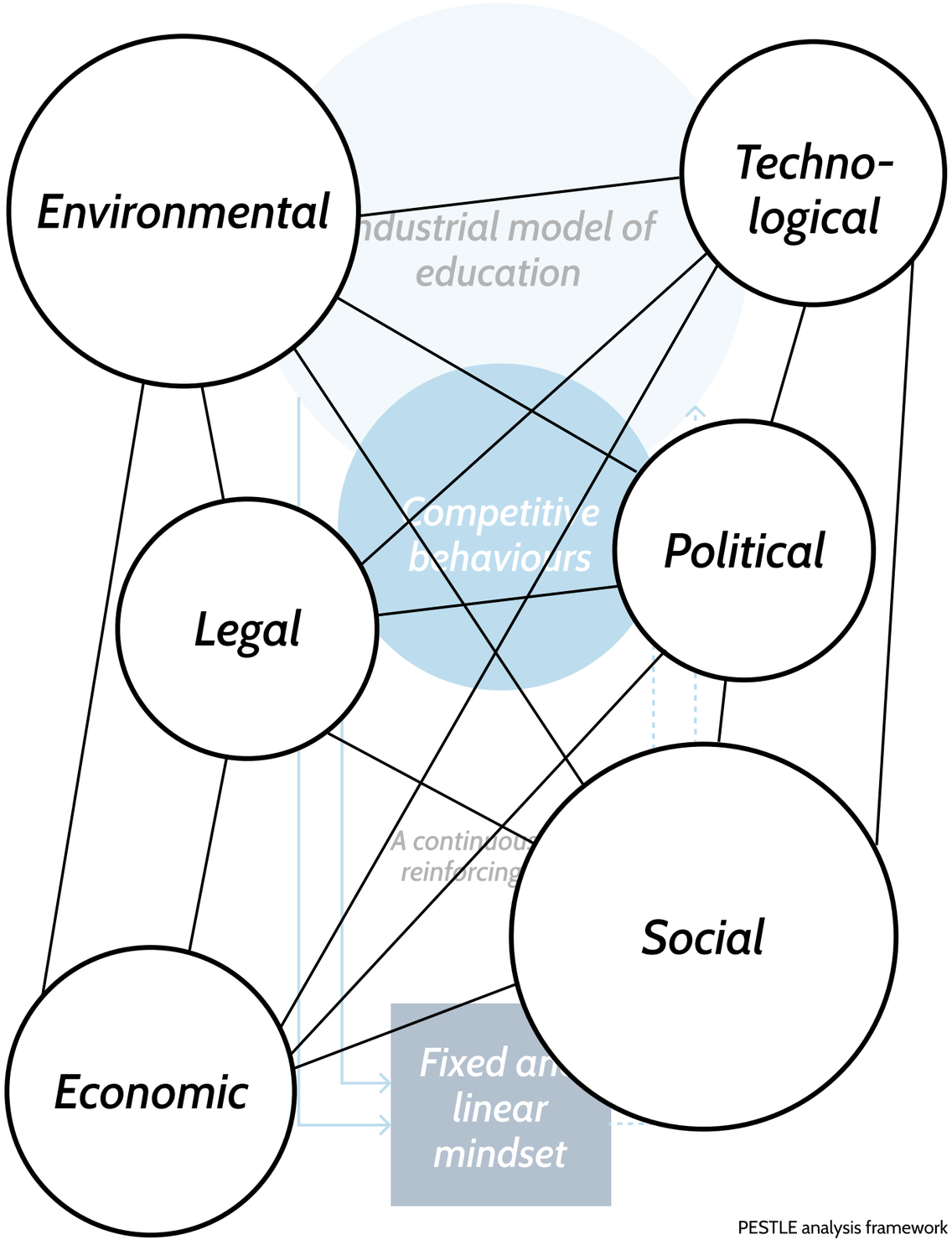
Scope of this project

To investigate how the entire Chinese high school education system would change for the future? *Nope!*

The four key insights reveal the complexity of the Chinese high school education system. Like a wicked problem, it has no right or wrong responses and comprises an amalgamation of different kinds of problems (Suoheimo, 2019).

To envision future changes in the entire Chinese high school education system, a comprehensive and broader understanding of various perspectives is essential, including political, economic, social, technological, legal and environmental (Basu, 2004).

Due to the current project's time constraints, I reflected on how I could leverage my design expertise effectively: My wish was to explore how service design can contribute within educational topics. It seemed necessary and more realistic to set up a boundary within the broader scope of my initial investigation to guide its further development.



PESTLE analysis framework

Scope of this project

Education model level

Key insight 1

Chinese high school education is designed to test and filter students. This leads to a greater focus on developing competencies that can be quantified, compared, and efficiently improved.

Behaviours level

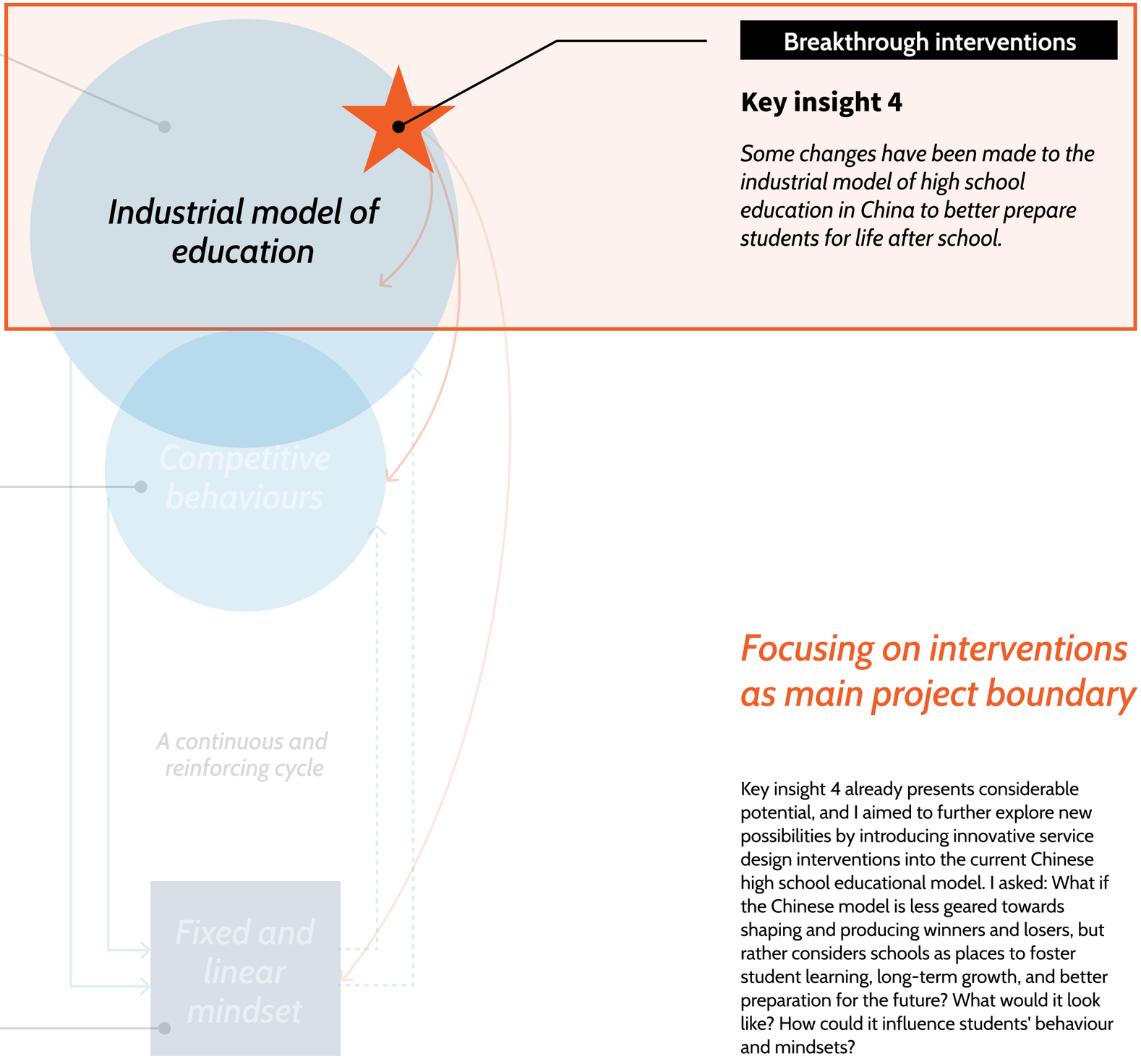
Key insight 2

Most of the time and energy is invested in winning the competition rather than developing students as individuals.

Mindset level

Key insight 3

Single and standardized approaches to assessment promote fixed and linear thinking. This limits curiosity, imagination and creativity.



Breakthrough interventions

Key insight 4

Some changes have been made to the industrial model of high school education in China to better prepare students for life after school.

Focusing on interventions as main project boundary

Key insight 4 already presents considerable potential, and I aimed to further explore new possibilities by introducing innovative service design interventions into the current Chinese high school educational model. I asked: What if the Chinese model is less geared towards shaping and producing winners and losers, but rather considers schools as places to foster student learning, long-term growth, and better preparation for the future? What would it look like? How could it influence students' behaviour and mindsets?

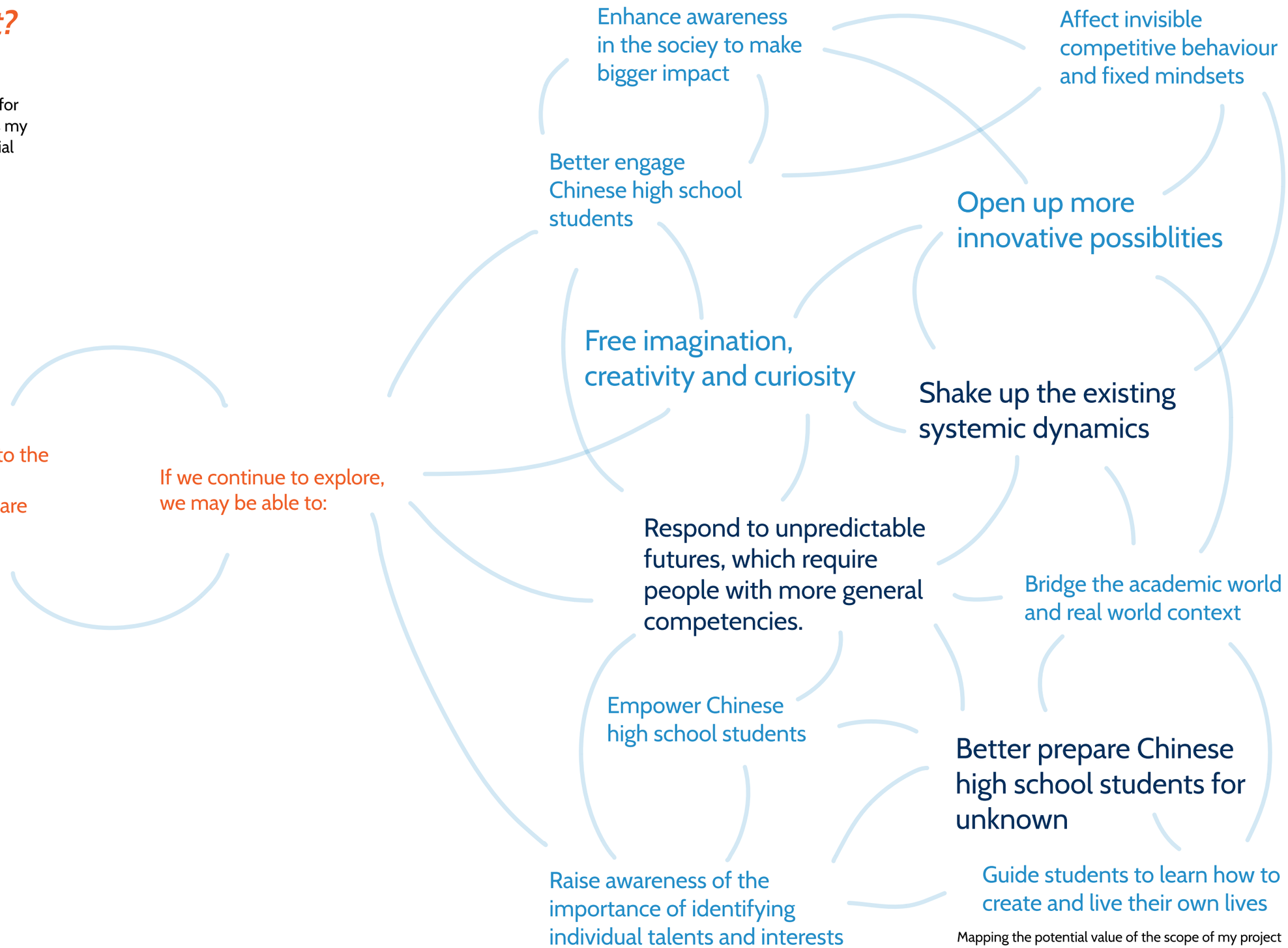
Scope of this project

Why is this important?

Through this map, I outlined the reasons for identifying breakthrough interventions as my main project boundary where the potential exists to move forward.

Some changes have been made to the industrial model of high school education in China to better prepare students for life after school.

If we continue to explore, we may be able to:



Mapping the potential value of the scope of my project

Problem statement

The initial research done in this project led me to extract the following problem statement:

How might we bring transformative changes to the industrial model within Chinese education system?

To better prepare high school students for unpredictable futures!

04

This chapter shows my step-by-step design exploration journey from the development of the problem statement to a final design proposal.

EXPLORATION JOURNEY

Starting point

Based on my research, I have summarized four key design principles. They provide a general direction for how my design can respond to the first half of my problem statement: "bring transformative changes to the industrial education model within Chinese education system."

I also used theories from Sir Ken Robinson, who was a global authority on creativity, education, and human potential. He suggests eight competencies that are important to the future development of youth (Robinson & Aronica, 2015). These more specific competencies correspond to the second half of my problem statement: "to better prepare high school students for the future."

Problem statement:

How might we** bring transformative changes to the industrial model within Chinese education system **to** better prepare high school students for unpredictable futures**?

Design principles

Exploratory and discovery

"The essence of education is learning. Human flourishing is not a mechanical process but an organic one. We should embrace new metaphors and transition to agricultural principles rather than the industrial education model" (Robinson, 2010). It's important to create conditions and environments for Chinese high school students to explore and discover the world based on their own circumstances.

Inspired and motivated

"People engage and learn spontaneously when they find what they love and value" (Robinson & Aronica, 2013). It's important to explore how different roles in the Chinese high school education system can help students identify their personal talents and interests that engage them the most. Oppressive, comparative, and restrictive education can lead to high competitiveness and pressure. In contrast, more inspiring approaches should be promoted.

Sense of empowerment

"The four basic purposes of education are personal, cultural, social, and economic" (Robinson & Aronica, 2015). It's essential to fulfil all of these in order to nurture and empower Chinese high school students to become independent individuals. It's important to encourage them to be economically responsible, appreciative of diversified cultures, and compassionate citizens capable of connecting with the world.

Real-life context

The unpredictability, uncertainty, and complexity of the future demand more well-rounded competencies (Global Business Coalition for Education, 2020). Incorporating more real-life contexts into the current Chinese education context can help bridge students from academic worlds to their futures. Problem-solving skills are enhanced, as well as other soft skills such as resilience, stress management, and disaster preparedness. All of them will contribute to the long-term personal development of students.

Eight key competencies

Sir Ken Robinson suggests eight core competencies that schools should facilitate if they really are going to help students succeed in their lives. Students who leave school feeling confident in these eight areas will be well equipped to engage in the economic, cultural, social, and personal challenges that they will inevitably face in their lives (Robinson & Aronica, 2015).

Curiosity

The ability to ask questions and explore how the world works.

Creativity

The ability to generate new ideas and to apply them in practice.

Criticism

The ability to analyse information and ideas and to form reasoned arguments and judgments.

Communication

The ability to express thoughts and feelings clearly and confidently in a range of media and forms.

Collaboration

The ability to work constructively with others.

Compassion

The ability to empathize with others and to act accordingly.

Composure

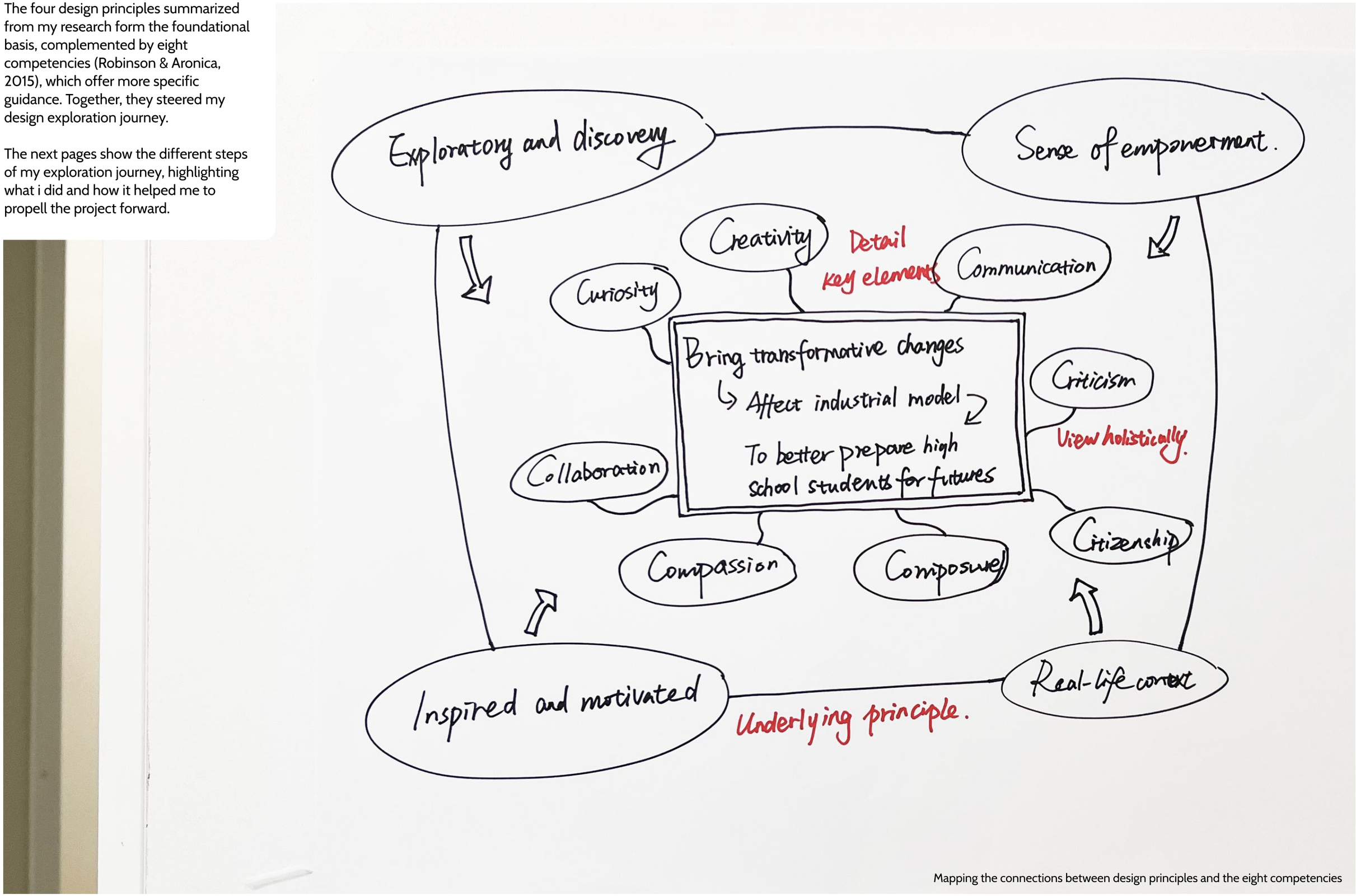
The ability to connect with the inner life of feeling and develop a sense of personal harmony and balance.

Citizenship

The ability to engage constructively with society and to participate in the processes that sustain it.

The four design principles summarized from my research form the foundational basis, complemented by eight competencies (Robinson & Aronica, 2015), which offer more specific guidance. Together, they steered my design exploration journey.

The next pages show the different steps of my exploration journey, highlighting what i did and how it helped me to propell the project forward.



Mapping the connections between design principles and the eight competencies

Ideation & Co-creation

Three ideation workshops with fellow students

What did I do?

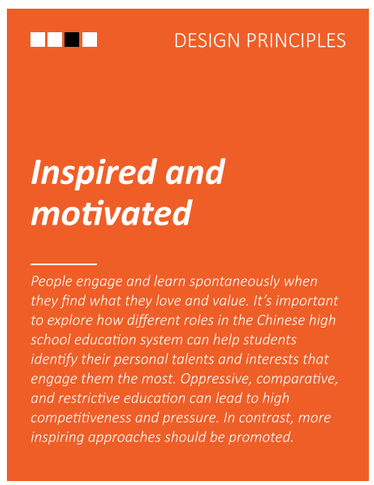
Based on the four design principles I summarised and the eight competencies referenced from Robinson, I created a series of prompt cards. Each card contained a how might we (HMW) question to facilitate brainstorming. I organized three ideation workshops, inviting three fellow students from China. All of them hold experience and know the Chinese education system at the high school level very well.

What did I bring forward?

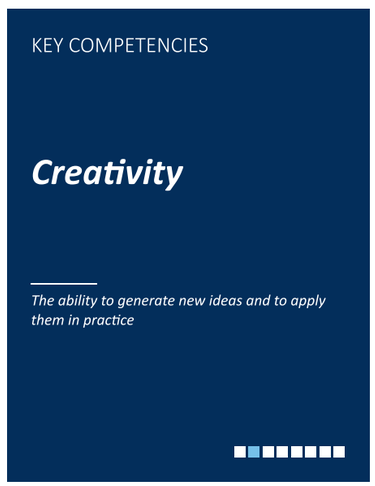
A lot of valuable ideas were generated during the workshops. Meanwhile, I noticed that participants were more familiar with some competencies, such as Communication and Collaboration, but found it challenging to ideate on Compassion and Composure. One participant mentioned, “I think Composure is really missing in the education system.” I realized the importance of establishing a common ground for understanding these eight competencies and their significance, as it later benefited the way I organized all of ideas.

Brainstorming ideas on prompt cards

Prompt card example of design principles



Prompt card example of eight competencies



Ideation & Co-creation

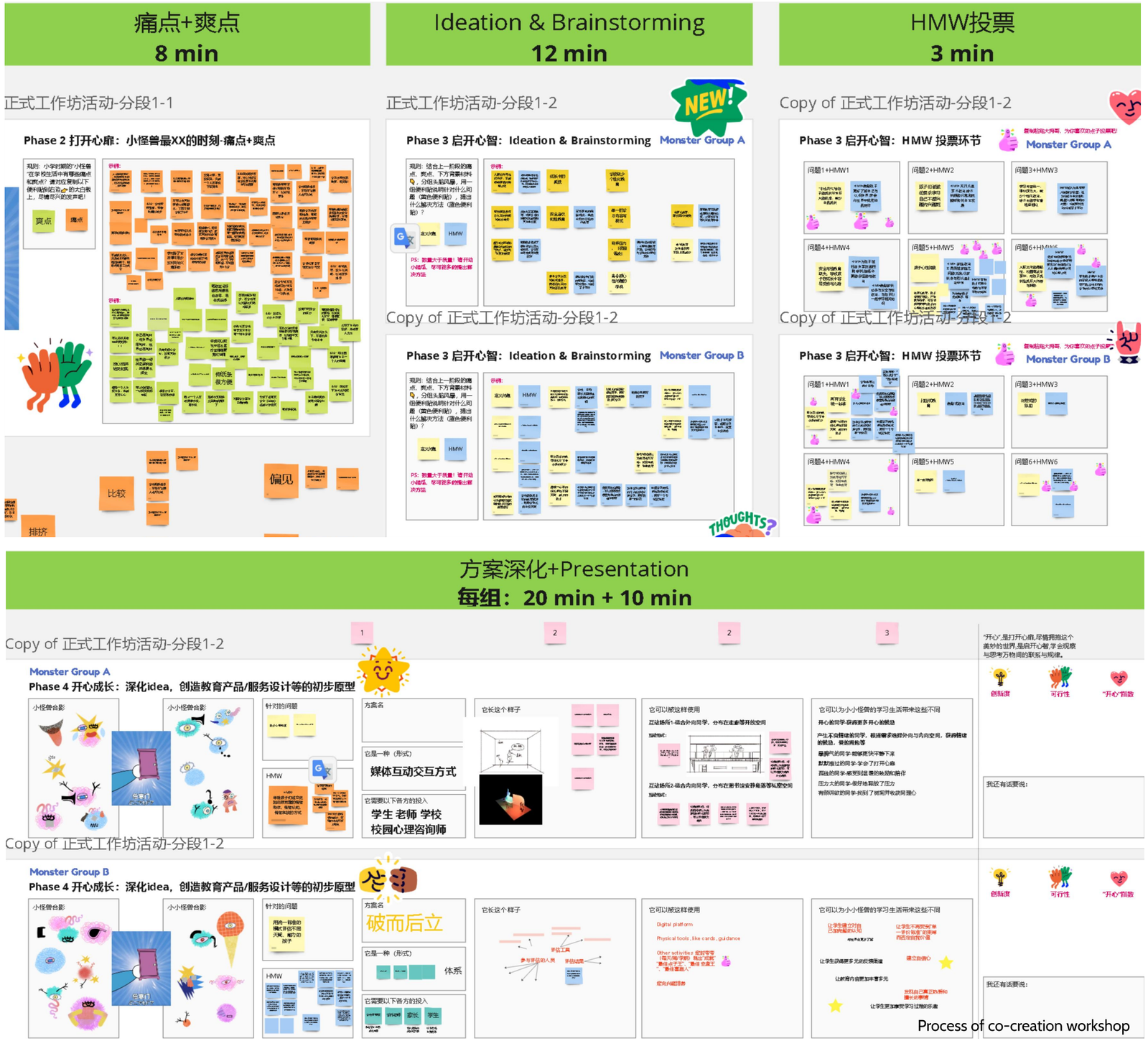
One co-creation workshop with twelve people

What did I do?

I joined one co-creation workshop organized by the Chinese Service Design Community to design future education scenarios with twelve people from different backgrounds. Over three hours, we listed both happy and sad moments from our school experiences. Then we brainstormed problem statements, HMW questions, and possible solutions. Selected solutions were developed and presented.

What did I bring forward?

I felt very inspired when participants openly discussed the issues they encountered or identified within the Chinese education system. I also shared my research findings to stimulate ideation on potential solutions. For example, one idea was introducing more diverse topics to help students cultivate a comprehensive understanding of themselves and the world, such as sex education and multiculturalism. It's highly relevant to one of the design principles I identified: real-life context. The new ideas generated in this workshop greatly enriched those from previous ideations.



Analysis and assessment of ideas

Vote for the most promising ideas

What did I do?

After organizing all the ideas from the ideation and co-creation workshops, I invited three fellow Chinese design students to each cast five votes in each cluster of ideas they found promising and worth developing.

What did I bring forward?

According to Robinson's theory, the eight competencies hold equal importance and should be considered cohesive. It makes sense and my future design proposal should cover all of them rather than prioritizing a select few. Taking a holistic perspective, I analyzed and integrated the most promising ideas from different clusters which have a lot of votes.

I clustered them into three main categories, providing a framework for the next step in developing service design concepts.

- Understanding competencies
- Developing competencies
- Evaluating competencies

All clustered ideas from the ideation and co-creation workshops

Concept development

Develop ten service design concepts

What did I do?

Based on the three previously identified categories, I consolidated various promising idea fragments into several service design concepts. For each concept, I presented what it is, which category it belongs to, and how it can be visualised.

What did I bring forward?

I created a concept portfolio covering ten service design concepts, providing a solid foundation to move forward. Here is a list of the ten concepts sorted under three main categories:

Understanding competencies:

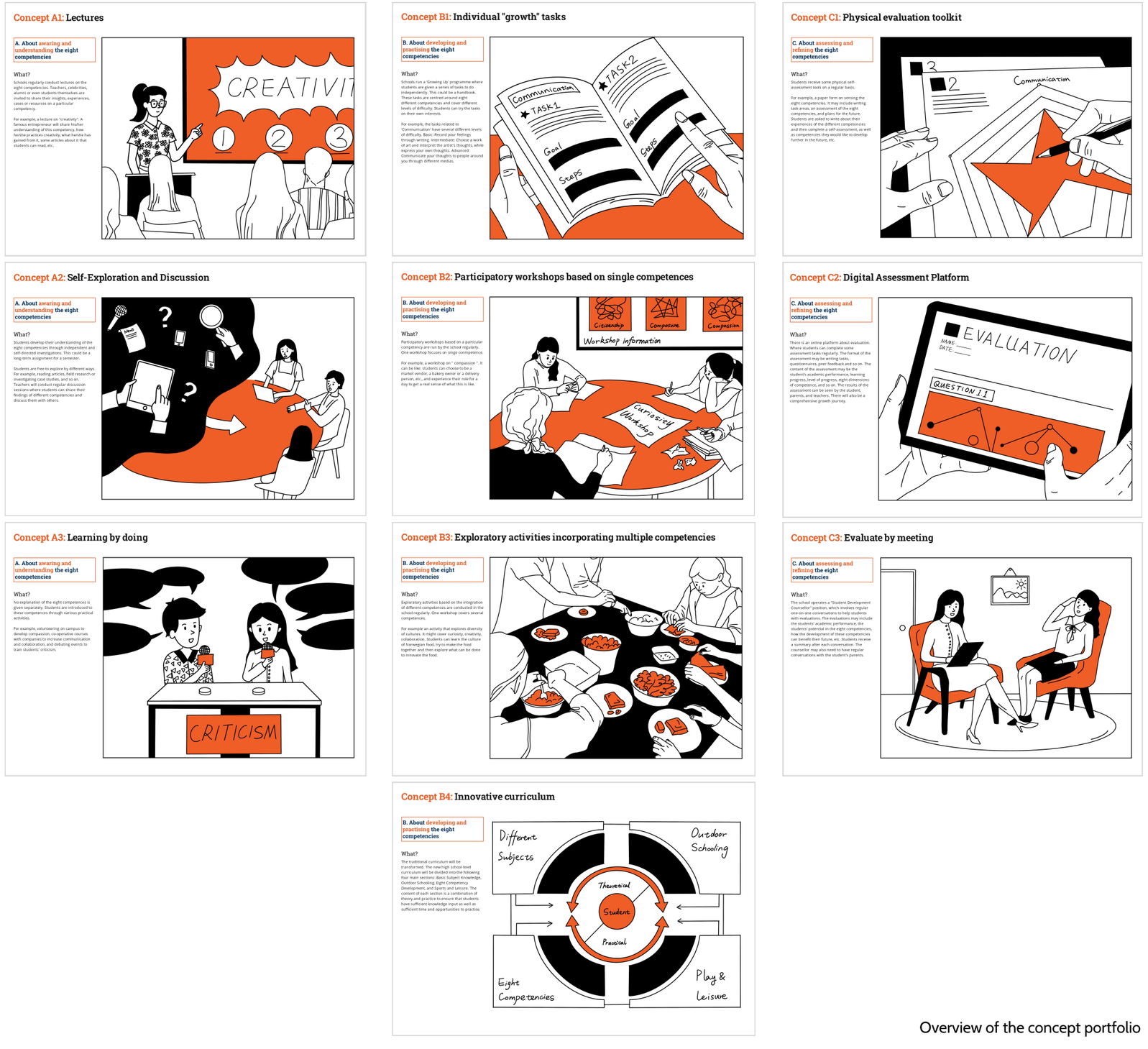
- Concept A1: Lecture
- Concept A2: Self-exploration and discussion
- Concept A3: Learning by doing

Developing competencies:

- Concept B1: Individual "growth" tasks
- Concept B2: Participatory workshops based on single competences
- Concept B3: Exploratory activities incorporating multiple competencies
- Concept B4: Innovative curriculum

Evaluating competencies:

- Concept C1: Physical evaluation toolkit
- Concept C2: Digital Assessment Platform
- Concept C3: Evaluate by meeting



Overview of the concept portfolio

Concept evaluation

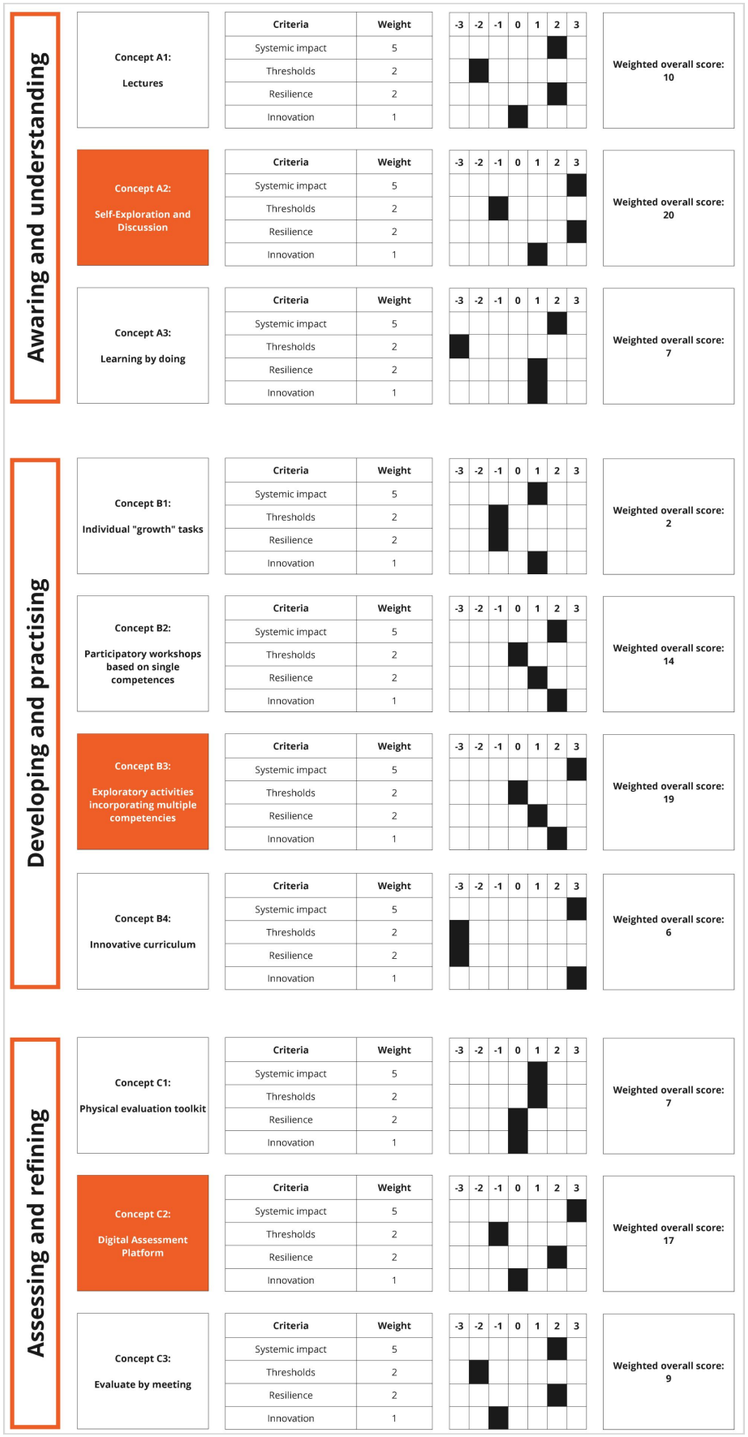
Impact & Threshold analysis to prioritise three promising concepts

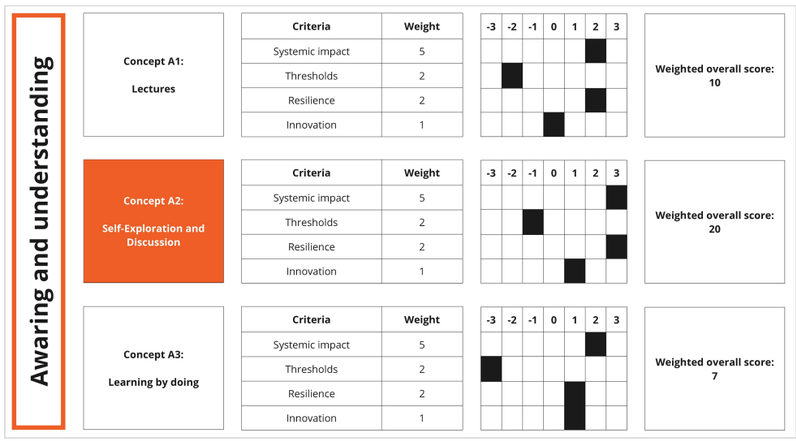
What did I do?

Using the Impact and Threshold Analysis (Sevaldson, 2013) and the Pugh Matrix ("Decision-matrix method", 2022), I evaluated the different concepts in terms of systemic impact, threshold of implementation, resilience, and level of innovation. A higher total score indicates a higher potential for further development of the concept.

What did I bring forward?

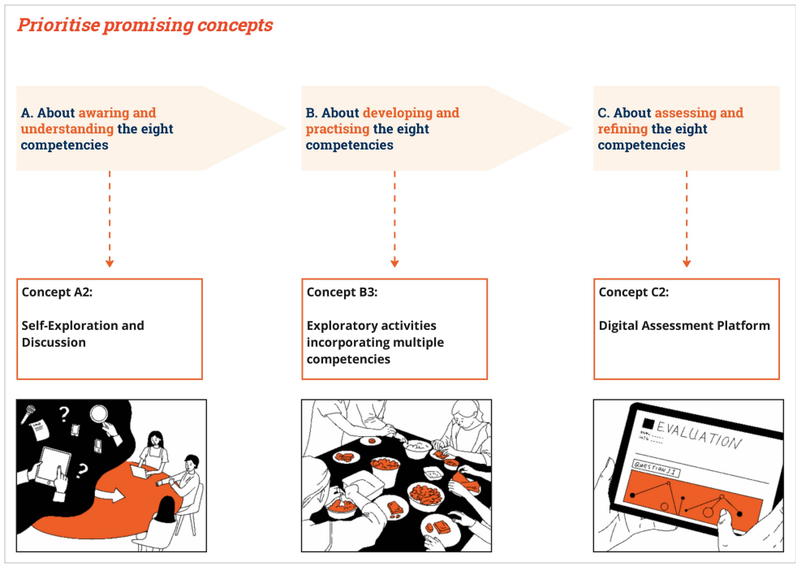
For each of the three categories: Understanding competencies, Developing competencies, and Evaluating competencies, I highlighted the concepts that had the highest weighted total scores. I converted them into a straightforward user journey map, which served as material for the subsequent verification workshops: communicating the current structure of my design proposal to stakeholders, collaborating with them on revisions, and fleshing out the details of the revised structure.





Example of impact and threshold analysis

User journey map



Concept verification

Five verification workshops with stakeholders

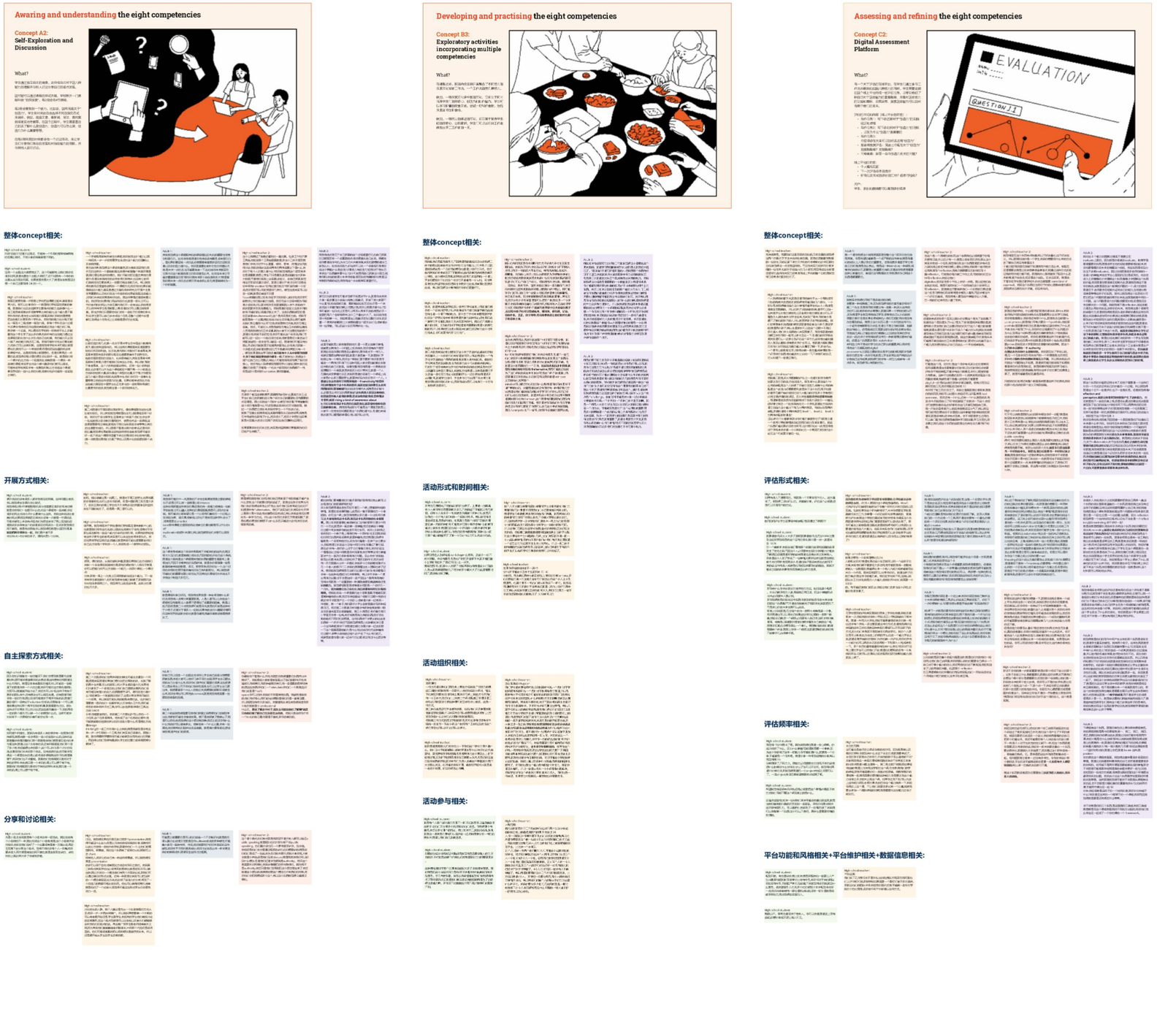
What did I do?

I conducted five verification workshops with Chinese participants, including a high school student, two high school teachers, and two adults. We discussed the pros and cons of the current user journey map featuring three concepts and explored how to further develop and refine it into a coherent design proposal. Based on the rich feedback, I adjusted the previous structure and created a first draft of my design proposal.

What did I bring forward?

First draft of my design proposal

My initial design proposal was a pilot course for Chinese high school students, based on the eight key competencies from Robinson's theory. This course aims to prepare the target groups for the future. It comprises three main components: understanding the competencies through self-exploration and discussion, practicing them in exploratory workshops, and reflecting on their learning through recording activities. Additionally, students' performance needs to be evaluated. At this stage, my goal was to design all the materials for the course.



Feedback from the verification workshops

Conceptual framework

Move towards 'Design for Service' and 'Service Ecosystem Design'

From *Design of Service* ⇢ *To* *Design for Service* *Service Ecosystem Design*

(Vink et al., 2020)

What did I do?

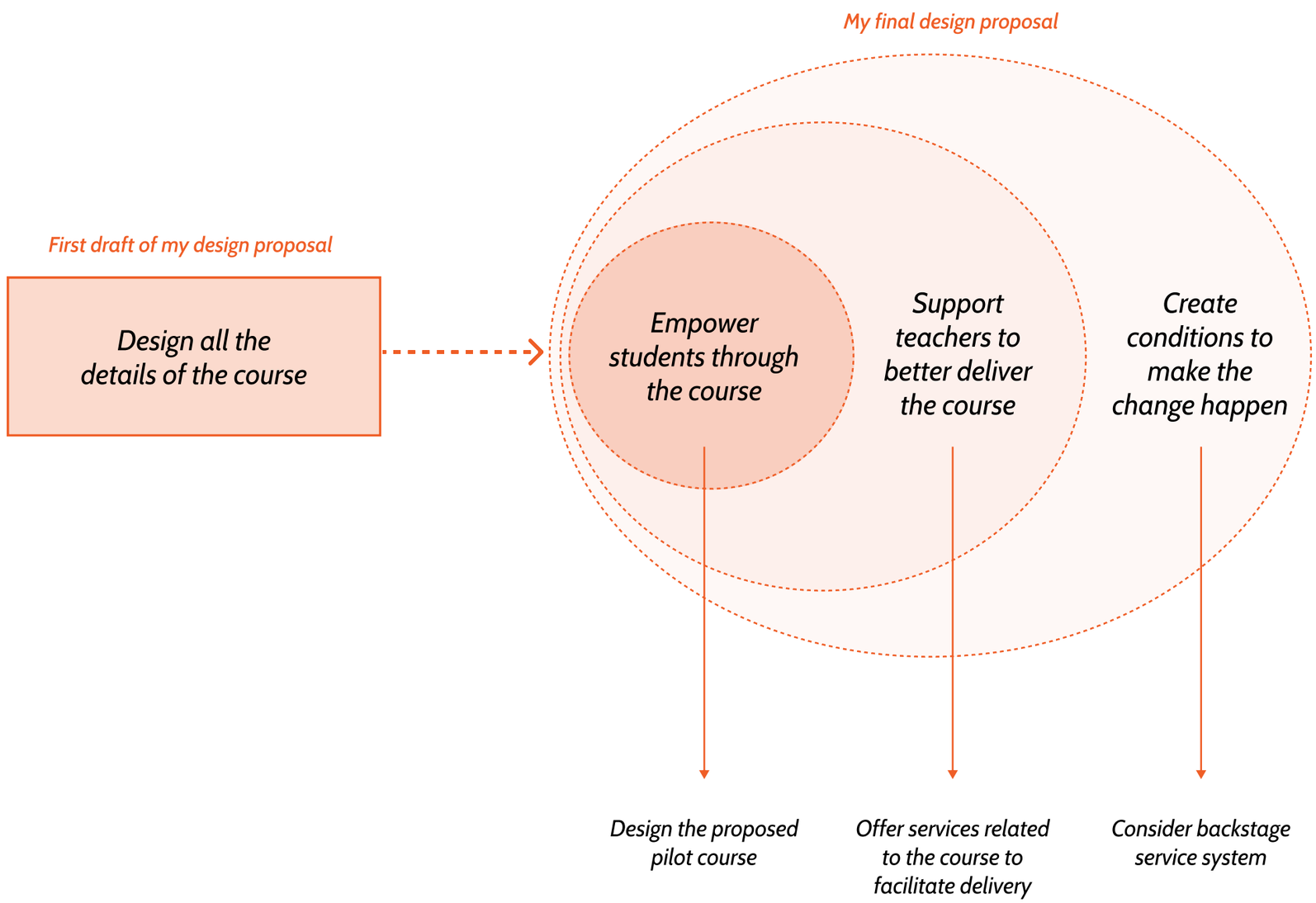
After having the first draft, I realized it didn't align with what I had learned during my entire exploratory journey. I discovered that different high schools have unique contexts, and teachers are the ones who know their students best. One size fits all won't work. Therefore, I decided to move from "Design of service" to "Design for service" and "Service ecosystem design" (Vink et al., 2020).

This means that instead of me setting out everything about the course, it would be more realistic and long-term beneficial to think about how to create the conditions to make the change happen, and how to empower teachers to deliver the course better. The illustrations on the right show my project's focus moving towards a new conceptual framework.

I discussed it with two Chinese high school teachers. I learned that a good way to empower people to make this happen is to clearly communicate the structure, purpose and criteria of the proposed pilot course. And then provide lots of choices that could help people implement the course.

What did I bring forward?

A conceptual framework acts as a guide for the development of my final proposal - as seen in the next chapter.



Visualisation of the conceptual framework

Mapping the entire design exploration journey

05

This chapter elaborates on my final design proposal, providing descriptions of the three service design interventions offered: what they are, why they exist, how they work, and their suggested visual identity. It concludes with the project's values and a roadmap for future development.

DESIGN PROPOSAL

Proposal introduction

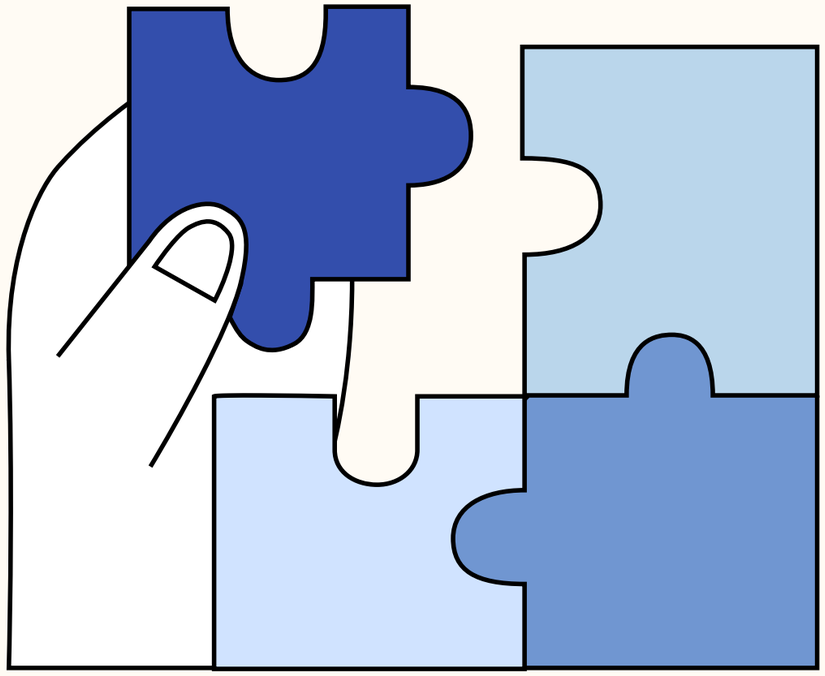
What?

Lab for Future Learning is a proposed course development organisation that helps Chinese high school students better prepare for the future.

It will develop a course called ***"Competencies for the future"***. The course is based on education reformer Sir Ken Robinson's theory of the ***eight key competencies*** that are essential to the future development of youth. Based on this foundation, it consists of ***three course components***: undertsand, practice and reflect. Together, these gradually equip high school students with these eight competencies.

Lab for Future Learning works with Chinese high school teachers, high schools, and the Ministry of Education to deliver the course to high school students. ***Three service interventions related to the course*** are provided to facilitate its delivery: a syllabus, a teaching toolkit, and assessment methods.

It aims to design the course content to enhance high school students' independence in navigating future complexities by introducing them to crucial competencies. Simultaneously, the related services empower other stakeholders in the Chinese education system to create an environment that supports the course development for students. Achieving this opens up new possibilities for intervening in the existing industrial education model of Chinese high schools.



Lab for Future Learning

A course development organisation that helps Chinese high school students better prepare for the future.

Proposal introduction

Why?

The aim of the proposed course:

Through the course conducted in pilot high schools, students are exposed to these eight competencies, ensuring that they can systematically learn in an comprehensive environment. Compared to other teaching formats, it provides students with sufficient time and motivation to explore these important competencies. Simultaneously, it enables students to receive timely feedback and fosters peer learning.

Introducing this innovative course with new content, course structures, and evaluation models offers a new possibility to impact the existing industrial education model in China. It serves as a test to examine how such a movement might influence people's competitive behaviors and fixed linear mindsets within the Chinese high school education system. At the same time, it provides an opportunity for reflection, allowing various actors, including students, teachers, school leaders, and parents, to engage in discussions about the future of education.

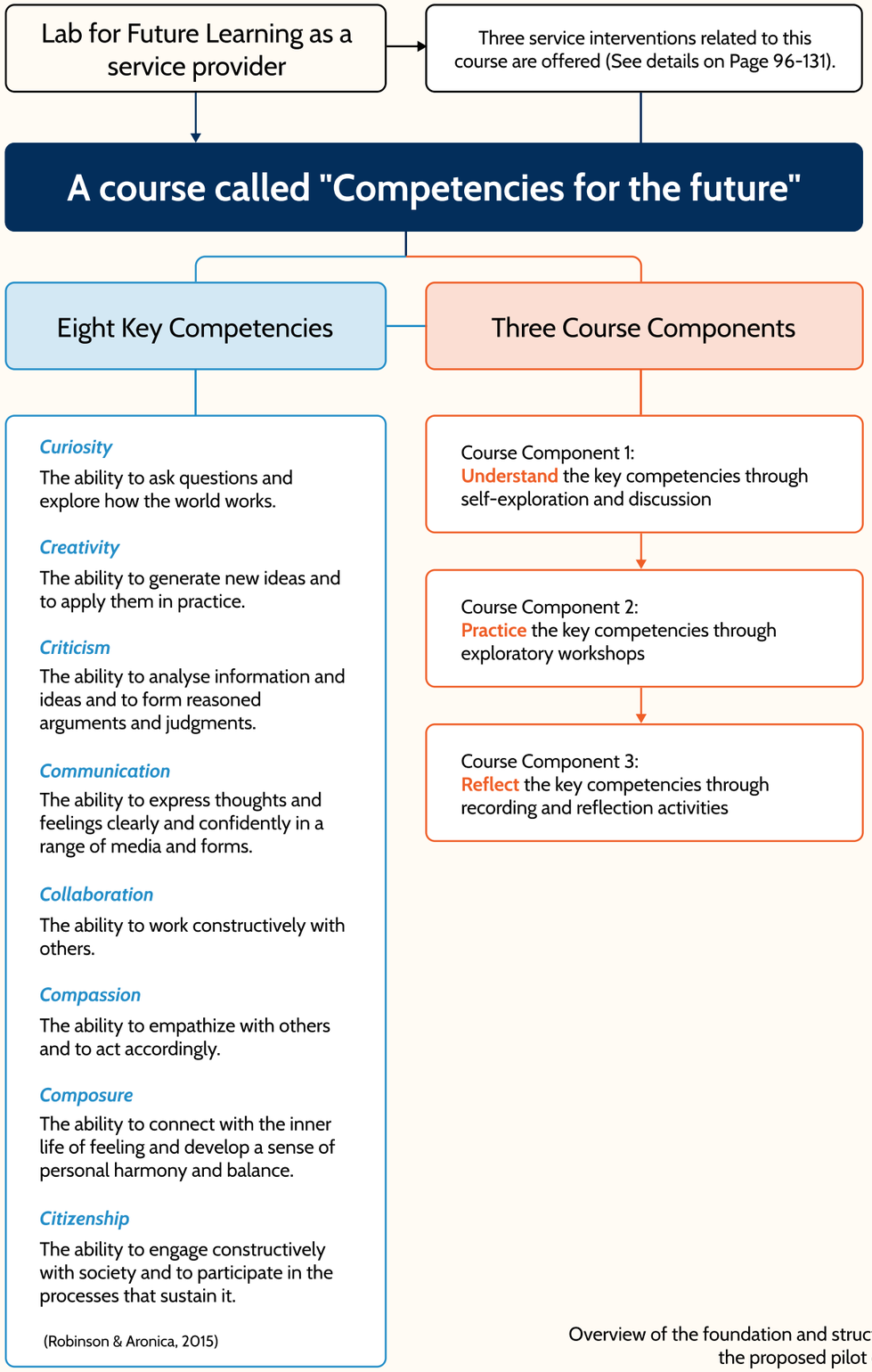
Importance of these eight key competencies:

I was inspired by the eight key competencies Sir Ken Robinson suggests in his book Creative Schools. He outlines the competencies that schools should facilitate for their students (Detailed definitions are shown in the left part of the map). Because students who feel confident in these eight areas will be well-equipped to engage in the economic, cultural, social, and personal challenges that they will inevitably face in their lives (Robinson & Aronica, 2015).

However, during my research, I learned that these competencies were neglected in most Chinese high schools. Creating a new course based on Robinson's theory aims to raise awareness of the fact that becoming an independent person who can handle the complexities of the future well requires competencies in addition to traditional Chinese course content.

Student-centered course approach:

The proposed course is framed into three main components (Details are shown in the right part of the map). Unlike the traditional “teacher-centered” course, it advocates for a “student-centered” way of learning and provides a progressive approach that integrates theory with practice. High school students can grasp the importance of these eight competencies by creating their own understanding and then developing them through practice and reflection.



Overview of the foundation and structure of the proposed pilot course

Stakeholder map

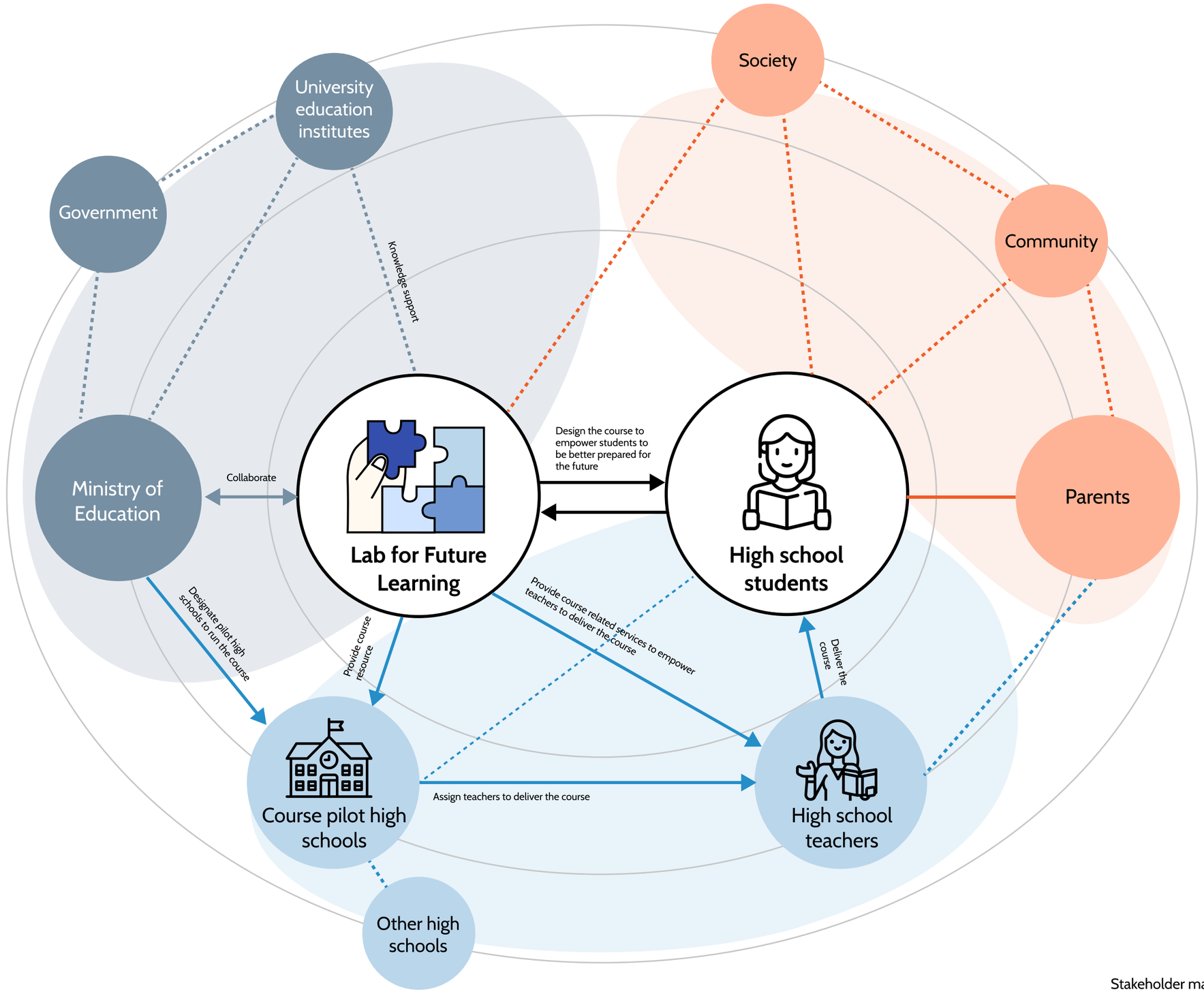
Who?

The core target groups for the “Competencies for the future” course developed by the Lab for Future Learning are Chinese high school students, aged from 15 to 18 years old.

Lab for Future Learning collaborates with the Ministry of Education to select pilot high schools for implementing the “Competencies for the future” course. To support the implementation process, Lab for Future Learning offers three services related to the course to designated pilot high schools and the high school teachers within them.

Other stakeholders also include parents of students, the government, some university education institutes, and so on.

The map illustrates the main stakeholders involved in the delivery of services by Lab for future Learning and their relations with each other.

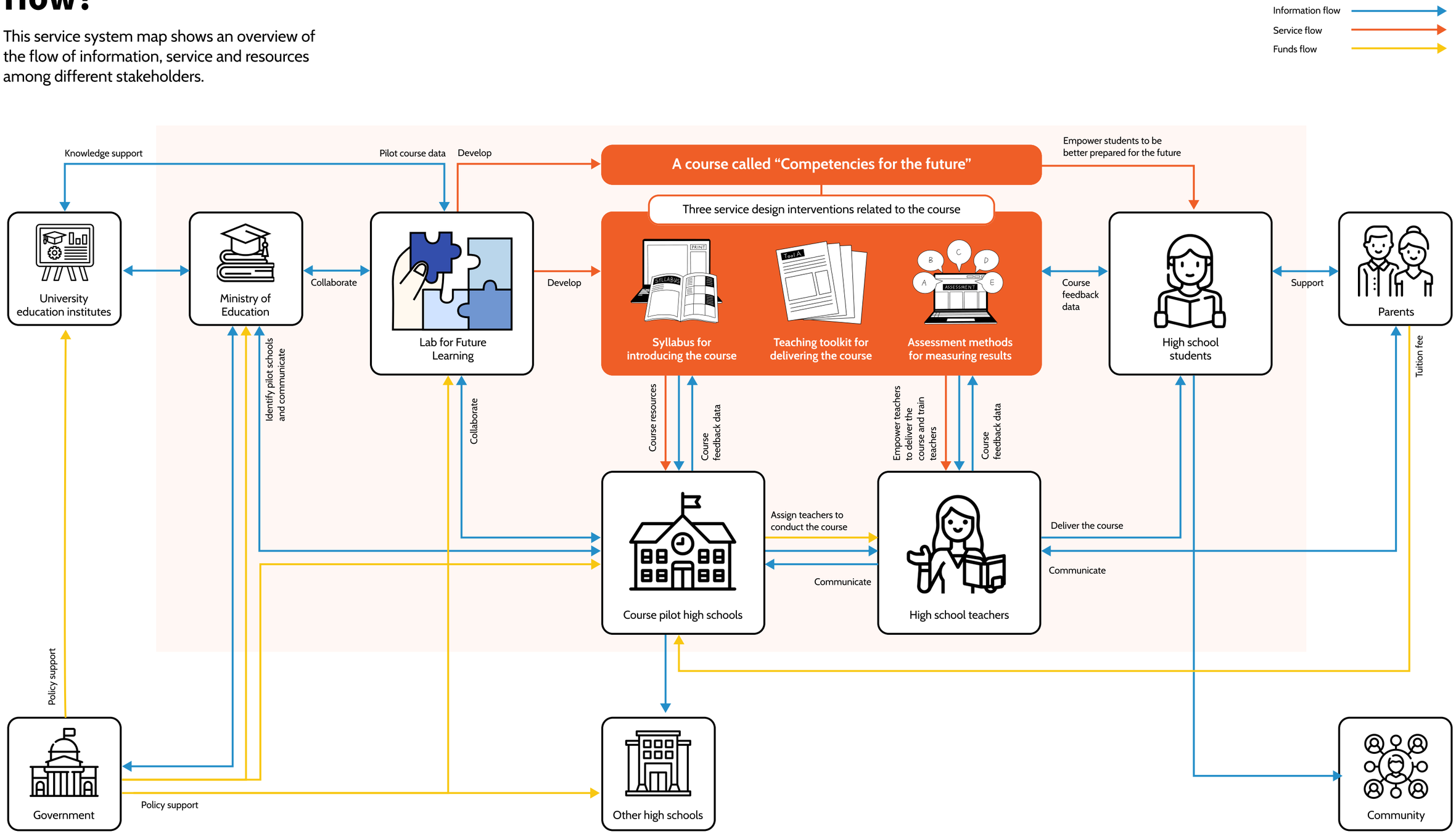


Stakeholder map

Service system map

How?

This service system map shows an overview of the flow of information, service and resources among different stakeholders.



Service design interventions

How?

The Lab for Future Learning develops an online platform where three service design interventions related to the "Competencies for the future" course are provided for the pilot high schools and teachers: a syllabus, teaching toolkit, and assessment methods. All of the digital materials on the website can be downloaded and printed.

When the Lab for Future Learning has developed the "Competencies for the future" course, it works with the Ministry of Education to select suitable high schools from across the country to pilot the course. After that, the Lab for Future Learning provides access to the three service interventions to the pilot high schools and teachers to empower them to run this course.

The illustrations at the top provide an overview of the proposed main stages and corresponding actions that need to be taken to implement the "Competencies for the future" course. At the bottom is an overview of the three proposed service design interventions, which will be explained in detail later in this chapter.

Stages

Getting access to the course → **Delivering the course** → **Assessing course outcomes**

Actions

Lab for Future Learning develops "Competencies for the future" course.

Ministry of Education designates certain pilot high schools to run this experimental course.

Pilot high schools receive materials from the Lab for Future Learning platform, which are then assigned to teachers for delivery. Teachers read the **Course Syllabus**.

Teachers choose suitable practical tools from the **Teaching Toolkit** offered to conduct the "Competencies for the future" course, covering three main components.

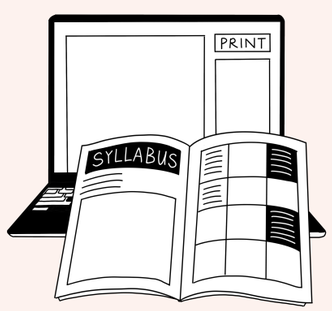
- Course Component 1: Understand through self-exploration and discussion
- Course Component 2: Practice through exploratory workshops
- Course Component 3: Reflect through recording and reflection activities

Teachers select suitable **Assessment Methods** to evaluate whether students are meeting the goals of the course.

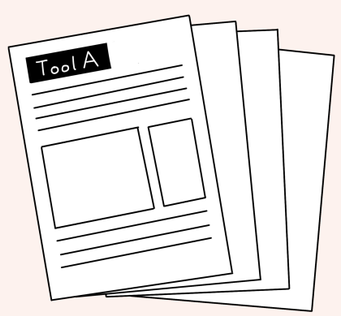
Teachers enter data on course outcomes, which is then sent to the Lab for Future Learning for service iteration.

Design interventions

Syllabus
for introducing the course



Teaching toolkit
for delivering the course



Assessment methods
for measuring results

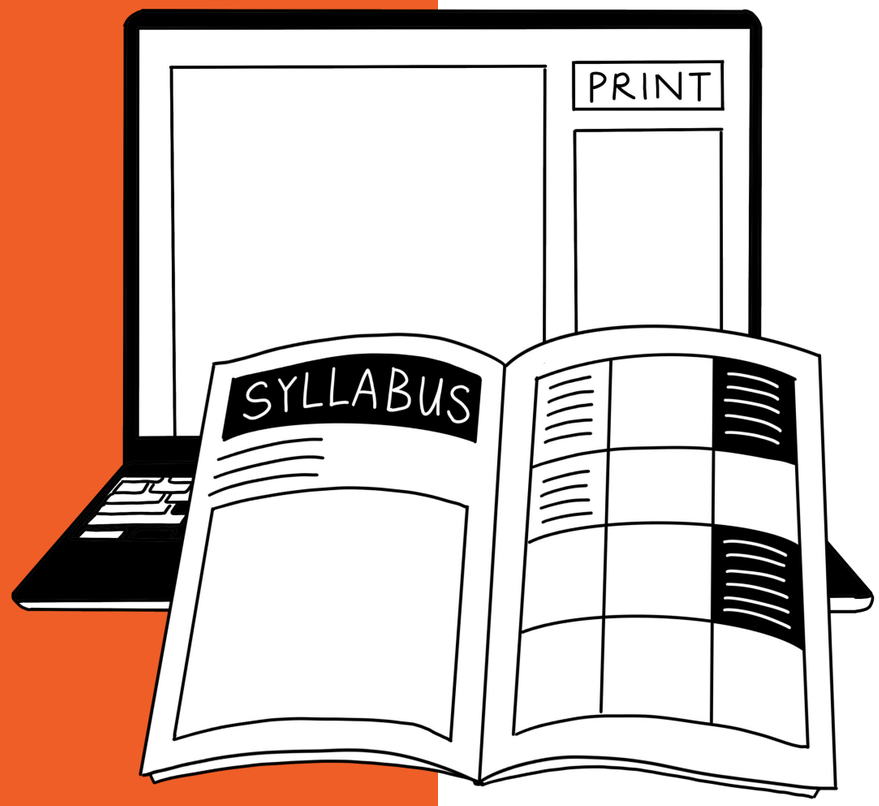
Service journey map

Design intervention 1

Syllabus for introducing the course

What?

A syllabus document for the "Competencies for the future" course, outlining the course aims, components, overview of the teaching toolkit and assessment methods, and so on.



Why?

Based on my research, I found that the syllabus is an important touch point. It facilitates collaboration among school stakeholders to plan teaching strategies and assists course instructors in navigating essential course information.

After discussing with some Chinese high school teachers how to better communicate information about the proposed pilot course, I learned that the syllabus needs to begin with a concise summary, followed by clear goals to guide teachers on what students need to achieve by the end of the course. Additionally, it's crucial to outline the other two design interventions provided by the Lab for Future Learning—the teaching toolkit and the assessment methods—in the syllabus. This ensures a comprehensive overview and helps teachers understand how to utilize all available resources effectively, enabling them to better deliver the course.

To ensure easy accessibility, the Lab for Future Learning intends to develop an online platform for distributing all resources to teachers. Moreover, all materials can be downloaded and printed out to better assist teachers in their use.

How does the syllabus work?

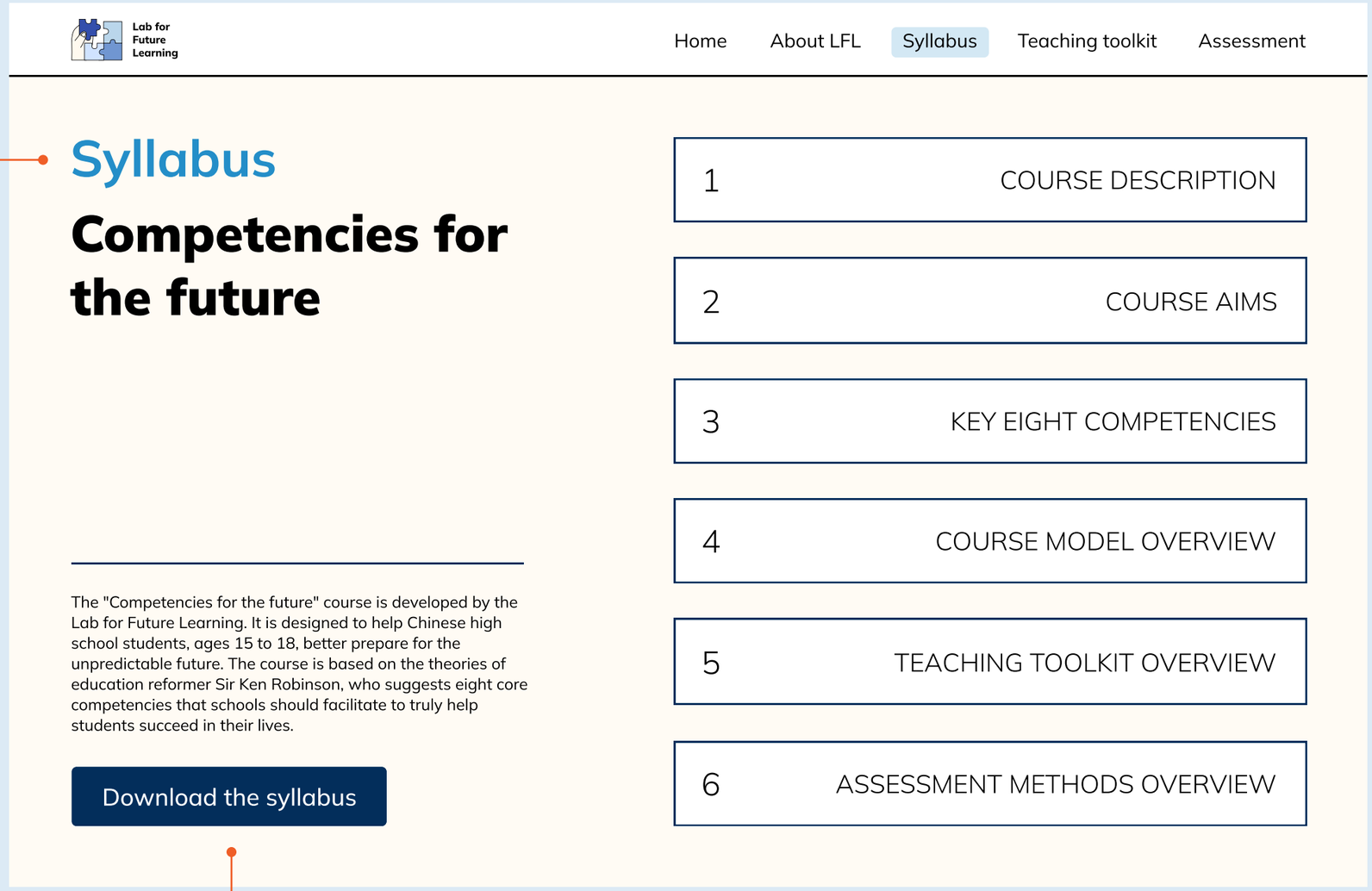
Syllabus framework

This syllabus is designed for high school teachers who will teach the “Competencies for the future” course to be on board. The syllabus framework is illustrated here as an online resource for teachers provided by the Lab for Future Learning.

The syllabus is organized into six main sections:

1. Course Description: Provides a concise introduction.
2. Course Aims: Defines the objectives and goals.
3. Key Eight Competencies: Details the foundational competencies the course aims to develop.
4. Course Model Overview: Elaborates on the three main components of the course structure.
5. Teaching Toolkit Overview: Outlines the tools and resources available for practical teaching.
6. Assessment Methods Overview: Outlines the various assessment methods that can be used.

Course syllabus overview page



Download and print the syllabus

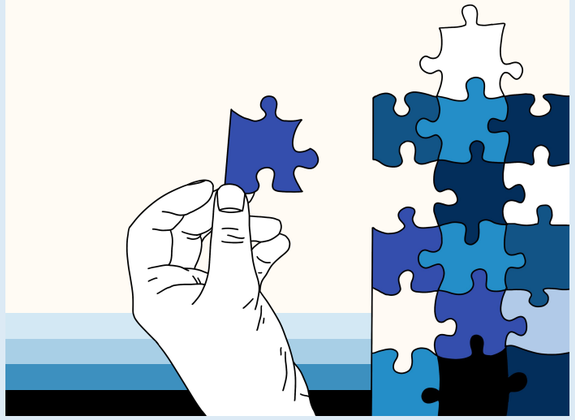
Teachers can read the syllabus through this platform: clicking on the button on the right will take them to the page corresponding to the syllabus sections where the details are available. Teachers can also download and print this document in A4 size.

Cover of the printed Syllabus

Lab for Future Learning

Syllabus

Competencies for the future



First page of the printed Syllabus

1. Course description

The “Competencies for the future” course is developed by the Lab for Future Learning. It is designed to help Chinese high school students, ages 15 to 18, better prepare for the unpredictable future. The course is based on the theories of education reformer Sir Ken Robinson, who suggests eight core competencies that schools should facilitate to truly help students succeed in their lives. Students who are confident in these eight competencies covered in this course will be well-equipped to engage in the economic, cultural, social, and personal challenges that they will inevitably face in their lives.

This is an innovative course in which students develop analytical skills by researching the eight core competencies and communicating their findings to others in a well-informed manner. Students are expected to expand their understanding of the competencies through practical activities that allow them to explore the application of these competencies in a variety of real-life contexts. Furthermore, students are encouraged to record and reflect on their findings through various mediums to refine their learning outcomes.

Pilot high schools and high school teachers can shape the course based on their context, with a wide range of supportive teaching tools and assessment methods provided. The role of the teachers should be to actively and carefully organize learning experiences for students, directing their studies to enable them to reach their individual potential and meet the demands of the course.

2. Course aims

The aims are to enable students to:

- enjoy lifelong engagement with the eight core competencies
- build and expand their own understanding of the eight core competencies
- develop the eight core competencies through theoretical, practical, and reflective activities
- solve real-life contextual problems by strategically applying the eight core competencies
- develop an inquisitive, creative approach to research and construct arguments for their findings
- develop the ability to express and articulate ideas with confidence
- develop the ability to critically reflect on their learning process using a range of media
- become informed, critical, and reflective individuals who are open and better prepared to meet future challenges

3. Key eight competencies

The eight core competencies identified by Sir Ken Robinson are important for students to cope with the complex challenges of their futures. Teachers and students should view these eight competencies equally and holistically, with no difference in importance between them.

The eight core competencies for the "Competencies for the future" course are:

- **Curiosity:** The ability to ask questions and explore how the world works
- **Creativity:** The ability to generate new ideas and to apply them in practice
- **Criticism:** The ability to analyse information and ideas and to form reasoned arguments and judgments
- **Communication:** The ability to express thoughts and feelings clearly and confidently in a range of media and forms
- **Collaboration:** The ability to work constructively with others
- **Compassion:** The ability to empathize with others and to act accordingly
- **Composure:** The ability to connect with the inner life of feeling and develop a sense of personal harmony and balance
- **Citizenship:** The ability to engage constructively with society and to participate in the processes that sustain it

Reach common ground

The course description and specific aims provide clarity for teachers regarding the course content, its significance to students, and strategies to assist students in attaining the intended goals. This syllabus aims serve as guiding indicators for teachers in implementing the course.

Undertsand the foundation

The name of the course, “Competencies for the future,” refers to specific skills and abilities essential for success in upcoming futures. This section articulates the definition of these competencies. With this understanding, teachers can more effectively cultivate these skills within students, aligned with the course framework.

In this four-page printed syllabus, I provided detailed content for each of the six sections. As a designer, I've worked on exemplifying what the syllabus should contain and what it might look like. I believe this framework will offer teachers a comprehensive overview that can be quickly grasped, yet the details are certainly not fully developed. They require further discussion and refinement by the Lab for Future Learning in collaboration with professional experts in the education sector.

Second page of the printed Syllabus

“Partially flexible” course model

The framework of this course is defined, structured into three components to facilitate progressive learning of these competencies by students. However, the specific approach to implementation remains flexible. This flexibility ensures that teachers can deliver the course effectively within their own context while maintaining alignment with the intended goals.

For example, in the first component, students are required to develop their own understanding of the eight competencies through activities fostering self-exploration and collective discussion. Various teaching tools offer different approaches to conducting self-exploration and discussions, providing teachers with a range of options. Teaching tools can be found on the Lab for Future Learning website.

4. Course model overview

Component		Recommended teaching hours
Course Component 1: **Understand through self-exploration and discussion**	Students are encouraged to develop their understanding of the eight competencies through self-directed investigations and share their findings with other students through discussions. Teachers can select suitable teaching tools from those provided in this component to guide and support students' self-exploration. Empower students to solve problems that arise and assist in building arguments for their findings. Additionally, teachers can choose appropriate ways to facilitate discussions among students and encourage learning from each other. It's crucial to ensure that each student has equal opportunities to express their ideas.	30
Course Component 2: **Practice through exploratory workshops**	Four to eight exploratory workshops integrating different competences are expected to be organised during the course. Students are encouraged to engage in practical exploration of the eight competencies learned from self-exploration during these workshops. Teachers can select suitable teaching tools from those provided in this component to plan and conduct workshops, adjusting the number based on ambition and available time. These workshops should be "student-centred". Teachers need to decide how to better engage and motivate students. Meanwhile, teachers are encouraged to create a safe space for students to carry out their practical explorations.	30
Course Component 3: **Reflect through recording and reflection activities**	Students are expected to complete some recording and reflection tasks or activities after each workshop during the course. The purpose of the reflection is to improve and refine their understanding of the eight competences, as well as to deepen their awareness of the importance of these competences. Teachers can select suitable teaching tools from those provided in this component to plan and run recording and reflection activities. Teachers need to determine how to make them more engaging. It is crucial that students are aware of the eight competencies and why they are beneficial for them in the long term.	30

Available tools for implementing the three course components can be found on the Lab for Future Learning website.

About the teaching hours

The course provides a recommended teaching time for each component. Additionally, it allows space for teachers to make decisions or adjustments based on their own context. For example, teachers can choose the semester in which to conduct the course and have the flexibility to increase teaching hours, and so on.

Teachers’ roles

The course also outlines the responsibilities of teachers in each component, aiming to assist teachers in navigating their role effectively. Rather than exerting control, teachers are encouraged to facilitate learning and psychological safety.

Third page of the printed Syllabus

Get to know the teaching toolkit

The teaching toolkit is the second service intervention provided by the Lab for Future Learning.

In this syllabus, teachers can quickly grasp the number of teaching tools available for each of the three components, along with the information contained in each teaching tool, instructions on their usage, and additional details.

5. Teaching toolkit overview

The Lab for Future Learning provides many teaching tools for each of the three components of the “Competencies for the future” course. Each tool includes learning goals, course preparations, instructions, and tips for using each tool. Teachers can log in to the Lab for Future Learning website and choose suitable tools for their students, or they can combine, innovate, or redesign the tools to better fit their own classes. The Lab for Future Learning regularly reviews all of these teaching tools and gradually adds new ones to reflect the latest research evidence and professional teaching practice data. The aim is to empower teachers to better deliver the course.

Four Tools Provided	Six Tools Provided	Four Tools Provided
Course Component 1:	**Course Component 2:**	**Course Component 3:**
Understand through self-exploration and discussion	**Practice through exploratory workshops**	**Reflect through recording and reflection activities**

6. Assessment methods overview

The Lab for Future Learning offers six methods of assessing course outcomes and student performance on its website to empower teachers to better practice achieving the course aims. Teachers are expected to upload assessment data on the Lab for Future Learning website for further research and continuous development of the course. The core purpose of these assessment methods are: Firstly, to help teachers understand how to achieve the course goals in order to better engage students in the course. Secondly, to facilitate the management and delivery of the course more effectively. Teachers should not use assessment results to judge students' abilities or create competition by comparing students.

Types of assessment methods
Method A: Process Portfolio
Method B: Exhibition
Method C: Personal Website
Method D: Videos about Learning
Method E: Investigation Writing
Method F: Presentation

How to upload assessment data
On the Lab for Future Learning website, teachers can access the description pages for individual assessment methods, where they will find an area for “Upload Course Assessment Results.” Teachers can fill in information about their school and classes, as well as upload the assessment data for their course. Teachers are also encouraged to reflect on their own teaching processes and to provide feedback for the improvement of this course.

Get to know the assessment methods

The assessment methods are the third service intervention provided by the Lab for Future Learning.

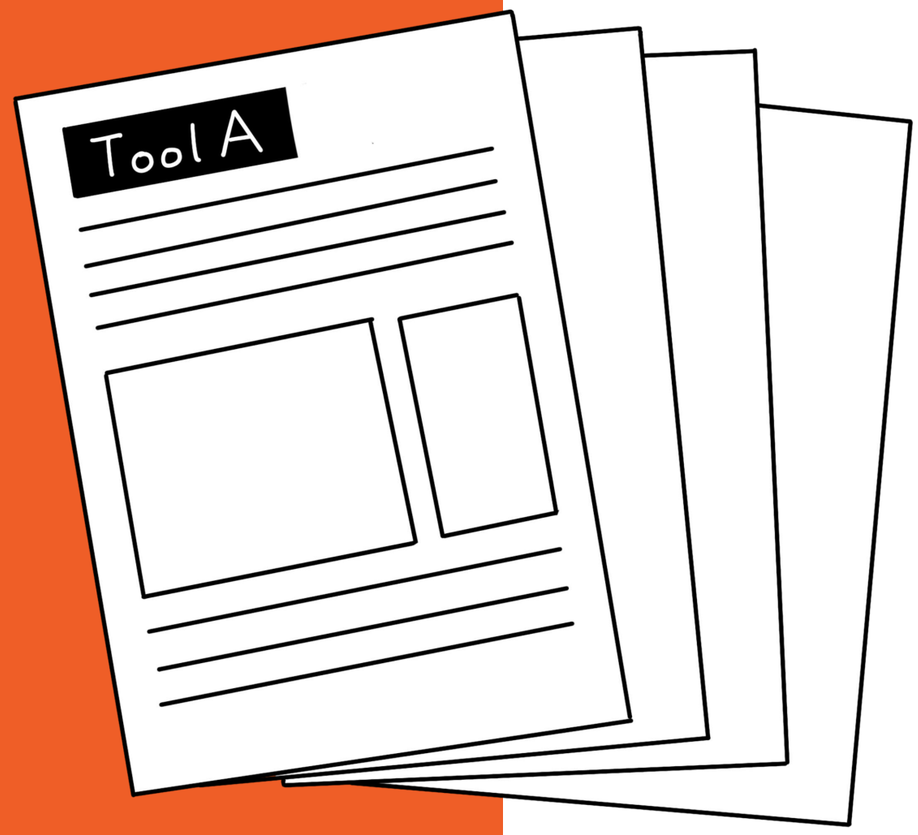
In this syllabus, teachers can quickly review the six assessment methods available and learn how to upload assessment data on the Lab for Future Learning website. The two main purposes of assessment are also highlighted, aiding teachers in understanding how to select the appropriate assessement method.

Design intervention 2

Teaching toolkit for delivering the course

What?

The second design intervention includes a teaching toolkit to empower teachers to deliver the course. It provides a number of supportive tools for each of the three components of this course. Teachers can select and apply them based on their own context.



Why?

Different pilot high schools have different circumstances. Similar to education itself, if all the details of the “Competencies for the future” course are fixed and standardized, it might fall into an industrialized mode of operation. It might undermine the motivation of the stakeholders who are delivering this course. We already learned that the approach of 'one size fits all' doesn't work, so it's more important that the service creates the conditions for this course to happen in different high school contexts.

The goals and framework of the course are defined, but the specific ways of achieving the goals and implementing the course content are deliberately left more open. This is the reason why the Teaching Toolkit provides a number of different tools for each of the three components of the course.

It affords teachers a sense of ownership by giving them the freedom and flexibility to better tailor the course to their specific situation in the classroom and with their students. It also leaves room for teachers to innovate the tools, creating the soil for the further development of this course.

How does the teaching toolkit work?

Teaching toolkit framework

This teaching toolkit is designed to support teachers in the implementation process of the course. The course consists of three main components, each accompanied by corresponding tools. In total, my proposal includes 14 tools, all of which emerged from my discussions with stakeholders. The toolkit is expected to expand to provide more teaching resources based on teaching feedback.

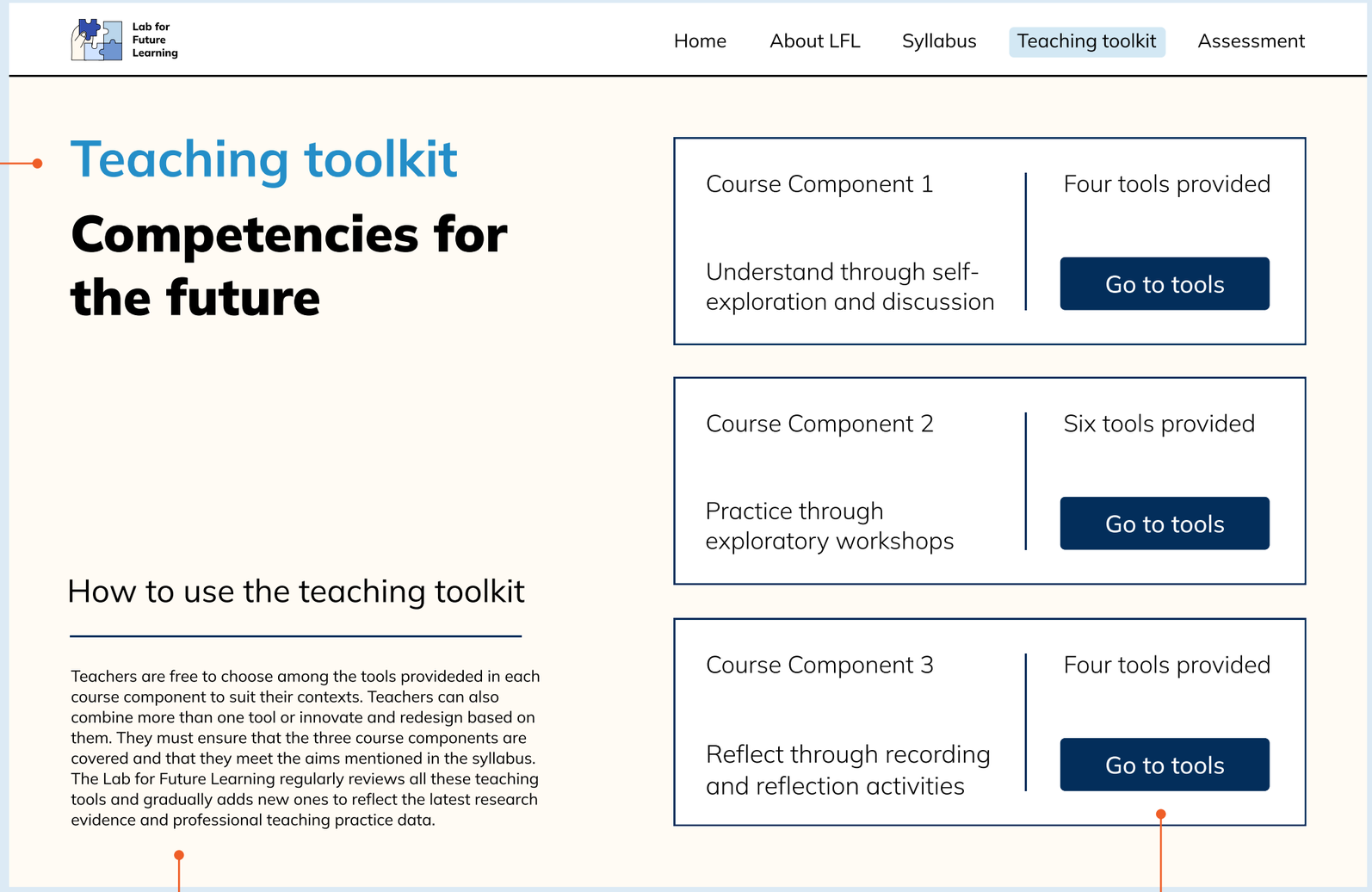
Due to time limitations, I selected one tool from each course component to demonstrate in detail (marked with red text below), the other tools need to be developed further in the future.

Component 1:
Tool 1A: Concept Mapping (See the example on page 113-115)
Tool 1B: Debate and Vote
Tool 1C: Role Play
Tool 1D: Real Life Research

Component 2:
Tool 2A: Exploration of Career (See the example on page 117-119)
Tool 2B: Exploration of Diverse Cultures
Tool 2C: Exploration of Emotion Manage
Tool 2D: Exploration of Volunteering
Tool 2E: Exploration of Independence
Tool 2F: Exploration of Individual Values

Component 3:
Tool 3A: Reflective Drawing (See the example on page 121-123)
Tool 3B: Learning Exchange
Tool 3C: Five Minutes Writing
Tool 3D: Thinking Hats

Teaching Toolkit Overview Page



Learn to use it

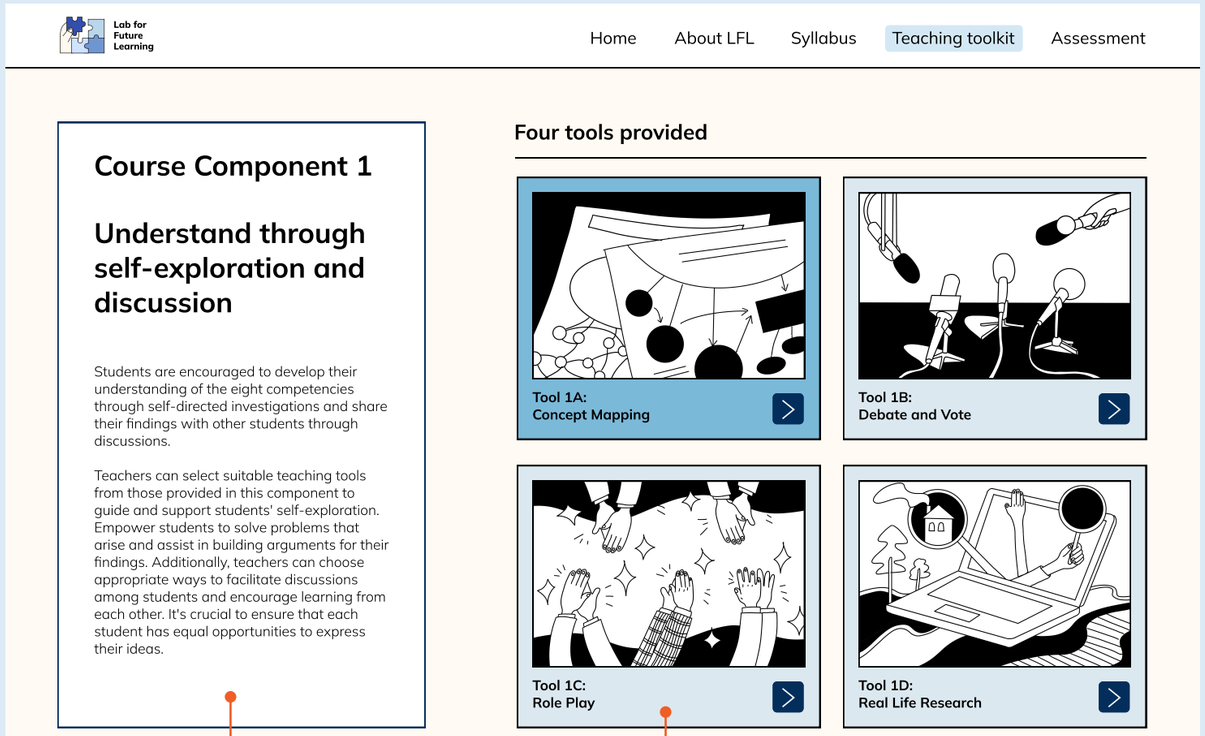
A brief introduction aids teachers to quickly grasp how to utilize this service. Teachers can choose some tools that suit their contexts the most. It also clarifies that there is flexibility for teachers to combine more than one tool, or to innovate and redesign on the basis of them, as long as they ensure that the three course components are covered and that they meet the aims mentioned in the syllabus.

Go to tools

Click here for an explanation of this course component and an overview of the corresponding tools provided.

A tool example for Component 1 - Understand through self-exploration and discussion

Tools for Component 1 Overview Page



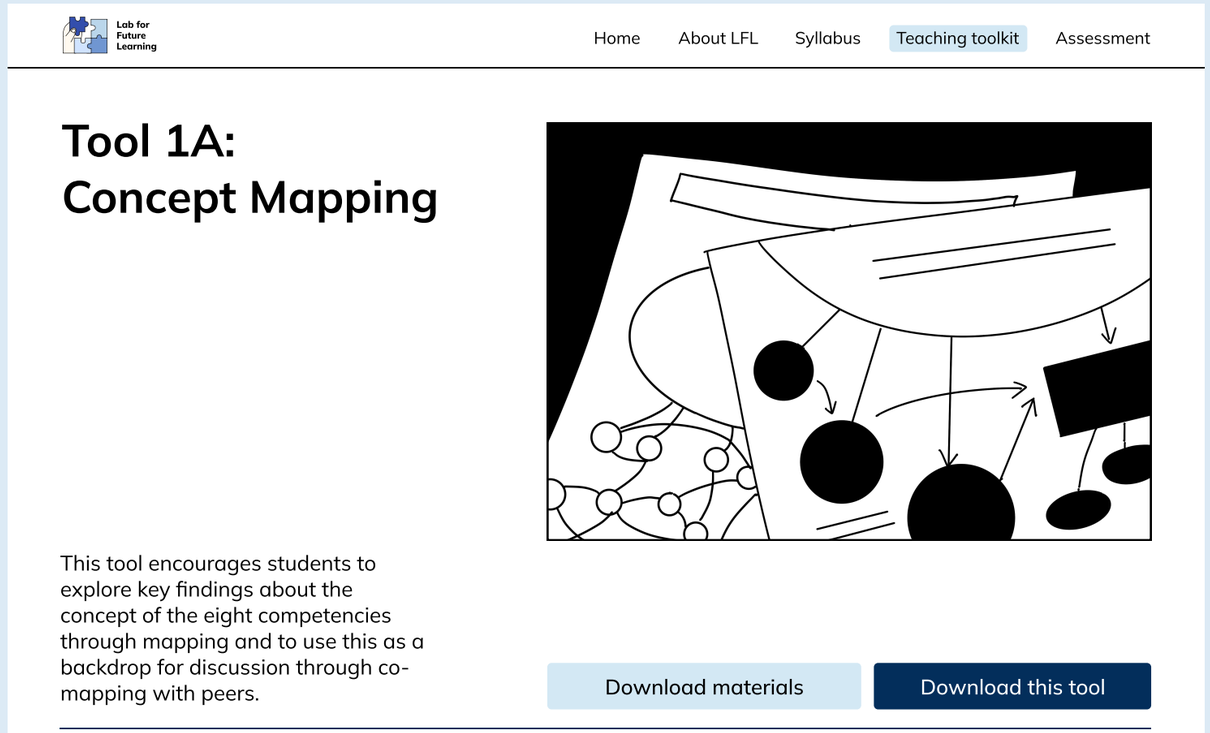
Understand this component

Teachers can learn about the content of the corresponding course component here, in addition to the syllabus.

View this tool

The visual elements here are directly related to the content of each tool. Clicking on the bottom right corner leads to the introduction page for the tool.

Tool 1A Page



Download materials

Some of the tools require corresponding materials, which can be downloaded here. For example, templates to complete the concept mapping. Teachers can print out the materials in advance.

Download this tool

On this page, teachers can access a detailed description of the tool and also have the option to print it out. The size is A4.

Printed Tool 1A Example

Tool 1A: Concept Mapping

This tool encourages students to explore key findings about the concept of the eight competencies through mapping and to use this as a backdrop for discussion through co-mapping with peers.

Course Component 1:

Understand through self-exploration and discussion

Learning Goals:

- To develop an inquisitive, creative approach to research and construct arguments for their findings
- To develop the ability to express and articulate findings with confidence
- To build and expand their own understanding of the eight core competencies

Course preparations:

- Decide if one or more of the eight competencies should be mapped out and discussed in this class.
- Choose suitable concept mapping templates and print them out. Prepare enough pens and other items needed.

Instructions:

Step One: Introduce
Inform students of the designated competency topics, what needs to be mapped out, how to use the concept mapping template, how much time they have to complete it, how they are going to discuss it afterward, and so on. If students have any questions then the teachers should strive to answer to them clearly. Teachers can provide examples and give a demonstration if needed.

Step Two: Map
Based on the instructions, students independently complete the mapping of key findings for a given competency or competencies. Through this process, students can also think about why these competencies are crucial for their long-term development.

Step Three: Discuss
Divide the students into groups of about four, and each group needs to discuss what each member found individually. If there is enough time, consider having each group do a second map together and then present their group findings in turn.

Tips for using this tool:

1. Teachers need to ensure that all eight competencies mentioned in the syllabus are covered as they have equal importance. Teachers can choose to focus on one competency at one time or cover several competencies at the same time.
2. Mapping the content of competencies is preferably done independently by students, with the aim of allowing them to build their own understanding.
3. To ensure that each student has an equal opportunity to discuss once they are grouped, teachers can join different groups to listen or consider smaller groupings.

Navigate the tool

This information helps teachers quickly navigate which course component this tool belongs to, reducing confusion.

Get to know the tool

This part is included to clearly communicate what the tool is, the learning goals for students. It also provides the necessary preparations for teachers to make and help them utilize the tool more efficiently.

Apply the tool

Detailed instructions are provided to support teachers using this tool in their teaching practice.

Don't forget the tips

These tips are designed to remind teachers of important things. For example, in this tool, teachers need to make sure that all eight competencies are mapped.

A tool example for Component 2 - Practice through exploratory workshops

View tools for component 2

In the course component 2, teachers have the option to choose from six relevant teaching tools. Due to time limitations, I designed one tool example for this part. Using the same structure in all the components of the course can facilitate the use and efficient understanding of the information provided.

Tools for Component 2 Overview Page

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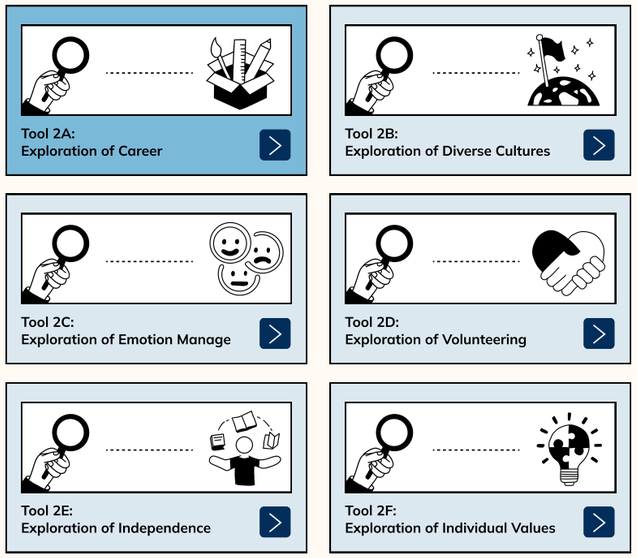
Course Component 2

Practice through exploratory workshops

Four to eight exploratory workshops integrating different competences are expected to be organised during the course. Students are encouraged to engage in practical exploration of the eight competencies learned from self-exploration during these workshops.

Teachers can select suitable teaching tools from those provided in this component to plan and conduct workshops, adjusting the number based on ambition and available time. These workshops should be "student-centred". Teachers need to decide how to better engage and motivate students. Meanwhile, teachers are encouraged to create a safe space for students to carry out their practical explorations.

Six tools provided



Tool 2A Page

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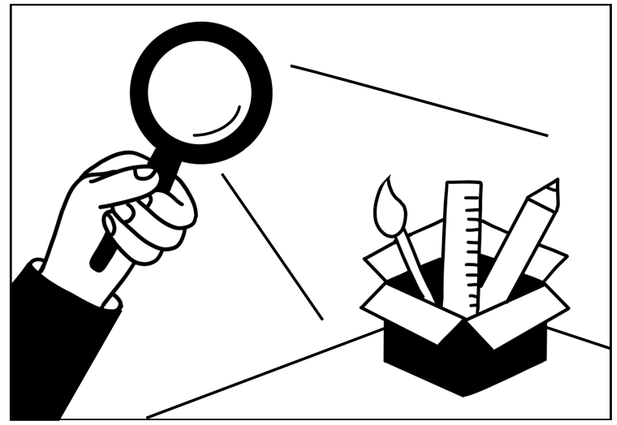
Tool 2A: Exploration of Career



This tool encourages students to practice and apply their theoretical understanding of specific competencies by facilitating the exploration of their career passions.

Download materials Download this tool

Confused about the tool?

If teachers have any questions about the tool, they can email the Lab for Future Learning with questions. Contact information can be found on the its website.

Tool 2A: Exploration of Career

This tool encourages students to practice and apply their theoretical understanding of specific competencies by facilitating the exploration of their career passions.

Course Component 2:

Practice through exploratory workshops

Learning Goals:

- To build and expand their own understanding of the eight core competencies
- To develop the eight core competencies through practical activities

Course preparations:

- Download and print out the materials for this workshop. Prepare enough pens, post-its, and other items needed.

Instructions:

Step One: Generate as many career options as possible
Teachers and students work together to brainstorm ideas for current career path options and possibilities for new careers in the future. Students can write down their ideas on post-its and then teachers organise all the ideas in one place.

Step Two: Prioritise the careers that interest you most
Each student is required to prioritise three career options that they are most interested in pursuing and provide 3-5 reasons for each option.

Step Three: Think critically
After considering the reasons for and benefits of their interest in the three career options selected, students are encouraged to think about the risks as well as the issues they may have.

Step Four: Think broadly
Students then need to analyse how they should arrive at these careers step by step if they want to pursue them in the future, what the possible work scenarios for these career options look like, and the contribution and function of these careers to society.

Step Five: Think loudly
Divide the students into groups and share with each other their analyses of the three careers they have chosen and give constructive comments to the others.

Tips for using this tool:

1. Teachers can have students use the internet or career-related books or other resources to aid them in searching for information and completing analyses.
2. Teachers need to create a safe space for students to realise that the purpose of the workshop is to practise eight competencies and to explore careers that interest them, not to comment unkindly on the preferred choices of other students.

A tool example for Component 3 - Reflect through recording and reflection activities

View tools for component 3

In the course component 3, four teaching tools are provided to assist teachers in facilitating recording and reflection activities. Following the same design logic, I provided one tool example for this part.

Tools for Component 3 Overview Page

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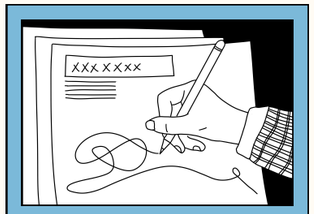
Course Component 3

Reflect through recording and reflection activities

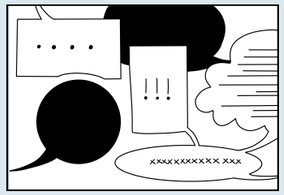
Students are expected to complete some recording and reflection tasks or activities after each workshop during the course. The purpose of the reflection is to improve and refine their understanding of the eight competences, as well as to deepen their awareness of the importance of these competences.

Teachers can select suitable teaching tools from those provided in this component to plan and run recording and reflection activities. Teachers need to determine how to make them more engaging. It is crucial that students are aware of the eight competencies and why they are beneficial for them in the long term.

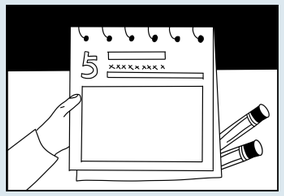
Four tools provided



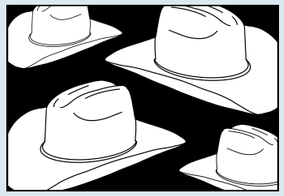
Tool 3A:
Reflective Drawing



Tool 3B:
Learning Exchange



Tool 3C:
Five Minutes Writing



Tool 3D:
Thinking Hats

Tool 3A Page

Lab for Future Learning

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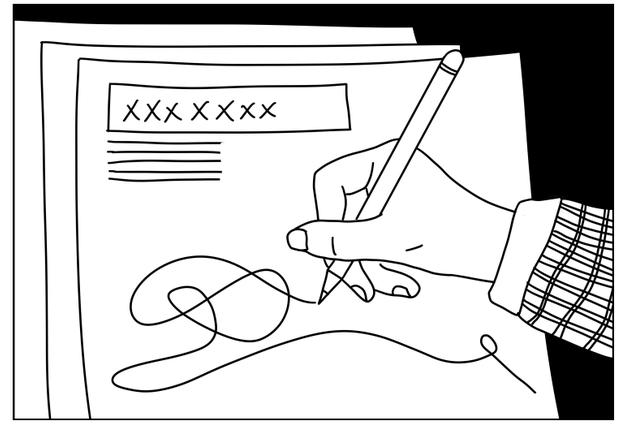
Tool 3A: Reflective Drawing



This tool encourages students to reflect on what they have learned from the workshop in relation to the eight competencies through drawing.

Download materials Download this tool

Printed Tool 3A Example

Tool 3A: Reflective Drawing

This tool encourages students to reflect on what they have learned from the workshop in relation to the eight competencies through drawing.

Course Component 3:

Reflect through recording and reflection activities

Learning Goals:

- To build and expand their own understanding of the eight core competencies
- To develop the eight core competencies through reflective activities
- To develop the ability to critically reflect on their learning process using a range of media

Course preparations:

- Choose suitable reflective drawing templates and print them out. Prepare enough pens and other items needed.

Instructions:

Step One: Introduce
Inform students on how to use the template for reflective drawing and how much time they are given to complete it. Different templates contain different reflective drawing tasks. Teachers may ask the following questions: Which of the eight competencies have you learned from this workshop that you have applied? Please draw your understanding of these competencies at this moment. Please draw a future scenario of how you would continue to apply these competencies in the future, etc.

Step Two: Draw and reflect
Students draw according to the reflective questions and instructions on the reflective drawing template.

Step Three: Share
Students can share their reflective drawings with each other.

Tips for using this tool:

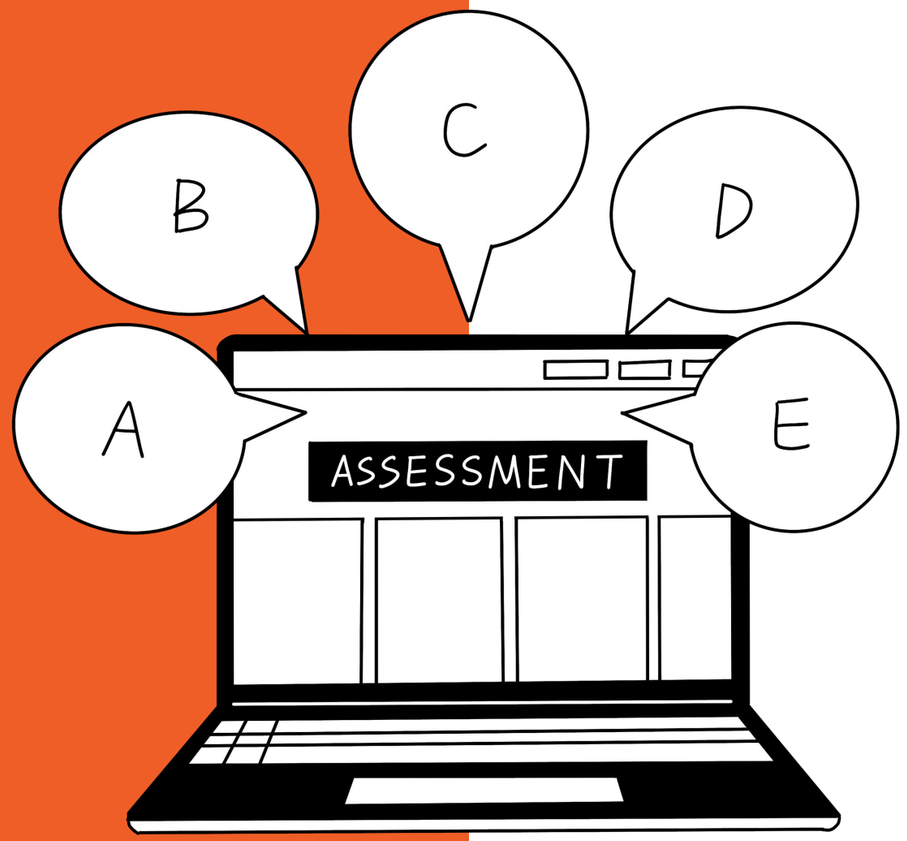
1. It is recommended that each workshop be followed by a reflection activity. However, the teacher can carry out some reflection activities during the workshop or before it starts. The reason behind this is to make the workshop more related to the practice of the eight competences.
2. Teachers need to create a safe space for students to realise that the purpose of this activity is to reflect on whether they have practised and improved the eight competences during the workshop, rather than to compare the drawing skills of the students.
3. If some students seem uninterested, teachers can work with them to guide them through the process.

Design intervention 3

Assessment methods for measuring results

What?

Lab for Future Learning offers a number of methods for teachers to choose from to assess course outcomes and student performance. The assessment data will be used in future course developments.



Why?

In most traditional Chinese high schools, a large number of standardized tests are used as the only way to measure student ability. However, student abilities are diverse, and many cannot be quantified or compared. This leads to the fact that students who are unable to adapt to such a test-based format of learning feel alienated in the system and thus lose motivation and confidence in learning.

The Lab for Future Learning offers a range of different assessment methods. The core purpose of these assessment methods are: Firstly, to help teachers understand how to achieve the course goals in order to better engage students in the course. Secondly, to facilitate the management and delivery of the course more effectively. Teachers should not use assessment results to judge students' abilities or create competition by comparing students.

As the situations of each pilot high schools are different, the various choices allow teachers to tailor the assessment methods to the actual conditions and choose the ones that they think are most suitable for their students.

How do the assessment methods work?

Assessment methods framework

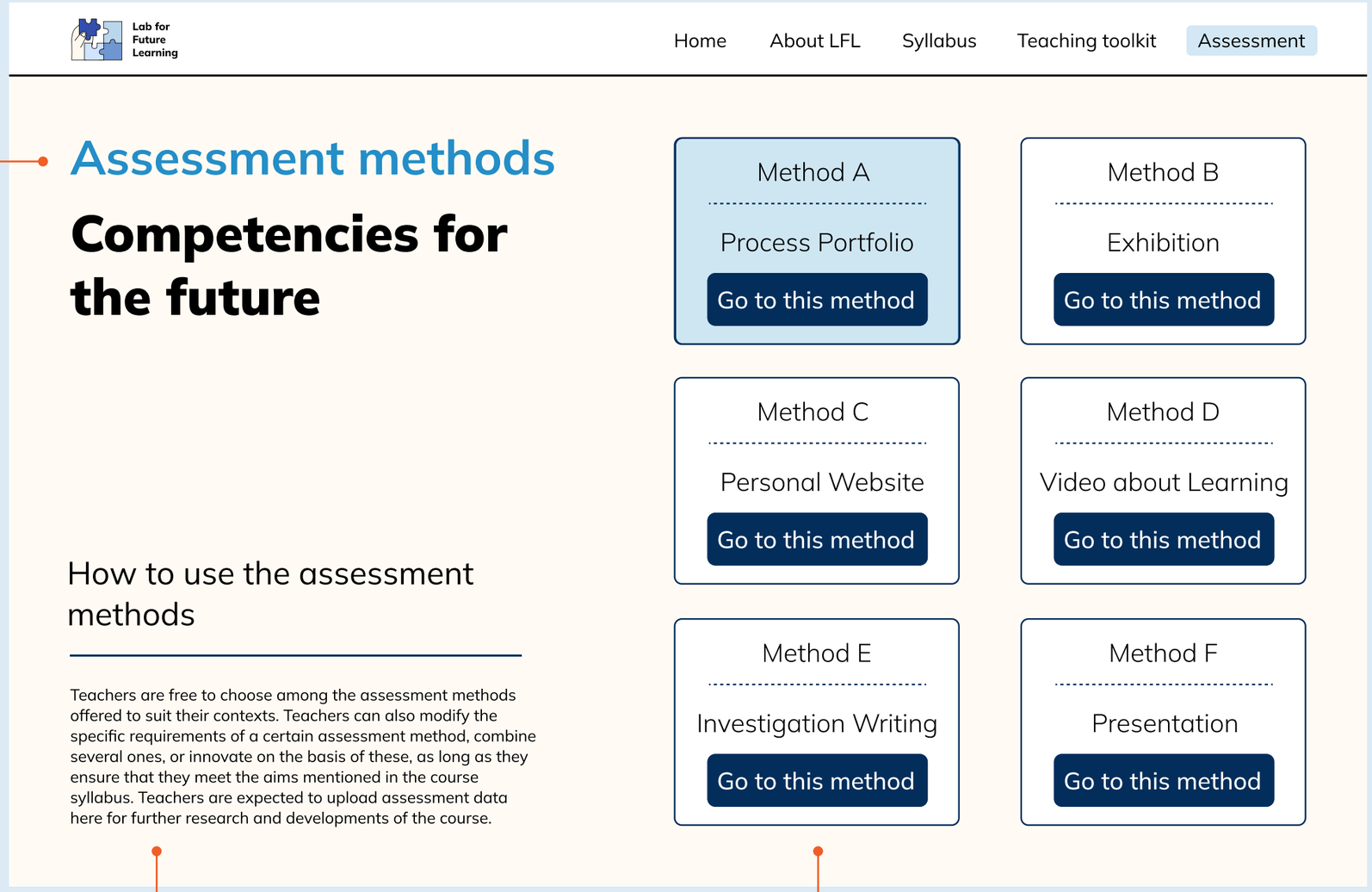
These assessment methods are designed to help teachers evaluate whether students' performance are in alignment with the course aims outlined in the syllabus.

I have proposed six assessment methods. Unlike traditional examinations, which focus on evaluating students through standardized answers, these methods prioritize checking students' growth and progress throughout the process. They encourage students to demonstrate their uniqueness through outcomes.

Due to time limitations, I selected one assessment method to demonstrate in detail (marked with red text below), the other methods need to be developed further in the future.

Method A: Process Portfolio (See the example on page 128-131)
Method B: Exhibition
Method C: Personal Website
Method D: Video about Learning
Method E: Investigation Writing
Method F: Presentation

Assessment Methods Overview Page



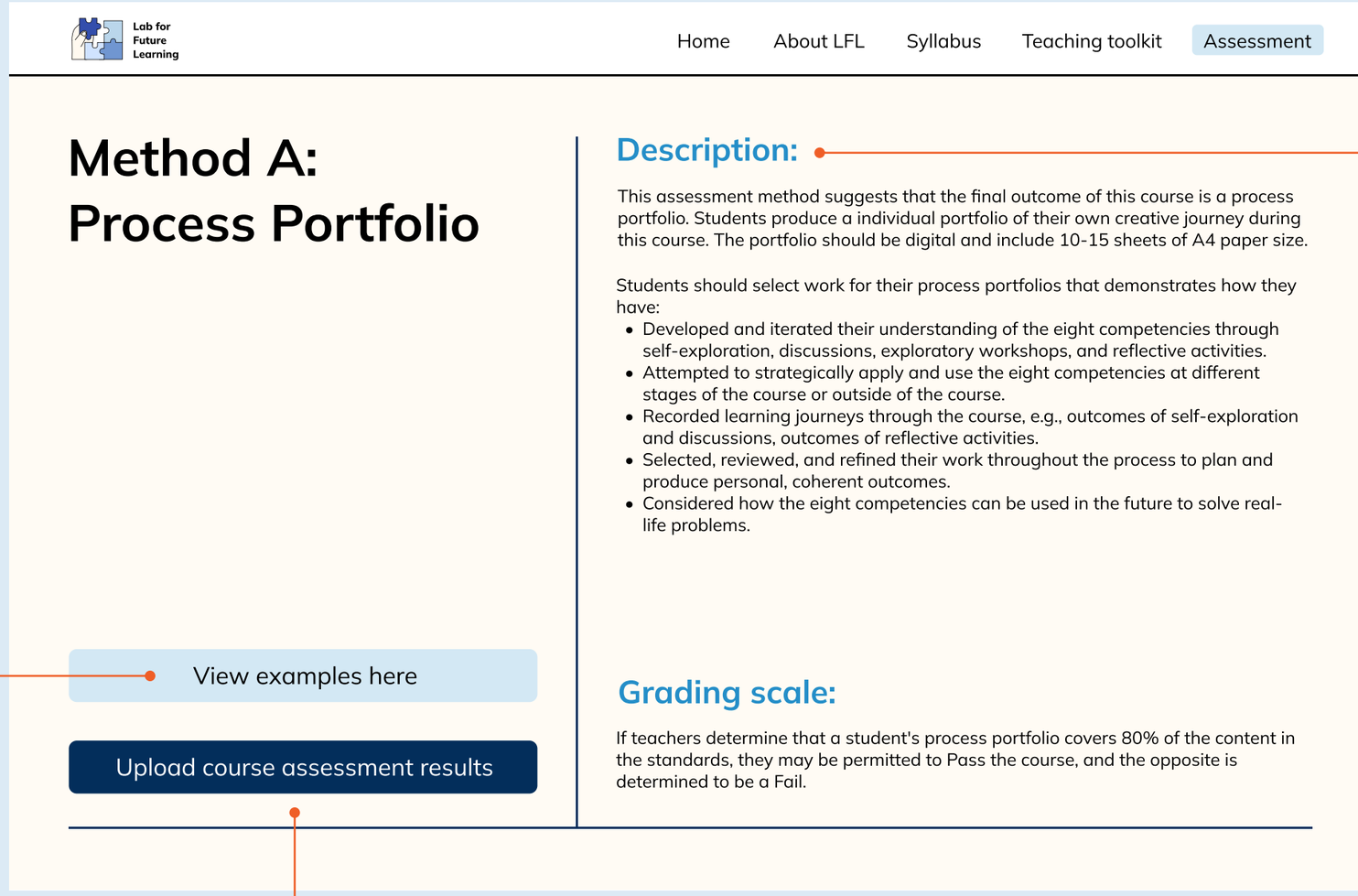
Learn to use it

A brief introduction aids teachers in quickly grasping how to utilize this service. Teachers can choose the one that suits their contexts the most. It also clarifies that there is flexibility for teachers to modify the requirements of a specific assessment method, combine methods, or innovate as needed.

Go to this method

Click on these dark blue buttons to see details about this assessment method.

Method A Overview Page



Learn from previous work

Teachers can view examples of the work provided for each assessment method. These examples represent actual student outcomes after the course has been implemented. This aims to help teachers gain a more intuitive understanding of the assessment method.

Upload feedback and students' works

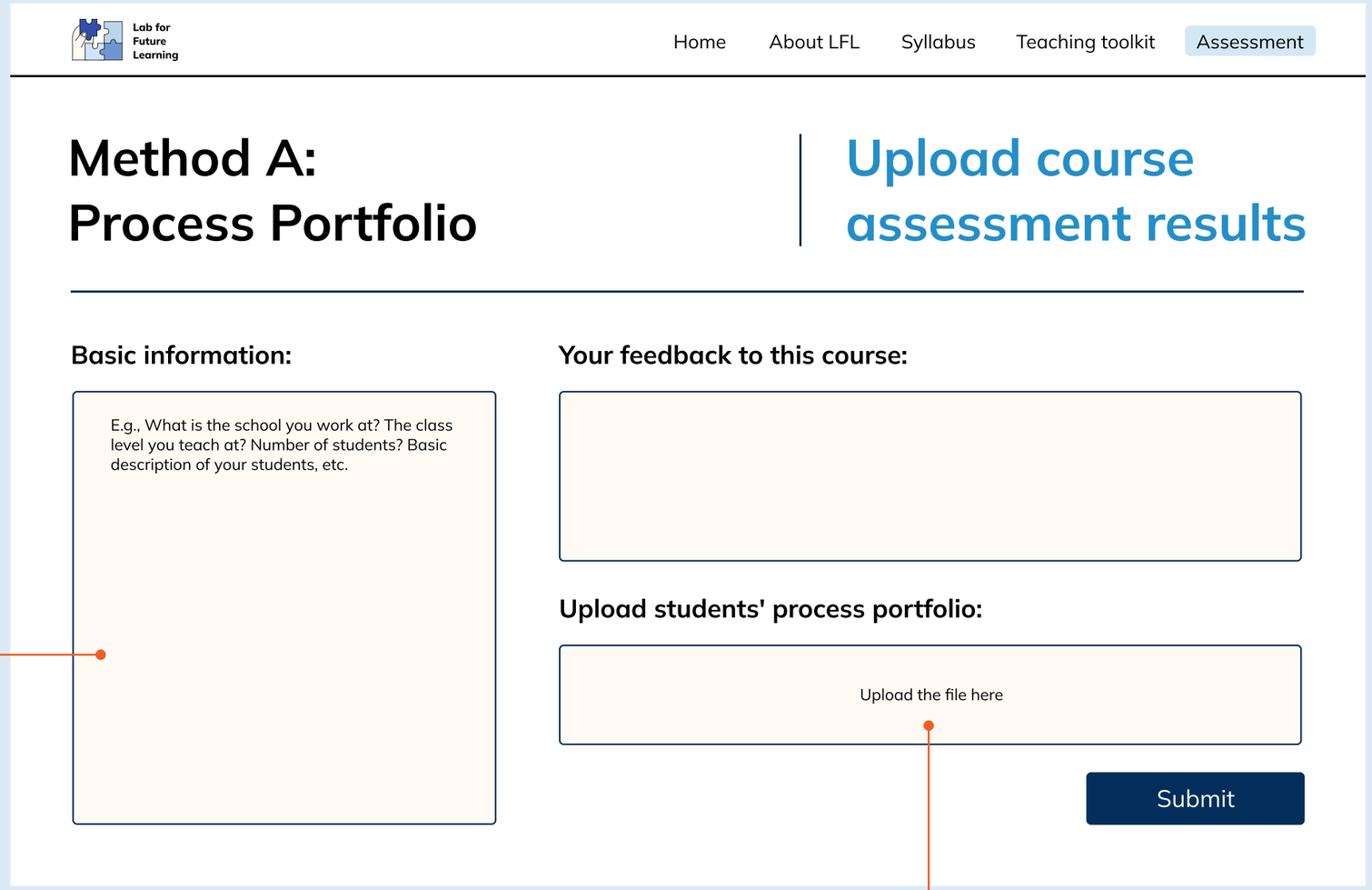
Teachers are required to provide feedback and upload student work corresponding to the assessment method. They can click on this button to do this on the next page.

Understand requirements

Specific details about the assessment method are provided for teachers to enhance their understanding and support them comprehensively.

For example, if a teacher chooses this assessment method, students are required to produce a process portfolio as the final outcome of the "Competencies for the future" course. The size, number of pages, and other requirements for the process portfolio are then clarified here for teachers to follow through with this assessment method. These requirements are closely aligned with the course aims outlined in the syllabus.

Upload Method A Results Page



Provide feedback

The Lab for Future Learning requires collecting feedback from teachers regarding the course and the services it offers to enable continuous updates and improvements.

Share teaching outcome

Teachers are required to upload their student work here. Upon uploading, they will be prompted with questions regarding Lab for Future Learning's authorization to use the data for research purposes and whether the content can be displayed in the 'View examples here' section of the platform, which describes the assessment method, and so on.

Suggested visual identity

Logo

Lab for Future Learning

I've used some visual elements related to puzzles because they serve as powerful symbols. I perceive students' growth as akin to completing a jigsaw puzzle. However, the current Chinese high school education system mainly emphasizes certain “puzzle pieces”, such as students' test grades and college admissions. The Lab for Future Learning aims to add new “puzzle pieces” to students' growth by introducing the innovative “Competencies for the future” course. This concept is reflected in its logo.

Typography

I’ve chosen the font “Mulish”, as it’s straightforward and can clearly communicate the information.

Mulish Black

Mulish Bold

Mulish Regular

Mulish Light

Colours

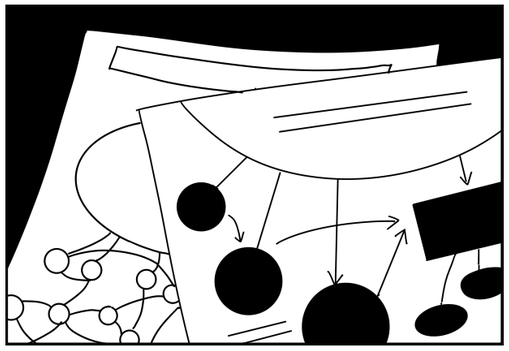
I’ve used blue as the main color to emphasize the professionalism of the services provided by the Lab for Future Learning.

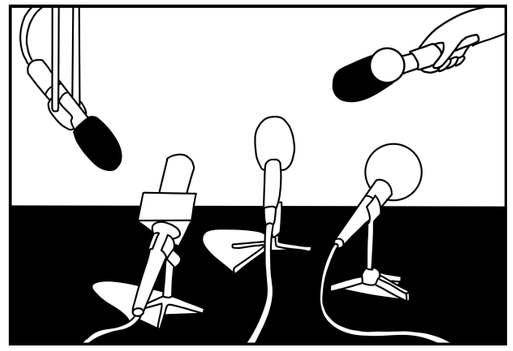
334EAC *D3E8F4* *248EC8* *032E5B*

EDF0F5 *FFFBF4* *7096D1* *D0E3FF*

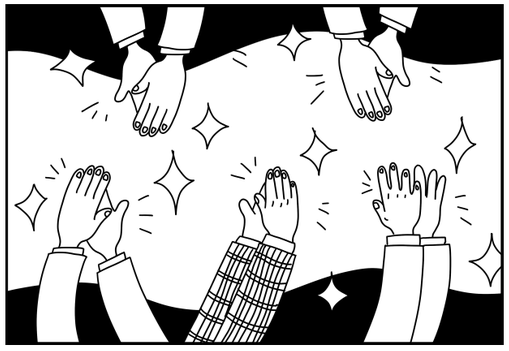
Illustrations

I’ve added many illustrations to the “Teaching Toolkit” section on the Lab for Future Learning website. Aiming to help high teachers who will run the course better understand what these tools are and to provide a more engaging user experience. I didn't visualize the tools in a very abstract way because I want to give teachers a sense that these tools are closely aligned with reality and can be directly applied.

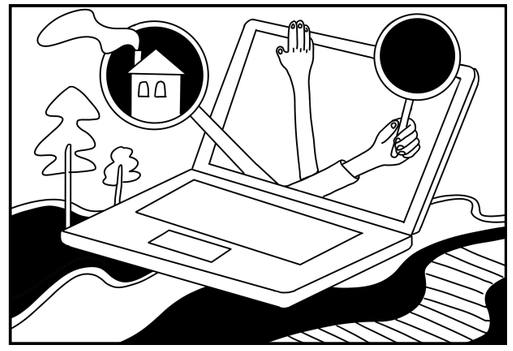




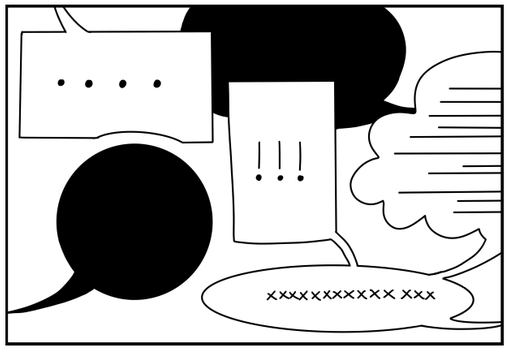
This illustration is adapted from Elena Xausa

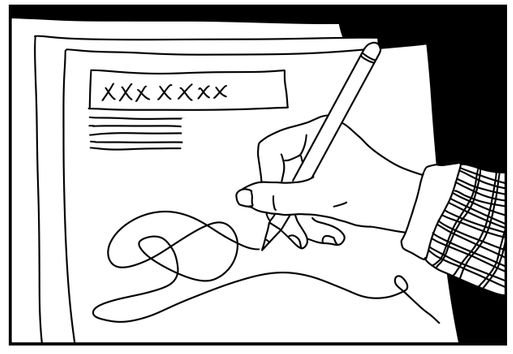


This illustration is adapted from Freepik



This illustration is adapted from Elena Xausa





Value of this project

Value for Chinese high school students

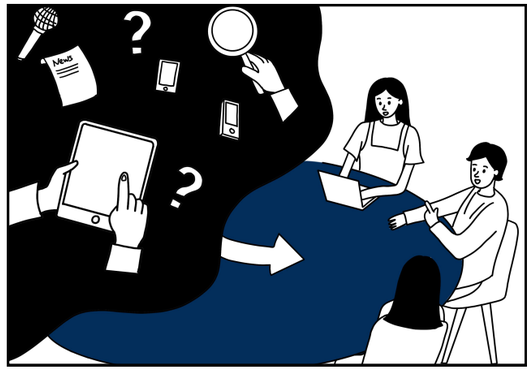
The Lab for Future Learning aims to assist Chinese high school students in bridging the gap between their academic studies and future through the “Competencies for the future” course. It is crucial to nurture students' comprehensive competencies, which encompass curiosity, creativity, criticism, communication, collaboration, compassion, composure, and citizenship.

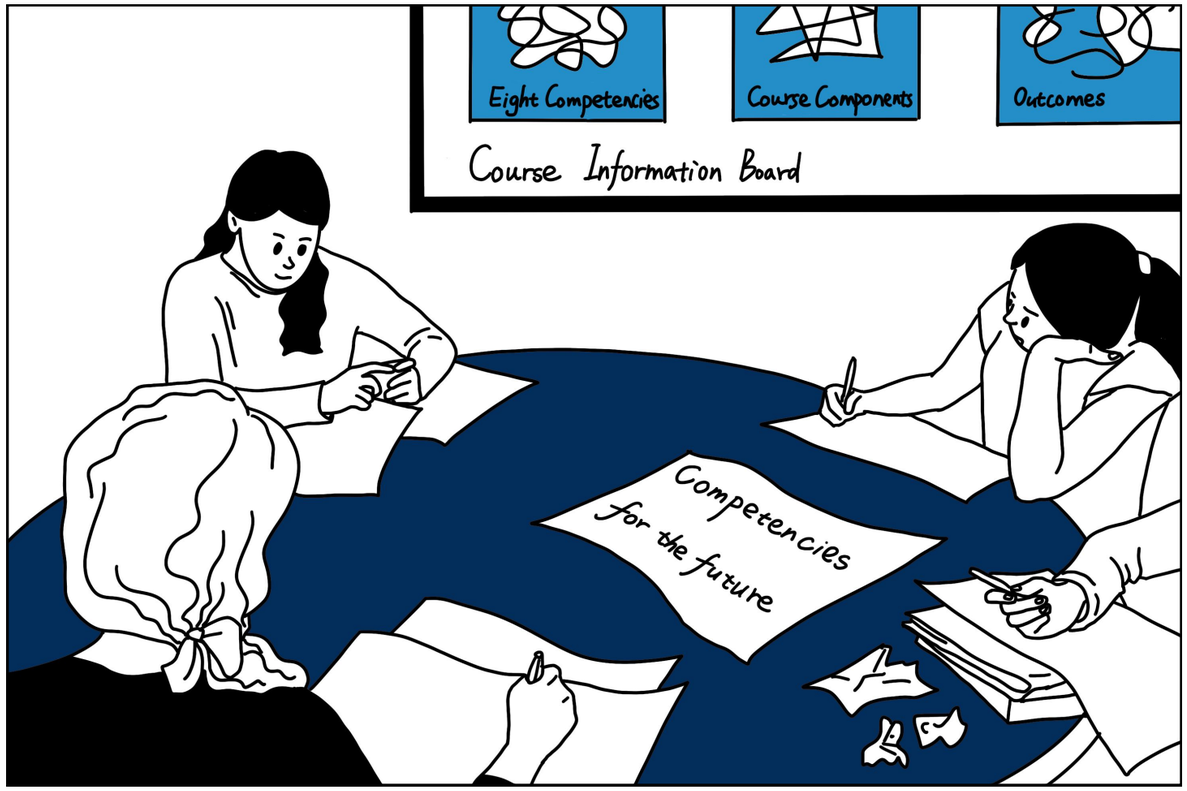
My hope is that students will recognize the value of traditional subjects as a strong foundation. Additionally, acquiring these competencies will enhance their adaptability and resilience in navigating future challenges, empowering them to thrive in unpredictable situations.

To illustrate the value of my proposals, I designed two future scenarios and envisioned some ideal responses. The first scenario depicts Chinese high school students taking the “Competencies for the future” course. The second scenario (see the next page) portrays high school teachers using the service offered by the Lab for Future Learning to deliver the “Competencies for the future” course.

Future scenario 1:

High school students are enrolled in the “Competencies for the future” course, where they engage in discussions to share findings about the eight key competencies. Through workshops and reflective activities, they not only practice these competencies but also contemplate how their learnings will equip them to better navigate the complexities of the future.





Ideal responses:

These are the thoughts I wish to foster among students before, during or after the “Competencies for the future” course.

> *This course sounds interesting, I want to know what competencies will be needed for the future?*
> — High school student

> *I've always overlooked this competencies, and I've just realized how useful it is to me and my future.*
> — High school student

> *The insights gained from this course have helped me develop more positive self-identities, acknowledge my strengths, and leverage them toward a better future.*
> — High school student

Value of this project

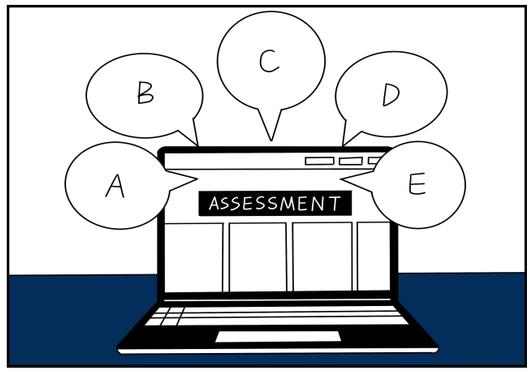
Value for Chinese high school teachers and other actors

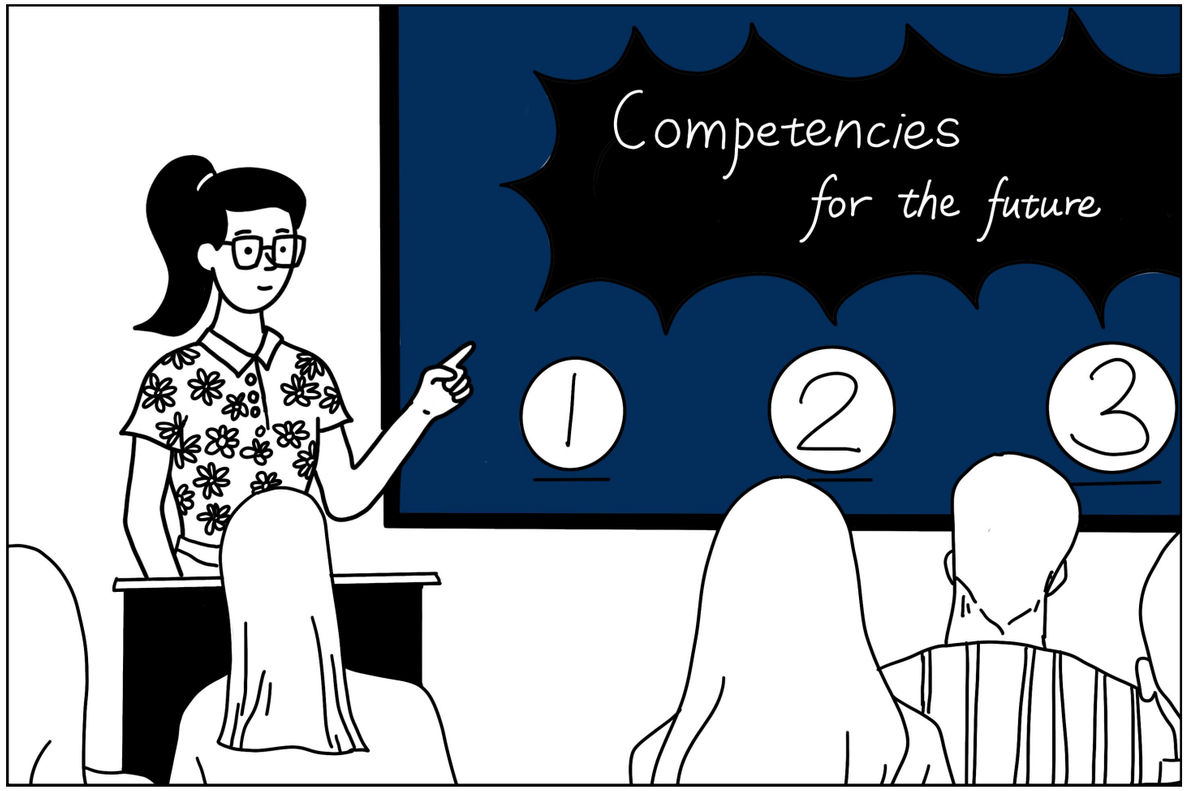
The Lab for Future Learning provides services related to the "Competencies for the future" course: a syllabus, a teaching toolkit, and some assessment methods. With its emphasis on highlighting the fundamental role of high schools in facilitating holistic student growth beyond mere test performance, incorporating education on additional key competencies becomes essential. Providing adequate support to teachers can facilitate such a change.

Moreover, shaping the learning environment requires collaboration among various stakeholders; for instance, policymakers deciding on changes, and schools, teachers, and communities taking action with open-minded approaches in response. An important aspect of this process is granting each school the freedom and resources it needs to enact change.

Future scenario 2:

High school teachers are using the syllabus, teaching toolkit, assessment methods offered to plan and run the "Competencies for the future" course. They feel well-supported and empowered by having the flexibility to choose how to apply the resources to their courses.





Ideal responses:

These are the conversations I wish to facilitate among various stakeholders, such as teachers, leadership teams, and others.

> *I have some innovative ideas to tailor the course more effectively to our students' needs. Let's discuss them.*
> — High school teacher

> *We might need more courses like this! Let's discuss more possibilities.*
> — High school principal

> *This pilot course seems to be a promising starting point. Let's discuss more movements.*
> — Education policymaker

Moving forward

Road map

After presenting and discussing my design proposal with various stakeholders, I received a lot of valuable feedback on how it could be further developed and implemented in the future. In response, I've created this roadmap to envision further developments and possible trajectory of my design proposal.

More preparation to facilitate implementation

Further Development
To refine and complete the current syllabus, teaching toolkit, assessment methods, and visual identity.

Establish A Venue For Questions
To promptly respond to and resolve issues encountered by teachers, such as confusion about specific tools.

Create Community Hub
To encourage teachers to communicate, share teaching practices, seek feedback, and discuss, fostering support and mutual learning from each other's experiences.

Provide Professional Development Resources
To offer additional resources such as instructional videos, real-life case studies, teacher guidebooks, and training activities. To support new teachers in learning and practicing, while helping experienced teachers enhance their teaching skills.

Improve The Evaluation System
To enhance the existing Pass/Fail grading scale by creating a more comprehensive assessment system, enabling teachers to better evaluate students' performance and provide feedback.

Set Up Standards
To efficiently assist the Ministry of Education in selecting pilot high schools suitable for implementing the course.

Iterate current services

Iterate On Teacher Feedback
To refine the syllabus, teaching toolkit, and assessment methods based on feedback from teachers' practical experiences.

Iterate On Student Feedback
To create a way to gather feedback from students about the course to improve the content and structure.

Iterate On Expert Feedback
To collect feedback from more experts in the education sector.

Expand to make a bigger impact

Collaborate With More High Schools
To spread the course from the pilot high schools to more high schools.

Develop More Courses
To create more courses that better prepare high school students for the future.

Cover More Stages Of Education
To develop courses that cater to a broader range of age groups and educational stages, such as primary school, junior high school, and university.

Introduce More Innovations
To pursue more innovative approaches, such as integrating the eight competencies from the pilot course into traditional subject courses to develop a completely new curriculum.

06

This chapter outlines the project feedback, my reflections and final conclusions.

CONCLUSION

Feedback

Feedback on the "Competencies for the future" course

I want to learn these competencies through the activities you mentioned. It's more interesting than what I'm studying right now.

— High school student A

For students, you've provided various dimensions and steps to attain these competencies. I'm impressed by how your design covers so many details.

— Service designer B

These eight competencies that the course touches on are really important for students, which are not covered in our traditional courses, so the course itself is essential.

— High school teacher A

If I were a student, this is the course I would want to take.

— High school teacher B

Feedback on the three service design interventions related to the course

On top of the course content, you provide teachers with very detailed and supportive guidance. I can get a holistic view of what this course is actually doing, with various key indicators. Additionally, there are detailed explanations and tools for each component, including instructions on how to upload the assessment outcome at the end. The framework and content are super clear and complete.

— High school teacher A

The variety of assessment methods you provided is excellent. Offering teachers choices instead of prescribing specific assessments for each tool is a great approach. You've allowed them to customize and even modify assessment requirements, making it very flexible.

— Service designer A

You've really considered everything comprehensively, trying to cover any problems teachers might encounter in the process.

— High school teacher A

While this course may be new and innovative for most high school teachers, it is undeniably meaningful. I appreciate how you've designed the toolkit to accommodate each teacher's individual teaching practices.

— High school teacher B

I'm really looking forward to it being used in high schools. The research you've done is also what our school is currently exploring.

— High school teacher A

The illustrations and visual elements on the website attract me to read its content. I like the design style. The overall experience is easy and user-friendly, with a low threshold for me to use.

— High school teacher B

Conclusion

In this project, I investigated China's high school education system and uncovered that the current industrial education model is interconnected with competitive behaviors and fixed mindsets. These factors have resulted in many Chinese high school students experiencing struggles and lacking perspective on navigating the complexities of their future lives.

My research indicates that there are already some breakthrough interventions affecting the current Chinese high school education model. There is great potential and value in continuing to consider how to intervene and better bridge students' studies and their futures. During my design exploration journey, I realized the importance of leveraging the collective efforts of other stakeholders, such as high school teachers, to create the conditions that make potential change possible.

Therefore, I proposed a new organization called the Lab for Future Learning to develop an innovative course aimed at developing key competencies in Chinese high school students to better prepare them for the future. Simultaneously, the Lab for Future Learning would offer three service interventions to support teachers in implementing the course. Finally, I visualized what the outcomes would look like and considered future developments. Considering the feedback I received, I believe this proposal is realistic and has the potential for further enhancement through increased collaboration to maximize its impact.

In closing, I would like to use a few statements to summarize what the Lab for Future Learning aims to do:

It is an exploration to discover how we can better assist high school students in acquiring more key competencies. This enables them to solve diverse problems more effectively and with greater ease when they confront complex future challenges.

It is a new possibility to investigate the question: “How might we bring transformative changes to the industrial model within the Chinese education system?” This provides a fresh perspective on the efforts and attempts made by various sectors of society to reform the education system.

It is an attempt to integrate various stakeholders within the education system and collaboratively co-create long-term value.

It is an opportunity to engage various stakeholders within the education system and society in reflecting on the plight of high school students in the current context.

It is a starting point to call for the proposal, discussion, and implementation of more ideas aimed at reforming high school education in China.

When talking about education, people usually think, “It can't be done differently; that's just how it's done.” The Lab for Future Learning is on a mission to prove that “Education can be done differently.” Hopefully, in the future, more collective effects will converge to make this happen.

“Human flourishing is not a mechanical process, it’s an organic process. All you can do, like a farmer, is create the conditions under which they will begin to flourish.
— (Robinson, 2010)

Reflections

I studied fine arts in high school in China, where I was born. It's supposed to be a subject that encourages creativity, and curiousity, but as students, we were learning and practicing how to cater to the standardized assessment system and succeed within it. I felt something was wrong. Therefore, I had a strong motivation to explore the topic of education as part of my diploma project. I'm glad that I could step out of the Chinese high school education system, allowing me to objectively apply different research methods to investigate its benefits, harms, impacts on students, root causes of problems, and so on.

After conducting a systemic analysis of how the high school education system works, I encountered findings spanning education models, human behaviors, mindsets, and breakthrough interventions. Initially, the complexity of the situation made me feel it was impossible to provide any solutions. When considering the future of the entire system, I recognized the necessity of covering elements such as policy, economy, and culture, which lie beyond my expertise. Consequently, I decided to set a boundary and focus on efficiently utilizing my expertise in design: designing interventions aimed at affecting the industrial model of current Chinese high school education system.

During my design exploration, I greatly appreciated the willingness of many stakeholders to share their experiences of the high school education system in China, along with their valuable ideas, opinions, and constructive feedback. These contributions have profoundly influenced my design, shaping it into what I hope to become a realistic programme that can bring impact in real-life contexts. One of the main lessons I learned from this process is the importance of discerning where to focus my efforts as a designer. At times, I found myself trying to over-design things, which not only caused me to struggle but also limited the direction of my work.

My final design proposals that I've made reflect this learning. I aimed to empower teachers and other stakeholders to make the pilot course happen within the current context, while also utilizing the course content to empower students to better cope with the future. Through this process, I learned that design proposals need to create ownership among stakeholders to foster long-term value.

Overall, the project proceeded more smoothly than I anticipated. Engaging in discussions with stakeholders alleviated my initial concerns regarding the lack of expertise in the education sector, enabling me to navigate the project more effectively. I aspire to leverage this experience to further explore how service design and systems oriented design can contribute to the education sector.

Acknowledgements

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