From Exam Performance to Job Performance

A Case Study of Chinese Participants of 42 Piscine

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Abstract

This thesis focuses on the experience of Chinese learners in an alternative high educational program, the Piscine of school 42. It attempts to study the passage from traditional to alternative education by focusing on the specific case study confronting students from a strong traditional background - Chinese students - with one of the most unconventional higher educational places - *school 42*. Moreover, it lies in a broader literature dealing with the performance of Chinese learners in higher education, adding to it a focus on their experience within an alternative higher educational program. The collection set of the data includes interviews of six Chinese learners, with observations on three of them during their Piscine experience. Two main tensions have been identified as keys to understand both their difficulties and adaptation to a new alternative learning environment. Firstly, there is a persistence of their exam performance regarding learning, evaluation, and achievements. Secondly, there is a new sketch to take learners out of their comfort zone, with a highlight on their job performance regarding the newly earned skills of autonomy, cooperation, and adaptability. The thesis carries some reflections about the value of freedom within higher education but also questions the evolution of higher education toward vocational training.

Keywords: Alternative Higher Education; Chinese learners; 42

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Introduction

Among all current higher education practices, School 42 runs one of the most distinguished programs. Indeed, the school holds the specificity of being free, teacher-less, with a peer pedagogy, and it adopts project-based learning. Students have their own schedule and the pace is individualized. The first campus was founded in Paris in 2013 and its selections are open to anyone above 18 years old. At its opening, it was described as "*a strange school*" by Le Monde (2013). It has grown rapidly and there are now 20 cooperative campuses worldwide.

On the other side of the world, the Asian mainstream education, particularly the Chinese one, is well known for its exam-oriented education(Kirkpatrick & Zang, 2011), particularly in the high school level. The program is filled with overwhelming exams and assignments. Students all follow uniform and intensive class schedules to prepare for "GaoKao", the national college entrance examination. While Chinese learners go abroad to pursue higher education, encountering different learning systems, some researches emerged to observe their experiences doing so, like one conducted in New Zealand universities(Skyrme & White, 2011), or in British universities considering the change of strategy of Chinese learners in language learning (Gao, 2003). Along with adapting to new residency, language, and a learning system, students could also switch to a radically different pedagogy of alternative education. This pedagogical switch has not yet been studied. Thus, it raises the doubt of how Chinese students would deal with the change of both the learning environment and very distinct alternative pedagogies in their transition.

This study aims to explore the experience of students in an alternative school, with a focus group of young adults with a previous Chinese educational background. We will observe and analyze the experience of young Chinese learners, as they jump from mainstream to alternative education, and we will describe and analyze the tensions behind their learning behaviors.

Literature Review

Alternative education for young adults

Researchers worked on the definition of mainstream and alternative education in the past. Mainstream education refers to a standardized model, which follows a regional curriculum and pedagogical guideline. It is administered, and under control by a higher authority(Hadar et al., 2018; Kraftl, 2013). Alternative education varies and its definition could be arguable. Firstly, it was viewed as fragmented landscape and refers to all educational activities that fall outside the mainstream education(Sliwka, 2008) Later on, with the effort of researchers, it was specified to the program provided to children with the adoption of their own innovative models, being flexible with their own pedagogical considerations while supplementing or replacing the engagement of mainstream education(Kraftl, 2013; Hadar et al., 2018). From a global view, there are famous examples with dedicated researchers for analysis in diverse topics: Waldorf education in Germany(Oberski, 2011), Summerhill school in England(Stronach & Piper, 2008), Montessori method of Italy(Whitescarver & Cossentino, 2008), Sudbury Valley model in the United States(Gray & Chanoff, 1984), etc. Researchers have spent time evaluating not only the vision, processes, and approaches of the school(Woods & Woods, 2009) but also the motivations and achievements of the students(Besançon & Lubart, 2008). Following the individual case studies, researchers have also started to discuss the connection and disconnections(Kraftl, 2013), the negotiation(Hadar et al., 2018) between alternative and mainstream models. There was also research about the principal's choice from mainstream education to alternative education(Riddle & Cleaver, 2013).

However, there are two limitations: firstly, in the research field of alternative education, there is little analysis about the students' adaptation, to focus on the phenomenon of student performance, when they suddenly switch from mainstream to alternative, or inversely. Secondly, all the above listed alternative pedagogies concentrate more on early childhood and teenage education. Rare research around adults in a free learning environment(Heimlich & Horr, 2010) was conducted. It is unclear whether the definition of alternative education which has been mainly developed regarding a younger age can be fully transferred to higher education. Compared to the alternative schools for the students under

18, the alternative higher education programs are more diverse and more vocational considering the learning objective of the programs. They promote distinct and creative pedagogical practices, different from traditional universities, such as Team Academy, as an entrepreneurship oriented bachelor program in the Netherlands.

In this thesis, considering the characteristics of high school education in China, we adopt the definition of mainstream education which has been introduced at the beginning of this section. For alternative high education, since we target young adults in this case study, we will adopt the term alternative education developed by Kraftl(2013) and Hadar(2018) partially with a modification. We define the alternative higher education as an educational program, which targets young adults and adopts pedagogies designed in accordance with their own special concerns, in our case vocational objectives. It means that they don't search for academic nationally shared standards. That is to say, financial resources, and legality or accreditation status of the program are not part of the definition criteria.

Existing research around Chinese learners

Researchers so far have not agreed on a specific definition of the term Chinese learner. There are multiple layers and plural identities(Jin & Cortazzi, 2011). It is used in a very broad sense as a reference to students growing up and studying in China, including regions with different educational systems: mainland, Hong Kong, Macau, and Taiwan. Neither there is a clear boundary for the usage of this term while applying on geographical regions(Chan, 1999), nor there is a duration limit of the years of education to distinguish the young age teenagers who went aboard, from the main group. Thus, in the past usage of this term, it plays with all different cultural groups and ages(Watkins & Biggs, 1996). However, with the consideration of different regional policies and educational systems, also to distinguish students who are taking international bridge courses, the Chinese learner of this thesis is used in a more restricted sense. The term Chinese Learners refers to the group of students who have completed public high school education in mainland China.

In the past, with a general application of Chinese learners, researchers have explored various topics across fields, including overall experience(Gu, 2008), English language learning and teaching(Jin & Cortazzi, 2002), discourse patterns and assessment system(Zhao & Bourne, 2011). They also focused on classroom performance and analyzed their struggles

such as class participation and group learnings(Wu, 2015). The relation between teachers, academic staff, and themselves has also been evaluated. (Kingston & Forland, 2008). Researchers also developed stereotypes of Chinese learners(Ruble & Zhang, 2013), there are more positive thinkings, such as the one recognizing them actively possessing agencies to respond to challenges(Heng, 2018). With respect to prior research work, the adaptation issue of Chinese learners in the alternative education program will be highlighted and evaluated in this thesis. Specific care will be put in not using stereotypical thoughts, such as the assumption of them being passive and dependent as previous research concluded.(Robertson et al., 2000)

Educational contexts

In the following, educational contexts of two distinct learning programs will be introduced in brief, as supplementary background information to help readers reach a better understanding.

The high school in mainland China

With the definition of Chinese learners, the targets of this research all graduated from public school. Confirmed in interviews, their high school experiences are very similar to each other and can be summarized: exam-oriented learning; mandatory assignments and exams; uniform and intensive class schedule.

The learning in public school is oriented by an exam called “Gaokao”, the national college entrance examination, it has been introduced to western educators from researchers(Davey et al., 2007) with the analysis of its strength and weakness(Muthanna & Sang, 2015). The aim of public high school education is to help students gain a better score on the exam. Every semester, there are regular monthly exams, mid-term exams, and final exams. All students work on the same subject[1] at the same pace.

The smallest unit of the school is called class, which contains around 40 to 70 students. Students are allocated into different classes without choice. At the same class, students have to share a collective sense of honor, which is supervised by a headteacher,

[1] There are divisions of art and humanity, and of Science. To be more accurate, students of the same division work on the same learning objectives.

including hygiene, discipline etc. To facilitate the collective tasks, there are always student responsables for different purposes, such as class management, sportive activities etc. Besides the head teacher, there are many subject teachers. They make assignments everyday, and provide corrections with feedback, and both encourage and punish students.

The class schedule is very intensive. For a typical high school schedule, the first class of the day starts between 7am and 8am, and the last class ends in between 9pm and 11pm. There are small breaks in between 45 minutes and long classes and students have a big lunch or dinner break for 1 to 2 hours. Students could have classes on Saturday.

42 and its Piscine

To enter school 42, every candidate needs to pass an online test, and then selected candidates will be invited to attend a 4-week admission exam on campus, which is called Piscine. There is no exam fee but students are responsible for their own accommodation. Piscine is usually held multiple times a year and there are around 300 to 600 candidates depending on each session. The model of piscine has changed over time since 2013, thus the target of this research is limited to having participated in one of the Piscine between June 2019 to February 2020, which offer the same experience, highlighted by: autonomous and individualized learning; mandatory assignments with peer evaluation; free schedule.

In the piscine, students focus on programming language C, but they can decide their own pace for learning and choose their own way to learn. For a complete Piscine, there are team projects and individual projects. Team projects are optional and usually run on weekends. Besides, there is no teacher nor supervisor to teach or monitor the learning of each student. Students need to find their own learning materials online, it could be documentation, video tutorial, or coding website etc. They can also ask other students. The progress of individual projects varies, at the end of the Piscine, the most advanced students could work on the last individual project, slower students could stay on an earlier stage. Thus, both the learning pace and learning methodology are up to the choice of its learners.

Peer evaluation of the individual project is essential to all participants. Before unlocking a new daily project, participants have to get approval from their peer's evaluation and also the mechanical test. The peers, who are also Piscine participants, are arranged

randomly by system, regardless their level of knowledge. The evaluator could be advanced or knows nothing. Students cannot pick their peers but they can schedule time. Each evaluation lasts 15 minutes though the real duration is unpredictable, because the peer can stop the evaluation anytime if there is a significant error such as wrong submission, or the peer can explain their thoughts and exchange ideas for a longer time. Everyone has to do peer evaluation for others in order to receive evaluation for themselves. It is a fair system that the exchange between doing evaluation and being evaluated is at a one to one rate and students have evaluated others firstly. Specific guidelines of the procedure for evaluation are given in words.[2]

Students can arrange study time freely. Since 42 opens 24/7, participants can come to school at any time they want. They are also free to quit the Piscine and not to come back if they decide. There is no minimum requirement of learning hours nor maximum limits. There is no set-up schedule for eating or pauses either, students decide when to relax and eat by themselves.

Research question

With the considerations of the previous work and the interest of the researcher, this thesis attempts to focus on the experience of Chinese students, to analyze their adaptation while changing learning tasks, styles and systems. Thus the broad research question leading this inquiry could be shaped as this one: **What are the main difficulties for a higher education's student shifting from traditional to alternative learning environment?** Then, more specifically, we use the case of Chinese students in School 42, for the specificities of both these students and this learning place, as a case study to get some clues of answers to this question. Since this subject has not been studied thoroughly, the thesis is exploratory and without any assumed hypothesis.

Content presentation

The presentation of the findings has been divided into two parts, with three subparts in each. The two parts together show an overall switch of the Chinese learner's focus from exam performance to job performance during their participation in the Piscine at 42. The

[2] See examples in the annex

exam performance refers to their exam-oriented mindset, task-complement priority and knowledge-dominant thinking, inherited from their traditional education. The job performance refers to soft skills valuable in the job market such as self-learning, cooperation, adaptability. The first part, reveals a persistence of their focus on exam performance that we can observe through their learning behaviors. This persistence leads to tensions for students' reaction to the alternative learning program in three aspects: exams, peer evaluation, understanding of what achievement means. In the second part, we will see that the 42 Piscine animates the real working environment and takes Chinese learners out of their comfort zone to be more autonomous, cooperative and adaptive. These results show a more general evolution of higher education from academic performance to job-market adaptability.

Methodology

Research goal and orientation

The leading goal of this research has been to use a qualitative approach in order to analyze the experience of Chinese candidates at the 42 Piscine. In other words, we wanted to see whether the students who come from a very uniform, structural and rigid education can adapt themselves to a very free, autonomous learning environment. This research track was inspired by a personal experience of studying in mainland China and then went aboard with encountering different alternative high education models. The researcher also holds a personal interest in the development of autonomy for young adults.

The case-study methodology has been adopted to this study of which how the experience of studying at Piscine of 42 impacted their performance of six chinese students. We would see how *academic performance,* as the goal of their learning behaviors, transforms to a non-academic performance, particularly job performance. Here, academic performance refers to the fit of the student's productions with the academic standards (Plaisance, 1986). This fit is translated by scores of exams, rank in the competition etc. Job performance, which refers to personal skills such as communication skills, soft skills and adaptability, that are highly valued in the job-market.

This qualitative case-study, the in-depth analysis of Piscine experience, as an illuminating case, reveals the tension between two different learning environments acting on participants, the persistence from the old habits and also the change triggered by the current one. When a phenomena is rooted in a natural context, case-study methodology could facilitate its exploration, to investigate a new theory, or to deepen the insights of existing theories. (Stake, 1995; Yin, 2009) It also helps to illuminate the general meaning of a specific phenomenon and the meaning behind the phenomenon. (Merriam, 1991) This case study aims at revealing the tensions behind a series of repetitive phenomena of students' learning behaviors, interactions and recognitions, and thus a variety of data resources have been collected and used, including but not limited by a person, the environment, and the process.

Participants, data collection and analysis

Criterion and convenience sampling(Bloomberg & Volpe, 2015) has been employed for this research and there were a total 6 participants involved. The criteria of ideal participants is 42 Piscine candidates who have completed a normal high school education in mainland China. Their willingness has also been taken into account. The convenience sampling was chosen because there was a difficulty to find eligible interviewee: there are not many Chinese learners, and 42 refused to ask candidates for cooperation. Hence, the researcher started from friends, to search and contact people online, and enlarged the scope from the Paris campus to a global range. Thus, in the final list of interviewee, there is one who attended the Piscine in Tokyo. There was a pre-check before the real interview that the Tokyo Piscine maintains the same form as Paris Piscine.

The data collection and analysis is guided by grounded theory approaches and techniques(Corbin et al., 2008). For data collection, it contains two parts, one is a semi-structured interview and the other is observation, which will be explained with more detail in the next paragraph. The following Table 2 contains the brief demographic information of the final participants. Among all, Camille is the only female student. Felix participated in Piscine in Tokyo and all the rest participated in Paris.

Name	Age	Piscine time	Result	Background	Post-Piscine status
Adam	21	Sep.2019	Fail	Bachelor student of humanity	Study in humanity
Bob	23	June.2019	Pass	Quitted engineering school, free lancer	Work in CS relevant + 42
Camille (F)	22	Feb.2020	Pass	Master student of business & management	Study at 42
David	26	June.2019	Pass	Bachelor degree of design	Study at AR + 42
Edson	anonymous[3]	June.2019	Fail	Master degree of design	Work in Game design
Felix	22	Feb. 2020 (Tokyo)	Fail	Bachelor degree of Politics & Economics	Intern in CS relevant

[3] Edson prefers not to indicate his age.

(Table 2)

Among all above candidates, Bob, David and Edson have been followed during a 26 days long observation, the Piscine of june 2019, at 42 Paris campus. The researcher presented every day during the observation, and since it is a private space and only authorized people can enter, I applied to be a candidate of 42 and performed as an active participant (Gold, 1958) for all involved activities. Since it took time to identify them and to reach them individually, the active observation was around 22 days. All three participants were informed at the beginning of the interaction, while exchanging the purpose and background, the possibility of being involved for an educational study. Observation notes were taken after Piscine and have been re-organized for this research. Later on, during the interview, I informed them again for the observation data utilisation and gained their agreements.

For interviews, the question was firstly drafted, and it was reviewed and modified with the suggestion from supervisor and also other peers in the same discipline. Then, I went to find interviewee and started to schedule interviews. In process, there were actually 10 interviewees who were reached during the data collection process. However, two of them were excluded before the interview, because they went abroad at an early age and they didn't stay in mainland China for high school. Another two eligible people already agreed on making an interview after their picine of March 2020.Then, the Piscine was interrupted by covid-19. 42 had to close the school and stop any activities and thus the interviews were cancelled. Thus, there were 6 interviews conducted and all was done between February and March 2020, either face to face, or through online phone calls, each lasting between 20 to 40 minutes long.

For data analysis, two cycles of codes have been done primarily. In the first cycle, a mix-typed coding has been made, including descriptive coding, In-vivo coding, process coding and emotional coding.(Saldana, 2015) Inductive method has been applied, and all sources of data have been allocated to a preliminary category. While highlighting the information, the allocation and gathering were paid extra attention to avoid subjective judgement, though keeping both the name of category and the allocation to category as closely as possible to participants' original expressions.(Smith et al., 1995) A second cycle was then taken to discover the patterns and structures. The preliminary categories have been

classified again and assigned into different topic groups in order to map the links and generate the main connection. Meanwhile, the cross-case analysis has been adopted. This coding and analysis method facilitates the access to the particular analysis from long transcript data sets.(Namey et al., 2008)

There were difficulties already described for data collection, like searching for eligible participants, due to the accidental covid19 interruption. During the interview, especially with the three participants who I already knew very well during the observation, they assumed that I understood their thoughts and thus had little willingness to express themselves. I had to guide them for more detailed explanations. For two participants who were admitted to 42 and started their coursework, in the interviews, extra questions were needed in order to specify their opinions towards Piscine, particularly when they talked about their experience in general. The research wishes that the impact of their extended experience could be minimized by the usage of clear questions and guides. For analysis, there could be subjectivity bias. Besides, my personal experience and judgements could possibly bias the analysis, since I graduated from a high school in Mainland China as described above, and I also participated in the Piscine. I have my own reflections, including both appreciation and criticism to two programs. My own understanding could possibly affect the selection of interview transcripts and then affect the analysis. However, this was mitigated by focusing on the transcripts of the interview and also taking the inductive method rather than deductive one. A larger sample may also have allowed us to analyse the differences between students according to their final results in the Piscine (admitted or failure), which didn't appear in our data.

For ethical concerns, all participants were informed of the research purpose and agreed to use their data anonymously for analysis and writing, though three students of observations agreed after the process. What is more, the name of 42 Piscine is not hidden in this paper for two reasons: due to the limited space for description, the real name can make readers be convenient to find more detailed information of this program online; pictures attached at the end for readers' better understanding in the annex, and thus 42 can be easily identified even if it made anonymous. Furthermore, this research was conducted without the communication with 42, the interviewees were found with personal efforts.

Findings

I. A departure from result-oriented mindset

At the first part of the result, we would illustrate the reactions of participants to the Piscine and analyze the underlying impact of their mindset on their current behaviors in learning, peer evaluation and their reflection of experience. Through their performance, we would see how their result-oriented mindset of exam, tasks, knowledge is struggling with their nature for pursuing passion, pleasure and well-being.

Exam-oriented learning behaviors

Interviewees mentioned that when they were in China, they studied for exams, for high grades, for certificates and degrees, but rarely about their passion, neither they had a choice. Compared to the necessity for completing high school education in China, especially to fulfill great expectations of family, the Piscine is totally up to them. There is no external force for them to participate. The two common motivations for the participants are: the program is free and they can be benefited by learning coding. From a short-term view, Camille and Bob mentioned that they heard the speciality of Piscine and they were curious about it, since they were free and had nothing to do, they came to 42. There are also participants Adam, Camille and David thought about long-term economic reward. Coding leads to decent jobs and this motivated them more to come 42 to study. Thus, participants have treated Piscine as a free one-month coding training program, rather than a real exam that they have to pass. As the post-Piscine status shows in the table of the previous chapter, only one interviewee, Camille, is currently attending 42 full time. For other students who failed, they went back to their original track of life, and for other students who passed, they implemented the study of 42 to their previous plan of life.

Though, everyone has an alternative plan if they cannot pass the Piscine, the students seem to inherit the habit of getting high scores in competition from their previous educational experiences. There is a phenomenon that reveals the continuation of their previous learning habits and mindset. I have observed Bob, David and Edson for their Piscine. In my observation, all of them spent time finding old versions of exam questions and took hours and

days practicing them before the exam, to achieve a better score. They have mentioned that it is very similar to what they have done previously in China. In mandarin, the method is called "*刷题*"(ShuaTi), literally, it means scan and solve a big amount of questions quickly and intensively, in order to be familiar with different types of questions and to know the general structure of solution. Especially for the final exam of 42, they found a collection of exam questions on Wednesday (1 day before the final exam) and decided to stop learning new concepts or doing new projects, instead, they gathered and tried to practice with exam questions for high scores. The preparation of the exam took them up to 2 days.

The attitudes and behaviors towards the exam of students also shows an underlying and implicit continuation of their previous learning experience. In my observation, they showed their high attention to exams. It was common and frequent for Bob, David and Edson to talk about their ranking since there is a full table of ranking for all participants of the same Piscine and it updates in real time. They would complain about the accident and difficulty that they have met, which leads them to lose time or point in the exam, such as the conditioner didn't work so that they could not focus on exams. After the weekly exam, they also check others' exam points and talk about who got the highest rank. Exam is a hot topic that they frequently encounter everyday.

On the other hand, the interviewees were overwhelmed by their passion for overcoming difficulties and having fun learning. Though they did spend time specially to prepare exams, they also spent nights challenging coding problems. For example, there are always difficult optional tasks in the individual projects, with the same amount of time, students could possibly solve one of these challenging tasks, or skip them to learn the basic concept of a new project and solve easy tasks to gain more points. If students want to optimize their time and energy and be score-oriented, they would skip the difficult one and move to the next new project. However, during my observation, particularly, Bob did enjoy solving very difficult tasks instead of moving faster to gain high scores. Camille, in her interview, has also described her preference of being slow, not starting a new individual project but spending time on solving the last assignment of different projects, and usually the last task of each project is the most difficult one.

Therefore, though no one mentioned their thrive for the high score of exam in their motivation, neither they have to pass this selection in their study plan. When there were exams and competitions, they applied their old study habits to deal with exams for high scores. However, we could also see them be out of the result-oriented mind and fully focus on the pleasure of learning, the tension is underlying their learning behaviors.

The devaluation of peer-evaluation

Peer evaluation is an essential part of 42's learning pedagogy and it has been briefly introduced at the earlier part of this article. In my observation, students have their own style of doing this task and evaluations are very individualized case by case. In the interview, interviewees also shared very diverse experiences and opinions regarding the peer evaluation.

In various experiences of evaluation, there is a common phenomenon that they value less the benefit of learning from peer evaluation and deal with them more as tasks. The necessity of complement guided their work and there could be very little learning activities involved. There are different cases.

For a performant student like Bob, always learning faster than others and ranking very high in the competition system, there is a gap between him and other Piscine candidates. It seems that this gap made the evaluation less meaningful and useful to him. I have followed and observed Bob for evaluations. He could run a quick peer evaluation and complete it as soon as about 5 minutes. In this case, Bob quickly ran the test and there were rare communications between him and the other. Bob just said "*Bonjour*" at the beginning and they confirmed the identity of each other, and then "*Bon courage, auvior*" at the end of the evaluation. When a random assigned evaluator came to evaluate his projects, most of the time, this evaluator has not studied as fast as him, and thus they just let Bob demonstrate his work and leave 100 marks. In the interview, Bob recalled his memory and concluded that the peer evaluation is not useful by saying "*it is a waste of time and maybe only 2 to 3 students out of 100 were able to help me.*" Bob treated peer evaluation as tasks that he had to do, and sometimes David and Edson also held the same attitude but for different reasons. They had some assignments that they didn't pass for very small bugs, such as a typo, or missing one simple condition. If it happened, they would quickly modify their coding to submit a second or third time. However, they ran out of evaluation chances so that they had to evaluate others.

At this time, they applied to evaluate others but they rushed the evaluation. They would evaluate others continuously and it means an evaluation has to be done quickly, in order to not be late to catch the following one. Certainly it is not enough for very rich exchange and learning.

Interviewees still expect to have a teacher for systematic guidance or learning assistance and they still think that there is a difference between the identity “student” and “teacher”. Thus, when they did the evaluation for others, they never thought of them as teachers to help their peers. In general, Bob, David and Edson were not talkative and they focused on the testing. When they found a bug or a confusion, they just pointed it out and said it very briefly. If someone came to them, unless the evaluators ask, they were silent on the side. Thus, in an evaluation, if students wished to learn from them, they have to trigger the conversation by postulating a question and requesting an explanation. If not, the peer evaluation was more like a mechanic evaluation but manually clicked by a human being. They were rarely active to make discussion and pass their knowledge to others, especially for Bob, who was more advanced than his peers.

The evaluation could be thought of as superficial tasks from another perspective, feedback. To finish an evaluation, both evaluators and students need to write down feedback to each other. Regarding the evaluation, the comment could be anything such as, correction style, the appreciation, the record of exchange, or tips etc. Bob, David, and Edson always gave 5 stars and said thanks to their evaluator disregarding the situation of the evaluation. Even if the person were late, they also remarked 5 stars for the category of “being on time”. When I questioned them about this, Bob said the feedback system is meaningless and he has been given 5 stars by others too when he was late. David has different concerns and explained that the Piscine is small and everyone sees each other frequently, without specific reason to write a bad feedback, he preferred this way for making less conflicts. If you open the historical summary page of their evaluations, it would be the same feedback that had been repeated endlessly. They didn’t feel that they had the responsibility to make real suggestions or comments for their peers’ study.

On the other hand, interviewees have found another kind of enjoyment from peer evaluation. Camille, like Bob, was advanced than others in her Piscine, but she had very

different experience while doing peer evaluation for the students who studied slower than her. While explaining to others about concepts and logics, etc. She has gained a great feeling of self-fulfillment. She described one experience: she has spent one hour and a half to help a peer, and this tutoring has attracted neighbors and finally became a little class of a small group of girls. Camille enjoyed very much helping and teaching others and this has been a top reason for her to come to 42 instead of studying coding alone at home.

The peer evaluation has been enjoyable for other reasons, such as gaining confidence and more clear thoughts. David had experience spending half an hour to do a peer evaluation. As described earlier, though he was not very talkative to actively trigger a conversation, he was patient and responsible. He spotted problems and spent time explaining and also teaching the solutions. One time, he also said that explaining to others made him feel better because his logic became more clear and he has gained better understanding even if he has known the points before. Further, he became more confident while speaking.

Thus, for peer evaluation, for various reasons, students could take it as tasks, and there could be a mindset underlying to make them be oriented by the priority of completing tasks rather than real communications. In the learning progress, their mind could be diverted to enjoy the process rather than focus purely on the result.

Toward non-academic benefits

In the interviews, participants show that they highlight pure academic learning as an achievement. In this part, we would see how they started to notice their non-academic performance, and discover the value beyond knowledge, such as well-being benefits, including mindset change or active interactions.

When participants evaluated the Piscine as a training program, they always started their reflection from the knowledge absorption perspective, and efficiency would be an important matter for them to make their critics. According to their narratives, they devalued the knowledge earning of the Piscine. The interviewees agreed that their knowledge of C has been increased, meanwhile, some of them don’t agree with the value of coding learning here. They seem to have a higher standard to judge the knowledge transformation of the Piscine. In Particular, Edson criticized that social media has overdescriped the learning of the Piscine

and the real learning of the Piscine was not as strict and intensive as media posted[4]. Camille thought for the same amount of knowledge that she could learn more efficiently at home. She said, "*I was happy to learn coding by myself at home. I didn't feel that I had learned much here, in fact, I studied faster at home.*" When Adam described his experience, he said, "*I have roughly known the very basic situation of an area (programming) that I was not familiar with.*" By the use of the words "*roughly*" and "*basic*", we can see that Adam shows himself humble but meanwhile it also reveals that he thought the knowledge of coding that he has learned is limited.

In addition to the judgement of knowledge absorption of the Piscine, it was common for them to underestimate the mental well-being components. However, in the illustration of their experience, they counted informal social activities which helped with well-being as a heavy part for their achievements and appreciations. If they have been asked or guided into this direction with a request for detailed information, there were fruitful results about this. Casual communications, which are non-academic interaction and informal social activities, carried the task of maintaining mental well-being of participants.

All interviewees have claimed that they have enjoyed casual communications and benefited from multi-background exchanges and sharings, though they didn't speak of it as a knowledge or skill achievement. Here, casual communications refer to the conversation happening anywhere, anytime and for any reason on campus. They are usually very relaxable, and could be neighbors' discussions, gossip while eating together, short interactions in the toilet, random talking before or after an evaluation.

To further illustrate the impact of casual communications, at the beginning of the Piscine, casual communication accelerated interviewees' adaption to the Piscine. It opened up their relationship with others and got them used to talking and exchange. For Camille, her connection to others has been enforced thanks to an accident in the toilet. The very first day, she encountered a peer who later on helped her a lot in the toilet. That girl asked her "*Ca va?*" and she responded "*Ca va pas*" in their first conversation. At that time, Camille was very confused and troubled by the first day learning tasks. This girl came to her seat and voluntarily helped her to learn, and came to check her a few times on the same day to answer

[4] This opinion was recorded in the interview, however, the original social media was unable to be found again

Camille's questions about coding. Camille said that she really appreciated it and immediately she felt the relation between her and others got closer. Later on in the Piscine, she also frequently asked others "*Ca va?*" to identify the people who needed help and tried to help them. She even believed that she became more active to ask people whether they need help in the street, which she usually didn't do for safety concerns in the past.

Casual communication also benefited participants to become more comfortable with the peer pedagogy of 42, particularly about postulating questions to others. Adam told us his story and used the word "*less shameful*" to describe his progress. In the morning of the first day of the Piscine, he came to 42 alone and he didn't know anyone and he had plenty of questions, such as how this competition was organized, what he should do first and how exactly to do it etc. He felt uncomfortable asking strangers questions. He also thought that organizational and learning questions should be directed to teachers, and thus he went to *Bocal*, which is the only existing office of 42 for Paris campus. He got no solutions there and the staff emphasized that he should ask other Piscine participants. He was shocked by the moment and it was very hard for him to ask a random stranger some question. He held his questions about coding for a while until his neighbor actively asked him questions, and they talked more out of the topic of coding. When he felt more familiar with a peer, he finally asked learning questions. By exchanging back and forth with others during the Piscine, Adam changed his mind and understood that asking questions is not shameful and it benefits both sides. It is not just to disturb and distract others, the collective intelligence can solve questions faster. In the way of the illustration of this story, he finally admitted this as a huge achievement for him, though not in a knowledge nor skill form.

In the causal conversations, there is an example collection of frequently asked questions: "*What is your background? Why do you come to 42 Piscine? Why do you want to study coding? What are your hobbies and interests in general? What is your future plan?* " Because 42 recruit students from any age and most of participants have already experienced from university or work etc. The diversity of background enlarges the scale of possible answers for the question about personal experience, and those answers enlarged participants' vision and understanding of norm and life.

The diverse recognition of life helped Adam for his mental well being. Parallel to the knowledge-oriented judgement for educational programs, according to Adam's narrative, his peers and family share a monotonous understanding of the learning that people should take careful and serious decisions for switching directions in their learning. Adam studied humanities and he was not understood by surroundings to be interested in coding. His parents and friends questioned his change of interest. Adam claimed that he had a very heavy mental baggage and social pressure. He also had no supportive buddy to discuss. The conversations released him and he became more comfortable to study an unfamiliar subject, which looks irrelevant to his major. In the Piscine, Adam found many other participants come from humanities backgrounds. By knowing their study purpose and concerns about coding, he felt that he was not alone and he realized that it is not a one-way traffic for building career and life paths.

Extensive life experience absorbed through casual conversation also helped participants to be more open to the world and to themselves. Camille appreciated mostly from knowing other's real life, because it helped her observe her relation with the world and rethink her decisions and plans. She focused on inquiring about the other participants' status, opinions and emotions. By background, she was more interested in knowing in general, such as others' marriage or employment status, rather than academic studies. By talking about desire and plans, she focused more on emotional feelings, rather than realistic thoughts. She was able to distinguish others who were anxious and who were very relaxed. Thus, in her words, she defined the Piscine as a "*social experimental lab*", to observe and interact with different opinions and emotions, which led her to become more grateful with her current life. She was very happy to enlarge her life experience from others through unexpected conversations.

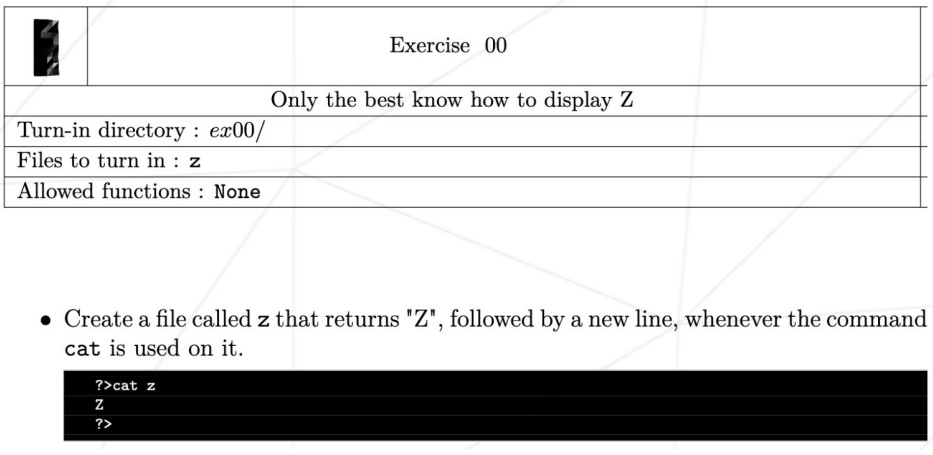
Indeed, in the Piscine the learning of programming disappointed the participants to different extent, but the participants gained a range of well-being benefits through casual communications, such as Adam being released from the social pressure of transforming his interest in study. Furthermore, in general, participants adapted to the environment more quickly with the kindness they felt from non-academic exchanges. They acquired a richer understanding of life, such as the possibility of various life patterns.

To summarize, though the interviewees claimed that they have no strong pressure to pass the selection and they took it more like a free training program. They also were passionate about pursuing knowledge itself, but in such a competitive learning environment with exams, their learning habits and mindset are still around. For peer evaluation, the main learning methodology of 42, it seems that not all interviewees have understood it. To some extent, they pursuited efficiency and were result-oriented. At the same time, they have found other pleasures of the exchange. But they still think that detailed corrections and guides should be offered by teachers rather than peers. It was difficult for them to deal with the "peer-teacher" dual identity. For achievements, they set up a high standard to judge a learning program by evaluating the knowledge absorption. However, they have mostly evolved through communications, and they started to reconcile with themselves while changing their mindset and enlarging their understanding of life. Thus, we can find that their past result-oriented learning experience remains and affects them with or without attention, and there is a tension while they struggle out from it.

II. An arrival towards professional life

After seeing the departure of participants from their result-oriented mindset, in this part, we will elaborate how 42 takes students further out of their comfortable zone, and then ground them to an animation of the working environment. In the delivery, there are complaints, pain, and struggles, but the achievements are also fruitful and highly appreciated. Students prepared better from three perspectives: autonomy, cooperation and adaptability.

Dealing with ambiguity



	Exercise 00
Only the best know how to display Z	
Turn-in directory : *ex*00/	
Files to turn in : `z`	
Allowed functions : `None`	

- Create a file called `z` that returns "Z", followed by a new line, whenever the command `cat` is used on it.

```
?>cat z
Z
?>
```

The above screenshot shows the first assignment that is given in the Piscine, and the description in the picture is all information that is provided by the program. Let's imagine that we come into a new learning environment and the first task given is shown as the above. We don't have any coding knowledge as the selected candidates of the Piscine, and now we feel the same as them. Thus, there could possibly be the confusion of what the file is, what a command is and where the task is executed.

All interviewee agreed that they have to spend time searching online to understand the task and they were very confused and distrubed by the statement of tasks. When Camille described the first few days of her Piscine experience, she mentioned that, when she asked help from others, she didn't want to know the answer, but she preferred that others could show her how they find clues and hints for the solution. She was in a great desire to know how to understand the task, and then locate the key word in the very brief description, also where is the best place to search etc. She shared her observation in the interview, students who were stuck in one task, most of the time, they just didn't understand what exactly the task is. To add on, David also complained about the unclearness of the tasks, and also the lackness of the guideline: "*The descriptions of the tasks are really ambiguous and keywords are not clear*". He wished the program designer could provide more guidelines than it was. Edson also brought up another relevant issue, there are translation issues of the task itself. For english translation of the original french description, it needs more accurate words for expressions. The translation seems to even make the problem more serious and disturbing.

On the other hand, students could really see some value in program *a posteriori*, when they enter the job market. For example, at the time of the interview, Felix and Edson were done with their training and had started a job internship. They both mentioned one comment on 42's model of learning that, to some extent, 42's way of learning animates the real working environment in the sense that it trained them to be autonomous and creative. Their searching ability has been enhanced too. Edson said that he had a better understanding of the form of tasks only after he got a job. In his current job, as a game designer, the tasks that his manager gives to him are, according to him, always ambiguous and leaves space for his creativity. Thus, he concludes that the main objective of 42 is not to teach coding to their students, but mainly prepare the students into real work. Felix is currently doing an internship in python, he appreciated his Piscine experience, though python(language of current work)

and C(language of study in Piscine) are very different, he has already been familiar with the biggest discussion forum, the common tool during the Piscine. He also commented that the way of learning in 42 is similar to what he does in his internship now, because the working assignments are also given as tasks and projects. He always needs to search online for more information as he did while he was solving the tasks of Piscine.

There is no specific teacher in the Piscine, besides the wish of a more clear guide, Adam and Edson have mentioned that they wished that there could be a teacher to force them to study and punish them if they don't finish the tasks as planned. But in fact,they are also aware that self-discipline for learning is valuable in the job market. Especially Edson, while doing his job, he still needed to learn at night and weekend by himself to master his skill and catch up with the newest knowledge in his industry. He has to be more autonomous and be adapted to self-responsible for his learning. Now, he doesn't think that the lack of teachers would be a serious issue in a training program, because it helped for the transition to post-school life. Some other students have prefered to learn this way from the first day, like Camille who believes strongly that people should be able to decide their own learning pace, method and also the suitable material. She enjoyed the freedom and autonomy from the beginning.

In a nutshell, this type of learning task and methodology, which animates real working situations, goes beyond the comfort zone of students. Students complained and wished to have clear instructions and hand-to-hand guidelines. However, it could be really appreciated afterwards, it is true that the uncertainty can be disturbing in the moment, but in fact it also prepares participants for an uncertain job in the future.

Challenges in cooperation

To complete the tasks of peer evaluation and team projects, interviewees have encountered different challenges which seems to push participants more to the real social world.

To complete the peer evaluation, Edson and Camille have experienced very distinctive difficulties, but they are undoubt about their earning that they agreed it helped them improve their demonstration relevant skills. For Edson, he did his Piscine in Tokyo

while he only spoke very rare Japanese. According to him, it was *"extremely hard"* to communicate. Neither he believes the evaluations can be done without common language, but he had to complete evaluation with assigned peers. Thus, he started to practice gesture communication, and to think about how to do demonstration with very simple English so that it can overcome the difficulty of language and be easily understood. He also had to think what his peers tried to say in their demonstration. At the end of Piscine, he was confident that he could explain and demonstrate well with gesture, drawing and easy English. He admitted that without mandatory evaluation, there was no chance for him to communicate with other candidates who can't speak English. The language challenge pushed him out to reach speechless exchanges. For Camille, as we described earlier, she has achieved a great amount of accomplishment through helping others in peer evaluation. Besides this, it was also an opportunity for her to switch the vision and be empathetic for others, she said "*I did not understand why they got confused. To me, it could be a very basic and simple mathematical concept, but when I explained to them, they didn't understand it. I started to think the same question in their position, how a solution could be understood from a lower level, and I learned how to better explain it.*".

Besides everyday peer evaluation, on every weekend, there are optional team projects which the system will randomly generate teams from all registered participants. All interviewees have participated in team projects and admitted that they have been challenged in different ways by the team cooperation. Bob reflected his team project experience and regret that he did not understand the meaning of cooperation at that time. During the Piscine, he disliked the system assigned teammates and treated a team project like an individual one. In my observation, he and his teammates didn't sit together during the competition. Instead, he asked his teammates to leave him alone and work on their individual projects. Because he thought that it consumed more energy and time to explain to his teammates than him to complete the task solely. He only called them to come when he overcame the difficulty to update his process. Now, Bob works as technical team manager and there are three interns supervised by him. He found that he could not manage the team well because he was overwhelmed by a combination of mixed difficult and easy tasks. He cannot free his interns like he did in the Piscine to free his teammate but he doesn't know how to assign tasks

properly and how to balance the work of each teammate. In his reflection of the Piscine, he felt that he had the chance to practice team management skills but missed the opportunity.

Adam has been challenged in another way that he was forced to learn negotiation skills. In his mindset, he desired to have a high authority like a teacher to distribute tasks and organize works. He prefered to divide the whole into equal parts and each teammate to take one, not like everyone gathers, discusses and studies on the same subject. He did not expect real collective work either. However, each time there were different teammates and he had to be adaptive to different teams and he had to negotiate for his tasks. He reflected this part of experience and concluded by saying "*I know it is more like how it works in the real world, that's why I didn't like it but registered every time. I wanted to force myself to practice and be adapted to it.*"

To sum up, peer evaluation and team projects have challenged the interviewees about demonstration and cooperation. They didn't experience different types of rich team projects in the past and thus, to some extent, they preferred individual work and systematic division works. A disordered and freed learning environment challenges their preferences and benefits them to grow, to better communicate and cooperate with others for collective works.

Facing an unstructured work environment

The learning environment of 42 is quite autonomous and this has been highlighted by the interviewees through two environmental factors: the design of the cluster[5], which is similar to the office cubicle but without clapboards; and a free schedule, which means no official distinction for pause and study. Those factors have disturbed interviewees individually by different levels and pushed them further to go out from their previous comfortable zone of learning.

At the first glance, all students have admitted that they had been shocked by the design of the cluster: hundreds of iMac and revolving chairs in rows for students. All the learning should be done on computers. The design of the arrangements permits students to talk with neighbors in all directions and thus, the cluster could be noisy all the time. Not every interviewee can easily adapt to this. For example, Bob had no idea of the Mac system

[5] See photo in the annex

before he came to 42, and since there were no other options, he spent time getting used to both the system and the accessories. Then he was annoyed by endless discussions and conversations around him. He went to the corner but it helped very little. He also tried to play music aloud in his headphones, but when it lasted a long time, it hurted his ear. He has adapted to learn in a noisy place, adapted to be interrupted by conversation. He concluded "*Now I can even code in the street.*" Adam met similar difficulties. Because he was used to studying in silence, like in the library, or in class with the supervision of teachers, where there were always clear rules to disencourage people making noise. At the interview, Adam joked by saying "*Maybe this would help me save money from no more need for visiting paid quiet learning spaces.*"

Besides above, there is also no class schedule for students, and they have to be autonomous and arrange their study and life by themselves. The interviewees have mentioned the issue of schedule problems. While there is no uniform time for break, for eating, and for relaxing. It is easy to lose track of their schedules. Bob said that his schedule of eating and sleeping was in a mess, especially for his diets, he often forgot time and ate very late. For Adam, he felt some kind of peer pressure, since he was afraid to leave the cluster when all of his neighbors were studying. Eventually, because everyone has a different schedule and there were always neighbors remaining in their seats, he went to eat when he waited to feel really hungry. For Camille, one day, she even had forgotten to leave on time, and thus she missed her train to go back home. She had to stay overnight on campus, which was a really exhausting experience.

As a consequence of the unstructured classroom and class schedule, it leads to a challenge for friendship construction. Only Camille thought that she had made good friends and it was not difficult to do it during the Piscine, and because the sample is very small, the gender factor cannot be further elaborated here. In the interview, for Edson and Felix, they mostly concluded it as a language issue. They thought the language barrier blocked them from seeking deeper friendship. Adam and David compared their previous social network activities with their Piscine activities, and explained the difference from this point of view. They explained that while in China, they have been passively assigned into a class, or a group. There were usually many mandatory activities to participate and it was natural for them to be close with some members of the same class or the same group. The network was

not particularly pursued by them but assigned to them. At 42, among a few hundreds of participants, they have to find potential friends and actively join some eating or hanging out activities in order to maintain the contact and deepen the relationship. This was quite challenging for them because they had to switch from a passive mode to an active mode that everyone here had very broad choices and no one waited for quiet people. Adam thought the Piscine animated the reality and regarded this as a preparation step for entering the real social world.

David has mentioned an acquisition of self learning ability regarding the overall organization of time and tasks of the Piscine. he recognized "*There is so much that I can do within a month, it's just about whether we want to make an effort, to focus on our goal, to be out of useless things such as social activities, and I am able to do it, even for a subject that I don't know much.*" David claimed that the immersive learning experience in such a learning environment improved his focusing ability and time management skills. He also had the confidence to deal with unfamiliar learning objects because he mastered how to search materials and how to learn without teachers.

Overall, for the learning environment perspective, while other schools set up clear rules to make the place quiet, to support teaching with board, to distinguish pause from classes, from all aspects, 42 makes itself as simple as it can and leaves freedom for learners. It animates the professional settings and though it was very annoying during the adaptation time, once the learners get used to it, surprisingly, they appreciate this more than an intentionally modified environment for their study.

To summarize, in this part, we have witnessed how participants dealt with unexpected difficulties and made their growth in the Piscine. They studied without clear guides, without familiar teammates and cooperative forms, without an organized learning environment. As a result, they claimed to become more confident to face uncertainty and work in complicated situations. For their study, they achieved new digital tools and the knowledge of searching. They gained autonomous learning competencies. Within the perspective for cooperation, their demonstration skills have been improved and they also realized the importance of collective work in teams. For the unstructured learning surroundings, they tried hard to adapt themselves, with handling their own schedule and working style. Regarding their experience,

42 Piscine performed like a transition from the school to work. On the one hand, it remains its main task of coding training, on the other hand, the program animates the working style tasks, cooperation and environment, which prepares students to be ready to enter the job market.

Conclusion

We have been able to show the Chinese learners' reactions to the jump from a mainstream exam-oriented education to an alternative higher education. The transition of students is described by two related tensions, one is led by the dominance of their result-oriented mindset, and the other is caused by the Piscine's environment, which animates the work from various aspects such as learning, peer and schedule. Notice that these two tensions are not chronologically presented, but are simultaneous. The analysis draws two perspectives out of recordings from various simultaneous activities during the Piscine. For example, a student could possibly persist by his exam-oriented mindset while adapting himself to an unstructured learning environment.

In the first part, we have seen that there is a strong imprint from Chinese learners' previous learning habits, attitudes and even judgement standards for achievements. The exam-oriented, task-completion and knowledge-earning mindset dominates their behaviors and has an impact on them. They still prioritize every competition that contributes to the final selection, and they contempt the learning process, particularly the informal ones, and not be active to participate in peer pedagogy, due to the clear distinction they had between teacher and peer. All these affected their participation and led to a difficulty to their adaptation. However, while revealing the occupation of their old learning habits and attitudes, we have also witnessed their good adaptability dispositions such as passion, the pursuit of enjoyment, the seeking of mental well-being in various learning activities.

The second part overviewed the struggles of Chinese learners' adaptation to the learning environment, they were forced to be out of their previous comfort zone of learning, such as clear instruction and guidelines, assigned group work, quiet learning space. While adapting themselves to ambiguous tasks and team projects in a noisy learning environment, they struggled to make progress with quite some pain. However, later on, this experience is mostly appreciated by the students who started either an internship or a job. The animation of real job and life is then seen as training for them to move on and enter the job market.

The learning environment like 42 Piscine redefines the boundary of freedom for students. Students are more in charge of their learning and social activities at school. For

autonomous learners, who are used to self-regulating themselves, they could also benefit from casual communications. They enjoyed the freedom and trust given by the environment and took the advantage to study at their own pace. For students who are not aware of the self-regulation and autonomy before participating in the Piscine, they are challenged on a different level, particularly, the animation of the work environment challenges the dependency of students to teachers and structural learning. But from another perspective, it could accelerate their maturity and their growth. Overall, 42 prepare students for their post-school professional life. Participants felt their development of transferable and soft skills in just one month of training. From this aspect, it could lead us to wonder about the design of the curriculum, how much settings that mainstream education is taking now could be minimized, and how much freedom can be given back to students, with the same expectation for their academic performance, without creating inequities.

Furthermore, before the research, I wondered the meaning of building an autonomous learning environment when the study could be made at home, where even with less distractions. Especially when the knowledge of programming can be studied online for free, and the whole learning program of 42 can be found online and it is accessible for everyone. However, as the analysis reveals, without thinking about the background of this group of participants, the very autonomous and advanced ones can find multiple values of being such a training with students of different levels. They valued their achievements on other perspectives than pure knowledge in their experience, such as mindsets, toolkits, soft skills, corporations etc. This could lead us to think about the meaning and power of a learning community, which could be more than a simple addition.

The goal of 42 is to prepare students for the real-world job market. It joins a long-time debate about how separated the school should be from the real world. For example, some pedagogists like A.S.Neil offered a learning environment with more freedom to students at Summerhill school in England, from almost one hundred years ago. He intentionally isolated school from the mainstream education and social forms, for the purpose of protecting the well-being of his students, and avoiding ill effects from the external world. (Neill & Fromm, 1960) On the contrary, in this research, we have seen 42, as a different alternative educational program, animates real working environments as much as it can to train their students. We have seen the tensions and also appreciations caused by this animation. On the one hand it

prepares students for the job market, on the other hand, it advances later challenges into younger ages, which triggers the pain and uncomfortableness for the early adaptation. It thus raises questions of alternative pedagogy practices about the best distance between learning and the real world. Particularly, for the job-market oriented training, when would be the right moment to be introduced to students.

Regarding the stereotype of Chinese learners, though there are tensions stretching them in their learning behaviors, we don't find an overall passive or dependent reaction from them. Instead, they are all very responsive to the change and they all explained their hard effort in the interview to adapt the 42 Piscine, which could be possibly related to the recent changing learning practice.(Jin & Cortazzi, 2006) However, since the convenience sampling was chosen at the beginning of the research, also the Chinese learners who are interested in learning 42 could naturally be separated as a different group of students, thus we cannot easily draw a conclusion regarding the images of Chinese learners. More board research will be needed for this purpose. On the other hand, it is also difficult to claim the described tension is only unique to Chinese learners, because in the observation, it seems there are also French and other foreign students having difficulties to adapt to it, especially for the part of animation working environment. I would say the tensions presented in this thesis has a Chinese learners' emphasis but some of it might also fit students in general, particularly the students from a very well organized and supervised mainstream education. When they suddenly change to a learning environment with more freedom, the adaptation experience could possibly be similar. This hypothesis requires further research to verify.

For the limitation of this paper, the sample size is small and also the sampling method might narrow down the transferability of the research result. In the way of finding participants by criterion and convenience sampling, some of them have been found because they shared their experience online and thus were contacted by me. However, there was a high chance that people who wrote mostly positive feedback accepted the interview request and people who complained mostly did not reply to my message. Thus a certain group of the participants who were unhappy with their experience could be excluded in the sampling, which could affect the research result. Furthermore, there is only one female in the sample, thus the gender factor has been excluded from consideration, which might cause differences. Because 42 has designed special workshops taking care of female participants in the Piscine

and there is no enough sample to discover whether it would lead to significant different feelings and experience. We decided to retain for the research only students that have completed the Piscine, that is to say, without quitting it in the middle of the training, which is the case of many trainees. Thus the zero drop out fact of six Chinese samples in this research could be an extreme case and it does not indicate that there is absolutely no drop-out Chinese students for the Piscine. A group of drop-out students could have told us more about the difficulties of adaptation they experienced. . Unfortunately, this kind of participants have not been identified during the research.

Future researchers could conduct longitudinal case studies with a larger number of students, who immersed in an innovative program for years. Thus, the data of the performance of students would be collected regularly, to follow their growth in different stages. It would add on chronological records for their adaptation. If the students would be followed from the beginning, the dropout decisions could be taken into an account and thus analyzed. Further, with a larger sample size, gender factor could be taken into consideration too. Regarding the speciality of the 42 learning environment, there are also other possible topics worth discovery, such as what I mentioned earlier, the meaning of autonomous learning community, or the functioning of a school with minimum interventions from the pedagogical team.

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Annex

1. Photo of 42 cluster

2. Semi-structured interview grid

All interviews have been conducted in Mandarin, the following is the English translation and used for peer corrections. What is more, the pieces of transcripts that are cited have been translated to English by the researcher, originally, they were collected in Mandarin.

Part I: with intention for previous experience

- Ask about age, previous education in china(public/private school), previous high education if exist, previous coding knowledge
  (quick description of their high school for a confirmation their high school system)
- How did you discover 42 and decided to come to Piscine? What are the main motivations?
- How do you usually learn a thing before studying at 42? at school? by yourself? online course?

Part II: with intention for adaption

- Overall, did you like your piscine experience of 42?
- What have you learned most from it? What you appreciate most from your experience of 42? (if it's different from learning)
- What were your main obstacles?
- Did you have difficulties with other students? or Did you find them helpful? Can you

give an example of your interaction with other students?

- Did you notice any change on you during or after your study of 42?
- Would you recommend this experience and why?

Part III: with intention for prospective

- What's the role of teacher in your mind now? Has it been impacted by studying here?
- Can you compare this pedagogy with your previous learning experience, particularly the ones in China?
- Do you think this pedagogy can be applied in any other subjects learning? Why?

3. For the average age of Chinese students of 42 Piscine participants, since 42 cannot help students apply for a student visa, all the candidates who I found in 42, had come to France for another study program first, and then found 42 in different ways. Hence, the average age of the interviewee that I found is higher than new undergraduates, around 23.

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