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A deep active learning approach to exploring young adults' learning in a picture book elective

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This research investigates early childhood student teachers' learning in a picture book elective at a Chinese university. The elective was designed as an educational reform that encouraged students' choices, interests, and active explorations. Drawing on the concept of deep active learning (DAL), the research aims to identify whether and how these young adults adopted the deep active approach to learning. Data sources included student questionnaires, student interviews, and an interview with the course lecturer. The analysis identifies the tension between students' DAL capabilities and DAL experiences, illustrating the difficulty in making reforms in a single course, due to the influence of student accustomed learning style, the general learning environment, and student career plans.

Keywords: *picture book elective, adult student, deep active learning, Chinese higher education*

Introduction

In recent decades, the proportion of students enrolled in higher education programmes has dramatically increased in China (Chinese Educational Statistics, 2019). The majority are young adults who have experienced structured and teacher-directed learning approaches in their previous education. Given that the goal of higher education is shifting from learning performance to students' autonomy and independence for the development of competitive global citizens (Chinese Ministry of Education, 2019; Kim, Song, Liu, Liu & Grim, 2018), it would be interesting to know how these young adults who have experienced one approach of learning, adapted themselves to another. According to Guo, Huang, and Zhang (2019), despite the many efforts of the Chinese government to improve the learning of young adults in higher education, whether these efforts "have led to improved students' academic performance, more effective learning, cultivated multi-faceted talents, inspired their creativity, enhanced their comprehensive abilities, or increased their education returns are still under-investigated" (Guo et al., 2019, p.13).

The purpose of this study is to explore one such aspect of higher education that has received little attention, namely, early childhood students' learning in an elective. This elective was purposefully designed as a model of educational reforms in a Chinese institution that focused on the creation and use of picture books in a project-based process. Drawing on the national guidelines, the course aimed to encourage students' interests, choices, and explorations. The current research is not about the content of picture books, nor how they were created but rather, the focus is on how students were learning through picture booking making in a formal teacher education course. This research was the first that we know of to explore Chinese adult students' learning in a purposefully designed elective.

Analysis of students' learning in the current research is informed by the concept of deep active learning (DAL). Combining learning content with learning activities, DAL is a two-dimensional concept that gives insights into both what and how students learn. DAL, in particular the ideas of relational learning, meaning seeking and knowledge transfer, provides the lens for exploring how participating students experienced their learning. We are also interested to know of the constraints that students may experience with a DAL context when their interests and choices are enabled.

Deep active learning in education

Deep active learning (DLA) is a conceptual framework within the notion of deep learning. As Marton and Saljo (1976) examined the implication of deep learning for education, they concluded that as a concept of machine learning methods, deep learning was able to facilitate human learning in a way that learners built a relational system to achieve a deeper understanding of what they learned. This idea of deep learning was later elaborated by other scholars, for example, Bacon and Stewart (2006), and Warburton (2003) who all considered deep learning as the development of a networking process in which underlying meanings of the learning content are explored.

While there is a consensus about the importance of deep learning in the context of learning, one issue of absence is the role of learners and learning activities. According to Diamond et al. (2018), given that many schools still focus on transmitting knowledge at the expense of learning activities, a critical need exists for education programmes to appropriately integrate learning content and the active learners.

The concept of DAL builds on the notion of deep learning to specify the role of learners and learning activities. DAL is an approach that "focuses both on the formats and the quality and content of learning" (Matushita, 2018, p.8). Yasunaga (2018) argues that for learning deeply, learners must externalize learning. In addition, in order to gain deeper understandings of the learning content, learners need to "apply concepts required in one context to a variety of new situations" (p.118). According to Higano (2018, p.209), "learning being 'deep' means learning achievements can be utilized anytime, anywhere, without the support of the teacher". Learning transferability is an important feature of DAL.

In order to provide learners with these abilities, a range of strategies has been suggested. These strategies include but are not limited to case-focused and project-based experiences, challenging tasks and collaborative opportunities (Howie & Bagnall, 2013; Peters, 2018). In practice, the effect of the DAL approach on students' learning necessitates an environment in which students exercise choices and direct their own learning in ways that knowledge is obtained and applied both within and outside the classroom (Peters, 2018).

The Chinese context: Higher education and young adult students

In the past several decades, especially after the entry into the World Trade Organization, a series of educational reforms have surfaced in China which were underpinned by a commitment to restructure students' learning in higher education by transforming the traditional teaching practice (Guo et al., 2019). As a result, from 2000 to 2010, curriculum reforms "associated with 'learning to learn' and quality-oriented education" (Lee & Song, 2016, p.39) were developed. In a blueprint for future development, an *outline of China's national plan for medium and long-term education reform and development, 2010-2020* (Chinese Central Government, 2010), developing students' motivation and active engagement was the key component of the reform agenda, and higher education institutions were expected to drive the country's future by cultivating motivated, creative and autonomous adults (Guo et al., 2019).

Over time came a growing acknowledgement that Chinese learners are not inherently passive. While adult students might have gone through teacher-directed learning, "when provided with learning opportunities…they are able to develop sophisticated notions of learning and collaboration" (Chan, 2010, p.201). According to Kember (2010), Western-based understandings of Chinese learners were seen to be inadequate, often failing to interpret underlying meanings of learners' behaviours. Chinese learners have often been described to use a surface approach because they tend to memorize materials, "when in fact the memorization was combined with attempts to reach understanding and was therefore not a surface approach" (Kember, 2010, p.192).

Even so, a body of research has reported the continuing struggle over the achievement of students' learning in higher education (e.g., Lee & Song, 2016; Yuan & Zhang, 2017). Although the issue is attributable to students' reasons, for example, low levels of self-efficacy, a strong focus on examinations (Wong & Yuen, 2012; Yuan & Zhang, 2017), and the preference for being taught (Chan, 2010), it is largely due to the course structure and teaching styles, which include too much "attention to the subject training", "neglecting students as individual learners", and "an ineffectual lecturing model" (Lee & Song, 2016, p.46). After a comprehensive literature review, Chan and Rao (2010) made a conclusive point that research on Chinese learners illustrates divergent views and these views mirror the inconsistencies and diversities of the contexts, curricula and teaching approaches.

Picture books as a pedagogical tool

Picture books have increasingly become the focus of learning and teaching of adult students and a site of educational interests in the face of a rising investigation into appropriate multimodal pedagogical practices (Early & Yeung, 2008; Foster, 2011; Nawangsih & Prasetyo, 2019). At a surface level, picture books are understood as "purposefully illustrated books in which the illustrations are, to varying degrees, essential to the enjoyment and understanding of the story" (Tomlinson & Lynch-Brown, 2002, p. 73). Focusing on the combination of media, visual and linguistic literacies involved in making picture books, Foster (2011) argues that "the common assumption that a picture book is an easy to read, brightly illustrated work for small children…is often demonstrably incorrect" (p.74). Nawangsih and Prasetyo (2019, p.192) identified a range of integrated modes of learning in picture books, claiming that

> *"…the picture book should contain two components, namely the quality content component and the visual display component. The content component consists of themes, characters, background, plot, point of view, language style, message, and content. The visual display component consists of text, image, page, colour selection, shape, size and texture".*

According to Pitkänen-Huhta and Pietikäinen (2014), the multimodal nature of picture books offers something for every learner, young and old, and invites and strengthens authentic and meaningful participation.

In describing what learners did when they were making picture books, Early and Yeung (2008) explained it as a collaborative process that ranged from "each learner creating own plots and characters to designing their unique picture books and then, collaboratively, producing their group's innovative dramatization" (p.316). For them, the process gave a sense of freedom and ownership to everyone involved.

Drawing on these studies, it is reasonable to believe that the picture book projects, as a multiple-stage experience that involve an authentic purpose and many forms of learning have great potentials to develop deep active learners. However, no attempt has been reported in the current literature on how DAL was cultivated in young adult students via picture book projects.

The present research

Taken together, the extant literature reviewed above has provided partial evidence of how Chinese students learn in higher education and certainly suggests more research to challenge the often recycled stereotypes of passive learning. This partial profile, coupled with an absence of a purposefully designed course to address the topic, has limited our understanding of how Chinese learners might learn deeply and actively when their interests and choices are enabled.

The present research addresses this gap through the following research questions:

1. How do Chinese young adults experience the DAL approach in a purposefully designed course that encourages their choices and active explorations?
2. What are the difficulties in their implementation of DAL?

Research context and participants

This study was conducted in Changchun, the capital city of Jilin province, China. An educational institution was sampled for this study. In the participating institution, learning programs comprise compulsory and elective courses. In 2018, the institution introduced a plan of reform to develop an elective for early childhood students that encouraged students' deep active engagement in learning. The plans included: 1) open choices in the learning topic; 2) a project-based process; 3) informative learning assessments; 4) a work-shop mode of teaching that focused on play, hands-on activities and collaborations. As a result of the plan, the course of picture books commenced as part of the institutional reform.

The research team was purposefully formed for this project. Researcher one and researcher two were both involved in the development of the picture book elective. While they did not teach it, they knew the structure and content so there were insider perspectives in this research. Researcher three is a university academic in Australia who knew nothing about the course. The link between insider's real life knowledge and outsider's objectivity provides particular quality to this research. Within this context, research is viewed as a complex way of knowledge collaboration. This means that the process was constructed through the

recognition of commonalities and differences among the researchers. According to Kerstetter (2012) due to the challenges and benefits associated with either insider or outsider researchers, an insider-outsider research team contributes many positive outcomes to research.

Our participants were the course lecturer and the third year early childhood education students (3 males and 28 females) who took the course from 2018 to 2019. The lecturer is female and has been teaching in the institution for six years. Students' average age is 21.65 years.

Research ethics

Ethics approvals for the research was granted by the Research Ethics Committee at Deakin University (approval number HAE-19-233) and Changchun Normal University. A detailed information letter specific to involvement was provided to all the participants, inviting them to participate voluntarily and give consent in writing with the right to withdraw anytime. In order to maintain privacy and confidentiality, pseudonyms were used in this paper. At the commencement of each interview, the lecturer and students were clearly informed of their right to skip an answer, would they be unsure about the question or concerned about their response. The Australian researcher had implemented several projects in China and was very familiar with the Chinese research protocols and she was supportive of any choices made by the participants during the interviews, including silence, a simple smile or questioning back. All efforts were made to ensure that the participants were not in a position that they felt coerced to participate in the project.

Data collection

Data were collected in three forms: an individual interview with the course lecturer, a questionnaire survey with all 31 students in the course, and an individual interview with 6 students who volunteered to talk further about their learning in the course. Data were collected in Chinese and later translated into English by the research team. As part of the ethical procedures, course documents and student learning documents were also obtained. The use of different sources of information was considered an important practice that allowed us to obtain richer and wider information when supported by detailed analysis and questioning of the data (Johnson & Christensen, 2019).

Before the main study, all the methods were piloted with a lecturer and two students in another course during which the researchers refined these instruments in order to ensure validity. The main study had three closely interrelated steps.

Step one (the course, teaching, and student group): a collection of course documents and a semi-structured interview with the course lecturer. The lecturer was asked about the purpose of the course, the content, teaching approaches, positioning of the lecturer and students in the course, assessment tasks and the lecturer's perspectives of students' learning outcomes and associated successes and challenges. The interview was audio recorded.

Step two (general information about students' learning): a questionnaire survey with all the 31 students. Survey questions targeted patterns of students' perspectives about their learning in the course. Students' own roles in the study, the role of their lecturer and their learning experiences, strategies and difficulties were asked. A range of question types was used. Table 1 provides a sample of questions included in the questionnaire.

Table 1

Sample items from the student survey questionnaire.

Sample items:
• Open question: e.g., what do you think is the role of your lecturer in this class? • Closed question: e.g., did you study after the class? • Rating question: e.g., how much do you agree with this statement? *What matters is not what you have learned but how you have learned*' a) strongly disagree; b) somewhat disagree; c) neither agree nor disagree; d) somewhat agree; e) strongly agree. • Multiple choice question: which of the following styles of learning do you like? a) self-reading and thinking; b) peer experience; c) small group; d) teacher instruction; e) hands-on; f) memorizing and repetitive practice.

Data in the first two steps were analysed and emerging findings guided the design of the next step (Johnson & Christensen, 2019). A classroom observation also took place before the next step in order to know what happened in the class. While observations did not generate data, they informed researchers of the class dynamic and helped shape the interview questions in step three.

Step three (detailed information and examples about students' learning): individual interviews with six students and a collection of their work samples. All the 31 students were asked to self-nominate to participate in the interview and we recruited all the six nominated participants. They were females aged 20-23. Each interview was carried out for an hour by researcher three, an external person, whom students did not know, and it was a conversation-based interview. The researcher talked to each student in order to find out what she learned, how she experienced the course, her understandings of the meaning of the concepts, how she developed the understandings, what relational system she created and whether and how she applied these understandings in other contexts. The interviews were audio recorded.

Data analysis

The notion of DAL was applied in the data analysis. Three key dimensions in DAL were used: relational learning, meaning seeking and knowledge transfer. Specifically, we looked in the data to identify what and how students brought to the course their own network of resources, how they learned the content, and examples and ways in which they transferred the experiences. We were also trying to understand how students perceived themselves as learners and the ways in which the picture book elective and their general learning environments enabled or constrained these perspectives. Data analysis was conducted separately for the interviews and questionnaires, but results were combined at the final stage to confirm emerging themes. The course documents and student learning documents were used to support our analysis of the interviews and questionnaires to help, for example, better understand the lecturer and students' descriptions.

Interview data analysis was implemented in two ways: analysing the individual data and looking across all the three sets. We used a 'bottom-up' approach by familiarizing ourselves with each set, developing an initial coding framework, and forming the categories (Johnson & Christensen, 2019). Any data in relation to relational learning, meaning seeking and knowledge transfer were defined as a code (e.g., 'searching for other picture books online' or 'learned to be more observant from this course to watch for details' were considered useful data). We then put similar codes into categories, followed by a process of grouping categories into themes. During the data analysis, each researcher did

this independently. We then shared and discussed for an agreement. An example of interview data analysis is presented in Table 2.

Table 2

Example of the interview data analysis.

Data examples	Codes (interviewee no, line no)	Categories	Themes
It's a long process of understanding how to make a picture book. I wanted mine to be very special so really worked hard. I learned all that the teacher taught in the class and then searched for readings, talked to people for help and I used internet a lot. All I wanted is how to make a good picture book.	(Long process of understanding) 2, 93 (For making a special picture book), 2, 94 (Learning class content) 1, 76 (Using readings, people and internet to help learning) 1,76 (Want to make a good picture book) 1, 77.	Learning process taken to learn everything about making unique and special picture books. Class content is the main focus of learning for making picture books.	Seeking meanings about the course in order to make good, unique or special picture books.
Making a unique picture book means knowing everything about it. In this class, we learned many concepts, including, the book covers, illustrations, themes, quality content and how to act out the play. There were lots of thinking, reading and talking with people to find out about how to make a book that is useful for children of different interests. It is a process of trial and error.	(Learning to know everything about making picture books) 4, 89. (Learning many concepts related to picture books) 4, 90. (Thinking, reading, talking to people) 4, 91. (Making a picture book useful for children) 4, 91. (Trial and error process) 4, 92	Making a unique book as the main goal of learning	

The questionnaires were analysed based on the two research questions. Summative content analysis was used that involved counting and comparisons to determine the number of responses for each question, creating a space to understand the strength of the responses (Hsieh & Shannon, 2005). Questionnaire results were then combined with the interview results to triangulate the interview themes and generate confirmatory findings. For example, the response of 'self-reading and thinking' was integrated with the theme of seeking meanings in the course. An example of questionnaire results is presented in Table 3.

Table 3

Questionnaire data summary of students' deep active learning experiences and related constraints.

Responses	Number of responses (n=31)	% of all the responses (%=100)
DAL experiences		
Self-reading and thinking	31	100
Peer experience	30	97
Seeking teacher support in and out of class	26	87
Internet and other technical means	31	100
Practice, trial and error	20	67
Previous knowledge and skills	18	60
Making other picture books	8	27
Knowing how to create stories	9	29
Knowing how to tell stories to children	4	13
DAL constraints		
Preference to follow teacher instruction	21	68
Only study what is needed for the course	28	90
Fear of risks, difficulty avoidance	24	77
Learning results focused	31	100
Fear of failing	31	100

Findings

Results from the data revealed that students and the lecturer agreed that DAL was happening but there were constraints in practice. In the following, the views expressed by the participants are further discussed in relation to two themes: DAL as an experience and DAL as a difficulty, based on the two research questions. The names used to refer to the participants are pseudonyms in order to ensure anonymity.

DAL as an experience

Seeking meanings of the course in order to make good, unique and special picture books

DAL requires an understanding of what is learned through finding the underlying meanings of the content (Matsushita 2018). When asked to describe the meaning of the course, participants in both methods (100% interviews and 80% questionnaires) used the phrases such as "analysing quality stories", "creating stories" and "producing picture books". The study also found these phrases to be prevalent in the lecturer's description.

The picture book is a multimodal resource characterized by many forms and genres (Early and Yeung 2008, p.300). In the eyes of the lecturer,

> *… The whole meaning is to make good and unique books for the right purposes in multimodal ways. We work on every part of the books, including images, words, episodes, and digital tools to make multi-dimension reading resources that suit preschool children.*

In common with Early and Yeung's project (2008), this picture book course also featured a learning experience in which the students were encouraged to actively seek meanings of the content. Students' experience was well illustrated in the iwnterviews. The following is an example from Lumei:

Making a unique picture book means knowing everything about it. In this class, we learned many concepts, including the book covers, illustrations, themes, content and how to act out. There were lots of thinking, reading and talking with people to find out about how to make a book that is useful for children of different interests. It is a process of trial and error.

Quanquan shared with us the 4D pop-up picture book she made (Figure 1). She felt "very proud that all the efforts paid off and a special book was created". To understand how to make such a picture book, Quanquan "read lots of picture books, watched many video clips and tried and changed them in numerous ways".

Figure 1

Example of a picture book.

The answers from the student questionnaires also provided evidence about what they did to seek meanings of the course so they could create a unique picture book (Table 4):

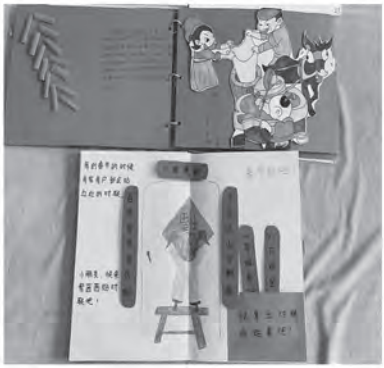

Table 4

Activities	*Percentage*
Self-reading and thinking	100%
Talking to people	85%
Trial and error	30%
Study groups	65%
Internet	80%

Building learning networks for successful completion of the course

In the original description of DAL (Marton and Saljo 1976), multi-layered neural network was referred to as the main component of the concept. The idea that learners' network of information contributes to their learning is also widely present in the educational scholarships (Stewart 2006; Warburton 2003).

A recurring theme in the students' data was the construction of learning networks. As shown in their questionnaires, through the means of "WeChat" (virtual chat group) (95%), "regular meetings after the class" (78%), "texting or phone calls" (70%), "book shops" (60%), "library" (68%) and "online resources" (65%), students built networks for their learning in the course. Participants' descriptions of learning networks frequently related to their aim to complete the course. This was evidence from Wanqiu, who said in the interview that "support from other resources was necessary for the successful completion of the course".

Among all of their learning networks both the questionnaire and interview participants demonstrated a preference for the lecturer and other students. Questionnaire participants were asked "what and who did you use to help your study?", with the highest response being "the lecturer", at 90%. This preferential average is slightly higher than the response of "classmates", which is 80%. 60% of students read books for additional information while 65% drew on technological devices, 45% used their previous knowledge and skills (e.g., drawing) to help with their learning in the course.

During her interview, Wenxuan talked about how she involved classmates as learning networks and together they built further learning networks (e.g., internet information, readings). In the following statement, Wenxuan illustrated Chan's (2010) point that "when provided with learning opportunities, they [Chinese learners] are able to develop sophisticated notions of learning and collaboration" (p.201). She continued to say:

> *Although I am not naturally a collaborative learner, I'm grateful that this course encouraged us to work with others. Collaboration with others was not simply doing the work. We had surprisingly discovered our talents. We shared readings, ideas and network information we each found. Without that, I could not have completed the course so well.*

Limited practice to transfer learning

In keeping with the existing conceptualization of DAL (Bacon & Stewart, 2006), data were analysed in terms of whether and how students applied the concepts to other situations. Notwithstanding the efforts to seek meaning and build learning networks in the course, few students reported having used the concepts beyond the class.

A total of nine students (35%) answered "yes" to the questionnaire item "have you ever tried what you learned in this class in other situations?". "Making other picture books", "creating stories", and "telling stories to children" were given as the answers.

In the student interviews, we noted that making use of the learning concepts outside the class was not what they were encouraged to do. Xinghong stated as follows, and her points were echoed by other students in the interviews:

"We paid all the attention to the course work so did not think about how the concepts, for example, designing a project could be used in other places".

The lecturer also did not consider encouraging students to transfer the course content. While the importance of students' general capabilities (e.g., analysing readings, designing projects and acting out the play) was accentuated, their learning was constructed primarily for the content and goals of the course. The only related point the lecturer made was "what we learned in this course could benefit their learning in other studies and in their work".

Constraints and difficulties

The importance of learning results

The perceived importance of the learning results in their studies was uniform across all the student groups (100%). While "the course emphasizes the learning experience" (lecturer), students still cared a lot about what mark they could eventually get. According to Lumei: "the only assessment we had in this course is the picture book. Because it was marked, we had to try very hard".

Wanqiu captured some of the reasons why results were important:

> *"Good marks help with almost everything for example getting a good job or continuing the study. My parents also tell me to get good marks. To get a good job, we must have good marks here and use them to attract future employers".*

There was a broad consensus (100% interviews and 85% questionnaires) that the scariest thing in their study was to fail a subject. Xinghong explained that "If I don't pass, I cannot graduate. I'm scared of that. All these years are wasted".

There was also a shared perspective from the interview data that obtaining good results involved some specific skills and practices, such as "keeping lecture notes" and "following the teacher". If these practices were described as surface learning (Matsushita, 2018) and the participating students applied them in their study to achieve good study results, it was possible to infer that the focus on study results made it difficult for students to use DAL approaches.

Workload and limited study time

While the picture book class did not have examinations and the experience was pretty relaxed (lecturer), what was expected of students from other courses and the related workload made an impact on their learning in the picture book elective. Students in the interviews saw this as a remarkable constraint on developing deep active approaches in their study. As Hanwei stated,

> *…we have classes every day, including weekends. On average, we take about ten subjects each term. There is no time to spend on any particular subject. All we try is to do what is asked so as to complete the work and pass the tests.*

A further shared concern was the school environment. The policies and rules, for example, that the "library is only accessible during the daytime", and the "light is turned off at 10 pm" have led to difficulty for some students to continue the study after the class (Xinghong). In an environment where the majority of students stayed in the school accommodation, time was found to be limited for the amount of work they had to complete.

In the light of these points, it is perhaps not surprising that many students chose not to approach their learning through 'deep learning' principles. This was evident from Quanquan's description: "We are very busy. Quite a lot of things were done in a rush".

In a structured system of education, it is apparent that there is a room for students' deep and active approaches to learning. Some arrangements at the participating school such as turning off the lights at 10pm might be unique. Nevertheless, the emphasis on learning results and the heavy workload in students' study is supported by other empirical work in the Chinese context (Lee & Song 2016).

Passive learning and accustomed style

The lecturer and many students (65% questionnaires and 100% interviews) mentioned points of "passive", "keeping safe", "avoiding failures", "using comfortable ways of learning", when discussing preferred learning styles of students. This can be reflected in the lecturer's statement:

> *Most students hold an attitude that 'I listen to you', so they just do what is told and are very passive.*

The interview data provided several reasons why students were passive learners. First, "we need to learn lots of subjects. It is about quantity but not quality, so we just make them through" (Wenxuan). Second, "I am used to listening to teachers. It is safe and comfortable" (Wanqiu). Third, "I don't really know what is right or wrong and what is useful. In this study, we don't have placements until in the final year. So, I just do what is provided because I do not have practical experiences" (Quanquan).

The findings that students are passive and stay in their comfort zone appear to be illustrative of a surface approach to learning (Wong & Yuen, 2012). However, a DAL experience could only be achieved by the improvement of students' learning programs, course structure and teaching practices (Yuan & Zhang, 2017). Although students were positive about the learning environment in the picture book course, they were not privy to the learning constraints in the institution.

The place of current learning in students' career plans

In contrast to the relative consensus on what students should learn in the picture book course, there was more divergence on their plans for future careers. In the interviews, students differed markedly in their talks about what to do after the study. Only one student was said to "be an early childhood teacher". The other five respectively talked about their future plan as "doing a study in order to teach adults", "government work", "running a business", "teaching in high school" and "going to study overseas".

Not surprisingly, the extent to which the current study could contribute to their future lives was also uncertain. "Busy work and low pay in preschools" (Lumei) provided the major impetus for the students' plan to shift their careers. For this reason, what seemed to be happening is that many of them, while interested in the picture book course and had the capability to learn more deeply and actively, did not do so. This was illustrated by Hanwei's words: "I am quite confused about the future. I don't think we need to spend too much time on any subject. What I do is just to complete the study".

These students did not position themselves as early childhood teacher educators therefore seeing their current learning as irrelevant to their future. Considering this finding, the limited attention that their lecturer and the course gave to raising students' awareness of the value of the study for their future could be another reason why the students did not take seriously their current learning.

Discussion and implications

Students' learning in a purposefully designed picture book elective is an important topic to explore given the current policies in China that emphasize students' choices and active engagement in learning in higher education (Chinese Ministry of Education, 2019; Lee & Song, 2016). The picture book elective was designed as a reform in the participating institution, whereby students were encouraged to make their own choices and learning directions so they could learn deeply and actively. Recent studies have shown picture books being used as a multidimensional project that strengthened meaningful learning participation (Pitkänen-Huhta & Pietikäinen, 2014). The driving force

behind this process was not only learners' capabilities but also their motivation and a strong desire for learning (Early & Yeung, 2008). In contrast to the traditional approach of content transmission, there were clear opportunities in the course to develop students' independence in line with the national and university policy guidelines (Chinese Ministry of Education, 2019).

What we found in our study is that students had some DAL capabilities. Most of them were able to seek meanings of the course content and build useful learning networks. However, it was also evident that despite their potential to be deep active learners, DAL was a difficult practice. There were issues in relation to students' personal values, career plans as well as environmental influences.

At first glance, participating students appeared to be positive about the picture book course and their associated learning. However, central to their views is the notion of study results. DAL seemed to be only applied to complete the study and produce good marks, which was considered to be able to lead to career opportunities. Students' learning experiences were bound to the way in which they had experienced their previous education, perceived the present study, and planned their future career, as well as the learning activities that were enabled or constrained by the larger social and educational environment beyond the picture book class. In the process of understanding students' experience, it was interesting to see how their learning swirled around the tensions between 1) learning results and processes, 2) students' accustomed styles and the aims of the educational reforms that encourage active learners, 3) and students' perceived value of the present study and their aspiration for the future.

A recurring theme in the data was that early childhood teaching was not a desirable career. There was strong evidence about students' intention to change the career. Early childhood teachers' shift in their career choices was also found in other countries (Wilinski, 2018). A number of variables such as students' own aspirations and future goals were considered powerful modifiers in this shift. In a comparative investigation into the career choice motives of early childhood teachers in four European countries, Weiss et al. (2018) reported three reasons why teachers left their jobs: "professional images, traditions and training structures" (p.501). Students' discussion in the current study

roughly mirrored Weiss et al's reasons. Their intention to change their careers was also attributed to their perceived image of early childhood education, students' aspirations for higher wages and the general learning structures of the programme they were studying under. The issue that early career teachers leave their profession has similarly compelled Australian researchers to consider some essential foundations upon which preservice education is based. Their studies have highlighted the fact that it is hard to keep early career teachers in their profession unless sufficient attention is given to the role of relationships in learning to teach and doing teaching in preservice education (Kelly, Cespedes, Clara & Danaher, 2019). Appropriately arranged teaching practice is also increasingly recognized as a fundamental basis for preservice education in other Asian countries, such as Indonesia (Raith, 2017).

This finding is especially important in the context of young adult students as they have the past life to draw on, present experience to consider and future goals to achieve (Baran, 2019). To some extent, we agree with Chan and Rao (2010) that Chinese students' learning is a diverse phenomenon. As shown in this research, the realities of our participants' experiences were complex. According to Baran (2019), students' motivation is crucial in adult learning. Notably absent in the findings of the current study is just the students' motivation to learn. It was the result that they focused on. Most of their attention was paid to completing the study, coping with the heavy workload and obtaining good marks. If deep active learning is a process of learning beyond teachers and classes (Peters, 2018), it is reasonable to say that the picture book course did not achieve the aim of developing deep active learners.

Where does the finding of this study leave us, and where does it point? Matsushita (2019) argues that DAL makes connections to students' previous, present and future lives. A key point from Pitkänen-Huhta and Pietikäinen's (2014) study of picture books is "the circulation of the participatory practice beyond the classroom" (p.14). The current study showed that the picture book class offered a way to incorporate learner-oriented goals in a context of heavy study load, strict organizational structures and an undervalued future profession. Issues therefore need to be resolved between what happened in the class and what happened outside.

The underlying belief among many learners in this study is that early childhood education is not a desirable career. While they were interested in the picture books, they could not sense the value of their learning. On the level of a single course, it is difficult to change students' career choices. Beyond that question, deep active practice raises issues related to a deep meaning of the class content and the transferability of what is learned (Matsushita, 2018).

The research suggests that students' experience was constrained by a range of factors, including those from themselves, the class, the institution and the profession. Making curriculum reforms in a single class is clearly insufficient. Nor is it enough to have the policy support. The institution needs to adapt curricula, structures and organizational conditions to a real student-centred educational environment. Chinese society needs to give importance to the work of early childhood teachers. The current research has revealed an unfortunate situation in which students planned to leave the profession.

Conclusion

From the perspective that DAL enabled both knowledge construction and knowledge application, the study reported in this paper involved an investigation into the learning approaches of young adults in a picture book course at a Chinese university, a course that encouraged students' deep and active explorations. The findings indicate that students' abilities to seek the meaning of the learning content and build a network of resources are among the most valuable resources that teachers could tap into for the development of deep active learners. However, students faced challenges in implementing DAL experiences. These challenges were illustrative of the tensions between study results and learning experiences, students' accustomed learning styles and educational reforms, and the value of the present study and students' career plans.

Whilst the study offers particular insights into students' experiences in an elective in a Chinese institution, it is important to acknowledge that a small sample size informs the study. There is diversity within Chinese higher education, and we hope this study will inform an ongoing discussion about how to implement educational reforms in the learning of young adult students.

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