

Original citation:

Robin Bell, Peng Liu, (2019) "Educator challenges in the development and delivery of constructivist active and experiential entrepreneurship classrooms in Chinese vocational higher education", Journal of Small Business and Enterprise Development, Vol. 26 Issue: 2, pp.209-227, <https://doi.org/10.1108/JSBED-01-2018-0025>

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Educator Challenges in the Development and Delivery of Constructivist Active and Experiential Entrepreneurship Classrooms in Chinese Vocational Higher Education

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Journal of Small Business and Enterprise Development (2019), Vol. 26, No. 2, pp. 209-227.

[doi: 10.1108/JSBED-01-2018-0025](https://doi.org/10.1108/JSBED-01-2018-0025)

Abstract

Purpose

The purpose of this research is to investigate the perceived challenges that Chinese vocational college educators face in developing and delivering constructivist active and experiential entrepreneurship education.

Design/methodology/approach

Qualitative data were collected from twenty-four focus groups of educators who had been tasked with embedding constructivist entrepreneurship education into their teaching and curriculum, at four different vocational colleges situated in four different provinces in China. The data was coded and analysed for emerging themes using a process of bottom up thematic analysis.

Findings

A range of concerns were identified from the focus groups and these could be divided into five main challenges, which were the role of the educator in the constructivist learning process and their ability to control the process; the educators' perceived student reaction to the process and their engagement with it; the time and technology required to deliver the process; the link between constructivist learning and industry; and the educators' perception of the requirements to meet internal expectations.

Research limitations/implications

This research explores the educators' perceptions of the challenges they face in developing and delivering active and experiential constructivist entrepreneurship education. Whilst these concerns may impact how the educators' approach the task, these concerns are only perceived, as the educators' have not yet implemented the introduction of constructivist entrepreneurship education, when other challenges may become evident.

Originality/value

Encouragement by the Chinese government to develop and deliver constructivist active and experiential entrepreneurship education has resulted in a number of tensions and challenges. Entrepreneurship education in China is still relatively young and under researched and this research contributes to the literature by exploring the challenges that educators face in developing and delivering constructivist entrepreneurship education in Chinese vocational colleges.

Keywords

Entrepreneurship Education; Vocational Education; Constructivist Education; Active Learning; Experiential Learning; China

Background

It was in 1989 that the concept of entrepreneurship was officially introduced to China which eventually led to the Ministry of Education (MoE) designating nine universities for the introduction of pilot entrepreneurship courses in 2002 (Lin and Xu, 2017). The Chinese government has actively promoted entrepreneurship education since 2002 (Zhou and Xu, 2012), often through MoE directives and preferential policies. This promotion is aimed at addressing two main issues (Anderson and Zhang, 2015; Tang et al., 2014). The first issue is the structural unemployment brought about through the massification of higher education (i.e. a move from an elite to a mass education system) and the resulting increased number of graduates in the labour market that it has produced (Anderson and Zhang, 2015; Zhou and Xu, 2012; Li and Liu, 2011). The move to a market economy has meant that the government is no longer able to guarantee all graduates a job (Tang et al., 2014). The second issue is the need to stimulate the economy now that the competitive advantage of being a mass producer of competitive goods, on the back of a cheap and productive workforce, may be on the wane (Kriz, 2010). The slowdown in economic growth has aggravated the graduate unemployment situation as the recruitment demands of firms have decreased (Tang et al., 2014).

Entrepreneurship can be seen as a critical contributor to both economic growth and development (Singer et al., 2015) and is widely regarded as a critical economic development strategy for both job and wealth creation (Nyadu-Addo and Mensah, 2018). Thus entrepreneurship education is seen as a way of both stimulating the economy and reducing the structural unemployment. Zhou and Xu (2012) highlight the way in which the Chinese Government has actively promoted entrepreneurship education in China over the period 1997 to 2011, culminating in the formation of a national advisory committee in 2010 and new policies designed to boost employment through entrepreneurship.

It is argued that in China the term entrepreneurship is viewed in terms of business start-ups (Zhou and Xu, 2012) and can provide both self-employment and the creation of new jobs (Tang et al., 2014). Not all graduates go on to start up their own businesses and for those

graduates the development of enterprising skills, many of which are considered entrepreneurial in nature, will make them more employable (Bell, 2016).

On this basis entrepreneurship education has been encouraged in China and has incorporated the educational pedagogical reforms as outlined in the Outline of the Curriculum Reform for Basic Education (MoE, 2001). The MoE (2001) directive talks of a 'shift from an over-emphasis on passive learning, rote memorisation, and mechanical training to one that promotes students' active participation, independent enquiry, practical ability, problem-solving, skills and teamwork' (MoE, 2001). In addition, other recommendations have included that educators should incorporate activity based learning to encourage learning by doing and should combine real life situations into classroom teaching. Although the pedagogical approach to this reform is not explicitly mentioned, Chinese scholars and educators have identified the dominant theory as that of constructivism (Tan, 2017).

However, Anderson and Zhang (2015) highlight the fact that although entrepreneurship education is well established in many countries around the world (Fayolle, 2013; Kuratko, 2005) it is still relatively new and novel in China. Indeed, when compared to the well-developed business curricula within higher education in China, the entrepreneurship education discipline is still a relatively young and unstandardized domain within the business education field (Lin and Xu, 2017). China still has a long way to go before it is available at all levels of study and is established as a mature area of study (Zhou and Xu, 2012). One obstacle to this is a lack of qualified faculty implementers of entrepreneurship education (Lin and Xu, 2017).

One of the results of China developing into the so called 'world factory' of manufactured goods over the last several decades has been an accompanied burgeoning increase in vocational education (Koo, 2016). The Chinese Ministry of Education issued the Plan of Constructing Modern Vocational Education System (2014-2020) proposing a target of 14.8 million students in tertiary vocational education by 2020 (MoE, 2014). Despite this, there is a lack of research in this area in relation to the introduction of constructivist active experiential learning as promoted by the Chinese government. This research focuses on the challenges that vocational educators face in the introduction of entrepreneurship and

enterprise constructivist approaches in higher vocational colleges in China. Thus this research extends into the under researched domain of vocational education. The next section will consider the constructivist pedagogical approach in more detail.

The Constructivist Approach

Constructivists argue that individuals play an active role in their knowledge construction which is made rather than discovered (Phillips, 1995). Learning is achieved when individuals make sense of new information by filtering it against their past experiences and existing knowledge to build a new knowledge framework and understanding (Snowman and Biehler, 2005). This is in contrast to behaviourist approaches that are based on the learner passively acquiring knowledge from an objective world and external reality (Lowenthal and Muth, 2008). The social constructivism approach, often ascribed to Vygotsky (1978), focuses on knowledge construction within the social environment.

Constructivism is a theory of learning that lends itself to a variety of active learning approaches, which include problem based learning, inquiry learning and experiential learning (Kirschner et al., 2006). Bonwell and Eison (1991) describe active learning as students doing things and thinking about the things they are doing. Active learning is aligned or based on the constructivism philosophy of learning and emphasises how the learner develops a new deeper understanding by taking part in the activity, discussing, reflecting on the experience and making sense or new meaning out of the activity. Importantly, the learner takes charge of the learning whilst the tutor acts as a coach or facilitator. The aims of constructivist learning include the development of reasoning, critical thinking, and the understanding and application of knowledge (Driscoll, 2013).

The educator's role includes the facilitation of reflection and discussion on experiences in a trusting environment, to act as a catalyst in problem based learning to create opportunities for reflection, to act as a coach or facilitator, and to assess the learners' learning through reflections in portfolios, analyses or work experience and interviews, where learners explain their learning outcomes.

Traditional teaching based on objectivism leads to assessment through testing the delivered content, thereby measuring the success of the learning process. However, in the constructivist approach, the learning process of gaining knowledge is as important as the product. As a result, assessment strategies include student observation, outputs and portfolios developed by students and student reflections of the learning process. Student reflection as part of HE assessments is increasingly recognised and common across disciplinary fields as part of course assessment requirements (Ryan and Ryan, 2013).

It is essential that the process is constructively aligned (Biggs, 1996), that is the instruction, learning, and assessment methods are consistently aligned to produce effective higher-order learning. In addition, authenticity i.e. the degree to which educational activities represent the reality and complexity of real life situations (Gulikers et al., 2005), is important and can provide deep learning, increased motivation, engagement and improved learning outcomes (Macht and Ball, 2016). Thus activities that encourage students to practice the same skills and knowledge that are used and required in the workplace are valuable as authentic activities (Fook and Sidhu, 2010). Kassean et al. (2015) found support for real world experience, action, and reflective practice, to engage students in authentic learning to promote the entrepreneurship education learning process.

Constructivism and Entrepreneurship Education

It has been argued that “constructivist learning is one of the stepping stones to developing an entrepreneurial mind” (Assudani and Kilbourne, 2015 p.65). Since constructivism emphasises how individuals create meaning from new knowledge, it can offer a better explanation of how knowledge is created within the fast-moving and dynamic context of entrepreneurship.

Korsgaard and Anderson (2011) have argued that entrepreneurship is both a social and economic process in which networking and social interactions play a prominent role. This view suggests that a social constructivism approach should underpin entrepreneurship types of education and that approaches rooted in constructivism are superior for entrepreneurship education (Balan and Metcalfe, 2012; Biggs, 1999), within which experiential learning is particularly efficacious (e.g. Fuchs et al., 2008; Honig, 2004).

Experiential learning can be defined as a participatory form of learning involving learners in mental processes to synthesise information in an active and immersive environment (Feinstein et al., 2002) and can provide the opportunity to gain practical experience and knowledge and a link between academia and the work place (Kong and Yan, 2014; Yang and Cheung, 2014). It can also help in the formation of the graduate's so called 'graduate identity' (Hinchliffe and Jolly, 2011; Holmes, 2015), which some researchers (e.g. Jackson, 2016; Holmes, 2013; Tomlinson, 2012) consider to be an important construct in terms of employability.

Entrepreneurship is a complex process (Anderson and Starnawska, 2008) which involves different skills at different stages (O'Connor, 2013). Heinonen and Poikkijoki (2006) argue that the special challenge that entrepreneurship education faces is the facilitation of learning to support the entrepreneurial process, which traditional approaches do not do. Zahra and Welter (2008) argued that whilst lecture-based education has a place in the entrepreneurship curriculum, the training of future entrepreneurs requires interactive and action-orientated approaches. It has been claimed that active engagement can improve knowledge retention, help develop problem solving skills and result in an increase in motivation for future learning (Bonwell and Eison, 1991; Rhem, 1998; Snyder, 2003). Furthermore, whilst lectures are a useful vehicle for imparting knowledge, it has been argued that they do not lead to thought or attitude adjustment and the development of behavioural skills (Grimley et al., 2011). Active engagement in an activity, together with enjoyment of the experience, can result in a significant increase in motivation and learning (Elam and Spotts, 2004; Karns, 2005).

Jones and Iredale (2010) opined that entrepreneurship education should include experiential learning, creative problem solving, and learning-by-doing to engage students. Other researchers have called for learning-by-doing activities in groups and networks (Rasmussen and Sorheim, 2006). As a result, constructivist active learning approaches, including experiential learning approaches, are becoming increasingly common in supplementing traditional educational approaches in the development of entrepreneurial and enterprising students. Experiential learning techniques have been used in venture creation programs and entrepreneurship centres and incubators (Lackéus and Williams Middleton, 2015). Active experiential entrepreneurship education has been found to be

effective in both traditional higher education and vocational higher education (Bell and Bell, 2018). Whilst a range of approaches have been cited as active experiential approaches, some may be more 'authentic' and may therefore offer the potential of being more effective as learning opportunities.

However, it is necessary to find a balance between approaches underpinned by traditional behaviourist and constructivist learning. Traditional approaches are important in providing the conceptual frameworks against which students can analyse and understand their own experiences in the real world (Jack and Anderson, 1999; Peltier and Scovotti, 2010). The use of multiple pedagogical approaches is an important design principle in the development of entrepreneurship education (Lourenco et al., 2013).

Constructivist approaches however, are not without criticism. Kirschner et al. (2006) have argued that such approaches are ineffective if they lack adequate guidance during instruction. The advantage of such guidance only decreases when learners have sufficient knowledge of their own to build on, which may disadvantage novices. This criticism is countered by Hmelo-Silver et al. (2007) who argue that such potential difficulties in problem-based learning and inquiry learning can be countered by scaffolded guidance. Educators can play a significant role in scaffolding the process by guiding learners, encouraging them to think deeply and leading them through the questioning process (Hmelo-Silver and Barrows, 2006). Mayer (2004) warns against the use of constructivist teaching techniques, which only require learners to be behaviourally active and not cognitively active during the learning process, whilst Clark et al. (2012) highlights that cognitive activity which may appear to be passive is the key to learning.

This research is focused on the introduction of constructivist approaches in entrepreneurship education within higher vocational colleges in China, to investigate the perceived challenges that the educators feel that they face. China has a long established and preferred preference for a didactic pedagogy based on transmission, knowledge reproduction and content mastery (Tan, 2017). Examining these perceived challenges can help provide important insights into the concerns of educators and the development of strategies that may help to overcome them. As Vanevenhoven (2013) highlights, evolving teaching challenges in entrepreneurship education can include students learning at different

rates; being motivated differently; coming with different knowledge levels and experiences; and having different levels of resource network access. Similarly, educators have different discipline specialities, different capability levels and varying resource networks. These factors may all play in to the challenges that educators perceive they face.

Research Aim and Contribution

The encouragement by the Chinese government to develop and deliver education using active student centred education approaches has resulted in a number of tensions and challenges, some of which stem from the background of a traditional didactic approach to education based on transmission, knowledge reproduction and content mastery (Tan, 2016; Tan, 2017). There has also been a push to deliver entrepreneurship education using constructivist educational approaches throughout the Chinese education system, in order to stimulate the economy and alleviate unemployment (Anderson and Zhang, 2015; Tang et al., 2014). However, the entrepreneurship education discipline in China is still relatively young and under researched (Lin and Xu, 2017). Previous work has discussed the challenges in implementing constructivist educational approaches in Chinese primary and secondary schools (Tan, 2017) and how Chinese university students have adapted to active learning (Zhao et al., 2017). However, a gap in the literature exists in exploring the perceived challenges that Chinese vocational college educators' face when looking to develop and introduce constructivist entrepreneurship education. This study meets calls for further research into entrepreneurship education from the educators' perspectives (Neck and Corbett, 2018).

This research aims to investigate and explore what challenges Chinese educators perceive they face in implementing a constructivist approach in the delivery of entrepreneurship education in their higher vocational colleges and importantly, why they perceive these as challenges. Having a critical understanding as to the challenges Chinese vocational college educators face when tasked with implementing constructivist entrepreneurship education can help in overcoming and mitigating the perceived challenges. It can also help to direct and support professional development training to develop an adequate level of trained

entrepreneurship educators, the shortage of which is evident even at the higher levels of the education system in China (Lin and Xu, 2017).

Methodology

Focus Group Data Collection

Qualitative data were collected from focus groups with educators who had been tasked with embedding constructivist entrepreneurship education into their teaching and curriculum. Focus groups capitalise on the discussion between participants and use the group interaction and discussion as part of the method (Kitzinger, 1995). It has been suggested that focus groups are useful for exploring what participants think and excel at uncovering why participants think this (Morgan, 1988). This research is interested in understanding what challenges educators perceive exist in delivering a constructivist entrepreneurship classroom, and exploring why they think this is the case. It is from understanding why the educators think this is the case, a more holistic understanding of the situation and suggestions as to how the challenges could be mitigated or overcome can be put forward.

One of the main strengths of using focus groups for data collection has been highlighted as affording comparison between groups (Barbour, 2005). Focus groups allow for the narrative investigation of shared and common knowledge (Hughes and Dumont, 1993). This research seeks to explore and compare educators' views from different colleges and subjects as to the common perceived challenges that exist in implementing a constructivist classroom to teach entrepreneurship.

All of the focus group participants had the same goal of embedding constructivist entrepreneurship education into their teaching and curriculum, so this made focus groups a suitable data collection tool, as they lend themselves readily to community of practice development situations (Barbour, 2005). It has been suggested that focus groups can generate more critical comments than interviews, which is important for this research, as it is seeking critical comments as to why the participants believe an entrepreneurship constructivist classroom might be challenging and difficult to implement. A strength of using

focus groups is the possibility for participants to develop ideas collectively from their own experiences (Du Bois, 1983), allowing this research to understand how challenges to implement constructivist entrepreneurship teaching are collectively seen from participants' own experience of being an educator.

Sample and Focus Groups Composition

A total of twenty four-focus groups were undertaken, across four different higher vocational colleges, situated in four different provinces in China. The four provinces represented South Western, Central and the Eastern region of China. The higher vocational colleges all covered a range of different vocational subjects, but all had slightly different specialisms. One thing which all of the colleges had in common was a desire to embed constructivist experiential entrepreneurship teaching across the whole college. Table 1 provides details of the location of the sample included in this research.

Table 1: Location and Breakdown of the Sample

Province	Region	Number of Focus Groups	Focus Group Sizes
Sichuan	South West	6	6, 6, 6, 6, 6, 7
Hubei	Central	6	6, 7, 7, 7, 8, 8
Jiangsu	Eastern	6	6, 6, 7, 7, 8, 8
Shandong	Eastern	6	6, 6, 6, 6, 7, 7

Each focus group contained between six and eight participants from a mix of subject areas. This was based on the recommendation by MacIntosh (1993) that the ideal number of participants in a focus group is usually six to ten. It was decided to mix the focus groups with participants from different subject areas, in order to open up the conversation about the challenges the educators perceived they faced, and not let existing dominant hierarchies and roles interfere with the conversation and discussion. Having hierarchy within focus groups may impact on the data collected (Kitzinger, 1995). Ethical issues are also related to the selection of participants within focus groups, as information can be provided to other focus group members who are at a higher level in the organization (Kitzinger and Barbour, 1999). Due to the nature of this research looking at challenges in implementing

constructivist entrepreneurship classrooms, which had been requested by the colleges' leadership, the hierarchy was kept the same in each focus group and the subject areas of participants were mixed to enable more open and honest discussion of the perceived challenges to support the reliability and trustworthiness of the findings. Barbour (2005) suggests that having focus groups where the participants are not too familiar with each other can improve the generalizability and transferability of the results, thus making the research potentially more impactful.

This research adopted a purposeful judgement sampling technique, whereby those judged to be best positioned to provide information which could help to achieve the research aim were asked to be a participant in the research. This purposeful approach allowed the selection of information rich research participants, who could provide information regarding the issues of central importance to the research (Patton, 2002). The focus group participants were all tasked with embedding constructivist entrepreneurship activities in at least one of their course curriculums, and had all been supported with reading about constructivist entrepreneurship education and attended a training workshop on constructivist education principles and entrepreneurship education. The workshop lasted two days and explored the goals of constructivist and entrepreneurship education, how to embed a constructivist entrepreneurship classroom into a curriculum, the roles of the educator and learner and provided some constructivist entrepreneurship activities. All of the focus group participants had limited experience in delivering and running a constructivist classroom. This ensured that all of the focus group participants were in a similar position and had similar knowledge and understanding of an entrepreneurship constructivist classroom. Whilst it is suggested participants should have different backgrounds and views (Kuzel, 1992; Mays and Pope, 1995), this enabled a similar base and platform for discussion of the challenges the educators perceived in trying to embed a constructivist classroom in their curriculum. As the primary purpose of focus groups is to stimulate discussion, focus groups should have enough diversity and shared knowledge within the groups to support this discussion (Elwyn et al., 1999; Kitzinger, 1995).

Conducting the Focus Groups

The focus groups were led by a moderator and started with the moderator providing a general introduction to topics of entrepreneurship and entrepreneurship education and constructivist teaching methods, to remind participants about the discussion topic. After this, group discussion was engaged by the moderator asking participants what challenges they perceived in trying to embed and utilize constructivist approaches to teach entrepreneurship in their own classes and courses. In each case they led to engaging discussion within the focus groups about the perceived challenges. When the perceived challenges were put forward by participants, the moderator would ask for the participant to explain why they perceived this as a challenge, if this was not already covered, before asking the other group members for their views. The moderator kept the conversation moving when the discussion dulled, by asking if there were other challenges perceived within the group and if there were other reasons why the challenges existed. The points discussed were recorded and then translated and transcribed into English by two translators who were specialists in business and education. The translations were then reviewed by the other translator to check conceptual equivalency (Brislin, 1970; Bhalla and Lin, 1987).

Data Analysis

The analysis of the data collected from focus groups is similar to the analysis of qualitative data collected by other methods (Britten, 1995; Mays and Pope, 1995). However, there is a need to indicate the group dynamic and the consensus within the group (Kitzinger, 1995). The data was coded and analysed for themes using a process of bottom-up thematic analysis (Braun and Clarke, 2013). Coding was undertaken to identify relevant sections of text and labels attached. The data was then collated and analysed to identify themes and sub themes. These were identified by bringing together fragments of views and experiences that would have been meaningless when viewed alone (Aronson, 1995). The themes and sub themes were generated adopting a data-driven inductive approach, rather than a pre-existing coding framework. The themes and sub themes were then reviewed for coherency to ensure each theme accurately reflected the meanings in the data set (Braun and Clarke,

2006). Finally, the themes were named based on the data and narrative contained within it. The next section presents the results and explores in more detail why participants thought there were challenges to implementing a constructivist classroom.

Results and Discussion

A wide range of concerns were expressed by the educators but these could broadly be described under five main headings or challenges (themes) which are, in order of the strength of consensus, the role of the educator in the constructivist learning process and their ability to control the process; the educators' perceived student reaction to the process and their engagement with it; the time and technology required to deliver the process; the link between constructivist learning and industry; and the educators' perception of the requirements to meet internal expectations. These will now be discussed using evidence from the focus groups, in the light of current literature and practice.

The Perceived Role of the Educator in the Constructivist Learning Process and their Ability to Control Learning

This challenge, which was the challenge with the greatest consensus, highlights several basic misunderstandings in the use of constructivist approaches and the constructivist classroom and can be subdivided into four distinct areas of concern (sub themes). These concerns reflect a perceived need for the educator to be the expert; the role of the educator as the knowledge purveyor; the desire and perceived need to test knowledge; and a concern over the maintenance of discipline when adopting constructivist approaches.

The perceived need for the educator to be the expert in the process was reflected in a series of comments which included;

I don't know all of the answers for all of the activities and problems. I need to know the answers to the problems before I can provide them to students.

It is difficult to set tasks I am not an expert in as I will not be able to help answer students' questions.

These comments highlight the concern that some educators have in not being in control of the learning process through the traditional transmission of objective knowledge approach. Social constructivism challenges this philosophy and pedagogy by adopting a subjective view of knowledge and arguing that knowledge is created by the individual in a social context under the guidance and mentorship of the educator. This change in approach can create tensions and some uncertainty. The roles of the educator in constructivism are changed as highlighted earlier and the process is student directed. Importantly, different students may produce different solutions to a problem and thus active learning approaches do not provide one standardized answer. It is this that makes this approach particularly suitable for entrepreneurship which is fast moving, unpredictable, complex and requiring of different skills and solutions at different times (e.g. O'Connor, 2013). In constructivism, the learning process of gaining knowledge is as important as the particular specific product. These changes can be difficult for educators who may very well not know the answers or even come up with the same answer or solution as the student, but must instead adopt the new role as facilitator in helping the student develop or create their own new knowledge. This does not necessarily reduce the status of the educator but changes their role in the process.

Leading on from this, the threat to the established role of the educator as the purveyor of objectivist knowledge led to comments such as;

The students value my knowledge and want me to teach them.

I want to make sure the student has all of the knowledge they require from my experience as an expert.

I appreciate it (constructivist classroom) has a place but it is important for me to share my knowledge with students so they can learn from my experience.

Chinese education has in the past been based on an objectivist view of knowledge, traditional behaviourist transmission teaching methods and assessment through testing, to achieve content mastery. The roles of teacher and student are clearly defined leading to a

passive style of learning. Chinese educators focus on the whole group needs and emphasise the connection of the individuals to the class (Jin and Cortazzi, 1998), and usually control the class strictly (Xie, 2010) with limited questioning and discussions (Chan 1999). Group leaders are often appointed when discussion groups are used and they announce the group decision (Chan, 1999). Chinese students prefer this passive style of learning (Van Auken et al., 2009; Rodrigues, 2005) which has been reported to stifle subsequent participation in Western style classroom discussion (Kim, 2006). Importantly, teachers must be seen with the authority to decide what knowledge should be taught and students readily accept this and rarely question or challenge the information within the educational setting (Chan, 1999). Thus the educator is perceived to be the expert, the purveyor of knowledge in a highly disciplined environment and the tester of acquired knowledge. It is for these reasons that constructivism can be seen as a challenge to traditional education. Importantly however, traditional teaching is still required and it is the integration of the functionalities of the two approaches which is vital (Lourenco and Jones, 2006).

The research also highlighted the desire and perceived need to test knowledge which constructivism appeared to threaten.

There is a need and requirement for tests to check students are at the right level.

Students need a test so we can check that they have learnt what they should and to make sure they take their learning seriously.

Students sometimes don't have the knowledge, so they can't do tasks or activities.

Traditional objectivist approaches to education measure learning through measurable change, that is through the measurement or testing of objective knowledge. This provides a measure of certainty that knowledge has been imparted. In constructivism however, the process leads to individual knowledge construction and importantly, the learning process of gaining knowledge is as important as the product. This is the basis of developing experiential knowledge through observation/reflection, forming new abstract concepts, testing in a new situation, and concrete experience (Kolb, 1984). Thus, different assessment strategies are used which include student observation, outputs and portfolios developed by individual

students and student reflections of the learning process. Student reflection also plays an increasingly important part in higher education course assessment.

Finally, several comments echoed concerns over the loss of the strict control over the classroom environment that has traditionally existed in the past.

The biggest challenge I think we face is the class sizes.

It is hard to do activities with such a big class, as it is hard to get all the students to do as they are told.

It is hard to set problems and student activities, as they (the students) are not willing to work for the answers, they expect me to tell them the answer.

These comments reflect the concern that some may have over the loss of strict control and status that the traditional approaches offered when compared to the constructivist approach. However, it is argued that authentic educational activities which represent the reality and complexity of real life situations is important and can provide deep learning, increased motivation, engagement and improved learning outcomes (Macht and Ball, 2016). The educator plays an important role in the design of the process and ensuring that participants can fully access the learning through scaffolding and mentorship as required.

The Educators' Perception of the Student Reaction to the Constructivist Classroom and their Engagement with the Constructivist Learning Process

This challenge was based around four main concerns, which were that students might not engage and learn what they should; lose interest and not learn; think the activities were just games; and the ability of educators to know when the students were learning and when they were just wasting time.

The concerns over the lack of engagement and loss of interest in the process leading to the participants not learning are reflected in comments such as;

The students might not engage as they should and learn what they should.

I am concerned what happens if my students cannot successfully complete the activities, they might just give up and not learn anything.

If they are left to do activities, they might not be bothered and will play with their phones. It can be challenging to arrange activities to keep engagement, some students finish quickly, other take longer.

These concerns highlight the importance of both constructive alignment and authenticity. The constructive alignment is essential for the process to work to ensure that the students understand what is expected of them, the role of the educator in the process, and the delivery of higher order thinking to produce the individuals' learning from the process. The assessment process plays an important part in the engagement of students in both the process and the learning experience (Macht and Ball, 2016; MacFarlane, 2016) and a good constructive alignment thus accentuates the role that assessment plays in mediating between the teaching and learning processes (Biggs and Tang, 2011). An assessment is different but still takes place and students are still accountable in taking part in the process.

In addition, the greater the authenticity of the challenge i.e. the degree to which educational activities represent the reality and complexity of real life situations (Gulikers et al., 2005), the greater the process can provide deep learning, increased motivation, engagement, and improved learning outcomes (Macht and Ball, 2016). Together, good constructive alignment and authenticity can help to engage students in a meaningful constructivist process. Similarly, the idea that the process is a game is reflected in the comment;

Students see the activities as games, so do not take them seriously.

Existing educational literature suggests that this might be avoided by making the exercise both authentic and meaningful and ensuring that the participants can access the learning.

Another comment echoed the concern over the full participation of all members in group work;

Sometimes students are not interested in getting involved as they don't see the benefit. They are happy to sit back and let other students do the work.

This comment represents one of the problems with group work that some students may well sit back and not play an active role and thus not gain the benefits of the process i.e. freeloading. This can be overcome by ensuring students understand how the process, including assessment, works and by considering the group sizes that are employed. This may be a particular problem in the Chinese context since in the past students have been particularly reticent about openly expressing views other than through the appointed group leader who expresses the group decision (Chan, 1999). Kerr (1983) opined that group size affects the motivation of individual members with increasing size of the group decreasing individual motivation. Several authors have suggested that the ideal size is around four members for better delegation and results (e.g. Davies, 2009; Simon and Hamilton, 1994).

Finally, the concern over whether the students are really working is reflected by the comments;

Arranging activities to keep students engaged is hard, it is difficult for me to know when they are really working or when they are not working when they are doing activities or groups.

When I am lecturing/teaching I can see who is paying attention and make sure they are listening.

Mayer (2004) warns against the use of constructivist teaching techniques which only require learners to be behaviourally active and not cognitively active during the learning process. Thus the process should be authentically aligned and students should be able to take part in the learning process under the mentorship of the educator. Assessment after reflection will help to ensure that learning takes place. Interestingly, Clark et al. (2012) highlight that cognitive activity which may appear to be passive is the key to learning.

The Educators' Perception of the Time and Technology Required to Deliver the Constructivist Learning Process

This challenge is centred on the concerns of the time required to undertake constructivist activities, particularly as part of a busy timetable and the need to cover course content, the uncertain outcomes of constructivist activities, and the technology required in the process.

The concern over the time required to undertake the constructivist activity was reflected in a number of ways.

Teachers need more energy and time to undertake such activities in the classroom.

Introducing these types of activities involves lots of planning and time. There is already so much to do and so many classes to teach, finding time is very difficult.

We have to cover a lot of content with our students, they often come not very well prepared, so it takes lots of time to get them to the required level (of knowledge).

It is difficult fitting the activities into normal courses, as they use up lots of time.

The issue of time is a commonly perceived challenge to active learning and Michael (2007) reported it as one of the most reported issues in a workshop of educators. Yet constructivist or active learning can provide greater engagement, deeper learning, increased motivation, improved learning outcomes and an increase in self-efficacy (Bell, 2015; Macht and Ball, 2016; Snyder, 2003). Constructivist activities can involve more preparation time, however over time, such experiential activities can be organised more efficiently when educators become more experienced in organising the process, and networks with outside agencies are developed which can make the experience even more authentic (Bell and Bell, 2016). It is also worth bearing in mind that whilst traditional teaching approaches are useful in entrepreneurship education, they do not necessarily lead to thought or attitude adjustment and the development of behavioural skills (Grimley et al., 2011).

The lack of time can be aggravated by the perceived lack of control over the process and the use of new technologies evidenced by comments such as;

I can see the value of such activities both to develop skills in students and to engage them, but there is a large curriculum we must cover. The faculty are not so familiar with technology as students. The faculty are worried that it will not work and we will look foolish in front of students.

It takes lots of time to learn the new technologies and there is always a danger it will not work.

It is difficult to know what the students will come up with and how they will deal with the activities. This makes planning difficult.

These comments reflect the concerns over the status quo within the traditional educational system. Educators feel vulnerable in the new environment in which they may feel they have less control, less certainty, and may end up losing face in the eyes of the students. Some of these comments reflect a lack of some discipline specialities, capability levels and resource networks, which have been identified as potential challenges for entrepreneurship educators (Vanevenhoven, 2013). The concerns over technology came largely from older educators which may indicate that some training may be required.

The Perceived Link between Constructivist Learning and Industry

This challenge highlighted the concerns that the linkage of the teaching to real life situations, entrepreneurship, and industry would not be clear or strong enough for students to understand or benefit from.

This was reflected in comments such as;

The students often do not see the activities as important as they will not help them with assessment.

Students don't want to do it; they don't see any value to doing the work.

These problems may be overcome by students understanding the full process and educators ensuring a clear constructive alignment as discussed earlier. The constructive alignment is

essential for the process to work and will ensure that the students understand what is expected of them e.g. portfolio reflection, and the role of the educator in the process.

Other comments highlighted concerns over the difficulty in developing the links that would help students understand the value of constructivist activities;

The activities are fun but it is hard to link these to industry.

Understanding the role and value of activities and getting students to appreciate it is difficult.

The activities are often abstract and don't offer topic related learning for students.

It is difficult to use the techniques in a systematic and embedded way. It is hard to make an embedded curriculum rather than using a few activities in class.

As discussed earlier, the linkage or authenticity of the learning has a major impact on the engagement and value of the learning. The traditional teaching provides the basic framework whilst the active learning helps to develop the skills for entrepreneurship. A whole range of approaches including developing business plans, attending entrepreneurship forums (Sherman et al., 2008), computer simulations, business visits, realistic class exercises (Solomon, 2008), mentoring experiences and case studies (Chang et al., 2013) have all been cited as experiential learning opportunities although some may offer more authentic advantages than others.

Two other notable comments included;

At present, we cover the course content and then get the students to do the practical assessment and activities in their own time.

The teaching helps the students understand the key concepts but is not designed to help the students to do the practical activities (homework) and assessment they must do.

Wherever possible, activities should be integrated rather than treated as an add-on. This type of add-on approach leads to poor engagement and poor constructive alignment in the

learning process. The social constructivist approach with the educator acting as a facilitator or mentor enables the student to learn with scaffolded assistance if required.

The Educators' Perception of the Requirement to Meet Internal Expectations

This last challenge highlights the concern that educators feel that senior management will either not understand the process or judge them adversely if they use constructivist approaches. This is reflected in the comments below;

It is expected that from the school leaders that we will use exams to assess the students, this means that we need to cover lots of material which will be tested in the exam.

If my line manager/leader comes into my class and he sees that I am just playing games, he will be concerned that my students are not learning anything.

These comments highlight the importance for all senior educators to understand the principles of constructivist education and the way in which students learn and are assessed. Equally, it is important that senior educators have an understanding of the role of the educator within the process. The process is student led and the educator acts as a coach or facilitator. The constructivist classroom is a different environment and the process and assessment are different. People are used to the testing of objectivist knowledge which provides a certainty of both achievement and quality of teaching which constructivism cannot provide. Instead, the constructivist approach adopts strategies which include student observation, outputs and portfolios developed by students, and student reflections of the learning process. However, in terms of entrepreneurship and enterprise the results can include new skills, new ways of thinking, innovation, changes in the attitude to risk, and greater self- efficacy.

A summary of the challenges and associated sub challenges can be found in table 2.

Table 2: Challenges and Sub Challenges

Themes	Sub Themes
Perceived role of the educator in the constructivist learning process and their ability to control learning	Perceived need for the educator to be the expert Perceived role of the educator as the knowledge purveyor The desire and perceived need to test knowledge Maintaining discipline when adopting constructivist approaches
Educators perception of the student reaction to the constructivist classroom and their engagement with the constructivist learning process	Students might not engage and learn what they should Students might lose interest and not learn Students might think the activities were just games The ability of educators to know when the students were engaged in learning
The educators perception of the time and technology required to deliver the constructivist learning process Perceived link between constructivist learning and industry	Time required to undertake constructivist activities in class Technology required in the constructivist learning process and the classroom Students not seeing the link to the real world or value of the constructivist learning Difficulty in developing the links that will help students understand the value of constructivist activities
Educators' perception of the requirement to meet internal expectations	Senior management do not understand the constructivist learning process Senior management will judge educators based on the content taught and students exam results

Conclusion

This research was designed to investigate and explore what challenges educators in Chinese vocational colleges perceived they faced in implementing constructivist active and experiential approaches in the delivery of entrepreneurship education in their vocational colleges and importantly, why they perceive these as challenges. A wide range of concerns were expressed by the educators but these could broadly be described under five main headings or challenges. These were, in order of the strength of consensus, the perceived role of the educator in the process and their ability to control the process; the educators' perception of the student reaction to the process and their engagement with it; the educators' perception of the time and technology required to deliver the process; the perceived link between constructivist learning and industry; and the educators' perception of the requirements to meet internal expectations.

The concerns that make up these challenges have been discussed against the backdrop of current practice and literature. In this way, the discussion has highlighted how some of these concerns may be reduced. These suggestions include a wider and clearer understanding of how this type of learning works, a strong constructive alignment that includes the assessment process, and as high a degree of authenticity as possible to maximise engagement.

Neck and Corbett (2018) have highlighted the urgent need for entrepreneurship educators to be educated in the delivery of entrepreneurship education, to enable students to move from learning 'about' entrepreneurship, where the students learn passively through the educator lecturing, to learning 'through' entrepreneurship, where students learn through the simulation of entrepreneurial processes with the educator acting as a coach, to develop an entrepreneurial mindset. Eventually learning by actually 'doing' entrepreneurship can take place, where students completely own their own learning and the educator acts as a facilitator in the process. In the present Chinese vocational college context, further training and support may be required to enable educators to overcome the barriers they face in moving towards a more applied, more experiential and more student focused learning. They must in the first instance, develop their skills as coaches in the development of their students' 'entrepreneurial mindset'. Further training and support may also be required in

some instances where educators lack the skills or knowledge required, such as the use of technology and engaging students through practical activities.

Although this research has been carried out in Chinese vocational colleges, an area that has been under researched in the past, many of the challenges resonate more widely and are not restricted to this area of HE in China. It has been identified that Chinese entrepreneurship education still has considerable room for improvement (Lin and Xu, 2017). This research has identified the challenges that Chinese vocational educators' perceive they face in implementing constructivist approaches to the delivery of entrepreneurship education and offers some initial suggestions as to how these challenges can be overcome or mitigated. The findings from this research could offer the basis for developing new professional development training and support for the development of approaches to entrepreneurship teaching in China. These findings might also be of value to other areas of the world that may struggle with the introduction of constructivist experiential teaching approaches.

Limitations and Future Research

This research was designed to investigate perceived challenges that the focus group participants, who were all tasked with embedding constructivist active and experiential entrepreneurship activities in at least one of their course curricula, felt they faced. Since these were perceptions prior to the event, other concerns or challenges may arise later. Future research could investigate the challenges post-event and the challenges that students faced. Furthermore, this research was conducted at four different higher vocational colleges situated in four different provinces in China. As a result, the findings may not extend throughout all provinces in China. This research could be extended to other regions to highlight common themes and variations.

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