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## Cultural Capital at Work: How Cognitive and Non-cognitive Skills are Taught, Trained and Rewarded in a Chinese Technical College

### Introduction

While broad-access higher education has long focused on ensuring students are prepared for the workplace, in the aftermath of the great recession technical colleges have become widely seen in the United States and China as a primary venue for developing a skilled workforce (Carnevale, Smith & Strohl, 2013). This recent focus on vocational education has led to significant efforts in both the U.S. and China to increase students' acquisition of sub-baccalaureate credentials, and to provide students with a seamless pathway or pipeline toward completing programs and transitioning into the labor market (Cleary, Kerrigan & Van Noy, 2017; Qiang & Zhigang, 2016).

However, the notion of college as the starting point of a talent "pipeline" to labor markets has been critiqued as an overly mechanistic account of education and student learning. Further, a human capital perspective that focuses on how cognitive skills or years of schooling translate into increased wages overlook how non-monetary resources such as social and cultural capital impact a person's employability and social position (Bourdieu, 1986; Cleary, Kerrigan & Van Noy, 2017). These critiques underscore the idea that students' acquisition of skills, knowledge and abilities valued in the labor market is not solely a structural matter or problem of inadequate pathways. Yet little research exists on the role that cultural capital and non-cognitive skills play in technical college student transitions to the workforce.

### KEY FINDINGS

1. Chinese and U.S. technical colleges are under similar pressures to improve student employability, reform instructional techniques, and prepare workers for jobs not requiring bachelor's degrees.
2. Chinese employers' demand for both cognitive and non-cognitive competencies is jeopardized by a tradition of lecturing or "chalk and cramming," and students' expectations for rote memorization and standardized testing.
3. While many valued competencies are similar to U.S. contexts, a strong work ethic in China pertains more to allegiance to a profession and society than just hard work and deferred gratification.
4. Given that Chinese employers screen for "fit" with corporate culture based primarily on non-cognitive competencies, educators should advise students about this point and cultivate these skills in the classroom.
5. With the Chinese government investing considerable resources into its postsecondary system and advocating for more experiential education, graduates from Chinese technical colleges may be well positioned to compete in the global labor market.

In this research brief we report findings from an exploratory case study that investigated how a group of educators and employers in an eastern Chinese city conceptualized and utilized embodied forms of cultural capital in their teaching, hiring and training activities.

## Background

One of the defining characteristics of the post-recession era in the U.S. was a widespread embrace of technical colleges as the linchpin to the nation's economic problems, as millions of jobs reportedly went unfilled. Consequently, a considerable amount of attention is being paid to figuring out how to improve student success and completion in U.S. technical colleges, efforts that are also informed by a conviction that technical and community colleges play a critical role in providing students from low-income backgrounds and marginalized populations with social and economic opportunities (Belfield & Bailey, 2011). While some of these concerns and developments are unique to the U.S. context, a focus on social mobility and employability is evident around the world, particularly in the nation with one of the fastest growing economies and postsecondary systems in the world – China.

The origins of Chinese higher education can be traced back to the Han dynasty (206BC – AD 220) and with it a pedagogical tradition nearly as old that prioritizes memorization and focuses on learners' knowledge of Confucian classics and politics. With this tradition the ultimate goal was to secure a clerical or professional position. However, in the early 1900s the Chinese Vocational Education Society was established to supplant the dominant, classical educational system focused on preparing the aristocracy in effort to modernize the nation and prepare a workforce skilled in industrial technologies.

Today, although China's new international and knowledge-oriented economy has led to a strong demand for an educated workforce, the government is actively addressing the negative perceptions of vocational education as it has continued to suffer from a cultural bias that favors four-year degrees and white-collar occupations (Chan et al., 2015; Wang, 2013). The government is also investing in higher education in order to increase the nation's prestige, and to produce creative talents and innovations as measured by patents, innovations, scientific breakthroughs, and Nobel-Prize winning scientists (Poo & Wang, 2015; Zhao, 2009).

Some observers attribute this state of affairs to China's highly structured, test-driven educational system, and Chan et al. (2015) even argue that the *gaokao*—the infamous college entrance exam—is a “soft skills killer” (p. 12), which has implications for students in a labor market where skills such as communication and teamwork are highly valued. This has caught the attention of the Chinese government, as the recent 10-year national plan includes reforms to the *gaokao* and also advocates for teaching to be “heuristic, exploratory, discussion-based, and participatory” (17th National Congress of the Communist Party of China, 2010, p. 25). Along with goals to create a postsecondary system that includes multiple pathways, reform efforts underway in China are not unlike those in the United States.

Another point of commonality between the U.S. and China is a preoccupation with a “skills gap,” or the notion that millions of jobs exist and go unfilled due to the paucity of appropriately skilled workers. A recent survey of college graduates found that students themselves considered their education to have inadequately provided them with skills such as programming, negotiation, and analytical thinking (Molnar et al., 2015). As such, the skills gap idea has influenced how policymakers and educators think about a college education in Chinese society (e.g., Qiang & Zhigang, 2016).

## Our Study

In this exploratory qualitative case study our primary unit of analysis was a single academic program and an employer in the same field (i.e., biotechnology and advanced manufacturing), or what we call “local occupational pathways.” At the time of the study (Spring 2015), Eastern China Technical College (ECTC, a pseudonym) had approximately 700 full-time and 80 part-time instructors, 9,200 full time and 2,400 part-time students, 31 academic programs, and over 230 partnerships with local and regional businesses. The two companies included in this study—PharmaCo, a national pharmaceutical company, and ElectroCo, a Chinese-European electrical manufacturing company (pseudonyms)—were selected by administrators at ECTC based on their regular recruitment of students. A total of eight educators (which

included two administrators and six faculty), and two employers participated in interviews. In addition, classroom observations with three instructors were conducted and factory tours were arranged for each company.

## Results

Analyses of the data resulted in four categories that capture the role that cultural capital plays in the transition from college to work experienced by Chinese technical college students. These categories represent a temporal sequence of how specific forms of cultural capital are: (a) conceptualized and valued, (b) cultivated in formal educational settings, (c) utilized in workplace hiring and training, and (d) situated in specific cultural, economic, and historical contexts (see Table 1, below).

Table 1: Four key categories and recurrent themes derived from data

Valued forms of cultural capital	Curriculum & Instruction	Hiring & workplace training	Contextual factors
Cognitive and non-cognitive competencies	Tension between theory and practice	Importance of corporate culture	Cultural norms regarding work/class distinctions
Work ethic	Value of general education	Procedures for hiring	Status of the labor market
Shared responsibility for skills cultivation	Chalk and cramming (i.e., lecturing) Student-centered teaching methods Varied teaching methods in classroom	Workplace training programs	State efforts at educational reform

### I. Forms of Cultural Capital Considered Valuable for Workplace Success

When asked about the types of skills, knowledge, and abilities that college students need to be successful in the workplace, respondents concurred on the necessity for young people to acquire a diverse range of both cognitive and non-cognitive competencies. In terms of cognitive competencies, respondents discussed the importance of both declarative and procedural knowledge related to a specific field. Educators and employers also spoke about how inter-personal skills such as communication and teamwork were essential, as well as intra-personal skills like attitude and lifelong learning.

Additionally, the importance of a strong work ethic and the responsibility of various parties to cultivate students' skills throughout their lives and careers were also reported. Unlike the U.S., where work ethic is generally depicted in terms of motivation and willingness to work long hours, respondents described it as an important belief system, as both a moral code and commitment to profession. Further, respondents generally agreed that family, K-12 and higher education, employers, society at large, and students themselves all play a role in cultivating students' competencies.

### II. Curriculum, Instruction, and Students' Acquisition of Cultural Capital

The second set of findings pertains to the educational processes that provide students with valuable forms of cultural capital. Several respondents reported a view that theoretical knowledge alone was insufficient for the world of work. This perspective was discussed by both employers in the context of broader critiques of four-year colleges, and the perception that graduates of four-year colleges had a limited ability to "work with their hands." Additionally, several respondents argued that general education plays a critical role in providing students with not only a broad-based education but also a sense of social and moral responsibility.

Respondents also spoke about teaching methods used in the classroom, which is one of the primary venues where students acquire particular forms of cultural capital. Participants referred to traditional Chinese modes of instruction (one educator described typical Chinese pedagogy simply as “chalk and cramming”), and discussed efforts to introduce active learning methods. Classroom observations of three instructors—a biology course, an engineering course on computer numerical control (CNC) programming, and an engineering course on programmable logic controllers (PLC)—also contributed insights into the ways some ECTC educators approach teaching and learning. Results from classroom observations indicate substantial variation among teaching methods, teacher-student interactions, cognitive engagement, and use of instructional technology (see Table 2, below).



Hora observing a biology course in a Chinese technical college.

Table 2: Teaching Dimensions Observation Protocol classroom observation data

	Biology	CNC	PLC
Teaching methods			
Lecturing	.18	.07	.05
Lecturing w/PP	.50	.09	.18
Socratic lecturing	.00	.00	.00
Administration	.02	.00	.00
Small group work	.00	.41	.27
Desk work	.07	.00	.00
<b>Teacher-student interactions</b>			
Teacher question	.27	.11	.07
Student response	.27	.11	.07
Student question	.00	.00	.00
<b>Cognitive engagement</b>			
Problem-solving	.00	.41	.27
Creating	.00	.00	.00
Making connections to real-world	.00	.00	.00
<b>Instructional technology</b>			
Chalkboard	.07	.09	.11
Powerpoint/Projector	.32	.09	.11
Clicker response systems	.00	.00	.00
Demonstration equipment	.00	.00	.05

Note: Figures indicate the proportion of two-minute intervals in which a particular behavior was observed throughout the entire lesson.

### **III. Business Practices: Hiring and Training**

The data also shed light on ways in which cultural capital functions in the labor market: the significance of corporate culture to employers and its impact on hiring and training policies. For instance, the PharmaCo representative stated that: “Getting to know a company is like getting to know a person—as time goes on, you get to know the culture better. If a student doesn’t agree with or adapt to the culture, then they won’t last.” Thus, conceptions of corporate culture play an important role in determining who gets hired. The respondent at ElectroCo stated that “corporate culture and core values form the most important segment when we recruit new workers.” This assessment in the recruitment process includes interviews where the focus is not only on work experience or educational credentials, but judging an applicant’s personality in general, and especially any indications about their willingness to learn.

Corporate culture also influences how companies approach workplace training. At both companies there is a focus on reproducing and/or developing two distinct forms of cultural capital in new hires via workplace training: aspects of the corporate culture and the development of task- and job-specific skills. At ElectroCo, the corporate culture was described as being “people-oriented” and in terms of how the company pays “meticulous” attention to cultivating and maintaining its culture, such that training programs focus on “corporate culture cultivation.” For these companies, culture was not an abstract idea but captured essential elements of their corporation’s identity as well as expectations for how staff should conduct themselves and approach their jobs.

### **IV. Salient Contextual Aspects of the Educational and Employment Fields**

Lastly, we report contextual factors related to higher education and the labor market that respondents identified as salient to students’ career pathways. This focus on context is important because how people conceptualize, cultivate and reward different forms of cultural capital does not occur in a historic, political or cultural vacuum, but depends largely on the contexts or fields in which they are positioned (Bourdieu, 1986). For example, several respondents discussed what they perceived as a societal bias against both blue-collar work and technical colleges, which are strongly held and hard to change, representing a significant barrier to encouraging young people to pursue vocational education.

Respondents also discussed issues related to the Chinese labor market that impacted students’ transitions from college to the workforce, including a recent economic downturn, a glut of college-educated workers in the labor market, and graduates unwilling to work for low wages. Furthermore, three major ongoing reform initiatives underway at the time of the study, including a push for “innovation” in education and industry, were viewed by some as “empty words without fruition.” Ultimately, these insights demonstrate that Chinese technical colleges such as ECTC are in the midst of a reformist agenda and socio-economic challenges not unlike their U.S. counterparts.

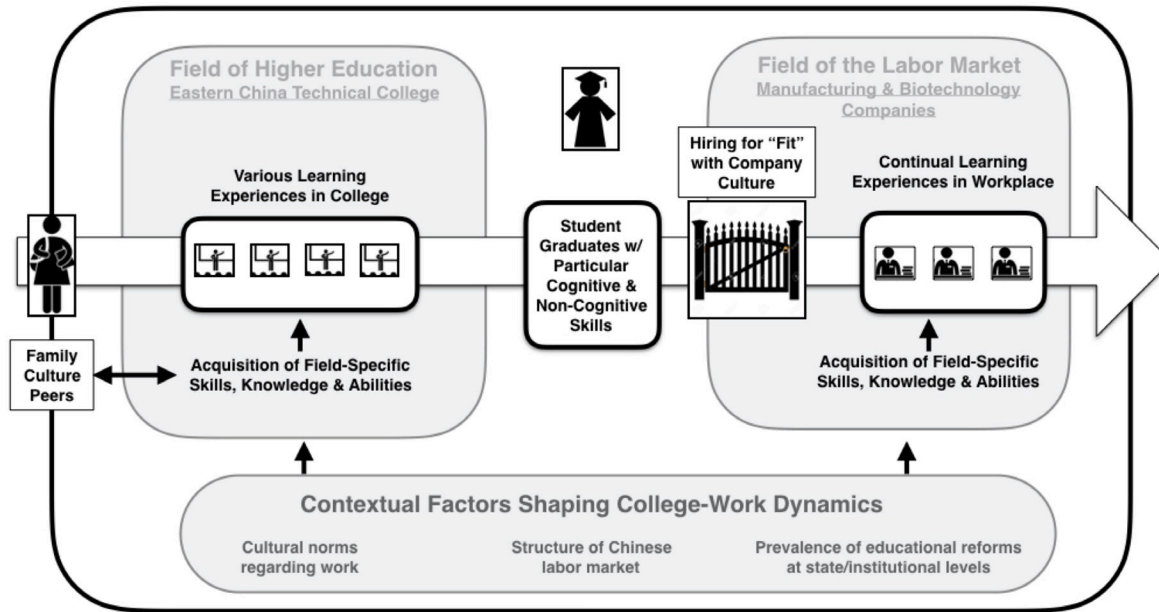
## **Insights and Recommendations**

Below we offer insights and recommendations based on data reported in this study that adds to debates about the role of technical colleges in society and the labor market.

### **1. Viewing students’ transition between technical college and the labor market as a “cultural transaction.”**

Rather than adhering to a skills gap narrative and college as but one part of a talent pipeline, we argue that students’ transition between technical college and the labor market is best thought of as a “cultural transaction” between distinct fields, where the skills, knowledge and abilities acquired in domestic and educational settings are “purchased” (or not) by employers, who themselves have strong cultural norms that act as gatekeeping mechanisms during the hiring process. These transactions are embedded in specific disciplinary/professional, institutional, political and historic contexts, and provide researchers, policymakers, and educators with a more contextualized and nuanced depiction of students’ college-workforce transitions than is suggested by the talent pipeline metaphor (as shown in Figure 1).

Figure 1. A new conceptual framework for college-workforce transitions



**2. The importance of cognitive and non-cognitive competencies in the Chinese labor market.**

It is clear that the forms of cultural capital Chinese technical college students should acquire to increase the prospects of success in the labor market include both cognitive and non-cognitive competencies, an argument increasingly advanced by U.S. educators and employer-based research in the U.S. (Hora, Benbow & Oleson, 2016) and in China (Molnar et al., 2015). These data raise a question that should be at the center of any discussion about student employability, but is almost entirely absent from policymakers’ and researchers’ debates of these issues—namely, how do we cultivate these diverse competencies via classroom and co-curricular programming?

**3. Teaching and curriculum: The need to kick the “chalk and cramming” habit.**

Chinese colleges face a challenge with respect to how institutions are actually capable of cultivating cognitive and non-cognitive competencies, which is a situation not unlike the U.S. (see Freeman et al, 2014). A particular issue in China is the predominance of the testing and lecturing culture, which arguably is more deeply ingrained in Chinese classrooms than in the U.S. Despite efforts to embrace active learning methods, widespread change in education is notoriously slow, especially in a system where teachers have little training and instructional autonomy and where students may be resistant to new modes of teaching and learning. Yet for Chinese students to acquire competencies such as complex problem-solving and communication skills, they will need to be exposed to more interactive and experiential modes of learning than is available at the present time.

**4. The penchant of hiring for “cultural fit” warrants an increased focus on non-cognitive skills (and discrimination) in students’ educational experiences.**

In many discussions of college-work transitions and skills gaps, the issue of hiring and how employers make hiring decisions is rarely broached. This aspect of college-workforce dynamics is too important to ignore, as both our data and that of others (e.g., Rivera, 2012) reveal the cultural and subjective underpinnings of the hiring process. Since much of the cultural matching process involves non-cognitive skills and personality traits, an increased focus on these competencies in the classroom would likely benefit students when they entered the labor market. However, they should also be provided with information about the potentially discriminatory aspects of these hiring practices, particularly for ethnic minorities

and women. Additionally, career services should provide students with ample opportunities for mock interviews and how to analyze corporate cultures, in preparation for the likelihood that they will soon undergo a process of cultural screening as they apply for jobs upon graduation.

### **5. Contextual factors need to be considered in the broad scope of technical colleges, namely, the relationship between social mobility and inequality, and cultural norms about the nature of work.**

As China is experiencing rising income inequality, with only one percent of Chinese households owning a third of the nation's wealth (Wildau & Mitchell, 2016), a central question facing policymakers and technical college educators in China is what role do technical colleges play in contributing to social mobility and/or inequality? This question must be asked because education is not always beneficial to student prospects, as many graduate with debt and no credentials, thereby worsening their prospects and potentially exacerbating inequality (Schudde & Goldrick-Rab, 2015). Future research should expand upon the sizable research on cost and accessibility in U.S. technical colleges to investigate these issues in the Chinese context.

Another important issue is the long-standing cultural bias in China favoring white- over blue-collar work. This societal preference raises questions about the role of cultural norms and expectations in young people's career decision-making. Given the possibility that China is experiencing a glut of four-year graduates in an economy no longer creating high-skill and high-wage jobs at a rapid rate (Hancock, 2017), it is not unlikely that the Chinese version of the "College for All" movement is increasingly at odds with the realities of the labor market. These issues raise questions about the relationship between industrial and postsecondary policy, and the prospect that students' career trajectories are shaped by a combination of rational considerations of the labor market as well as deeply held cultural norms about the nature of work.

### **Concluding Remarks**

The human capital perspective provides an incomplete picture of the nature of student employability. Instead, the data reported in this paper from an Eastern Chinese city confirm and extend prior work that demonstrates the importance of both cognitive and non-cognitive skills (e.g., Heckman, 2000) and how a complex array of socio-cultural, economic, and organizational factors influence student transitions from college to the workplace. Despite a welcome focus on systemic reforms to technical colleges, which is evident in the increasingly influential "guided pathways" model (Bailey, Jaggars, & Jenkins, 2015), we suggest that a focus on curricular and programmatic pathways tends to overlook the importance of classroom pedagogy in cultivating non-cognitive skills and the role that employers play in shaping students' labor market outcomes. This is due in part to the privileging of employer and labor market needs in dominant narratives or frames about student employability, and we call for a shift in emphasis and voice that takes a broader view while also considering the needs of students, educators, and society itself.

Finally, in considering the complex issues facing national postsecondary systems and labor markets, we also argue that framing the problem as a competition between nations, a zero-sum game where either the U.S. or China is the "winner" is counterproductive. While we do not naively overlook the inherently competitive nature of science and industry in the global marketplace, there exist points of common interest where a spirit of collaboration (at least among communities of educators) is warranted. Consider the global need for students to not only be competitive in the 21st century labor market, but also critical thinkers and civic-minded individuals who can pursue truth, knowledge and equity for all citizens. Towards this end, educational innovators in both nations are seeking ways to instill active learning throughout the curriculum and to integrate the liberal arts tradition with training in technical skills. The narrowing of the curriculum via a focus only on jobs and cognitive skills is thus not only inimical for students' prospects in the labor market, but also for societies where civic engagement and critical thinking are sorely needed.

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