

*Mind and Virtue:  
A Cross-Cultural Analysis of Beliefs about Learning.*

*by  
Marieke Christina van Egmond*

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*Dissertation committee*

Prof. Dr. Ulrich Kühnen, Jacobs University Bremen (chair)  
Dr. Song Yan, Jacobs University Bremen  
Prof. Dr. Jin Li, Brown University

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*School*  
Bremen International Graduate School of Social Sciences

*Cover illustration*  
Tamara Ramsey

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"It's what you learn after you know it all that counts."

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## **Chapter 1**

### *General Introduction*

INTERNATIONAL MOBILITY HAS become a central dimension of academic life. The numbers of students from diverse cultural backgrounds participating in Western European institutions of higher education are increasing annually. The OECD estimates that the number of students that are enrolled in a foreign country will continue to increase globally until 2030 and beyond (OECD, 2010). Students from Asia, particularly China, form the largest group of students who choose to pursue their degree in one of the OECD countries. As one of the top three host countries of foreign students in tertiary education (OECD, 2010), the issue of interculturality in higher education is an especially relevant one for Germany. In order to gain maximum benefits of this diversity, to manage diverse classroom environments effectively and to assure the continuation of the high quality of higher education that is offered in Germany, it is crucial to increase understanding of the cultural embeddedness of beliefs about learning and the way that these beliefs affect behavioral tendencies. The current project is aimed at understanding the concepts of learning that students and members of faculty from different cultures endorse. The theory that forms the main theoretical base of this project is the mind - virtue orientation theory by Li (2003; 2005). Li found that Western students have a 'mind oriented' approach to learning, whereas Asian students construe learning in a more 'virtue oriented' manner. At the core of the mind orientation is doubt towards pre-existing knowledge and the belief that the aim of learning is to develop one's thinking skills. Thus the ideal learner is primarily concerned with developing his or her cognitive skills. In the virtue orientation, learning is perceived as the development of the person as a whole, including the moral and social domain. Students are therefore to dedicate themselves to the process of learning by showing persistence, silent contemplation of the material and a respectful attitude. In the following chapters, four studies will be reported that provide evidence for the hypothesis that Western and East Asian academics place a relatively different emphasis on mind and virtue oriented components of the concept of learning.

### ***1.1 Overview of the dissertation study***

Existing research on cross-cultural differences in learning is spread through the fields of (international) education research, and cross-cultural, social and developmental psychology. Most of this research focuses on specific elements of the learning process, such as motivation, learning strategy or classroom participation. Although the existing literature describes remarkable and interesting differences in the different elements of the learning process for students of diverse cultural backgrounds, an overall theoretical framework to integrate the explanation and interpretation of these differences is lacking

from the field so far. The development of such an integrated theory is the main aim of the current research project.

The project aims to fill a gap in the cross-cultural literature in the different concepts of learning that people from different cultures have. Based on the qualitatively constructed theory of mind - virtue orientations towards learning, four subprojects are aimed at answering the main research question: What are the differences in the conceptualization of learning between students from different cultures? Each chapter addresses this main question, but does so from different methodological angles and focuses on specific sub-questions. In the following, each chapter will be briefly introduced.

The dissertation will start with an extensive theoretical analysis in chapter 2. In this review, a large body of literature from diverse disciplines (including developmental, social, cognitive and educational psychology) is integrated into the framework of the mind and virtue orientation. This chapter thus introduces the conceptual framework on which the following empirical studies are based. This in-depth theoretical review aims to answer the question whether different concepts of learning exist in different cultures on a theoretical level. The mind and virtue orientation are introduced as concepts that form the cultural mandates of learning in Western and East Asian cultures<sup>1</sup> and are suggested to influence a variety of subordinate cultural tasks. The origins of these orientations can be traced back to the philosophical traditions that have been identified to have shaped the values that penetrate both of these cultural contexts. For the West this is primarily the legacy of the ancient Greek philosophers, commonly personified by Socrates. In East-Asia, an equally elaborate philosophical tradition is formed by Confucianism, which still explains differences in beliefs about learning shared by contemporary students and faculty (see also Tweed & Lehman, 2002). Although both traditions put strong emphasis on the importance of education as such, the way in which one is to attain knowledge, as well as the reasons why, is formulated in a distinct set of beliefs. The conceptualization of the mind and virtue orientation as overarching themes that form people's beliefs about learning thus allows the integration of various, previously segregated, cultural differences in the domain of learning.

Next, chapter 3 builds on the theoretical review presented in the previous chapter and the qualitative study by Li (2003). In this chapter, empirical quantitative evidence is presented, which supports the mind and

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<sup>1</sup> Throughout this research project, the notion of 'Western' will refer to a cultural rather than a geographical distinction. Due to an emphasis on the European context, the term 'Western' will primarily refer to the (western) European context, with Germany as the main focus. The term East Asian on the other hand will refer to societies and educational systems that share the Confucian culture. The primary focus will be on mainland China, although the Confucian heritage countries typically include the societies of Japan, Korea, Hong Kong, Singapore and Taiwan as well (e.g., Biggs, 1996; Leung, 2001).

virtue orientation as two themes that represent the beliefs about learning of German and Chinese students. The main aim of this chapter is thus to answer the question whether quantitative empirical evidence can be found for a different emphasis that is placed on beliefs about learning in a Western and a Chinese context, based on the a-priori hypotheses that these beliefs are more mind oriented in the West and more virtue oriented in East-Asia. In order to do so, two measures were developed to examine the beliefs about learning of both students and members of faculty in Germany and China. The design can therefore be characterized as following a top-down approach. Based on the categories that emerged from Li's bottom-up construction of the mind and virtue orientations, a Likert-scale rating survey was developed to assess the rather abstract beliefs about learning of students and faculty on the attitudinal level. Secondly, in order to overcome the influence of response-biases that affect the validity of cross-cultural comparisons on Likert-scale ratings, a behavioral scenario questionnaire was created. These two surveys were conducted in seven samples in five socio-cultural contexts in total. The results of German students and faculty are reported, in comparison with the results of Chinese faculty and students. First, the developed measures were found to be satisfactory reliable and valid and cross-culturally equivalent in factor structure. Second, both on the level of attitudinal ratings and self-reported behavioral intentions a cultural difference was found in the degree to which German and Chinese students endorsed mind and virtue oriented beliefs about learning. Moreover, this difference persisted in the samples of German and Chinese faculty members, supporting the generality of this finding. As a final step, the results of the Chinese student sample were validated with a substudy of Chinese students who were enrolled in German institutes of higher education.

The fourth chapter extends the findings that are reported in chapter 3, to the under-investigated cultural context of Eastern Europe. Despite the increasing numbers of sojourner students from this region at Western European institutes of higher education, only a limited number of cross-cultural studies have investigated the beliefs that are shaped by culture that people from this region have. Moreover, studies that have been conducted provide inconclusive results. For example, research in the domain of cognitive styles of West and Eastern Europeans find a cultural difference between these contexts, whereas studies in the domain of value differences find remarkable similarities. The research question central to this chapter is therefore whether the learning beliefs of students from two Eastern European countries (Poland and Romania) are more mind or virtue oriented in nature. And, consequently, whether they correspond or deviate from the beliefs and self-reported behavioral intentions of Western European

(German) students. The reported study points into the direction of remarkable cross-cultural similarity between these different European regions. These results hereby refine the findings that were obtained from German and Chinese students in the sense that they indicate that the cultural difference that emerges in this comparison results from the Confucian heritage that is unique to the East Asian context. When it comes to beliefs about learning, contemporary students in Western and Eastern Europe share an emphasis on, the more Western, mind oriented beliefs.

Lastly, the fifth chapter reports the results of an experimental study. After the explicit measurements of beliefs about learning that are reported in chapter 3 and 4, the aim of this study is to find evidence for the difference in beliefs about learning, if measured implicitly. First, the question is thus whether the mind and virtue orientations represent mental knowledge structures that are not only available on the explicit, attitudinal level but are also ingrained in people's minds on the cognitive level. The basic assumption underlying this study is that cultural syndromes bridge mindsets with mental and social representations that are chronically activated in association with a particular concept (in the current case: learning). The content of these knowledge structures may however differ between cultures. If these knowledge structures are embedded in an overarching cultural frame, cuing one part of the network should cue others (Oyserman & Sorensen, 2009). Second, the design of the study is based on the classic social-psychological finding that cognitive networks function as cognitive energy-saving devices. If applied to the current context, it may be expected that processing information that is consistent with the cultural frame that is attached to the concept of learning is less effortful than processing information that is inconsistent with one's cultural frame of learning. To test this hypothesis, an experimental study was conducted in Germany and China. Students in both countries were continuously presented with learning-related words on a computer screen. Half of these words were combined with a word that was closer to the mind oriented concept of learning and the other half with a more virtue oriented word. In a following cued-recall task, German students correctly remembered more of the words that were associated to the mind oriented concept of learning than to the virtue oriented concept. This effect was reversed for Chinese students. When combined with a dual listening task in a next step, German students' performance on the memory-task was impaired when having to memorize culturally incongruent wordpairs, but not when the memory task was culturally congruent. These data provide initial support for the hypothesis that different mental frames are associated to the concept of learning on an implicit level and that these cultural orientations affect cognitive processing.

## **1.2 Significance of the study**

### *1.2.1 Scientific significance*

The scientific value of this study as a whole lies in its contribution to the development of a comprehensive understanding of cultural differences in beliefs about learning. The theory of the mind and virtue orientation provides a framework that allows the integration of a variety of theories that apply to the concept of learning, but that are currently spread across the fields of social, cognitive, educational, developmental and cultural psychology. In other words, for the first time, the elements of theories such as achievement motivation, cognitive style, self-concept and incremental / entity theories of intelligence and self are combined into the meta-theory of mind and virtue orientation that allows a comprehensive understanding of cultural differences in academic learning.

Each chapter contributes to this understanding in a different way. First of all, previously unrelated findings are integrated into the framework of the mind and virtue orientations on a theoretical level in the first chapter. The mind and virtue orientation are introduced to function as 'cultural mandates' in this chapter, which allows a meaningful interpretation of findings from diverse fields. Applying the cultural task analysis to cultural constructs is a rather recent development in cross-cultural psychology. First published by Kitayama and Imada in 2008 only, it has not been widely applied yet. The current study therefore contributes to the development of this new perspective in the field.

Secondly, the inclusion of the perspective of faculty in addition to that of students in both Germany and China is a unique feature of the current cross-cultural study. When beliefs about learning, motivation or teaching are examined, researchers usually focus on either one of these groups. The inclusion of both views in the current study therefore provides an answer to the open question whether the beliefs of students within a certain culture concur with those of faculty, and more importantly, if members of faculty share the same set of beliefs about what good learning is across cultures, or if their beliefs differ as well. Afterall, faculty are the ones who set the standards for what is to be seen as good learning by enforcing certain behaviors in their classrooms. The finding that teachers from distinct cultural backgrounds differ in their expectations of students and thus may be expected to base their assessments of students on different expectations as well, leads to an increased likelihood for the occurrence of misunderstandings in intercultural classrooms. When students do not exhibit the behaviors that faculty expects from a 'good' student, while the student believes his / her action to be the optimal one, the clash in beliefs might result in unnecessary down-grading of the student in question. With the numbers of international



students in higher education classrooms steadily increasing over the coming years, this is an especially relevant finding.

Lastly, the two measures that have been developed for the empirical survey studies proved to be reliable and sufficiently valid for the cross-cultural examination of beliefs about learning. The study has thus yielded two new measures that may be developed, adapted and applied in future research. The contrasting results that were obtained on the rating scale and behavioral scenario measures for the Chinese sample is a highly relevant finding, since it illustrates the dangers of an over-reliance on rating-scale measures in cross-cultural research. The fact that different results may emerge, depending on the type of measure that is applied by the researcher is a testament to the need to move beyond self-report measures and especially Likert ratings of abstract items.

### *1.2.2 Applied significance*

In addition to the theoretical or scientific relevance of the current project, the overarching theme of this research is also highly significant to the applied setting of increasing internationalization in higher education. As a defining feature of contemporary society, globalization impacts education everywhere (Kress, 2008). The increased importance of knowledge is characteristic of post-industrial societies that aim to participate in the global knowledge economy. Since well-educated people are the main drivers of development and growth and determine a country's competitiveness on the global market, both governments and individuals have never invested more in higher education than today (Gürüz, 2008). Nations thus rely heavily on the quality of their educational system, as it is increasingly important for people to be able to analyse the multitude of information that is made available and to make informed decisions.

As a key player in the global knowledge economy, largely owing to its strong industrial research and development reputation, Germany is currently in the top three of receiving (hosting) countries for foreign students in tertiary education (Gürüz, 2008; OECD, 2010) and only scores behind the United States and the United Kingdom. In absolute terms, students from China and India still form the largest group of foreign students around the world (OECD, 2010). In recent years, students from Central and Eastern European countries, as well as Turkey, have however become the groups with the largest growth in participation in exchange programs, like Erasmus (European Union Press Release, 2008). To be able to provide quality education to such a diverse student body, the social and cultural contexts of both students and faculty and the resulting dynamics must be taken into account (Gabb, 2006). Cultural differences between students from different

cultural regions are sometimes addressed by educators, researchers, policy makers or intercultural specialists, but core problems faced by foreign students due to cultural differences regularly go unacknowledged. Teachers on the other hand are not being prepared to teach diverse student bodies (Merryfield, 2000). The high percentage of international students who do not complete their education abroad with a degree, supports this finding. In Germany, the percentage of international students not obtaining their degree has even been found to vary between 50 and 70 percent (Isserstedt & Schnitzer, 2005). This results in high costs not only for the student but for their institutions and thereby their states as well. The current research provides information and knowledge about the underlying meaning of academic practices and communication in different cultural contexts, as was explicitly requested by international students from culturally distant backgrounds (such as East Asian students) in a US context (Hanassab & Tidwell, 2002). The inclusion of both the teacher and student perspective in the current study allows for an increased understanding of these differences from not only the student side, but the faculty side as well. In particular the behavioral scenario measure has large potential for applied purposes in the sense that it might easily be transformed into an intercultural training tool, following a culture assimilator approach that can familiarize both students and teachers with the diversity in beliefs about academic learning that exists both cross-culturally as well as within culturally.

### ***1.3 Methodology***

The research that is reported in this dissertation includes three methodological approaches. This diversity of methods sheds light on the topic from a multitude of angles and supports the strong relevance of the findings on both an empirical and theoretical level. As a start, an extensive theoretical review was conducted on a diverse range of studies in order to provide a stable theoretical foundation to base the following empirical studies on. This theoretical analysis was followed by an explicit measurement of beliefs about learning in the form of a rating scale and behavioral scenario method. Lastly, an implicit measure was applied to evaluate the degree to which the mind and virtue orientation are represented as chronically activated prototypes about learning in the minds of German and Chinese students. This triangulation of research methods increases the credibility and validity of the results obtained in each sub-study. Cross-examining the results of the theoretical review with survey studies that were conducted in five socio-cultural contexts, and an experimental study that moved from explicit to implicit measurement, allowed verification of the results that support the

cultural difference in learning in the framework of the mind – virtue orientation theory.

To characterize the nature of this research endeavor, the taxonomy of cross-cultural studies that was developed by Van de Vijver and Leung (1997) can be applied. These authors described four typologies in which the majority of studies that are conducted in the field of cross-cultural psychology can be categorized (see also Van de Vijver and Leung, 2000). An overview of this typology is included in Table 1.

Table 1. *Types of cross-cultural studies (source: Van de Vijver & Leung, 2000).*

Consideration of Contextual Factors	Orientated More Toward Hypothesis Testing	Orientated More Toward Exploration
No	Generalizability studies	Psychological differences studies
Yes	Theory-driven studies	External validation studies.

The current study however does not adhere to merely one type, but combines and includes elements of two of the four types, since it is a theory-driven study that examines the generalizability of beliefs about learning across cultural contexts. In both regards, it is however a level-oriented study, not a structure-oriented one. This level-orientation is due to the fact that all studies focus on differences in the magnitude of variables across cultures, i.e. in the endorsement of mind and virtue oriented beliefs about learning. A structure-oriented approach examining the relationships among variables in order to identify similarities and differences in these relationships across cultures, might be an interesting avenue for future research, but is not applied in the current study.

Regarding the theory-driven approach, Li's previous qualitative study formed the basis for all of the studies. The project was clearly driven by the hypotheses that could be derived from this theory. The main advantage of this theory-driven approach is that the study is therefore founded on a solid theoretical basis. The disadvantage of this approach is the focus on the mind – virtue orientation theory as the single explanatory framework, thereby relatively neglecting alternative interpretations. Within this theory-driven approach, attention was paid to the (lack of) universality in the beliefs people have about good learning. The cultural difference in the endorsement of mind and virtue oriented beliefs about learning is at the heart of all studies in the sense that the primary aim of the research is to assess the difference in the relative endorsement of mind and virtue oriented beliefs about learning

in different cultural contexts. The strong theoretical framework on the basis of which hypotheses are generated about cross-cultural similarities and differences is therefore one of its main strengths. Moreover, this approach allowed a systematic sampling of the to be examined cultures (Van de Vijver & Leung, 1997), since Germany and China as well as Poland and Romania were selected because they were hypothesized to represent different values on the theoretical continuum of the mind and virtue orientation. The disadvantage of this approach is however that other contextual factors that might confound the findings are largely overlooked. Although the (non-significant) effects of (e.g.,) gender and academic discipline are reported in chapter three, other theoretical explanations of the effects are not addressed outside of the general concluding remarks in chapter 6.

Lastly, all studies have been conducted in participants' native language. The measures were developed in German, English and Chinese simultaneously by a bilingual committee. The Romanian and Polish translations were created by applying the translation-backtranslation method in order to assure the accuracy of the measures in each culture. To achieve the greatest degree of similarity in comprehensibility and naturalness as possible, the translations were adapted slightly in each translation (e.g., the names of the protagonists in the scenarios were adjusted to common names in the respective languages). In addition to the prevention of norm activation of the culture that the language of the survey is associated with if all studies had been conducted in English, it has been found that events and behaviors are more easily recalled when the language of the interview matches the language spoken during the relevant domain of life (Schwarz, Oyserman, & Peytcheva, 2010).

### **1.4 Concepts**

Humans engage in learning in a broader sense than mere academic learning. Learning is after all perhaps not a unique human characteristic, but surely a central one. Not only do people learn in a formal setting, but cultural beliefs in particular are modified and subsequently taught to others indefinitely, as a defining feature of humanity (Heine & Ruby, 2010). It should therefore be clearly stated how the present topic of learning should be understood, as well as the concept of culture as such and the way that this concept influences psychological processes.

The present research is a reflection of the understanding of the influence of culture that is currently prevalent in the domain of cross-cultural psychology. This understanding holds that individuals across cultures have access to a diverse set of both overlapping and contradictory processes and procedures for making sense of the world, but that it are the beliefs, self-

concepts, values and cognitions that are more 'chronically salient' that differ (Hannover & Kühnen, 2004; Oyserman & Sorensen, 2009). Even in a cultural-historical approach as is currently applied, variations in cultural practices are not to be seen as traits of individuals, but as tendencies of people with certain histories to engage in specific cultural activities (Gutiérrez & Rogoff, 2003). This conceptualization allows for the application of the term cultural syndrome. Cultural syndromes are defined as "networks of associated features, such that cuing one feature is likely, through spreading activation, to make other features salient in working memory as well" (Oyserman & Sorensen, 2009, p. 25). Cultures are assumed not to have merely one syndrome that can be drawn from, but have access to a multiplicity of syndromes that can be differentially salient. This implies that one person from a particular culture may react in one way (e.g., persisting upon failure), and another in another way (e.g., quiet contemplation). These reactions do not necessarily have to be found within the same individual, but will statistically be found more often within the same society as in another (Hofstede, Hofstede & Minkov, 2010).

This conceptualization thus closely matches the conceptualization of the mind and virtue orientation as cultural mandates towards learning, in the sense that all elements of the mind and virtue orientation are to be seen as expressions of the level to which each mandate is endorsed in a particular society. Culture is thus seen as a set of likely reactions of people with a common mental programming, not a combination of properties of a "modal personality" or "average citizen" of that country (Hofstede, Hofstede & Minkov, 2010). The conceptualization of the mind and virtue orientation as cultural mandates is outlined in more detail in chapter 2.

As a central concept that is applied throughout the studies, the definition of the concept of 'belief' follows the definition that beliefs are "part of a group of constructs that describe the structure and content of a person's thinking that are presumed to drive his/her actions" (Bryan & Atwater, 2002, p. 823). Hence, beliefs are "psychologically held understandings, premises, or propositions about the world that are felt to be true" (Richardson, 1996, p. 103 as quoted in Bryan & Atwater, 2002). Beliefs guide action by framing and organizing tasks that are to be acted upon. They are organized as systems that are connected to each other and to other cognitive / affective structures (Pajares, 1992). The content of these belief systems is derived from personal experience and transmission of cultural knowledge and include more affective and evaluative components than knowledge structures do (Nespor, 1987). Since they are subjective, they are in principle contestable but less malleable than knowledge (unless

deliberately challenged) once they are shaped by enculturative experience early in life (Pajares, 1992).

Throughout the studies, the concepts of the mind and virtue orientation are however not only referred to as cultural beliefs about learning, but also as 'cultural mandates', 'cultural frames' and 'mental / cognitive schema'. The connection between these different terminologies lies in the view that the mind and virtue orientation, which are conceptualized as cultural mandates on the theoretical level, are expected to be represented cognitively in the minds of contemporary students. The term mandate thus refers to the theoretical construct and the terms cultural frame, mental model and cognitive schema to the cognitive. These latter terms, especially those of mental model and cognitive schema have a tradition in the fields of cognitive anthropology and psychology. For example, D'Andrade (1990, as cited in Shore, 1996, p. 45) defined a cultural model as 'a cognitive schema that is intersubjectively shared by a cultural group'. Since this definition does not answer the question what the relationship is between a mental model, the social environment and personal knowledge, I add in line with Shore (1996), that the construction of a mental model mediates the individual's encounter with a particular physical world. A cultural model is thus shaped in an interplay between a person's mental model and the social environment in which one participates and is constructed as a mental model by the internalization of socially constrained experiences. Applied to the context of learning, one's experiences in the classroom and the reinforcement by both positive and negative social feedback of parents and teachers in this domain shape the cultural model that children internalize in relation to the concept of learning.

## Chapter 2

### *The Meaning of Learning, a Matter of Culture?*

#### *A theoretical framework <sup>2</sup>*

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<sup>2</sup> A modified version of this chapter has been submitted for publication as: Van Egmond, M.C., Kühnen, U., Li, J. (2011). *Mind and Virtue: The meaning of learning, a matter of culture?* Manuscript submitted for publication.

**Abstract**

DOES THE MEANING of learning vary across cultures? In order to answer this question a theoretical frame is introduced in the following chapter that allows integration of various reported cultural differences in the domain of learning. Building on previous work, we argue that the Western philosophical tradition has led to a 'mind orientation' in learning, whereas learning beliefs in East-Asia can be characterized as 'virtue oriented'. Characteristic of the Western mind orientation is for learning to be primarily attributed to the cognitive domain. In the virtue orientation, the moral dimension is just as much associated with learning as the cognitive, focusing on the development of the person as a whole. These two orientations are proposed to represent cultural mandates of learning in the respective cultures and are suggested to influence a variety of subordinate cultural tasks. The review reveals that beliefs about learning are influenced by equally elaborate cultural traditions, which can be interpreted in the frame of mind and virtue oriented cultural mandates in order to increase meaning-making of psychological differences on the cultural level.



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**2.1 Introduction**

When Immanuel Kant used the words “Sapere aude!” (“Dare to know!”) in 1784 to describe the essence of philosophy in his era, he could have hardly imagined that more than two centuries later, these two words might still be applied to describe the core of the concept of academic learning. Kant was a philosopher in the time of European Enlightenment, a period in history (17<sup>th</sup>-18<sup>th</sup> century) in which Europe rediscovered its intellectual heritage that originated in ancient Greece. What academia sees today as the optimal way of pursuing knowledge finds its origin in the philosophical developments of this era. From the rise of the idea that argument was to be founded on reason to the opening of social and political knowledge, that once were the domains of state and religious authorities, to the critical examination of the public, thereby creating an ‘egalitarian’ society are all values that form the foundation of contemporary pedagogical philosophy.

Unpacking Kant’s statement and taking a closer look at the cultural context in which it was created, however reveals that the statement reflects a set of implied cultural norms. For example, the statement implies that anyone might ‘dare’ to pursue knowledge, regardless of social status, acclaimed or acquired expertise. It additionally implies that learning is primarily a cognitive and rationalist pursuit of knowledge in which objective knowledge is thought to exist and which the individual can, and should, seek to acquire. Furthermore, an emphasis is placed on the value of courage in the pursuit of knowledge, not on respect for one’s teacher or contemplation of previously existing knowledge, but on the need for the individual to place his academic quest above social conventions which might conceptualize contradiction and criticism as disrespectful instead of valuable.

While Kant’s ‘sapere aude’ reflects an orientation towards academic learning that is embedded in the Western cultural historical context, similarly influential but qualitatively different philosophical traditions have influenced the way contemporary people in other cultural contexts think about learning. The equally elaborate networks of philosophers that form the basis of Chinese and Greek philosophy (Collins, 1998), often personified by Socrates and Confucius, are frequently applied to explain differences in an array of (socio-) cognitive processes of contemporary people in East-Asian and Western European / North American cultural contexts (e.g. Jin & Cortazzi, 2006; Kitayama & Imada, 2010; Lee, 1996; Nisbett, 2003; Niu & Sternberg, 2006; Yang, Zheng, & Li, 2006).

Although learning in itself might be a universal aspect of human development, the meaning that is attached to it as a concept is culturally shaped. On a most abstract level, learning goals can be categorized into two major important developmental goals. First, scholars aim at improving their knowledge in certain domains and their mental skills. Secondly, personal

development in the sense of moral and social self-improvement is a generally endorsed important learning goal as well. While both goals can be considered to be important for learners' everywhere, the relative emphasis that is placed on each of these aspects varies between cultures. In fact, like most human behavior, learning requires engaging with socially constructed meanings and practices. It does not merely concern brain structure and cannot be examined regardless of its historical and cultural context (Peters, 2007). Thought, learning and knowledge are social phenomena (Palinscar, 1998). The influence culture has on the social construction of phenomena such as meanings and practices, causes learning to be a fundamentally cultural endeavor (Cheng & Wong, 1996). The notion of the cultural context should therefore be taken seriously, especially in the highly globalized arena of higher education. For this purpose, we will review the current literature on cross-cultural differences in the meaning that students and educators with an East-Asian and Western cultural background attach to the concept of learning, with a focus on the higher education context. We introduce the conceptualization of the mind and virtue orientations as cultural 'mandates' that form the overarching theme for many observed cultural differences between Western and East-Asian contexts. The review focuses on integrating literature from various psychological studies in which cultural differences are found in behavioral and psychological tendencies of Western and East-Asian students. The reviewed studies have been conducted in samples that represent a variety of sociocultural contexts (e.g., Chinese students enrolled in Western institutes of higher education and both foreign and Chinese born Chinese-American/Australian students). Research has found consistent cultural differences between these various samples. Cultural factors influence universal tasks of human development such as gaining knowledge and the concept of intelligence, from as early as infancy since they are transmitted to children by parents' child-rearing practices (Greenfield, Keller, Fuligni, & Maynard, 2003). We therefore include studies of samples that could theoretically be expected to be only marginally influenced by their East-Asian origin, since these studies illustrate the persistence of the Confucian heritage even if students are exposed to competing cultural influences at school. From this review, the mind and virtue orientations are constructed as two new interpretative themes that describe the cultural mandates towards learning in the West and East-Asia and in which currently disjoint findings can be integrated.

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### *2.1.1 Cultural orientations towards learning*

In different fields of literature, East Asian (a majority of Chinese, but also Japanese and Korean) students have been found to differ on various issues related to the domain of learning, from their Western European (e.g. British, German and Dutch) and American counterparts (e.g. achievement motivation (Hau & Ho, 2008), self-concept (Markus & Kitayama, 1991), verbalization (Kim, 2002; 2008), classroom participation (Paulhus, Duncan, & Yik, 2002; Van Petegem, Aelterman, Van Keer, & Rosseel, 2007), learning strategies (Helmke & Tuyet, 1999; Joy & Kolb, 2009; Kember, 2000; Kingston & Forland, 2008); reasoning (Peng & Nisbett, 1999); and (holistic and analytic) cognitive styles (Nisbett, Peng, Choi, & Norenzayan, 2001). Although each of these topics has received ample attention in their respective fields (e.g. educational research, psychology, sociology, anthropology), a systematic understanding of the different findings so far has not been established (Hau & Ho, 2008). Research with the specific aim of assessing the meaning that learning and receiving an education holds for students around the world has even been called sparse (Henderson-King & Smith, 2006). As such, no standard methodology has been established to assess cultural models of learning (Fryberg & Markus, 2007). With international mobility in academia becoming an increasingly important part of everyday life at universities around the world, understanding and making explicit the distinct, but often tacit and taken for granted cultural assumptions that underlie the concept of learning, is however of primary importance (Al-Issa, 2005; Fryberg & Markus, 2007; Gay, 2002; Jin & Cortazzi, 2006).

From a social constructivist perspective on learning, in which schooling is regarded as an inherently cultural process (Palinscar, 1998), we will review the literature in different sub-domains of research in order to construct two new interpretive themes in which these diffused findings can be integrated. At the moment, these findings represent different cultural tasks that are a part of the learning process, which have not been integrated in a meaningful way yet. The integration of these findings into a larger contextual framework allows the construction of two 'cultural mandates' of the concept of learning. The mandates that we propose are the mind and the virtue orientation. The model that we will follow in the development of these orientations as cultural mandates is the 'cultural task analysis' proposed by Kitayama and Imada (2010). The aim of this approach is to explain how abstract goals and ideals on the cultural level affect psychological processes on the subordinate level.

Cultural mandates have been described as abstract constructs that are typically embodied in the culture's philosophical traditions (Kitayama, Park, Sevincer, Karasawa & Uskul, 2009). Also, they represent the ideals and

general goals that are sanctioned and encouraged within the culture. As constructed originally by Li (2003), the mind and virtue orientations toward learning represent the ideals and goals of learning that are encouraged within the two cultural regions at hand. They could therefore be conceptualized as forming cultural mandates. As such, cultural mandates do not offer specific routines or procedures for individuals. Instead, this is the function of 'cultural tasks'. Cultural tasks are culturally scripted procedures or means by which to achieve the culture's mandate (Kitayama et al., 2009). As will be discussed, the cultural mandate of mind orientation can for example be achieved by the 'task' of critical thinking. This does not imply that people who grow up in an environment that endorses another cultural mandate, cannot perform this task. It merely is closer to the cultural mandate of mind oriented learning.

Using the 'cultural task analysis' as the framework to understand how culture influences psychological processes prevents the mind and virtue orientations from being characterized as discrete, homogenous and unchanging concepts (Ryan & Louie, 2007). Instead, the conceptualization of the mind and virtue orientations as cultural mandates accommodates hybrid combinations of cultural tasks as well. Each mandate merely promotes certain psychological tendencies over others, which results in mean tendencies of individuals from a certain culture to prefer exhibiting certain cultural tasks rather than others. For example, many European students would use memorization and long hours of private study as a preferred method of learning, especially when studying for exams. The beliefs individuals associate with learning are therefore conceptualized to not only be culturally based but to also reflect an individual's personality, type of school they attended, and what was valued or expected from education within their family. This conceptualization allows for a large variety to exist in the beliefs of individuals within both Western and East-Asian cultures, with some students preferring group discussions while others obtain best results after concentrated contemplation. Individuals in both cultures can thus be highly unique in their selection of cultural tasks (Kitayama & Imada, 2010). People may also select certain culturally mandated tasks, for example in the domain of affect (e.g. feeling motivated after failing an exam in the virtue orientation), but not in others, such as learning behavior (e.g. studying material by discussing it with others instead of preferring quiet contemplation). Which tasks people perform is not only a function of culture, but of a multitude of factors. The within-culture similarity however results from the shared underlying pursuit of the cultural imperative of the mind or virtue orientation in learning. At the cultural level of analysis, a cultural difference is however bound to be found in the cultural tasks that are emphasized between regions, due to the cultural imperative they are designed to address.

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### 2.1.2 *The mind & virtue orientations*

The empirical origin of the formulation of the mind and virtue orientations towards learning lies in previous work by the third author of this paper. Li (2003) conducted a prototype study, asking Chinese and European American students to freely associate words, which they felt reflected the concept of 'learning', best. From the bottom-up approach that her analysis allowed, a systematic qualitative difference emerged between the concepts that Chinese and European American students hold about the concept of learning. The domains of the concepts of learning that her analysis revealed include the *purposes* (e.g., what people think the goal of learning is), *processes* (e.g., which strategy one applies), *personal regard* (e.g., whether or not and why learning is important), *affects* (e.g., whether one experiences joy or dread from learning), and *social perceptions* (e.g., the perception of successful learners vs. unsuccessful ones and perceptions of teachers). One's beliefs about these elements of the learning process underlie the motivation for learning and influence learning on a cognitive, affective and behavioral level. Li found that although the structure of the mental construct of learning is similar for both Western and Asian students, the content of the categories of conceptions of learning differ due to fundamental differences in the meanings the two cultures attach to learning (Li, 2003).

For European American students, the superordinate level of the concept was defined as the process by which individuals' minds acquire knowledge (Li, 2003). Conceptually, one focuses on 'the distinction between this neutrally existing body of knowledge and the internal characteristics of the individual that enable the person to acquire it' (p. 264). These internal characteristics (i.e. cultural tasks and psychological tendencies on the underlying levels) include cognitive skill, intelligence, and abilities on the one hand, and thinking, communicating and active engagement on the other. Although learning was found to be an important part of the lives of the students, an intimate connection of learning with their emotional, spiritual or moral lives was not found. As can be concluded, the U.S. view of learning focuses on cognitive aspects and was therefore conceptualized as "mind oriented".

For Chinese students, Li found that knowledge is regarded as something that is indispensable to one's personal life. On the highest level of abstraction, knowledge included not only the externally existing body of knowledge, or mental functions for Chinese students, but other dimensions of life such as the personal, social and moral as well. The most central cultural tasks are personal-agentic by nature and include diligence, self-exertion, endurance of hardship, perseverance, and concentration, which have a moral and virtuous overtone. In addition to the objective mastery of academic subjects, learning aims at the unity of knowing and morality, by

seeing objective knowledge not as the ultimate purpose that is valuable to acquire for its own sake, but also for the contribution one makes to society. Li (2003) therefore termed the superordinate concept of learning for Chinese students as “virtue oriented”.

The finding that the mental representation of beliefs about learning is identically structured in the East-Asian and Western mind, but contains culturally emic contents resonates well with studies on cultural differences in epistemological beliefs (Chan & Elliot, 2002). Conceptually, epistemology should however be distinguished from cultural beliefs about learning. Whereas epistemology concerns the theory of knowing and knowledge, the mind and virtue orientations towards learning focus on the processes that are involved in learning and the meaning that is associated with the concept as such. They therefore do not aim to explain cultural variation in notions such as truth, belief or justification. Rather, they aim to integrate variations in motivational processes, learning behaviors and affect evoked by successful or unsuccessful completion of learning tasks. In the following, we will provide an integrative review of findings from diverse fields (including cultural, social, cognitive, developmental and educational psychology) and will explicate their cultural embeddedness along the lines of the mind-virtue framework.

## ***2.2 Mind orientation***

*“The whole of science is nothing more  
than a refinement of everyday thinking.”*

Albert Einstein

In Western philosophical history, the site of learning and knowing has primarily been referred to as the mind (Merriam & Kim, 2008). Although the concepts of thinking, reasoning and learning have received tremendous attention in the philosophical literature over the course of centuries, leading to a great variety of perspectives towards them, the contemporary consensus is that thinking in itself is seen as the most central element of learning (Peters, 2007). More specifically, in Western European and North American university contexts good learning has become synonymous with critical thinking (Doddington, 2007). A good part of Western education that precedes the college years, is already dedicated to teaching children the beginnings of argumentation, enabling six-year old children to engage in discussions that exhibit principles of reasoning (Doddington, 2007; Peng & Nisbett, 1999). As a student in the later years of schooling, one is taught that the information one receives must be treated critically, to determine its verifiability (Garrison, 1991). To become a critical thinker, a person must have certain attitudes, dispositions, habits of mind, and character traits,

which together may be labelled the “critical attitude”. (Siegel, 1988 cited in Garrison, 1991, p. 289). Although it has been questioned how these concepts should be understood (e.g., as skills or dispositions and general or domain-specific (Mason, 2007), resistance or critique towards the importance and centrality of this concept to academic learning is scarce. The moral domain is seen as relatively unrelated to the cognitive and people in Western cultures tend to be uncomfortable with moral issues in the educational arena (Tweed & Lehman, 2002). It is instead critical thinking that has been described as ‘a necessary condition’ for learning to take place (McPeck, 1981, cited in Garrison, 1991, p. 287). Overall, an emphasis is placed on cognitive thinking skills of the independent learning individual throughout a large part of western philosophical history. The development of these critical skills is seen as the primary goal of the learner to pursue over the course of studying.

Conceptually, the connection between critical thinking and rationality is frequently stressed (Mason, 2007). Debating is one of the core skills for any academic to master and students are encouraged to critically assess course material, regardless of academic discipline. In the higher education literature, the question of whether classroom discussions are associated with improved student learning has even reached consensus (Askell-Williams & Lawson, 2005). Empirically, the value that is placed on it is illustrated by a study of over 1100 US American college students. In this study, a significant correlation was found between college level critical thinking skills and college GPA (Facione, 2006).

This central tendency not to take things for granted, but always assess alternative possibilities finds its origin in the Athenian schools of thought, led by philosophers like Socrates, Plato, and Aristotle. The rediscovery and elaboration of this work during the Reformation and Renaissance eras in Western Europe, in which logic was formulated as the most central in the differentiation of good arguments from bad ones, has lead to the application of elements of this legacy to the interpretation of contemporary cultural differences in reasoning and thinking styles (Nisbett, 2003).

Another large part of Socrates’ legacy originates from his public displays of questioning the knowledge of Athens’ authority figures on the city’s market squares. Socrates believed that it was only a critical debate, with both parties obeying the rules of formal logic that could determine what was true and what was not. It did not matter to him if his opponent was an aristocrat or a merchant. Status or ascribed authority - which might have evoked respectful restraint at other times and in other cultural contexts - were no reasons to be excused from being questioned here. Although it cannot be denied that Socrates and other ancient Greek philosophers such as

Plato pursued logic with a deeper moral and social meaning in mind, the emphasis that was placed on the supremacy of the human mind and the laws of logic to uncover the world's mysteries, is a key determinant of their lasting legacy, that is still reflected in current academic practices, as evidenced by the reviewed studies.

Moreover, it is important to note that the emphasis on principles of logic and critical thought, over social conventions could only have been developed and endorsed in cultural contexts in which the independence of the person is central (Markus & Kitayama, 1991; Nisbett, 2003). The belief that no authority figure is exempt from making claims without being questioned by others is strongly related to the concepts of independence and individualism, concepts that form the cornerstone of the current cross-cultural research into East Asian and Western psychologies. In a society in which a person's worth is primarily developed by virtue of his or her individual actions, as is the case in the West, people may be more willing to withstand popular opinion. Moreover, the tolerance for the uncertainty that this creates is indicative of a value orientation that not only values the expression of individual opinions (individualism), but also one in which there is weak uncertainty avoidance and low power distance, which are more typical for Western than East-Asian contexts (Hofstede, 1986). Taking a critical position toward the words of others, independent of the social standing of the person expressing them, or the relationship one has with them, therefore shows that one is independent even in the domain of cognition (Tweed & Lehman, 2002).

Equally influential has been the fact that Socrates taught in the form of dialogues. The modern finding that communication is an essential component of the learning process in the West reflects the inextricable nature of the concepts of verbalization and learning. Verbal or written exchange of ideas is almost inseparably intertwined with the Western concept of learning. According to Wittgenstein, thinking can even be understood to be a kind of language itself (Peters, 2007). Empirically, ample research is available on the value of communication in the Western classroom (Kim, 2002). Brown and Campione (1996, as cited in Askill-Williams & Lawson, 2005, p. 85) for example identified the 'dialogic base' as one of the first principles of learning, which 'provides the format for novices to adopt the discourse structure, goals, values and belief system of scientific practice'. Furthermore, as Rivard & Straw (2000) point out, it is often thought that 'we come to an understanding in the course of communicating it'. Askill-Williams and Lawson (2005) found that students report that classroom discussion increases their motivation. These findings are reflected in the cognitive psychological research by Kim (2008), who found support for the proposition that the act of speech is more psychologically burdensome



for people from East Asian contexts than for people from European American cultural contexts. Whereas East Asian participants' performance on a problem-solving task was impaired upon verbalization, this effect did not occur for European American participants. Over all, the research supports the premise that verbalization of thoughts is a more integral part of problem solving for Western participants than for East Asian participants.

Besides seeing communication as an essential component of the learning process and a means of improving understanding, talking must also be considered to be the basic means through which individuals express their ideas, points of view and individuality (Kim, 2002). The emphasis that is placed in the West on talking, especially in formal learning contexts, therefore reflects the more general psychological finding that self-expression and uniqueness are values that are endorsed more strongly in the West than in Asia (Markus & Kitayama, 1991). This model of the self has led to the additional finding that positive self-regard is an important motivating force for people from a Western cultural background. North American students have for example been found to feel especially motivated to perform to the best of their abilities, if the task at hand is one on which they know they excel (Heine, Kitayama, Lehman, Takata, Ide, Leung, & Matsumoto, 2001; Heine, Lehman, Markus, & Kitayama, 1999). The background of this finding is formed by the belief that a person's attributes are relatively stable and that it is thus important to view these attributes positively. In the academic context, this implies that Western students' motivation increases upon positive feedback on their performance. Since the emphasis in learning is on cognitive performance, a positive evaluation of this performance (i.e. academic success) increases students' self-esteem and thereby increases motivation. Failure on the other hand hurts one's self-esteem and leads to a decrease in motivation.

In conclusion, the Western perspective on learning focuses on cognitive processes. The competencies that students are to strive for are those that emphasize individual ability, cultivation of the mind, curiosity, creativity and personal achievement (Keller, 2003). Learning serves the purpose of developing mental functions to understand the world, develop thinking skills, realize personal goals and pursue knowledge, a valued learning attitude being that of skepticism and the critical evaluation of information, before it can be accepted as knowledge. Verbal expression of one's thoughts is indispensable to the intellectual process and studying efficiently is put forth as a key strategy to reach academic success (Newport, 2007). Regardless of the question whether this minimal sense of moral responsibility and (over-) emphasis on moral relativism that characterizes education in late modern society is desirable or not, the fact remains that it is the absence of the domain of morality in education that is typically associated with education in

modern Western societies (Mason, 2001). As Aristotle put it, reason is “the best thing in us” and the life of reason is the best life (Munro, 1985). Emotion, feelings and morality are not seen in contrast to critical thinking, just as long as reason prevails (Doddington, 2007). Related to reason, it is the tradition of debate that is strongly endorsed.

### **2.3 Virtue orientation**

*“The determined scholar and the man of virtue  
will not seek to live at the expense of injuring their virtue.  
They will even sacrifice their lives to preserve their virtue complete.”*  
Confucius

Over the course of centuries, Confucius’ (551-479 BCE) heritage developed into Confucianism. Chinese society flourished under the influence of this philosophical legacy and the origin of Chinese cultural values can mainly be attributed to this philosophy (Fengyan, 2004). Confucius’ core concept of learning lies in seeing it as the pursuit for any human being to become the most genuine, sincere and humane person he or she can become (the concept of *ren* in Chinese) (Tu, 1979, as quoted by Li, 2003; Yang, Zheng, & Li, 2006). This pursuit of developing oneself morally and socially is open to everyone, regardless of class, age or gender. In traditional Chinese society, formal learning was understood to be essential for the development and improvement of the person. The meaning of learning is therefore not merely centered on cognitive development, but more importantly, it serves the purpose of becoming a better human being in all domains of life. From the virtue oriented perspective, morality and cognition don’t belong to separate domains, as in the Western mind orientation, but are both inextricably related to the learning process. This basic premise of the unity between cognition and morality in East Asian thinking about learning is exhibited in various empirical findings.

A teacher himself, Confucius valued the virtues of endurance, diligence and respect in his students. He conceptualized a good student as any person that can be characterized by being dedicated to the learning process, and who possesses diligence and perseverance rather than one who relies on his or her inherent ability to acquire knowledge (‘intelligence’), since learning was mainly regarded as an effortful process. The question whether this Confucian tradition still reflects Chinese students today has been empirically addressed. Li (2003) for example found that 79% of Chinese college students defined knowledge as “a need to self-perfect”, while only 15% of European Americans used this definition. In another study, Chinese students in Australia reported putting greater effort into academic pursuits

than did Anglo Australian and other Western students (Rosenthal & Feldman, 1991). The idea of Chinese parents and teachers alike is that students will achieve when they work hard, while genetic abilities only come second (Chan & Elliot, 2002; Cheng & Wong, 1996; Hau & Salili, 1991; Jin & Cortazzi, 2006).

For Chinese scholars, gaining an understanding is considered to be a long process that requires extensive personal effort. Memorization and repetition are two ways to show this effort (Li, 2005). The fact that memorization is a dominant learning strategy for many East-Asian scholars has however often been a reason for misunderstanding. Memorization in the Chinese case should not be seen as rote-learning that can be classified as a 'surface-learning strategy' (Biggs, 1996). Instead, Asian students have been reported to be more mastery oriented in their achievement goals, than Anglo students (McInerney, 2008). Repetition and memorization should therefore be interpreted in the sense that they are seen by East Asian learners and teachers as paths that lead one to a deep understanding, with the relationship between memorizing and understanding being complementary, rather than mutually exclusive (Purdie & Hattie, 2002; Watkins & Biggs, 1996; Kember, 2000; Lee, 1996; Peng, Spencer-Rodgers, & Nian, 2006). By quietly contemplating the material, one exerts the effort that is required of students to be considered a 'good student'.

Correspondingly, learning is primarily seen as an internal process that does not include or even require communication (Kim, 2002). This conceptualization stands in sharp contrast to the Socratic tradition of debate. Instead, East Asians tend to believe that states of silence and introspection are beneficial for high levels of thinking, an assumption that is well expressed in Buddhist and Taoist practices, such as meditation (Kim, 2002; Peng, Spencer-Rodgers, & Nian, 2006). It has been reported that a large amount of great Chinese creative works has been produced by poets and artists who used meditation, self-cultivation and quietness as primary techniques (Niu & Sternberg, 2006). Behavior that appears passive from a Western viewpoint is associated with a range of positive indications in East Asian contexts, such as maturity, cooperativeness and managing face (Kim & Markus, 2002). The emphasis on talk and communication in learning that is prevalent in the Western cultural context is therefore not universal, as illustrated by the finding that the cognitive performance of Western students is less impaired than that of East Asian students, upon verbalization (Kim, 2002).

Another learning-related domain in which morality and cognition are conceptualized as collaborative entities, instead of mutually exclusive categories, is in the evaluation of creativity. Research has found cultural factors to affect the definition that is attached to the concept of creativity.

Lubart (1990) for example found that Western cultures emphasize novelty when evaluating creative performance, while non-Western societies value appropriateness more. Chinese in Mainland China, Hong Kong, and Taiwan were found to regard characteristics such as “have original ideas” and “innovative,” as less important than “good thinking” and “has wisdom” (Rudowicz & Yue, 2000). Despite subtle differences between the concepts of creativity in these three groups of ‘Confucian heritage’ undergraduate samples, a frequently reported feature of creativity in Chinese heritage cultures is the inclusion of a moral component (Niu & Sternberg, 2006). Yue and Leung (2003) for example found that the motives and attitudes underlying creativity among Hong Kong and mainland Chinese undergraduates centered around extrinsic and instrumental rewards like social responsibility, good performance and contributions, instead of intrinsic ones like personal satisfaction, illustrating the interconnectedness of the cognitive and social-moral domains in learning.

The emphasis on morality in the East-Asian cultural context should be understood in relation with the literature on the cultural difference between the East and the West in self-construal processes in two ways. First of all, the view of learning as a process of self-development is associated to the East-Asian view of one’s self as relatively fluid and malleable (Markus & Kitayama, 1999) and in ‘perpetual change’ as expressed in not only Confucian, but Taoist beliefs as well (Peng, Spencer-Rodgers, & Nian, 2006, p. 250). If learning is primarily seen as a process by which people develop themselves to become a better person, the interpretation of academic success and failure will differ from the Western perspective in which the maintenance of positive self-regard is of primary importance. Instead, it allows negative feedback to be seen as an opportunity for improvement. Correspondingly, Heine et al. (2001) found that in contrast to North Americans, Japanese students were more motivated to persist on a task on which they failed, than on a task on which they had already been successful.

Secondly, a large body of research now indicates that people from an Asian cultural background tend to define their self-concepts in strong relation to others, thereby emphasizing their interdependence with others over their independence from them (Kitayama & Imada, 2010). In order to develop and sustain the social relations that are critical to the development of the interdependent self, maintaining group harmony is essential. One’s inner attributes (opinions, abilities and characteristics) must therefore be controlled and regulated to resolve the primary task of interdependence (Markus & Kitayama, 1991). Any form of confrontation, such as debate, can however not be performed without fear of making an enemy (Cromer, 1993). Moreover, Hofstede (1986) has indicated that interpreting intellectual disagreement as personal disloyalty is more likely to occur by individuals with

a value orientation that includes not only collectivism, but also strong uncertainty avoidance and high power distance since criticizing a teacher's opinion or having opinions different from those of classical work threatens the harmonious social order (Merriam & Kim, 2008). It is therefore unlikely for a tradition of debate to have developed, let alone flourish in a society that is primarily concerned with maintaining harmony in social relationships. Instead, Chinese everyday life is steeped in morality and the emphasis on the need for virtuous behavior. Wang and Leichtman (2000) provide empirical support for this theoretical hypothesis with their finding that Chinese children already make more didactic statements concerning social standards and moral rules in their narratives than Western children. Thus, learning is not only seen as a cognitive task, but valued as an indication of morality by Chinese children, already before extensive education has taken place. This research supports the strong influence of parental beliefs and values in the early stages of cognitive development of a child (Keller, Yovsi, Borke, Kärtner, Jensen, & Papaligoura, 2004).

The provided review reveals that the social and moral domains are intertwined with the cognitive in East-Asian contexts. By learning, one not only pursues knowledge, but also strives to be the best person one can be. Competence is achieved by moral self-cultivation, making a social contribution and the celebration of individual achievement is discouraged (Keller, 2003). As put by Cheng and Wong (1996), 'a student with good conduct but poor learning is unfortunate; a student with good learning but poor conduct is unacceptable'. The role of the teachers is therefore broader than in the Western context and includes an exemplary function. Teachers are respected members of society and are expected to act as examples for students both in and outside of the classroom in moral aspects as well (Cheng & Wong, 1996; Jin & Cortazzi, 2006). For the student, achievements at school bring pride to their social others as well. This is reflected in the finding that academic achievement includes a strong social component (Chang & Wong, 2008). Becoming educated is therefore essential for being a good person and for being a good family member (Fryberg & Markus, 2007).

This interconnection of the need for virtuous behavior and the cognitive pursuit of knowledge places moral and social domains at the heart of the concept of learning, resulting in divergent learning tendencies of both students and teaching staff in different cultural regions, as recently examined empirically (Van Egmond, Kühnen, Li, Yan, Haberstroh, & Damer, 2011). Conceptualizing the East-Asian orientation as the cultural mandate towards learning allows the interpretation of a myriad of findings as being 'virtue oriented'.

## ***2.4 Conclusions and future directions***

Despite prevailing developments towards globalization, the issue of cultural influences in education persists (Suárez-Orozco & Qin-Hilliard, 2004). The current review illustrates that different cultural traditions have led to culturally distinct ways of giving meaning to learning. The way people think about learning differs in multiple respects in Western and East-Asian contexts. These differences were placed in the interpretative framework of the mind and virtue orientations, as forming cultural mandates of learning. From the large body of theoretical and empirical research we analyzed, it can be concluded that for East Asian students, the learning process is first and foremost conceptualized as a lifelong pursuit to develop oneself morally and socially, to achieve mastery of the material, and to contribute to society by doing so. Questioning authority, a starting point in the Socratic tradition, is rather postponed until the student reaches understanding of the words of those that preceded him or her. To accomplish these culturally mandated aims, East Asian students are taught to develop diligence, concentration and humility. These cultural tasks lead to a virtue orientation towards learning. In the West, learning is primarily based on the idea that the student should achieve personal insight into the material by thinking critically, debating and keeping a challenging attitude. The cultural mandate of learning can therefore be characterized as mind oriented. The motivation for learning is achievement-based and efficiency and creativity are the main tasks that facilitate the learning process (Li, 2003).

The proposed cultural mandates of mind and virtue aim to suggest that the relative emphasis that is placed on these goals differs between cultures. In line with Shweder's conceptualization of three universal moral rhetorics, it is not the level of social and moral development that differs for people in different cultures, but it is the kind of rhetoric that is emphasized. For example, the "ethics of autonomy", which emphasizes the protection of the individual's rights and freedom is highly valued by US Americans, whereas it is more likely for Asians to endorse and base moral judgments on the "ethics of community" which includes the themes of duty, status, hierarchy and interdependence (Vasquez, Keltner, Ebenbach, Banaszynski, 2001; Fung, 1999). In relation to the mind orientation on the other hand, the possible outcomes on the cognitive level should be understood similarly, in the sense that it is not the level of cognitive development as such that is suggested to differ between cultures, but the relative emphasis that is placed on analytic thinking versus holistic thinking (Nisbett, Peng, Choi & Norenzayan, 2001).

Moreover, as indicated, the described orientations are conceptualized to operate on the relatively abstract cultural level, and cannot be equated with individuals' beliefs (Li, 2003). Culture can and should only be regarded

as one influence of the many that people are exposed to (Ryan & Louie, 2007). Additionally, the mind and virtue concepts are conceptualized as the results of the environment in which they are embedded and are not conceptualized as static concepts. This conceptualization therefore includes the understanding that students can agree with various aspects of both mandates, learn the corresponding behaviors (tasks) for either orientation and even change orientations over time, based on the goals and ideals that are sanctioned and endorsed in the academic environment that one is participating in. Results from studies on 'cultural frames of reference' provide support for the assumption that cultural frameworks are adaptable. Studies in this field have demonstrated that bicultural students can switch between cultural frames in response to social or situational cues (Hong, Morris, Chiu, & Benet-Martinez, 2000). This effect has been found to apply to the domain of motivational standards in learning as well (Zusho, 2008). In our own recent work, we did not find support in favor of intercultural adaptation of cultural beliefs about learning, since Chinese students in both China and enrolled in Germany indicated to be more likely to behave in line with the virtue orientation than the mind orientation in a behavioral scenario study (Van Egmond, et al., 2011). These results can however not discard the possibility that sojourner students' beliefs may change upon intercultural exchange.

A limitation of the current review is that the framework for the mind – virtue orientation may only be constructed for the two, broadly defined regions of East Asia and the West. As we outlined in the beginning, both acquiring knowledge and mental skills, as well as moral and social self-improvement can be considered important goals of academic learning around the globe. Cultural differences have for example also been found between the learning preferences of American and Arab students (Al-Issa, 2005). Since an increasing number of American universities are opening foreign branches, for example in the Arabian Gulf area, it would be interesting to examine the degree to which students from this cultural region would endorse mind and virtue oriented beliefs about learning. In the European context, the largest group of foreign students is from Eastern European countries (e.g. in Germany (Federal Ministry of Education and Research, 2005). As of yet, hardly any literature is available on the concepts of learning that exist in these cultural contexts. The application of the mind-virtue framework promises fruitful insights into learning beliefs of students and teachers in a plethora of cultures, i.e. beyond the frequently studied East-West categories. Additional research could be dedicated to the refinement of the current framework, in the sense that relative regional differences may exist in the endorsement of the mind and virtue orientations within both the Western and East Asian contexts. Moreover, especially for the East-Asian context the

current review was based on research conducted with diverse samples and primary attention has been dedicated to the influence of Confucianism and Greek philosophy on these beliefs. Other cultural factors, such as Taoism and Buddhism in the East-Asian context and (e.g.,) Protestantism in the West, as well as diverse value orientations can be hypothesized to influence beliefs about learning and learning-related processes as well (e.g., Dekker & Fischer, 2008).

The diversity of samples that was drawn from in the review might be viewed as weakening the argument. The fact that cultural differences are found for students across diverse cultural backgrounds however also speaks to the robustness of the mind – virtue framework and the penetrating influence of cultural background, even if only transmitted by parents' beliefs. The differences in the beliefs that specific subsamples of students hold should however be addressed in more detail in future studies.

Furthermore, variation in orientations may not only result from intercultural contact, but might also result from modernization processes within the cultural region itself. This realization calls for additional caution in making generalizations of cultural orientations and is especially pertinent in the case of China. Recent empirical studies have therefore called for a differentiated approach in the analysis of education topics concerning China, including the perspective that Confucian influences go together with modern elements in the contemporary Chinese classroom, due to the highly dynamic social, economic and ideological circumstances (Ryan & Louie, 2007; Shi, 2006). Yet, Chinese modernity is still in the initial phases of development and is moreover likely to take a markedly different path from that of the West (Jacques, 2009).

This paper has shown that the current literature supports the framework that the mind and virtue orientations represent to interpret existing orientations toward learning in East-Asia and the Western cultural region. The review has shown that beliefs about learning are influenced by equally elaborate cultural traditions, which can each be interpreted emically in the conceptualization of the mind and virtue orientations as cultural mandates. We have found support from a variety of sources that people in the West and East-Asia engage in divergent cultural tasks in the domain of learning. Viewing the mind and virtue orientations as the cultural mandates towards learning therefore suggests the existence of variation in the relative emphasis that is placed on either mind or virtue aspects of learning between East Asian and Western cultural contexts, and, allows meaning-making of the different emphasis that is placed on certain aspects over others, on a cross-cultural level. To summarize, culture matters with regard to the meaning of learning.



## Chapter 3

### *The Mean(ing) of Learning across Cultures*<sup>3</sup>

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***Abstract***

DUE TO DIFFERING philosophical, historical and social traditions, cultures differ in the way they conceptualize learning. The main objective of the current paper is to test the hypothesis that in Western academia, learning is 'mind oriented' and in East-Asia, learning is 'virtue oriented'. Whereas learning is primarily regarded a cognitive pursuit in the West, the domain of morality is a more integral part of the East-Asian view on learning, influencing various elements of the learning process. Study 1 confirmed the hypothesized cultural difference in the orientations of German and Chinese students and faculty, on an attitudinal level. Applying a behavioral scenario design, Study 2 yielded differences in behavioral preferences of Chinese and German students in academic situations. German students predicted to be more likely to display mind oriented behavior, Chinese students indicate higher likelihood for the virtue orientation. Study 3 confirmed that the different emphasis that is placed on virtue oriented beliefs by German and Chinese students persists when Chinese students participate in a German academic setting. Implications for internationalization of (academic) education are discussed.

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### **3.1 Introduction**

All human beings share the fundamental capability to acquire new knowledge and skills. Despite this basic universality of human development, the meaning that is attached to learning originates from a culturally distinct history. Among the many influences to which the act of learning is exposed to, culture is a key variable that shapes the social cognitive as well as relational underpinnings of the learning process. In line with Geertz's (1973) definition of culture as 'the fabric of meaning in terms of which human beings interpret their experience and guide their action' (as quoted in McAllister, Whiteford, Hill, Thomas, & Fitzgerald, 2006), learning is embedded in a cultural fabric that guides the way students and faculty in different cultural regions conceptualize it. Learning, although taking place universally, is also regarded as a fundamentally cultural enterprise (Cheng & Wong, 1996).

Indeed, research has documented important cultural differences in learning and education, including: achievement motivation (Hau & Ho, 2008); self-concept (Markus & Kitayama, 1991); verbalization (Kim, 2002; 2008); classroom participation (Paulhus, Duncan, & Yik, 2002; Van Petegem, Aelterman, Van Keer, & Rosseel, 2007); student – teacher interaction (Hofstede, 1986); learning strategies (Kember, 2000; Matthews, Lietz, & Darmawan, 2007; Kingston & Forland, 2008; Helmke & Tuyet, 1999; Joy & Kolb, 2009); and cognition (Nisbett, Peng, Choi, & Norenzayan, 2001). The meaning that underlies the concept of learning itself has however received little empirical attention so far. As indicated by Hau and Ho (2008), the findings so far have not led to a systematic understanding of the cultural differences that are found in learning. What is the goal of learning? Which processes does learning involve? What emotional and motivational reactions are evoked by success and failure in learning? How does an ideal learner and teacher conduct him- or herself? The answers to such questions (to which we refer as learning beliefs, see more discussion below) may vary substantially between cultures, yet in exactly what ways they do, has not been systematically understood. The current research aims to provide evidence for the hypothesis that the relative emphasis that is placed on certain ideals and goals that are associated to good learning, differs between cultural contexts. The framework of the mind – virtue orientation theory of learning beliefs, as constructed by Li (2003) forms the theoretical foundation for this empirical pursuit.

In qualitative studies, Li (2003) constructed the overarching theme of learning in the West as being mind oriented and the East-Asian theme being virtue oriented. By 'West' we will primarily refer to the democratic Western European and North American societies that have been influenced by Greek thought. By 'East Asian' we will refer to the Confucian Heritage Countries,

with China as a primary focus. In an exploratory prototype research, Chinese students and European American students were asked to provide their free associations to the term 'learn – learning'. The pattern of the networks that emerged was comparable for both groups. Despite this similarity in size and structure of the mental construct of learning in both cultures, the content of the categories of conceptions of learning was found to differ due to fundamental differences in the meanings the two cultures attach to it. The kind of terms that were used revealed distinct differences in the concepts that are attached to the mental structure of learning within these cultures. Abstract concepts that are typically embodied in a culture's philosophical tradition have been conceptualized as 'cultural mandates'. We theorize that the mind and virtue concepts of learning that emerged from this analysis represent the 'cultural mandates' of the concept of learning in the Western and East-Asian cultural context. Kitayama and Imada (2010) proposed the 'cultural task analysis' as a model to explain how abstract goals and ideals on the cultural level affect psychological processes on the subordinate level. The application of this model to the mind and virtue concepts of learning allows the integration of previously segregated findings in the literature about cultural differences in learning into an interpretable framework that contributes to meaning-making on the cultural level.

### *3.1.1 Cultural task analysis of mind and virtue orientations*

The mind and virtue orientations toward learning represent the ideals and goals of learning that are encouraged within the two cultural regions at hand. They could therefore be conceptualized as forming cultural mandates. As such, cultural mandates do not offer specific routines or procedures for individuals. Instead, this is the function of 'cultural tasks'. Cultural tasks are culturally scripted procedures or means by which to achieve the culture's mandate (Kitayama et al., 2009).

Using the 'cultural task analysis' as the framework to understand how culture influences psychological processes prevents the mind and virtue orientations from being characterized as discrete, homogenous and unchanging concepts (Ryan & Louie, 2007). Instead, our conceptualization of the mind and virtue orientation as cultural mandates, each promoting certain psychological tendencies over others, is one in which the orientations result in mean tendencies that are higher for individuals within a certain culture to exhibit certain cultural tasks rather than others, but in which hybrid forms of cultural tasks are accommodated as well. This framework therefore allows the co-existence of elements of both orientations in both cultures. As an example, the cultural mandate of mind orientation could be achieved by the 'task' of critical thinking. This however does not imply that

people who grow up in an environment that endorses a different cultural mandate cannot perform this task. It merely is a task that is closer to the cultural mandate of mind oriented learning. Since the cultural tasks may follow more or less directly from the cultural mandate, they allow the integration of both cross-cultural and within-culture variation in psychological tendencies among individuals.

As a matter of fact, it makes sense to assume that both orientations are based on a common motive, namely the attempt to be a good student. What exactly individuals conceive this to be like and how they strive for this goal may nevertheless vary across cultures. The central research question in the current study was therefore whether learning is thought of as more or less mind or virtue oriented, depending on culture. We will now review the literature on cultural tasks that are associated to the mind and virtue orientations.

### *3.1.2 Mind orientation*

The Western orientation centers around the idea that the goal of learning is to develop the mind. The most important goal of learning is to improve one's cognitive abilities through an advanced understanding of the world and by training one's logical reasoning skills.

Since Greek antiquity, Western philosophers have emphasized learning as a centrally cognitive process (Merriam & Kim, 2008). The prime example of this is Descartes' famous philosophical quote "I think, therefore I am.", which places cognition at the heart of life and as indispensable for one's being. Applied to the scientific pursuit, Albert Einstein echoes this quote when stating that 'The whole of science is nothing more than a refinement of everyday thinking', to describe the centrality of thinking to the academic domain. These expressions illustrate that in the West, the site of learning and knowing, both in the personal and scientific context, has primarily been referred to as the mind. The cognitive is hereby distinguished as a separate entity, disunited from other domains of life such as the emotional, social and physical ones (Merriam & Kim, 2008).

The conceptualization of learning as a primarily cognitive endeavor emerged as one of the primary themes from Li's analyses. For European American students, she found that learning was an important part of the lives of the students. She however did not find this to be intimately connected with their emotional, spiritual or moral lives. Instead, learning was primarily conceptualized in terms of internal characteristics (i.e. cultural tasks and psychological tendencies) like cognitive skill, intelligence, and abilities on the one hand, and thinking, communicating and active engagement. We will return to these characteristics in more detail.

Self-expression and uniqueness are values that are endorsed more strongly in the West than in Asia (Markus & Kitayama, 1991). As an expression of this independent orientation, one's internal passions, drives and interests receive more attention in the West, as compared to one's contribution to social groups in East Asia. Personal curiosity can therefore be regarded as a key motivator for Westerners, whereas freedom of choice has even been found to be detrimental to the internal motivation of interdependent selves' (Iyengar & Lepper, 1999). In addition to curiosity as a primary source of internal motivation, an external source of motivation is derived from receiving positive feedback on one's performance. Receiving positive feedback re-affirms one's self-worth, which in turn increases one's achievement motivation from the Western perspective. Negative feedback seems to decrease motivation. Western students have been found to persist less on a task, after receiving negative feedback on their performance (Heine et al., 2001).

With curiosity as a driving force for internal motivation that originates from the values of independence and uniqueness, the Western concept of creativity is commonly thought of as an expression of uniqueness and original thought. It is not only the degree to which creativity is endorsed in the learning process in different societies, but also the way in which it is evaluated. Whereas Western cultures emphasize novelty when evaluating creative performance, non-Western societies value appropriateness more (Lubart, 1990). A frequently reported feature of creativity in Chinese cultures is the inclusion of a moral component to the understanding and development of creativity, with social responsibility and contributions taking prevalence over intrinsic rewards like personal satisfaction (Yue & Leung, 2003).

Knowledge is conceptualized as a matter to distinguish truth from falsehood. This implies that 'knowing' must be separated from the person and remain stable over time (Merriam & Kim, 2008). To distinguish between truth and falsehood, claims must be treated critically to determine verifiability (Garrison, 1991). Establishing knowledge therefore occurs through the application of the rules of formal logic in a line of questioning. These rules and with them the development of the value of debate are still commonly seen as the ultimate guiding principles in the pursuit of knowledge in the West. Already from an early age, children are taught how to generate arguments and counterarguments concerning any given position (Peng & Nisbett, 1999) and critical thinking has even been described as 'a necessary condition' for education (McPeck, 1981, cited in Garrison, 1991). Taking a critical position toward the words of others, independent of the social standing of the person expressing them, or the relationship one has with

them, shows that one is independent, a value that receives strong emphasis in the West, even in the domain of cognition (Tweed & Lehman, 2002). In the Socratic tradition, virtuousness has even been indicated to lie in the ability of a person to think for oneself instead of following tradition (Scollon, 1999). In the higher education literature, classroom discussions are associated with a range of positive consequences, such as improved student learning (Askell-Williams & Lawson, 2005). Furthermore, college level critical thinking skills and GPA scores have been found to be correlated (Facione, 2006).

Tracing the origin of the value of debate, one finds the roots of this phenomenon in ancient Greek philosophy and writing. For instance, Socrates (469-399 B.C.) is famous for having taught in the form of dialogues, always in a line of reasoning based on a sense of doubt and distrust of assertions, not out of animosity but out of the genuine belief that only this path can lead to finding truth (Scollon, 1999). Another example can be found in the Greek poet Homer, who emphasized repeatedly that one of the most important skills for a man to have was that of being a good debater (Nisbett, et al., 2001). As supported by empirical research, communication is an essential component of the learning process in the West (Kim, 2002; Kim & Markus, 2002). This finding should be understood in light of the lasting legacy that these philosophers have on contemporary thinking. The act of speech has even been found to affect the learning processes of Asians and Westerners differently, with verbalization negatively affecting people from East Asian contexts, while European Americans' task performance is enhanced by thinking-aloud (Kim, 2002).

In conclusion, the idea that one is independent in the cognitive domain can be found to have shaped many elements of the Western orientation towards learning. In principle, the focus of learning is on the development of the mind as such and developing one's thinking skills. Primary importance is given to the cognitive pursuit of knowledge, largely independent of moral dimensions. Regardless of the question whether a minimal sense of moral responsibility and (over-)emphasis on moral relativism is desirable or not, the fact remains that it is the absence of the domain of morality that is typically associated with education in modern Western societies (Mason, 2001). Instead, debating and communication are seen as essential elements of this process and indicators of one's cognitive independence, such as creativity and curiosity are valued strongly.

### *3.1.3 Virtue orientation*

In traditional Chinese society, education was understood to be essential for the development and improvement of the person as a whole. Education to

this day is therefore not solely concerned with cognitive development, but more importantly, it is also about becoming a better human being on a moral and social level. With Confucius at the heart of the philosophical tradition in the East-Asian region, we will now elaborate on the theoretical background of the virtue orientation.

A teacher himself, Confucius (552 to 479 B.C.) valued the virtues of endurance, diligence and respect. He conceptualized a good student as any person that is dedicated to the learning process, rather than one who relies on his or her inherent ability to acquire knowledge (i.e., intelligence). Learning was mainly regarded as an effortful process that takes hard work, effort and persistence. It is therefore not only the goal of the learning process that matters, but also the path towards it. In Li's research, knowledge was regarded as something that is indispensable to one's personal life for the Chinese students. On the highest level of abstraction, knowledge included not only the externally existing body of knowledge, or mental functions for Chinese students, but other dimensions of life such as the personal, social and moral as well. Dedicating oneself to the process of learning means that one is developing oneself morally as well. But the role of morality not only plays an important role for students. The role that teachers assume also consists of more than that of mere topical experts. Instead, they are expected to serve as exemplars of moral development as well (Cheng & Wong, 1996).

Empirically, evidence has been found for the continuing influence of the Confucian meaning system for contemporary Chinese students. It has for example been reported that Chinese students put greater effort into academic pursuits than Anglo Australian and other Western students (Rosenthal & Feldman, 1991). Effort comes first and genetic abilities only come second in the East-Asian belief system, because the perception is that a lack of inherent ability can be overcome by the exertion of effort (Cheng & Wong, 1996). For Chinese scholars, gaining an understanding is therefore considered to be a long process that requires extensive personal effort.

The association between the concepts of effort and virtue also affects external motivational aspects of student learning. In contrast to Western students, Asian students' motivation to persist on a task has been found to increase upon negative feedback (Heine et al., 2001). Interpreted from the virtue orientation perspective, this effect can be understood in light of the idea that failure provides an opportunity to develop oneself. It allows one to polish one's character, by extending the highly valued effort, which is regarded as just one of the steps on the path of life-long self-development.

The observation of quiet memorization as a dominant learning strategy of East-Asian students has often been the subject of intercultural



misunderstanding. Memorization in the Chinese case is valued as a path that leads one to a deep understanding. It is believed that by memorizing one gains a deeper understanding of the material (On, 1996; Kember, 2000). Memorization and repetition are two ways to show the effort that is required of students to be considered a 'good student' (Li, 2005). Memorizing and understanding are therefore conceptualized as processes that complement each other, rather than being mutually exclusive, as is the predominant belief in the West (Purdie & Hattie, 2002). The application of dialogue as such is of course not absent from Confucius' legacy. The difference with the Socratic tradition however lies in the fact that he would typically ask students a (rhetorical) question, which would allow him to answer himself, based on the idea that the teacher is a conveyer of wisdom. This legacy is visible in the expectation of Chinese students today that the function of questions from teachers is to share an additional piece of knowledge (Scollon, 1999).

Correspondingly, the emphasis that is placed on strategies such as quiet contemplation, implies that learning is primarily seen as an internal process that does not require communication, as evidenced by the impaired cognitive performance of Asian students upon verbalization of thoughts (Kim, 2002). This conceptualization stands in sharp contrast to the Socratic tradition of creating knowledge in verbal exchange; debating. Instead, East Asians are more likely to believe that states of silence and introspection are beneficial for high levels of thinking, an assumption well expressed in Buddhist and Taoist practices, such as meditation (Kim, 2002). Behavior that appears passive from a Western viewpoint is instead associated with a range of positive indications in East Asian contexts, such as maturity, cooperativeness and managing face (Kim & Markus, 2002).

In summary, the virtue orientation centers around the interconnectedness of all dimensions of life with the cognitive domain. Learning is primarily regarded as a person's path towards self-development, in which respect for pre-existing knowledge, concentration and silence function as guiding principles. The process of learning is not only a cognitive pursuit, but is a pursuit for the person as a whole to develop morally and socially as well. It is believed that innate abilities can be overcome by dedication and extending effort to the process of learning.

#### *3.1.4 Research goals*

In our theoretical framework, we have brought together findings from the educational psychological field, with studies that have been conducted in other areas of cross-cultural psychology (such as work on cultural differences in cognition). The previously scattered findings on processes that are

involved in the learning process were integrated in the framework of the mind – virtue theory. We hereby applied the findings from different fields of literature to the educational domain. This review aims to fill the need in the literature for a systematic understanding of the cultural effects that underlie learning in different cultures (Fryberg & Markus, 2007; Hau & Ho, 2008; Henderson-King & Smith, 2006).

The theoretical review reveals that the majority of research in both the education and cultural psychology fields, including prior research on the mind – virtue theory, has been conducted with Chinese (or Chinese American) students on the one hand and U.S. American students on the other. As the mind – virtue theory should theoretically hold for other Western societies, whose philosophical origins also lie in ancient Greece, we aimed to establish whether the endorsement of the mind orientation could be generalized to an academic context outside of the United States. Germany was selected as a case-study for Western Europe. China was selected as a representative for the East-Asian (Confucian-heritage) cultural zone. In the following three studies, we will report investigations of learning beliefs of Chinese and German academics in order to provide empirical support for the construction of the mind and virtue orientations as a framework for the relative difference that is placed on cultural tasks by people from different cultural contexts

Two specific aims were formulated for study 1. First, we aimed to develop a Likert rating-scale to test the now a-priori hypotheses about cultural differences in learning that follow from the mind – virtue theory. The development of the scale, based on the indicators that emerged from Li's research, allowed us to quantitatively measure the endorsement of the mind and virtue orientation in Germany and China. Second, transcending the majority of research on learning across cultures, samples of faculty members from both cultures were included in the analysis in addition to student samples. The inclusion of both faculty and student perspectives provides the opportunity to test whether the beliefs that students hold about learning concur with the beliefs of the faculty. The inclusion of both the teacher and student perspectives allows us to establish whether cultural differences in learning beliefs reflect the subjects of the learning process within the cultures, as well as its designers. Afterall, the learning environment in which students' beliefs are shaped is determined by the parameters that faculty sets for educational success and failure. The beliefs of students in one culture can therefore be expected to reflect the beliefs of faculty of that same culture. To assess the construct validity of the designed scale measure, the results of a pilot study will be reported in which the convergent validity of both the mind and virtue oriented items of the scale were assessed.

In the second study, a behavioral scenario survey was conducted. This type of method served a double aim. First, the application of this method yielded indications which are closer to behavioral differences in the two cultures under study than the mere attitudinal type data that are collected with the more traditional Likert scale method. Second, this method allowed for the correction of possible influencing biases that cross-cultural comparisons of Likert scales are subject to.

The third study was designed first in order to replicate the findings of study 1 and 2. Secondly, both the scale and the scenario measure were conducted in a sample of Chinese students enrolled in public German institutes of higher education. This study therefore provided a more conservative test of the hypothesized cultural difference in beliefs about learning. Thirdly, this study allowed testing whether the difference in learning beliefs of students from different cultural backgrounds persists when these students share the same academic context.

### ***3.2 Pilot study***

To assess the validity of the developed scale, a pilot study was conducted in which the construct validity of both the mind oriented and virtue oriented items was measured. This study was conducted at Jacobs University Bremen in Germany. This institution is a highly selective, private and international university that hosts students from over 100 nationalities. To examine the construct validity of the mind oriented items, the convergent validity between these items and the Need for Cognition scale (Cacioppo & Petty, 1982) was measured. To assess the construct validity of the virtue oriented items, the convergent validity was calculated between these items and the prevention focus of the Regulatory Focus Questionnaire.

#### ***3.2.1 Methods***

##### ***3.2.1.1 Participants***

*Mind orientation:* A sample of 83 Western European students and students from ex-British overseas regions completed the mind – virtue orientation scale and Need for Cognition scale (Cacioppo & Petty, 1982). The sample consisted of 49 females (59%) and 33 males.

*Virtue orientation:* Another sample of Western European and North American students ( $n = 37$ ) completed the mind – virtue orientation scale and the Regulatory Focus Questionnaire (Higgins, Friedman, Harlow, Idson, Ayduk, & Taylor, 2001). The gender distribution in this sample was similar, with 65% of females and 35% of males.

### 3.2.1.2 Materials

*Mind and virtue orientation scale:* The scale was based on the original indicators that emerged in the prototypes of both the mind orientation (reasoning / thinking; debating; challenging attitude; efficiency, creativity, curiosity, and achievement-based motivation) and the virtue orientation of learning (self-improvement / virtue; respectful learning; concentration; diligence; quietness / contemplation; having heart for studying; persistence upon failure), as identified by Li (2003). Since the items were constructed based on an extensive literature review (Van Egmond, Kühnen, Li, 2011) and in direct consultation with Li, many steps were taken to assure the content validity of the developed measure for both cultures. The scale includes nine items to measure the virtue-orientation and nine items to measure the mind-orientation, making a total of 18 items (see Table 2). All responses were indicated on a 7-point Likert scale, anchored between 1 (*strongly disagree*) to 7 (*strongly agree*).

*Need for cognition scale:* The Need for Cognition scale (Cacioppo & Petty, 1982) aims to measure an individual's tendency to engage in and enjoy effortful cognitive endeavors. A high need for cognition was described by the authors as being related to the desire of individuals to seek, acquire, think about, and reflect back on information (Cacioppo, Petty, Feinstein & Jarvis, 1996). Accordingly, individuals with a high need for cognition score were conceptualized as being likely to hold more positive attitudes toward stimuli or tasks that require reasoning or problem-solving. Since a central element of the mind orientation is the focus that is put on cognitive tasks, this scale was expected to correlate positively with the mind orientation.

*Regulatory focus:* the Regulatory Focus Questionnaire (RFQ; Higgins, Friedman, Harlow, Idson, Ayduk, & Taylor, 2001) was included to assess the convergent validity of the prevention-focus subscale with the virtue orientation subscale. The regulatory foci, promotion focus and prevention focus are conceptualized as orientations towards new task goals. Of particular interest for our purpose was the prevention focus subscale which measures individuals' subjective histories of prevention success with items such as 'How often did you obey rules and regulations that were established by your parents?' and 'Not being careful has gotten me into trouble at times' (reverse scored). Since the prevention focus primarily concerns 'oughts' and measures people's subjective orientation towards responsibilities and duties, this scale was expected to be positively related with the concept of the virtue orientation, but negatively with mind orientation.

Table 2. *Items of learning beliefs rating scale.*

Mind orientation
A good student challenges a professor on content matters.
Getting good marks motivates me in my learning.
Being creative is important for students.
Achieving personal insight increases my motivation.
The goal of academic learning is to become a critical, independent thinker.
Active participation in class facilitates my learning.
It is important for me to work efficiently in my studies.
Debating a subject is the true path to understanding it.
Curiosity is a key motivator for me to study a particular subject.
Virtue orientation
Successful learning requires constant effort and hard work.
Professors should be treated with respect, because they are more knowledgeable.
Memorizing the material first leads to better mastery.
When I get good marks, I try to stay humble.
Good learning requires quiet contemplation.
A student must concentrate in learning.
The goal of learning is to always improve oneself.
If I receive negative feedback, I feel motivated to try harder.
A good student takes his or her study to heart.

### 3.2.1.3 Procedure

Sub-samples of students completed either the mind and virtue orientation scale and the Need for Cognition scale ( $N = 83$ ), or the mind and virtue orientation scale and the RFQ ( $N = 37$ ). In both cases, participants received an email with a participation invitation and a link to the survey, which also included other, unrelated scales since this study was conducted in the framework of a Student Online Panel.

Since the working language is English on campus, both the invitation email and the survey were created in English. Participation was voluntary and only rewarded with participation in a raffle for an Ipod among the participants who completed the full questionnaire.

### 3.2.2. Results

#### *Construct validity*

*Convergent validity:* To measure the degree to which the created mind - virtue scale relates to other variables that one could theoretically expect them to correlate with, subsamples of participants completed two measures that were included in the survey to assess construct validity. The measure that was expected to correlate positively with the mind orientation was the

Need for Cognition scale. A significant correlation was found between this scale and the mind orientation ( $r = .23, p < .001$ ). Need for Cognition was however not correlated with the mean virtue orientation ( $r = .07, p > .05$ ). These findings support the construct validity of the mind orientation scale.

To assess the construct validity of the virtue orientation scale, a subsample of participants completed the regulatory focus questionnaire. From this 11 item questionnaire, a mean score was calculated for the subscale of the prevention focus, following the procedure outlined by Higgins et al. (2001). A Pearson correlation test yielded a significant negative correlation between the mind orientation and prevention focus ( $r = -.52, p > .001$ ) and a marginally significant correlation for the virtue orientation and prevention focus ( $r = .32, p = .06$ ). The difference between the two correlations was significant ( $z = -3.69, p < .001$ ).

The pilot study was designed to assess the construct validity of the mind and virtue orientation scale. Correlational analysis for the mind orientation and the Need for Cognition scale and the virtue orientation with the prevention focus scale of the regulatory focus questionnaire provided support for the convergent validity for operationalization of the mind and virtue orientation into the developed scale.

### **3.3 Study 1**

Study 1 was designed to establish whether the mind / virtue framework functions as a reliable framework to assess cultural differences in the meaning that is attached to learning. Secondly, we aimed to establish whether the findings of the European American context would hold in a different cultural, but still Western, setting outside the USA. Germany was therefore selected as a case for Western Europe. Research on cultural values has indicated that Germany is located at the intersection of Protestant and Catholic Europe (Inglehart & Welzel, 2005). In combination with Germany's strong academic culture, its' philosophically rich history includes the lasting legacy of the German Romantics (end of 18th century through early 19th century) on ethical and political thought on the individual's uniqueness which has contributed to the prevailing value of modern individualism (Munro, 1985) in many western societies. Germany was therefore found to be an appropriate case to examine the meaning that is given to learning in a Western academic setting.

Furthermore, in any academic environment certain beliefs are endorsed while others are discouraged. It is primarily the academic faculty that determines which beliefs and practices this are, based on culturally desirable goals for learning and achievement. To fully assess the meaning that is attached to learning in an academic environment, the perspective of

the people who set the standards for what students are to strive for is necessary to take into consideration. If the beliefs that students hold about learning are not supported by their teachers, they are unlikely to endure. Instead, how the faculty think about the nature of teaching influences both the way they teach and the way their students learn and ultimately the learning outcomes they achieve (Lingbao & Watkins, 2001). Thus, what students believe should reflect what teachers believe (Hong, 2001).

For these reasons, both German and Chinese faculty members were included as sub-samples in the study, in addition to students from both cultures. It was hypothesized that similar patterns among faculty and students should occur for both within-culture group comparisons. Cross-culturally, we expected both faculty and students from Germany to endorse the mind orientation more strongly than the Chinese. For the the virtue orientation it was hypothesized that the Chinese would endorse this orientation more strongly than the Germans would.

### *3.3.1 Method*

#### *3.3.1.1 Participants*

The German student sample included 263 students from a medium-sized public German university. The average age of the participants was 23 ( $SD = 3.84$ ). All participants were of German nationality and did not have a minority background. The sample consisted of more female students ( $n = 187$ ) than male ( $n = 74$ ) students, with two participants not identifying their gender. The academic disciplines of the participants were diverse, although a majority of students were from the social sciences department. The Chinese student sample consisted of 139 students who completed the survey (73 females and 66 males). The average age of the students was 21.5 ( $SD = 1.7$ ) and they represented a variety of academic disciplinary backgrounds.

The German faculty sample included 35 university instructors. The mean age of the 33 participants who indicated their age, was 51.4 ( $SD = 7.9$ ). The sample included 22 male (61.1%) and 13 female (36.1%) instructors. The Chinese faculty sample consisted of 32 university instructors from a highly competitive Chinese university. Twelve male instructors (37.5%) and 20 female instructors (62.5%) completed the questionnaire. The mean age of the faculty was 39.1 ( $SD = 8.6$ ).

#### *3.3.1.2 Materials*

Both students and faculty completed the mind-virtue scale that was developed for the current research. All responses were indicated on a 7-point Likert scale, anchored between 1 (*strongly disagree*) to 7 (*strongly agree*). The content of the items was identical in the faculty and student versions.

Where required, the formulation of the items in the faculty version of the scale was however adjusted to clarify their own perspectives in their role of faculty members, rather than that of students.

German and Chinese participants completed the scale in their native language of instruction; German and (Mandarin) Chinese, respectively. The translation procedure consisted of both the forward- and backward translation method. Having been developed originally in English, by bilingual English-German researchers, the Chinese translation and back-translation was conducted by bilingual research assistants and supervised by a bilingual research associate, who was fully informed of the theoretical background of the study.

### *3.3.1.3 Procedure*

German students anonymously completed the scale on paper as a filler task in a larger, unrelated experimental design. Data collection took place on campus at a medium-sized public university.

To maximize the response rate a multi-mode data collection process was applied for Chinese students, including both a paper version and an identical online version. Seventy-four participants (53,1%) filled out the scale online. Research assistants of Chinese origin, studying at an American university forwarded the invitation to their networks in China. The other 46,9% were approached by a research assistant at a highly competitive university in eastern China. These students anonymously completed a paper version of the scale.

German faculty members were invited to complete an online version of the described questionnaire. At the same university where the student participants were recruited, an invitation of the questionnaire was sent to a university-wide email list. The university was a medium-sized public university in north-western Germany. Faculty completed the questionnaire voluntarily and no incentive for participation was provided.

Chinese faculty from the same university where data collection from the students had taken place, were approached by the research assistant and asked to complete the questionnaire anonymously. Participants did not receive an incentive for participation.

## *3.3.2 Results*

### *3.3.2.1 Reliability*

For all four subsamples, all reliability scores had a Cronbach's  $\alpha$  of .7 or higher, with the slight exception of the mind orientation scale in the German faculty sample. Considering the fact that the scale only includes a small number of items, this deviation of .02 is so slight that it was considered not



to be a problem. Table 3 indicates the Cronbach's alpha scores for both the full scale and subscales in all four of the subsamples.

Table 3. *Results of reliability analyses of scale measure.*

Scale	Cronbach's Alpha			
	Germany		China	
	Students	Faculty	Students	Faculty
Mind orientation	.98	.68	.90	.70
Virtue orientation	.99	.82	.87	.74
Full scale	.99	.78	.94	.80

### 3.3.2.2 Factor structure

The 18 items of the mind – virtue scale were subjected to principal components analysis (PCA). Prior to performing PCA, the suitability of the data for factor analysis was assessed. Inspection of the correlation matrix revealed all coefficients to be above .3. The Kaiser-Meyer-Olkin value was .98, exceeding the recommended value of .6 and Bartlett's Test of Sphericity reached statistical significance as well ( $p < .001$ ), supporting the factorability of the correlation matrix.

The principal components analysis revealed one factor as the best fit, in both samples. In the German sample it explained 87.30% of variance. In the Chinese sample it explained less variance, but still 47.65%. The results of this analysis support the cross-cultural equivalence in factor-structure and cross-cultural equivalence in measurement equivalence. The finding of one-factorial solution is in line with our theoretical framework, in which the mind and virtue orientations both form important elements of the concept of learning in any culture. Moreover, we suggest that a shared factor underlies both orientations, that drives the beliefs about learning in both cultures at hand. This factor would be the motivation of being a good scholar. It is merely the relative emphasis that is placed on certain aspects over others in this pursuit that differs between cultures.

### 3.3.2.3 Cross-cultural analysis

German faculty and students were hypothesized to score higher than the Chinese academics on the mind orientation. The Chinese academics were expected to score higher on the virtue orientation than the Germans. In other words, we expected to find an interaction effect for orientation and culture, but not for orientation and group (faculty and students). To test this hypothesis, a three-way mixed ANOVA was conducted, including culture (German / Chinese) and group (student / faculty) as between-groups variables and orientation (mind / virtue) as within-group factor. This analysis

first revealed a significant main effect for the within-groups factor orientation ( $F(1,434) = 56.17, p < .001, \eta^2 = .11$ ): Overall, participants endorsed the mind orientation subscale more strongly ( $M = 5.95; SD = 4.7$ ) than the virtue orientation one ( $M = 5.19, SD = 4.59$ ). Most importantly, and confirming the hypothesis, this main effect was qualified by a significant interaction effect for culture and orientation ( $F(1,434) = 25.07, p < .001, \eta^2 = .05$ ). Inspection of the means confirms that the German students and faculty endorse the mind orientation more strongly than the Chinese, whereas the Chinese endorse the virtue orientation more strongly than the German academics. These findings are illustrated in figure 1.

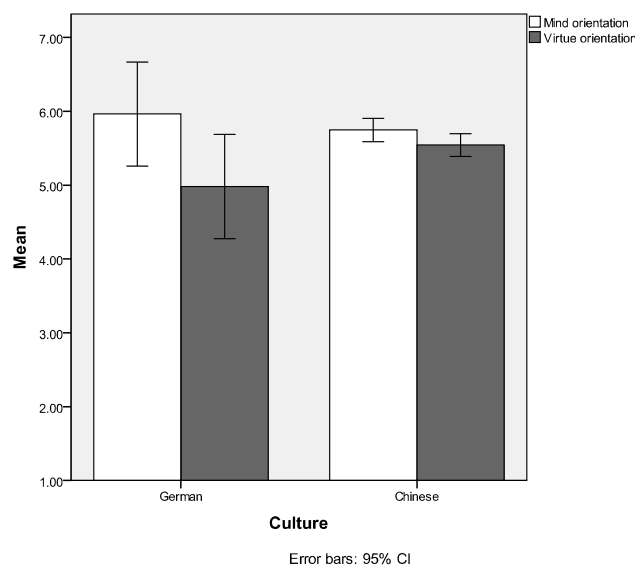


Figure 1. Mean scores on the mind and virtue orientation scales as a function of culture in study 1.

However, the pattern of means only partially supports the hypotheses, as the following analyses revealed: In line with the predictions, German academics were clearly more mind oriented ( $M = 6.08, SD = 5.96$ ) than virtue oriented ( $M = 4.98, SD = 5.82; t(267) = 3.02, p < .01$ ). However, contrary to our assumption (but implied by the above reported main effect for orientation), this difference was also found in the same direction for Chinese participants (mind orientation:  $M = 5.75; SD = 1.04$ ; virtue orientation:  $M = 5.54; SD = 1.02; t(170) 2.56, p < .05$ ).

Moreover, within the sample of Chinese students, a significant effect was found for the method of data collection ( $F(1,137) = 8.57, p < .05, \eta^2 = .06$ ). Students who completed the survey on paper score higher on both orientations ( $M_{\text{mind}} = 5.94, SD_{\text{mind}} = .64; M_{\text{virtue}} = 5.89, SD_{\text{virtue}} = .7$ ) than the students who completed the survey online ( $M_{\text{mind}} = 5.4, SD_{\text{mind}} = 1.36; M_{\text{virtue}} = 5.07, SD_{\text{virtue}} = 1.22$ ). This effect however only influences the main effect

that we find for orientation. Conducting a within-subjects analysis of variance in which only the Chinese students who completed the survey online are compared with the German students, still yields a significant interaction effect for culture ( $F(1,174) = 24.41, p < .001, \eta^2 = .12$ ).

Furthermore, the above reported ANOVA did not reveal any significant effect of the status group (all  $F_s < 1$ ). In other words, as expected, the found cultural difference was not moderated by status group (students versus faculty). Moreover, the variables gender and academic discipline were included as covariates in the above reported within-subjects analyses of variance. First, gender was not found to interact with orientation towards learning ( $F < 1$ ) and the interaction effect of culture and orientation remained significant upon its inclusion in the analysis of variance ( $F(1,249) = 59.08, p < .001$ ). Not all students reported their academic discipline, but for the students for whom this data was available, the inclusion of academic discipline as a covariate (Sciences, Engineering, Medicine / Social Sciences, Humanities, Education / Business, Law) in the reported within-subjects analysis of variance did not yield a significant interaction between this variable and orientation towards learning ( $F < 1, p > .05$ ) and the interaction effect between culture and orientation towards learning remained significant in this analysis as well ( $F(1,240) = 49.89, p < .001$ ). Lastly, age was not found to correlate with either the mind orientation or virtue orientation ( $p$ 's  $> .05$ ) either.

### 3.3.3 Discussion

The central hypothesis for study 1 was that academics from different cultural regions would differ in their learning beliefs, such that mind orientation should be more pronounced in Germans than in Chinese, with this difference being reversed for virtue orientation. The observed interaction of orientation and culture provided support for these hypotheses. Furthermore, this difference was not moderated by the status group (students versus faculty): Within both cultures, no significant difference was found between the student and faculty groups. Thus, overall, the findings are in line with the assumption that the learning beliefs of Chinese and German academics differ from one another, but not between students and faculty members. Note that we predicted relative differences between the cultural groups with regard to the sub-scales. Both Germans and Chinese do however have relatively high mean scores (above 5 on a seven-point scale), indicating that both orientations are important components of the learning beliefs of both cultures.

To the best of our knowledge, this study is the first quantitative evidence for a-priori predicted cultural differences in learning beliefs. First of

all, factor analysis suggested relative cross-cultural equivalence of the factor structure of the developed scale. We believe it is noteworthy that the designed scale was on the one hand broad enough to address different aspects of mind and virtue orientation, but also reached sufficient levels of reliability in all subsamples. Moreover, the inclusion of data from a faculty sample, complementing the findings from the student sample, transcends prior research and supports the claim that different concepts of learning exist in academia in different cultural regions. The reliability of the scale in both faculty samples was lower than in the student samples, implying lesser internal consistency. A possible reason for this inconsistency might be the fact that faculty was not asked what they value in their own learning process, but what they value in their students. Being a member of faculty at a university in either China or Germany however implies that one has been a (successful) student oneself. Perhaps it was difficult to distinguish between these two questions that might be answered differently, for the faculty samples. The origin of this relative inconsistency should however be addressed empirically in further research.

In sum, study 1 provided important evidence towards the development of a systematic understanding of cultural differences in learning (Hau & Ho, 2008). Based on a one-factorial solution, our findings provide support for a relative cultural difference in learning orientation, consistent with prior research on the concepts of mind and virtue orientation.

Yet, it is not in line with our prediction that the Chinese sample also indicated higher mind than virtue orientation. This finding may call the strength and validity of the cultural difference into question. Undeniably, the current global standards for academic excellence originate mainly from Western institutions of higher education. It could be hypothesized that the mind orientation represents the norm for academic practice in the globalized academic world. Both students and faculty in China are therefore likely to be aware of the Western standards and to strive for them.

We see, however, at least three reasons why this interpretation should be treated with care. First, it is conceivable that the sample we studied in China is not representative for the Chinese culture in general. This presumption makes sense, given that the data were collected at a highly competitive university, located at the East coast of China. Being the most modernized and Western-oriented region of the country, it is likely that both students and faculty have been stronger influenced by the Western educational perspective in this region, than in other parts of China.

A second reason for the strong endorsement of mind orientation among the Chinese may be due to their relatively young age (especially the faculty was relatively young). Age differences in Asia have for instance been

found with regard to traditional values. For example, highly educated young Koreans who are socialized to meet the changing demands of industrialization have been found to endorse modern values more strongly than traditional ones, compared to older generations (Hyun, 2001).

Thirdly, while the scale developed for study 1 proved to be a reliable instrument to capture the predicted cultural difference, such general survey measures have been criticized in the past. One of the effects that have been found to bias the comparison of Likert scales across cultures is the deprivation-effect (Peng, Nisbett & Wong, 1997). The deprivation-effect states that people often express stronger preferences for something they lack, or believe themselves deficient in, than they do for things they have. This effect could explain the strong endorsement of the mind orientation by Chinese academics, relative to the German sample, given the accelerated Westernization in China but little Asian influence in Germany. Other examples of response-biases include the reference-group effect (different samples applying different reference groups to base responses on) (Heine, Lehman, Peng, & Greenholtz, 2002); acquiescence (tendency to agree with statements, regardless of specific content); social desirability and moderacy-bias (responding towards the middle of the scale) (Peng, Nisbett, & Wong, 1997). As illustrated by the significant main effect of method of data collection in the Chinese sample, it is likely that one or multiple of these response-biases have influenced the results obtained from this measure. The relatively small standard deviations in the Chinese sample provide some indication in favor of this suspicion. Furthermore, the attitudinal nature of the study, does not allow for conclusions to be drawn regarding the behavior that is actually exhibited in real, everyday situations. In study 2, we therefore designed a different measurement for testing the assumed cultural difference which was posited to be closer to actual behavior.

### **3.4 Study 2**

In study 2 we used scenarios about typical classroom interactions for which participants made behavioral predictions, as recommended by Peng et al. (1997). It was hypothesized that the scenario method would correct a possible response-style effect on the results of the rating-scale, because this methodology averts biases that Likert-type rating scales are subject to in cross-cultural comparison. Based on the theoretical mind-virtue frame, we developed a questionnaire consisting of nine behavioral scenarios. Each scenario described a commonplace situation that students typically encounter during the course of studying. Two alternatives for how to behave in these situations were created, one reflecting mind, the other one virtue orientation. The central dependent variables (see below) were a.) the behavioral

alternative that was considered to be more appropriate (forced-choice) and b.) the predicted likelihood of engaging in either kind of behavior. As indicated by Peng et al. (1997), the benefit of this type of method is that participants do not have to generate their own interpretation and mental representation of the abstract value of an item. Instead, a specific situation is described in the scenario about the value that is being measured. The behavioral scenario method asks about behavioral preference in hypothetical situations, not the judgement of the importance of an abstract concept. This avoids the problem of social comparison-based and deprivation-based judgements. Secondly, the use of a forced-choice answer-format, as applied in this measure reduces the effect of acquiescent and socially desirable responding. An added benefit of this method is that besides the correction of deprivation-based or acquiescent judgements on the Likert scale measure, the scenario method allows for an assessment of behavioral preferences in specific academic situations. This goes beyond the measurement of attitudes that are obtained by rating scale methods. Our hypotheses therefore stated that the German students would select the mind oriented behavioral options more frequently as the appropriate behavioral alternative than the Chinese students would. Furthermore, the German students were expected to predict their own behavior in the given scenarios as being more likely mind than virtue oriented. The reverse pattern was expected for the Chinese sample. Chinese students should select more virtue options than the Germans as the appropriate response, and they should indicate to be more likely to behave according to the virtue rather than the mind orientation.

### 3.4.1 Method

#### 3.4.1.1 Participants

The scenario questionnaire was completed by 103 German students (64.1% female). The participants were 23.1 years old on average ( $SD = 2.64$ ). Their backgrounds were similar to those in Study 1 with the exception that only 10% were psychology majors.

The Chinese sample consisted of 193 Chinese students. The gender distribution was nearly equal with 53.9 percent of the participants being female and 46.1 percent male. The mean age was 21.5 years ( $SD = 1.59$ ) and students from a range of different disciplines were included in this sample as well.

#### 3.4.1.2 Materials

Based on the nine items for each orientation on the Likert scale, a corresponding scenario was written. All nine constructs of the mind and virtue orientation that were included in the scale measure were therefore also included in the variables of the scenario measure. In each scenario a hypothetical student was described who found him/herself in an everyday academic situation (e.g. *Jennifer is taking a History course. She doesn't agree with the professor on some ideas. Should Jennifer interrupt the professor and discuss it with him in class?*). Each of the nine scenarios consisted of two sections. The first part consisted of a forced-choice between either a mind or virtue behavioral option that the participant would recommend the hypothetical student (1 = Yes and 2 = No). Secondly, participants were asked to predict their own likely behavior in the respective situation (e.g., "If you were Jennifer, how likely is it that you would..."). For both behavioral alternatives separately, participants were asked to provide a rating on a scale from 1 (*not at all likely*) to 7 (*very likely*). The names of the hypothetical students were each adjusted to represent commonly used Chinese and German names and the gender of the students was alternated.

Furthermore, a set of descriptive variables was included (e.g., age, gender and academic discipline). The variable of academic discipline was posed as an open question. These responses were coded into three categories: sciences (e.g., physics, medicine, engineering) social sciences and humanities (e.g., psychology, education, communication), and other (e.g., law, business), for analysis.

German students completed the scenarios in German, while the Chinese students completed a (Mandarin) Chinese version. The translation procedure was conducted identical to the translation of the rating-scale items, by the application of the back-translation method.

#### 3.4.1.3 Procedure

*Germans:* Participants completed the scenarios as a filler-task in a larger, unrelated experimental design, on paper. Participants were students at the same medium-sized, public Germany university as the participants of study 1.

*Chinese:* Participants were recruited by native Chinese research assistants and completed the scale in a multi-mode data collection process, applying both a paper version and an online version. Participants were recruited at the same university as those of study 1 and did not receive an incentive for participation.

#### 3.4.2 Results

##### 3.4.2.1 Reliability

The assessment of reliability yielded a satisfactory result. Over all self-report indications of behavioral likelihood, the Cronbach's alpha was found to be .66. This value is not as high as expected, but in light of the nature of the measure, which describes specific situations, the internal consistency of the measure might be expected to be lower than more traditional rating scale measures.

##### 3.4.2.2 Forced-choice results

The first answer section of each scenario consisted of a forced-choice between one mind and one virtue behavioral option, in response to the described situation. The main question that we aimed to answer with this format was if the German students are more likely to select the mind options than the Chinese. It was hypothesized that the German students would select the mind options more frequently than the Chinese. Since the forced-choice design dictated a binary decision from the participants, it logically follows that we expect Chinese students to select the virtue options more frequently than the Germans.

An independent samples t-test was conducted with culture (German / Chinese) as between-subjects factor and mean number of selected mind options as dependent variable. The frequency with which German and Chinese students selected the mind options, on average, differed significantly ( $t(294) = -7.41, p < .001$ ). German students selected the mind oriented options more frequently ( $M = 6.19, SD = 1.37$ ) than the Chinese students ( $M = 4.94, SD = 1.39$ ). By implication, the one-way analysis of variance for the number of selected virtue oriented behavioral options was reversed.

##### 3.4.2.3 Likelihood of mind and virtue behavior

The second part of each scenario-item consisted of a rating of the likelihood that the respondent him- or herself would perform according to the mind and



the virtue behavioral option. It was hypothesized that the German students would favour the mind orientation and would thereby rate the likelihood of behaving in line with the provided mind oriented options higher than the Chinese students would. For the Chinese, it was hypothesized that they would favor the virtue orientation and that they would therefore indicate to be more likely to behave according to the virtue oriented options than to the mind oriented options.

To test this hypothesis, the two likelihood ratings were submitted to a mixed ANOVA with culture (German / Chinese) as the between-subjects and orientation (mind / virtue) as within-subjects factor. This analysis yielded a highly significant interaction effect for orientation and culture ( $F(1,289) = 93.92$ ,  $p < .001$ ,  $\eta^2 = .25$ )<sup>4</sup>. In confirmation of our hypotheses, the two cultural groups differed significantly in the likelihood with which they predicted to exhibit the mind or virtue behavioral options. German students indicated to be more likely to behave in a mind oriented ( $M = 5.28$ ;  $SD = .71$ ), than virtue oriented fashion ( $M = 4.58$ ;  $SD = .72$ ;  $t(98) = 9.59$ ;  $p < .001$ ). By contrast, Chinese students showed a greater tendency to behave in a virtue oriented ( $M = 4.99$ ;  $SD = .91$ ) than in a mind oriented way ( $M = 4.57$ ;  $SD = .8$ ;  $t(192) = -7.44$ ;  $p < .001$ ). These means are depicted in figure 2.

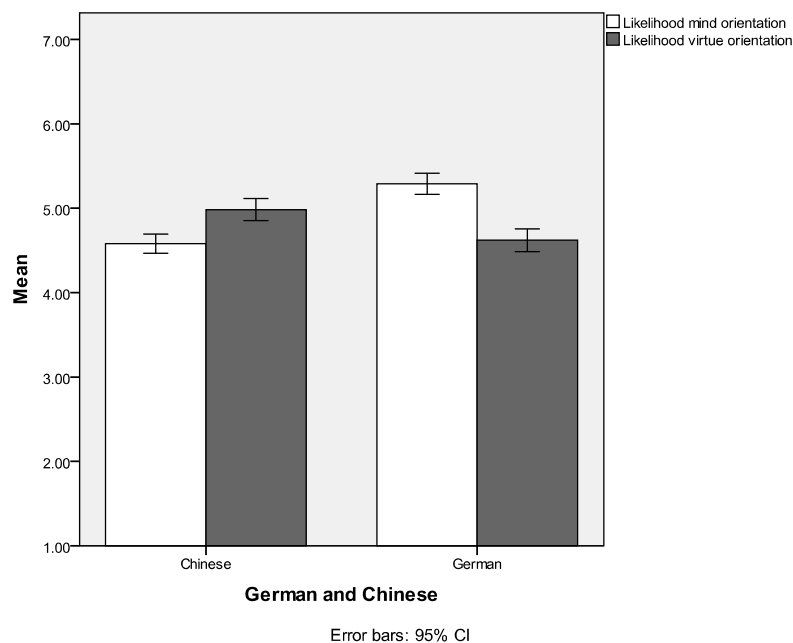


Figure 2. Students' mean self-rated scores of behavioral intentions.

<sup>4</sup> Additional ANOVAs adding potentially relevant other factors found neither an effect of academic discipline ( $F(2,295) = 1.46$ ,  $p > .05$ ), nor of gender ( $F(2,295) = 1.99$ ,  $p > .05$ ). Results also did not differ between methods of data collection within the Chinese sample ( $F(2,193) = .69$ ,  $p > .05$ ).

### *3.4.3 Discussion*

The results from this study confirm our hypothesis that the German students would select the mind oriented options more frequently than the virtue oriented options. By implication, the Chinese students selected the virtue options more frequently than the German students.

The second part of each scenario item consisted of a rating of the likelihood with which both options would be exhibited by the participant him/herself. For these data, a significant interaction effect of culture was found. The likelihood with which German and Chinese students reported to behave according to the mind and virtue orientations differed. Chinese students indicated to be more likely to behave virtue than mind oriented. In contrast, German students were more likely to behave mind oriented than virtue oriented.

With these results, study 2 refined the cultural difference that was found in study 1 by the application of a different methodology. The study revealed that, when placed in a situational context, Europeans on average tend to behave according to the mind orientation, but, over all nine presented scenarios Chinese students are more likely to behave virtue oriented. The results of this study therefore indicate that it is probable that study 1 was subject to methodological biases that cultural comparisons of Likert scales are subject to (e.g. deprivation-effect). The relatively high endorsement of the Chinese academics for the mind orientation on the Likert scale presumably resulted from an attitudinal preference for this Western perspective. When placed in a specified situational context, asking for the likelihood of behavior, Chinese students however prefer the virtue orientation over the mind orientation.

### *3.5 Study 3*

In the previous two studies, not only the cultural background of the students differed, but also the context in which they were studying. The inclusion of the faculty samples in study 1 aimed to assess the beliefs of the faculty, who shape the learning context in each culture. As such differences were found between the learning beliefs of academics in a Chinese and a German context. The question whether the difference in learning beliefs of students from different cultural backgrounds persists when they share the same academic context remains unanswered. Study 3 was therefore designed to examine whether the cultural difference in beliefs and behavioral indications of Chinese students, when compared to German students would persist, when both groups of students share the same learning context. A sample of Chinese students, currently enrolled at German public universities was

recruited for this purpose. A new sample of German students was included for comparison.

### *3.5.1 Methods*

#### *3.5.1.1 Participants*

*Germans:* A total of 45 students with German nationality participated. The sample consisted of slightly more females (62%) than males and the mean age was 23.8 ( $SD = 3.48$ ).

*Chinese students in Germany:* The sample of Chinese students who were studying in Germany consisted of 41 participants: 17 females and 24 males. This sample was slightly older, with a mean age of 26.8 ( $SD = 4.1$ ). Students had been in Germany for an average of almost two years ( $M = 1.72$ ,  $SD = 2.03$ ).

#### *3.5.1.2 Material*

All participants first completed the mind and virtue orientations rating scale measure. The reliability of the scale was high in this sample as well, with Cronbach's  $\alpha = .82$ .

Secondly, participants completed the nine behavioral scenarios. German students completed the scale in German. The Chinese students in Germany could choose between a German and a Chinese version of the material. All selected the Chinese version.

#### *3.5.1.3 Procedure*

*Germans:* German students anonymously completed the scale as an additional task, after participation in an unrelated experiment. Data collection took place on campus at a medium-sized public university. This sample was however recruited at a different institution than the samples in Study 1 and 2.

*Chinese in Germany:* Multiple student unions of Chinese students in Germany were contacted to request participation of their members in the (online) survey. The contact persons of these unions forwarded an invitation email including a link to the survey to members of their union's mailing-list. Participation was therefore completely voluntary and not stimulated by an incentive.

### *3.5.2 Results*

#### *3.5.2.1 Rating scale*

The first objective of this study was to test whether a cross-cultural difference could be found in the relative emphasis that is placed on either mind or virtue oriented beliefs about learning by German and Chinese

students in Germany. It was hypothesized that the German students would endorse the mind orientation more strongly than the virtue orientation and that the Chinese students would endorse the virtue orientation more strongly than the German students.

To test these hypotheses, the mean scores of the mind and virtue subscales were submitted to a 2 (culture: German / Chinese in Germany)  $\times$  2 (beliefs: mind / virtue oriented) within-subjects analysis of variance<sup>5</sup>. This analysis yielded a significant main effect for the within-subjects factor orientation,  $F(1,83) = 33.41$ ,  $p < .001$ ,  $\eta^2 = .29$ . The orientations were not equally strongly endorsed in both groups, but the mind orientation was endorsed more strongly than the virtue orientation. More specifically, paired-samples t-tests were conducted within each cultural group. These analyses revealed that the beliefs of German students are more mind oriented than virtue oriented ( $t(1,44) = 5.98$ ,  $p < .001$ ). The Chinese students in Germany endorse the mind oriented beliefs more strongly than the virtue oriented ones as well ( $t(1,39) = 1.93$ ,  $p < .05$ ).

This main effect was, however, qualified by the expected significant interaction effect between culture and orientation ( $F(1,83) = 11.59$ ,  $p < .01$ ,  $\eta^2 = .12$ ). As depicted in figure 3 and in replication of the cross-cultural effect found in study 1, both groups endorse the mind oriented beliefs about learning highly. The Chinese students however endorse the virtue oriented beliefs more strongly than the Germans.

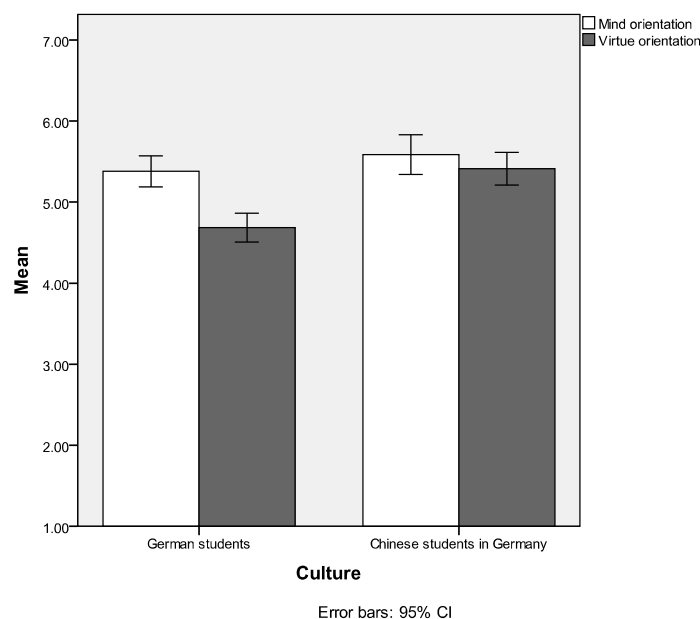


Figure 3. Mean scores on the mind and virtue orientation scales as a function of culture in study 3.

<sup>5</sup> Despite the uneven gender distribution in the two groups, the inclusion of gender as a covariate in this analysis did not yield a significant effect ( $F(1,82) = 1.37$ ,  $p > .05$ ).

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### 3.5.2.2 Forced-choices

An independent samples t-test was conducted with culture (German / Chinese) as between-subjects factor and mean number of selected mind options as dependent variable. This analysis revealed a significant difference between the number of times the German and Chinese students select the mind option as the most appropriate response ( $t(84) = -3.38, p < .001$ ). German students selected the mind oriented options more frequently ( $M = 6.27, SD = 1.16$ ) than the Chinese students ( $M = 5.43, SD = 1.2$ ).

### 3.5.2.3 Behavioral likelihood scores

Besides indicating which beliefs about learning students valued more, they were also asked how likely it would be that they would personally engage in both the mind and virtue oriented responses, in specific academic scenarios. It was expected that German students would indicate to be more likely to behave in a mind oriented than virtue oriented way. We expected the Chinese students to indicate to be less likely to exhibit mind oriented behaviors. Instead, based on the results of study 2, they were expected to indicate greater likelihood for exhibiting virtue rather than mind oriented behavior. To test these hypotheses, the variables were submitted to a within-subjects analysis of variance with likelihood of behavior (mind / virtue oriented) as within-subjects factor and cultural background (German / Chinese in Germany) as between-subjects factor. This analysis yielded a significant interaction effect between the groups and behavioral likelihood as well:  $F(1,84) = 15.37, p < .001, \eta^2 = .16$ . The groups differ in their behavioral preferences, as expected. The effect is illustrated in figure 4.

More detailed paired-samples t-tests confirmed next that German students indicated to be more likely to behave in line with the mind orientation ( $M = 5.17; SD = .57$ ) than the virtue orientation ( $M = 4.59; SD = .73; t(1,44) = 4.42, p < .001$ ). Although not reaching the conventional level of significance, this difference was reversed for Chinese students. They provided higher likelihood ratings for virtue ( $M = 4.92; SD = .91$ ) as compared to mind oriented ( $M = 4.65; SD = .71$ ) behavior.

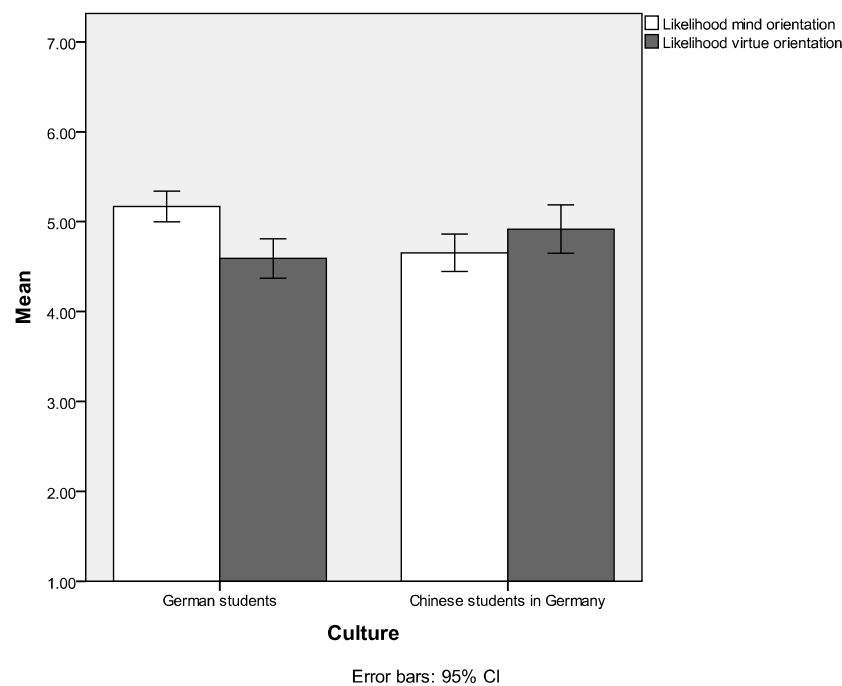


Figure 4. Students' mean self-rated scores of behavioral intentions in study 3.

### 3.5.3 Discussion

Study 3 was designed to examine learning beliefs and self-reported behavioral intentions of Chinese and German students who share the same academic cultural context. The responses of Chinese students, currently enrolled at German public universities on both the scale and the scenario measure were compared with the results of German students. Our analyses revealed that the findings of the Chinese students in Germany did not differ greatly from the results of the samples of Chinese students in China in studies 1 and 2. This study could therefore be considered to replicate the findings from studies in 1 and 2, in a more conservative context. Even within the German context, a cultural difference was found in the learning beliefs of students of Chinese and German origin. This study confirms that the found cultural difference in beliefs about learning is not merely due to the current context in which students are learning, but forms a set of beliefs that persists in a new cultural environment. The cultural difference however was again primarily found in the endorsement of the virtue oriented beliefs about learning. The Chinese students endorsed these more strongly than the German students. For both the forced-choice variable and the self-reported indications of behavioral likelihood, a similar pattern was found as in studies 1 and 2 as well. Although the difference in likelihood in mind and virtue oriented behaviors was not significant in this sample, the direction was in line with the finding from the Chinese sample in study 2. Moreover, the direction of the effects on the scale measure and the behavioral likelihood measure

were in opposite directions. Despite the high endorsement of the mind orientation on the scale measure, the Chinese students were less likely to behave mind oriented, even when they have been studying in Germany for an average of two years.

Additionally, it could be expected that students who have the means and motivation to pursue an education abroad, would form a selective sample, compared to the students who pursue their studies in China. One could expect that these students would already be more 'westernized' in their beliefs about learning compared to their peers. Our results however do not provide evidence for this assumption. Instead, the difference in relative emphasis that is placed on primarily virtue oriented beliefs and behavioral preferences by Chinese students relative to German students persisted.

These findings suggest that cultural beliefs about learning and culturally shaped behavioral intentions are not as easily adapted to a new cultural context as might be expected. Even in an environment in which specific constraints are set on behaviors in order to be successful, as is the case in academia, adaptation to the new cultural context is more likely to follow a pattern of 'integration' than of 'assimilation' in the sense that one might become more likely to exhibit mind oriented behaviors upon migration, but this does not mean that the virtue oriented beliefs are endorsed any less. This finding might have important implications on the applied level, since a discrepancy between the expectations of Chinese students who come to Germany and German faculty could lead to misunderstandings in the process of learning, both inside and outside the classroom.

### ***3.6 General discussion***

The present research examined the cultural difference in the concepts that underlie academic learning in East-Asian and Western contexts. Study 1 examined whether the mind - virtue framework can be applied to examine cultural differences between the ways in which Western European and Chinese students and faculty think about learning. Using a rating-scale method, the study demonstrated that mind orientation was valued more by Germans than Chinese, with this difference being reversed for virtue orientation. No differences were found between faculty and students within both cultures.

The behavioral scenario design applied in Study 2 allowed the examination of the behavioral preference of students within prescribed academic situations. Results support the theory that Chinese students are more likely to behave according to virtue-oriented options, whereas German students prefer to behave along the lines of the mind orientation. The application of this method corrected possible biases that influenced the

findings of the Likert scale ratings and provided an indication of actual, preferred behavior of students in everyday, academic situations.

Study 3 replicated the cultural differences between German and Chinese students in studies 1 and 2. Furthermore, it provided evidence for the persistence of a cultural difference in both the beliefs about learning and the self-reported behavioral indications. On both measures, the cultural difference was however again primarily found in the endorsement of the virtue orientation.

### *3.6.1 Implications, Limitations and Future Questions*

Although much discussed in different fields of literature, research and practice, no standard methodology has been established to assess cultural models of learning (Fryberg & Markus, 2007). Research with the specific aim of assessing the meaning that education holds for students is surprisingly sparse (Henderson-King & Smith, 2006). The current research illustrates the importance of raising awareness for the role that culture plays in an aspect of human development that is rather universal. We aimed to provide a framework for the interpretation of cultural differences in academia. Within the framework of the mind – virtue orientation theory, culture was found to have a profound effect on the way contemporary students in different cultures prefer to behave in academic settings. The conducted research has demonstrated the influence of the mind – virtue orientations on the evaluation of various elements of the learning process, such as motivational, affective, cognitive and behavioral elements. The primary cultural difference is found in the relative endorsement of the virtue orientation. Although both groups tend to score relatively high on the mind orientation, Chinese students score higher on both the endorsement of virtue oriented beliefs about learning and the self-reports of virtue oriented behavioral intentions.

Our findings provide evidence for the assumption that a certain line of philosophy developed in the West that has influenced Western contemporary thought. Another line developed in Asia, which has influenced Asian beliefs about learning. It is however necessary to be cautious in drawing conclusions from these philosophical traditions to contemporary people in the respective regions (Munro, 1985). This is even the case when philosophers have played such a crucial historical role in forming the philosophy of the culture, like Confucius did for the development of educational philosophy in China and the philosophers of ancient Greece in the West. Within the framework of the cultural task analysis, the current study however finds empirical support for the hypothesis that the mind – virtue orientations embed concepts of learning in Asia and the West, resulting in contemporary students in both regions to exhibit different types of behaviors. For Asian students the moral



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domain is a core element of the concept of learning, whereas moral development of the person is a less important part of people's beliefs about academic learning in the West. These orientations have been found to affect the endorsement of various elements of the learning process.

The operationalization of these philosophically embedded concepts of learning in an 18 item scale and nine item scenario-questionnaire is subject to criticism that is often expressed towards quantitative research methodology. The use of a standardized scale does not allow for the incorporation of subjective interpretations or individual interpretations of the orientations being measured. However, the purpose of this study was not to assess individual-level constructs of learning, but to see if cultural-level analysis provides evidence for the existence of an average cultural difference in the meaning of learning, in addition to an expected within-culture variation. Understanding how cultural backgrounds influence everyday academic life should only lead to an increase in the openness towards these traditions (Seo & Koro-Ljungberg, 2005).

The results of the reported studies have implications for applied academic settings in which primarily mind oriented faculty interact with more virtue oriented students. The research finds evidence for the likelihood of miscommunication and misattribution of behavior to occur in these types of intercultural situations, from both the student and faculty point of view. It could for example be that the behavior that the student exhibits does not follow faculty's expectations. If this results in down grading, despite the student's best intentions of exhibiting the strategy that would be regarded as most appropriate in their culture of origin, this would be problematic. With levels of international exchange increasing on a global level, ways have to be found to increase the understanding in the educational domain for culture-specific learning orientations, in order to capitalize on the added value that a diverse environment offers.

Lastly, whereas the results of this research indicate the existence of a cultural difference, the survey design of both studies does not allow the measurement of the influence that these different cultural concepts of learning might have on the behavior that is eventually actually performed. An experimental design could assess whether students from different cultures actually behave differently in settings that stress mind-oriented behavior or virtue-oriented behavior. Furthermore, measurement could take place of how students adapt to these environments, and if the orientations are open to intercultural adaptation. Research in an intercultural setting could assess the degree to which the mind and virtue orientations play a role in intercultural adjustment. Further research is needed to answer these questions.

In conclusion, the found differences in the endorsement of the mind and virtue orientations between the cultures under study indicate that the influence of culture in the academic domain should be taken seriously. With internationalization penetrating all levels of university life to an increasing degree, intercultural skills have become a requisite for professional knowledge. The development of this competence is increasingly becoming a part of the core mission of universities (McAllister, Whiteford, Hill, Thomas, & Fitzgerald, 2006). In our study, students from different cultures have been shown to prefer diverging solutions in response to equal academic situations. Our research thereby confirms that the applicability of conventional Western pedagogical approaches, in which 'good' learning is equated with rationality and critical thinking (Mason, 2007) needs to be reevaluated, in order for all students to gain maximal benefits of the international learning environment.

## Chapter 4

### *Learning Through the Eyes of Polish, Romanian and German University Students: Mind or Virtue Oriented?<sup>6</sup>*

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<sup>6</sup> A modified version of this chapter has been submitted for publication as: Van Egmond, M.C. & Kühnen, U. (2011). Learning through the eyes of Polish, Romanian and German university students: Mind or virtue oriented? Manuscript submitted for publication.

***Abstract***

LIKE THE MAJORITY of cross-cultural studies, cultural differences in learning have primarily been studied in either Western or Asian cultures or comparisons thereof. The beliefs of students and faculty in the West have been characterized as primarily 'mind oriented'. In this orientation, the development of one's cognitive thinking skills is seen as at the heart of the concept of learning and learners are encouraged to develop their creativity, critical attitude and independence. For academics in East Asia, 'virtue' oriented beliefs form an equally important part of the meaning people attach to the concept of learning. Learner characteristics such as respect, diligence and perseverance are central to this orientation. Little is known, however, about Eastern European students. The findings of the existing literature on cultural differences in values, cognition and beliefs between Eastern and Western European contexts have been inconclusive, if not contradictory. To fill this gap, both mind and virtue orientation of student samples from Poland, Romania and Germany were assessed. The study included both a traditional rating scale measure and a behavioral scenario questionnaire. The results showed that students from all three countries endorse the typically Western mind oriented beliefs about learning more strongly than the virtue oriented ones. Students from these diverse contexts were also found not to differ on a self-reported indication of behavioral intention on the behavioral scenario survey. The results thus suggest greater cross-cultural similarity in cultural beliefs about learning than differences among young people in these diverse regions within the European context.

### **4.1 Introduction**

Critical, persistent, creative, respectful, diligent, or smart? Which characteristics are most important for students while pursuing their university studies? Different people may answer this question differently, but all students and teachers have certain beliefs about which characteristics are essential for a 'good' student. People could for example believe that a good student is creative and smart, that one primarily learns how to think at school and that critical thinking is the optimal way to pursue knowledge. The overarching theme that would characterize these answers would be a 'mind orientation' towards learning (Li, 2005). Alternatively, a good student may be thought of as respectful, diligent and persistent. Learning may be thought of as a process of personal development that not only includes the cognitive domain, but social and moral aspects as well. These beliefs about learning have been characterized as 'virtue oriented' (Li, 2005).

Both orientations towards learning represent ideals and goals that are associated with good learning. The beliefs people have about different elements of the learning process underlie their motivation, affect and preferences for learning and learning-related behavior. As such, both orientations represent higher order goals that are essential to learners everywhere. Yet, the relative emphasis that is placed on either orientation has been found to differ between cultural groups, specifically those of Western Europe and East-Asia. The learning beliefs of German students and teachers have for example been found to be primarily mind oriented, whereas virtue oriented beliefs about learning form an equally important element of the concept of learning for Chinese students (Van Egmond, Kühnen, Li, Yan, Haberstroh & Damer, 2011).

Like the majority of the cross-cultural literature, research on cultural differences in learning have primarily focused on comparisons between Western (US American or Western European) and Asian (primarily Chinese) students. Little attention so far has been paid to the culturally interesting region of Eastern Europe. As countries that are in the process of post-Communist transition and that are thereby going through major societal changes, they are societies that face dramatic changes in societal demands (Ammermüller, Heijke, & Wößmann, 2005). Since education is one of the major vehicles through which societal changes take place, institutions of higher education in these countries face multiple challenges. Students now need to be educated to meet the demands of the changing labor market and newly privatizing enterprises (Eisemon, Mihailescu, Vlasceanu, Zamfir, Sheehan, & Davis, 1995). As suggested by both Tudge and colleagues (2000) and Holloway et al. (2000), it is likely that values of conformity and compromise, which were previously conducive to a successful socialization,

have changed in the direction of values that are needed to succeed in a market economy, such as those of initiative taking and independence. Education thus plays an essential role in these societies. Examining the beliefs about learning of contemporary students in these countries contributes to our understanding of the meaning that learning holds for students in this demanding context.

Additionally, the numbers of students from this region who choose to pursue their studies abroad continues to increase. The transition of Eastern European countries to the European Union has promoted the international exchange of students from these countries within Europe (Student Statistics Federal Statistical Office, 2007; European Union Press Release, 2008). The participation of increasing numbers of Eastern European students in Western European institutions of higher education calls for more insight into the way students from this area conceptualize learning and whether/how this differs from Western European perspectives. The current study therefore measures the beliefs about learning of students from two large Eastern European countries: Poland and Romania. The orientations towards learning of students from these countries will be compared with each other and those of students from the Western European case-country Germany in the framework of the mind and virtue orientations. In the following sections we will first elaborate theoretically on the concepts of the mind and virtue orientation. Subsequently, we will review the existing literature from Eastern European contexts that relates to the domain of learning, in order to derive our hypotheses for the empirical investigation.

#### *4.1.1 Cultural orientations towards learning*

In 2003, Li conducted a prototype study, in which Chinese and European American students, enrolled at a university in their home country at the time of the study, were asked to freely associate words, which they felt best reflected the concept of 'learning'. Li found that the structure of the mental construct of learning is similar for both Western and Asian students. The domains of the concept of learning that her analysis revealed, include the *purposes* (e.g. what people think the goal of learning is), *processes* (e.g. which strategy one applies), *personal regard* (e.g. whether or not and why learning is important), *affects* (e.g. whether one experiences joy or dread from learning), and *social perceptions* (e.g. the perception of successful learners vs. unsuccessful ones and perceptions of teachers). The content of the categories that were used by the Western and Chinese students in her study in relation to these categories differed systematically and qualitatively, however.

At the highest level of abstraction, learning was defined as the process by which individuals' minds acquire knowledge for European American students (Li, 2003). Primary importance was given to the characteristics of the individual that enable the person to acquire knowledge, such as cognitive skill, intelligence, but also thinking, communicating and active engagement in the classroom. Already from an early age, a good part of Western education is for example dedicated to teaching children the beginnings of argumentation, enabling children as young as six-years old to engage in discussions that exhibit principles of reasoning (Doddington, 2007; Peng & Nisbett, 1999). In line with the independent orientation of values and self-concepts that persists in Western cultural contexts (e.g. Markus & Kitayama, 1991; Oyserman, Coon, & Kemmelmeier, 2002), creativity, curiosity and an achievement-based motivation function as important motivation mechanisms for students to learn. In sum, learning as a concept centers around the idea of developing the mind and one's thinking skills. Learning may form an important part of life for students, but it is not commonly connected to the emotional, spiritual domains of the life. The overarching theme that describes the Western orientation towards learning was therefore termed 'mind oriented'.

Li however found that knowledge is regarded as an intricate part of the personal lives of the Chinese students. On the highest level of abstraction, learning included not only the externally existing body of knowledge that might be acquired by the students, or mental functions that enable one to acquire this knowledge, but dimensions such as the personal, social and moral development as well. From the Confucian philosophical standpoint, learning is not only seen as a cognitive pursuit, but it is valued as a lifelong pursuit of the person in the moral and social domains as well. The role that teachers assume for example consists of more than that of mere topical experts. Instead, they are expected to act as exemplars for their students on a moral level as well (Cheng & Wong, 1996). The most central elements of the content of Chinese students' beliefs about learning include a personal-agentic dimension such as diligence, self-exertion, endurance of hardship, perseverance, and concentration. These characteristics include a moral and virtuous dimension and take prevalence over the mere cognitive elements in the pursuit of learning for Chinese students. In addition to the objective mastery of academic subjects, in this orientation, good learning aims at the unity of knowing and morality. Knowledge itself and the process of acquiring it are evaluated by the contribution they make to society. Li therefore conceptualized the theme that the learning beliefs of Chinese students center around as 'virtue oriented'.

The vast majority of studies that have been conducted on cultural differences in learning however solely juxtaposes the Western (European American) 'Socratic' cultural context with the East-Asian cultural context and the 'Confucian' legacy which has shaped this region (Tweed & Lehman, 2002). The theory of the mind and virtue orientations aims at overcoming this limitation by conceptualizing cultural differences in learning as 'cultural mandates' (Kitayama & Imada, 2010). The mind and virtue orientation are conceptualized as reflecting important elements of 'good learning' anywhere. Becoming both a critical, creative thinker and a person who acts in morally accepted ways can for example be considered to be important socialization goals for students in most educational systems, regardless of their cultural context. We however propose that the cultural variation between cultures is due to the relative emphasis that is placed on some core aspects over others.

Building on the pioneering work by Li, a two-fold survey study was recently conducted with German and Chinese students and faculty members (Van Egmond et al., 2011). The first part of the survey consisted of a rating scale containing two subscales, one for each learning orientation. This scale was constructed in order to capture the different components of the mind – virtue orientation, as identified by Li (2003). The results showed that the beliefs of Germans (both students and professors) were clearly more mind than virtue oriented, while Chinese scholars' beliefs (of both faculty and students) were both highly mind and highly virtue oriented. In fact, their scores for virtue orientation were significantly higher than the ones by Germans.

In cross-cultural comparisons it is however especially relevant to consider the possible influence of judgmental biases that affect subjective ratings. For this reason, a second measure was designed which was also slightly closer to measuring differences in behavioral preferences between Western and Eastern students. In this behavioral scenario survey, participants were presented with nine situations that students can typically find themselves in over the course of their studies. Participants were asked to make a *forced-choice* for a behavioral response that the protagonist in the scenario should apply. They were asked to select the type of behavior that they would find most advisable in the described situation. One behavioral option reflected the mind orientation while the other one was more in line with virtue orientation. These scenarios were based on the original formulations of the orientations by Li (2003) as well. The results showed that Germans found the mind oriented kind of behavior more appropriate than the virtue oriented behavioral option in the clear majority of scenarios, while this was reversed for the Chinese. Finally, for each scenario, the participants were asked to imagine being in the position of the protagonist



and to indicate the *likelihood* that they would engage in mind oriented behavior, as well as the likelihood to show virtue oriented behavior. It turned out that Germans on average indicated to be more likely to behave in the mind rather than virtue oriented fashion, while this pattern was reversed for Chinese. In sum, the designed material proved successful in capturing cultural differences in mind and virtue orientation between German and Chinese student and faculty samples.

The empirical evidence so far thus reveals that the differences in learning beliefs between Western Europeans / North Americans on the one hand and East Asians on the other are relatively well studied. Little is known so far about the way that learning is construed in other regions, such as the Eastern / Central European post-Communist region, although it could be hypothesized that elements of both orientations constitute the beliefs students in these regions have about learning. The aim of the current paper is therefore to analyze how students in two post-communist countries; one Central European and one Eastern European think about learning. The aim is to test whether or not students from this region differ in the extent to which their beliefs emphasize mind and virtue orientation, not only from Western European students, but from each other as well.

To answer these questions, a survey study was conducted in three countries, in order to triangulate our findings. First, Poland was selected as a case-country, based on its post-Communist background, combined with a Catholic tradition. Secondly, Romania was selected because it shares the post-Communist status with Poland, but has a different religious tradition, namely orthodox Christianity. Based on this difference in religious background, cultural differences between these two countries could be expected as well. Lastly, Germany was included as a case-study for Western Europe. Two measures were applied in all three samples. First, the attitudinal rating scale measured both the mind and virtue orientation of students' beliefs about learning. Secondly, the behavioral scenario questionnaire was included to gain an indication of behavioral preferences of students in everyday academic situations. In order to determine the direction of our hypotheses, we will review the available English language literature that has been published on learning-related topics in Eastern European contexts, with a specific focus on our case-countries of Poland and Romania.

#### *4.1.2 Learning in the Central and Eastern European context*

Research that addresses the cultural psychological differences between Western and Eastern Europeans is growing, but still relatively scarce. A second factor that complicates the design of a cross-cultural inquiry into this region is formed by the inconclusive and sometimes even contradictory findings that have emerged from previous studies. For example, some studies

are based on an expected cultural similarity across the Eastern and Western parts of the European region, since prior to the introduction of Communism, Eastern European societies identified themselves largely with Western Europe's cultural, religious, and intellectual heritage (Whitmarsh & Ritter, 2007; Varnum, Grossmann, Katunar, Nisbett, & Kitayama, 2008). It would therefore be plausible to hypothesize that Eastern Europe would share the Socratic tradition, which has been found to be related to the way learning is conceptualized in the West (e.g., Tweed & Lehman, 2002; Li, 2003). Several empirical studies find support for this line of reasoning. Related to the domain of learning specifically, Sztejnberg, den Brok and Hurek (2004) found that the preferences of Polish students in teacher-student interpersonal behavior are largely similar to the preferences of students from Western regions, such as the Netherlands, Australia and the US. Polish students only indicated that teachers should provide slightly more responsibility and be slightly less strict than students from other countries reported. These authors therefore suggest that, when it comes to interpersonal teacher-student behavior, only minimal cultural differences exist between the perceptions of Polish students and those from other regions. These results were however obtained from relatively small samples and consisted largely of primary education students and students enrolled in higher vocational education. The generalizability of these findings to current university students is therefore questionable. A study that did examine the beliefs of Polish university students, albeit towards the specific sub-domain of creativity also found that Polish students valued the more Western traits of this concept, in comparison to Chinese students (Rudowicz, Tokarz, & Beauvale, 2009). In particular, Rudowicz and colleagues found that Polish students attach a high desirability to cognitive abilities, such as being smart, curious, and inventive. These characteristics are also reflected in the mind orientation, which would lead to the expectation that Polish students would value mind oriented beliefs about learning more strongly than virtue oriented beliefs, just like their Western European counterparts.

Furthermore, it could be hypothesized that the youth in Eastern Europe today would value mind orientation strongly, in compensation of the deprivation of characteristics such as the value of debate, curiosity and having a critical attitude that was experienced at the time of Communist rule. The awareness of the lack of something makes people value it more (see Schwartz & Bardi, 1997). In the cross-cultural literature this effect has been identified as the 'deprivation-effect' and it has been found to influence the judgments of people on attitudinal measures such as Likert rating scales (Peng, Nisbett, & Wong, 1997). The deprivation-effect states that people often express stronger preferences for something they lack, or believe

themselves deficient in, than they do for things they have. This effect would thus predict that Eastern European students endorse the mind orientation equally strongly if not more strongly, than Western European students. These deprivation effects are however typically only found on abstract and subjective rating scales only. The addition of the scenario measure which includes a forced-choice answer format in the current study therefore allows us examine whether a bias of this kind influences the students' ratings on the Likert-scale of mind and virtue oriented beliefs about learning.

So far, we have provided evidence in favor of the similarity between Eastern and Western European cultural beliefs. Other studies however provide counter-evidence and find cultural differences between these regions within the European continent. In a domain that is closely related to that of cultural beliefs about learning, research on cognitive styles suggests that East Europeans have more in common with East Asians than with Americans or Germans. Kühnen, Hannover and Roeder (2001) have for example shown that the attention pattern of Russians is more holistic than analytic. More recently, Varnum et al. (2008) found additional supportive evidence that Central and Eastern Europeans tend to be more holistic in their thinking than Western Europeans and North Americans. The patterns of cognition of Central and Eastern European students were found to be more holistic on a categorization task and two visual attention tasks. Furthermore, Kolman and colleagues (2002) not only found important differences between the value orientations of Western European (Dutch) and Central European students, but also within the four Central European countries included in their study (Czech Republic, Hungary, Poland and Slovakia). All Eastern European countries for example tended more strongly towards masculinity than femininity and power distance and uncertainty avoidance were found to be exhibited more strongly in these societies as well.

It has been suggested that cultural variation can be thought of as a continuum. Poles have for example been found to take in an intermediate position on individualism-collectivism, since it is relatively individualistic within the Central European region, but substantially more collectivistic than a Western country like the Netherlands (Kolman, Noorderhaven, Hofstede, & Dienes, 2002). In the case of cognitive style, Western Europeans and North Americans would be the most analytic and East Asians the most holistic on this continuum. Central and East Europeans would take in an intermediate position (leaning towards a more holistic style) (Varnum, Grossmann, Katunar, Nisbett, & Kitayama, 2008). Following this line of reasoning, it could be hypothesized that the beliefs about learning of both Polish and Romanian students in the current study would be less mind oriented and more virtue oriented than the beliefs of German students.

In support of this expectation is the historical finding that even before the advent of communism, Eastern Europe was governed by different types of regimes than Western Europe. At that time, Eastern Europe was ruled by more centralized and autocratic regimes and it was more agrarian and less economically and socially developed (Schwartz & Bardi, 1997). Eco-cultural factors like these have been found to influence people's psychological tendencies in the domain of cognition (Uskul, Kitayama, & Nisbett, 2008). Recent large scale research has also found the Eastern European countries to still represent distinct cultural regions from Western Europe in the domain of values (Inglehart & Welzel, 2005; Schwartz & Bardi, 1997). Other studies however suggest that this difference in values primarily persists for individuals who have actually been raised during the time of the Cold War, not the younger generations (Van Herk & Poortinga, 2011).

In line with this is the fact that it is an interesting mix of typically Western and Eastern cultural elements that characterizes some Eastern European contexts. Democracy and authoritarian elements have for example shaped Polish social political history to a large extent. In the domain of power distance, this is reflected in the finding that Poles attach a lot of value to having a good working relationship with their superior, but they also value being consulted by him or her (Kolman et al., 2002). This finding places Poland at an intermediate position in the domain of power distance, similar to the domain of individualism-collectivism, since a relatively large power distance is found when compared to Western European countries. It is however rather egalitarian when compared to other Eastern European countries.

On the societal level, empirical research has not been able to provide convincing evidence in support of the assumption that a political system would have an extensive impact on the values that its citizens ascribe to, especially not years after the collapse of such a system. Schwartz and Bardi (1997) for example did not find differences between Western and Eastern Europeans in most cultural values. The one domain in which they did find significant cultural differences however, was in the domain of work values. They found that East Europeans valued initiative, achievement, and responsibility less in their work than Western Europeans. In addition, intellectual autonomy values, such as curiosity, broadmindedness, and creativity were significantly less important in Eastern than in Western Europe. During Communist times, expressing opinions that were not explicitly known to be allowed was dangerous as punishment for failure to conform (e.g., by following one's curiosity or expressing one's creativity) was ubiquitous (Schwartz & Bardi, 1997). Open debate or critiquing the taught material were not encouraged. Students were supposed to be obedient, quiet

and take notes of the information the teacher provided. Preference was given to extending students' 'knowledge', with deep understanding being less of a focus. Although many efforts are undertaken to reform educational practices, it cannot be denied that beliefs such as these are at the root of current teacher education programs, for example in Romania (Singer & Sarivan, 2009). Moreover, the educational curriculum during Communist times was designed to endorse socialist ideology. The import of Western books was regulated, especially within the fields of psychology and philosophy (Whitmarsh & Ritter, 2007). Philosophical debates in the style of the ancient Greeks, have been described as 'inherently incompatible with a doctrine that saw itself as a closed system, containing scientifically correct answers to all social dilemmas' (Brezinski, as quoted by Whitmarsh & Ritter, 2007, p. 87). Values such as obedience and conformity were instead more in line with the objective of creating an egalitarian, communal society (Whitmarsh & Ritter, 2007).

Since these are values that are closely related to the domain of academic learning, it could be hypothesized that communist influences have left their traces in the learning environment of contemporary Eastern European students in addition to the more distant historical legacies that also influence the region (Varnum, Grossmann, Katunar, Nisbett, & Kitayama, 2008). Based on the latter part of this review, it could thus be predicted that the meta-cognitive beliefs of contemporary Eastern European students will reflect the virtue orientation more strongly than the mind orientation.

#### *4.1.3 Study overview*

The above review provides an ambiguous answer to the question whether cultural differences might be expected between Western and Eastern European students in their beliefs about learning. Evidence was found both in favor of a cultural difference and in favor of cultural similarity between these regions. In an effort to resolve this ambiguity in the domain of beliefs about learning for young, contemporary students, a study was designed to measure these differences empirically. In order to do so, we applied the materials that were created for previous studies which revealed clear cultural differences between Germans and Chinese (Van Egmond, et al., 2011). For the present study, the rating scale by which both mind and virtue orientation can be measured, as well as the conflict scenarios for which participants are asked to make behavioral predictions were translated into Polish and Romanian. The study was conducted with samples of German, Polish and Romanian students.

## **4.2 Methods**

### *4.2.1 Participants*

The total sample consisted of 181 students. All participants were enrolled at a university in their home country and had never studied abroad. The distribution across academic disciplines was calculated for each sample, based on the categories: social sciences, humanities, sciences (e.g., biology, mathematics, physics), economics / business administration, and other (e.g., logistics, sustainable development). No large differences in distribution across academic discipline occurred between the sub-samples.

The German sample consisted of 55 students (33 female, 22 male), with a mean age of 23.7 (SD = 3.3). A small majority was formed students from the social sciences (38%), with the other two equally large groups being formed by students from the sciences (26%) and humanities (26%). The Polish sample consisted of 59 students (38 female, 21 male). They were 22 years old on average (M = 22.31, SD = 2.34). A small majority (28 %) of these students were enrolled in economics or business administration programs. The remaining sample was nearly evenly spread across the social sciences (23%), humanities (23%) and sciences (19%). The Romanian sample consisted of 67 students (42 female, 25 male), who were 22.2 years old on average (SD = 3.9). The distribution across academic disciplines was nearly equal across the categories as well, with a small majority of 32% of students enrolled in the social sciences.

### *4.2.2 Material*

All participants completed the mind – virtue orientation scale and behavioral scenario questionnaire in their native language. The scale consists of 18 items; half of them measuring mind oriented beliefs about learning and half measuring virtue oriented beliefs about learning. Agreement with each item was rated on a 7-point Likert scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The Polish and Romanian translations were created using the back-translation method.

The behavioral scenario questionnaire consisted of nine scenarios that describe situations that students will typically encounter at some point during their university studies. In each scenario a hypothetical student was described who found him/herself in an everyday academic situation (e.g. *Jennifer is taking a History course. She doesn't agree with the professor on some ideas. Should Jennifer interrupt the professor and discuss it with him in class?*). The names of the protagonists were adjusted in each translation to reflect commonly used names in the countries at hand.

The questions that followed each scenario consisted of two subsections. First, students were asked to select either a mind oriented

option or a virtue oriented option that they would recommend as the most appropriate response to the described situation for the protagonist ( Option 1 = Yes and Option 2 = No). Secondly, participants were asked to rate the likelihood with which they themselves would engage in both the mind oriented option and the virtue oriented option (e.g., “If you were Jennifer, how likely is it that you would...”) on a 7-point Likert scale, ranging from 1 (very unlikely) to 7 (very likely).

#### *4.2.3 Procedure*

German participants anonymously completed a paper version of the scale. Data collection took place on campus at a medium-sized public university. Participants received the request to complete the questionnaire as an additional task, following participation in a social psychological experiment on unrelated topics.

The Polish and Romanian students completed the questionnaire online. First of all, an invitation to the survey was sent to a mailing list for young Eastern European scholars. Separate data collection strategies were then additionally applied for Polish and Romanian students. For the Romanian sample, the main recruitment strategy consisted of the publication of a call for participation on a webforum for Romanian students. Secondly, Romanian students were recruited to participate through an announcement on the mailing list of an international university in Germany. The Romanian students who were studying at this university were asked to forward the email invitation to their network of Romanian friends who were not studying at this university, but in Romania itself. A similar recruitment strategy was applied for the Polish sample. Here, contact persons from several Polish student unions were approached by email and asked to distribute an email including a link to the survey to the members of their organizations.

### **4.3 Results**

#### *4.3.1 Reliability*

The reliability scores for both newly introduced Eastern European samples reached satisfactory levels (Polish sample:  $\alpha = .91$ ; Romanian sample:  $\alpha = .93$ ; German sample:  $\alpha = .64$ ). Therefore, for each cultural group we calculated one mean score over the mind orientation items and a second one over the virtue orientation items.

#### *4.3.2 Rating scale: mind and virtue oriented beliefs*

The main research questions were whether the beliefs about learning of students from the culturally distinct regions of Poland, Romania and Germany are more mind oriented or virtue oriented and, if cultural

differences exist in the beliefs about learning between these groups of European students.

In order to answer this question the mean scores for mind and virtue orientation were submitted to an analysis of variance with culture (Polish / Romanian / German) as between-subjects factor and orientation of beliefs (mind / virtue) as within-subjects factor. This ANOVA revealed a significant main effect of orientation ( $F(1,178) = 165.03, p < .001, \eta^2 = .48$ ). All three groups endorse the mind oriented beliefs more strongly than the virtue oriented beliefs (Germans:  $M_{\text{mind}} = 5.38; SD = .64$  vs.  $M_{\text{virtue}} = 4.69; SD = .59; t(54) = 6.66, p < .001$ ; Polish:  $M_{\text{mind}} = 5.16; SD = 1.1$  vs.  $M_{\text{virtue}} = 4.74; SD = 1.07; t(58) = 4.49, p < .001$ ; Romanians:  $M_{\text{mind}} = 5.76; SD = .86$  vs.  $M_{\text{virtue}} = 4.61; SD = .94; t(66) = 11.00, p < .001$ ). The means are also depicted in figure 5.

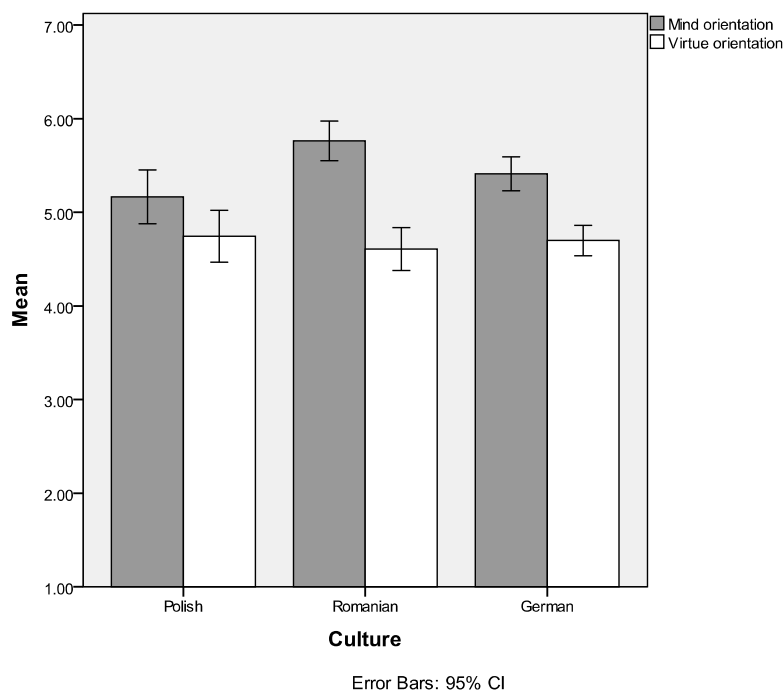


Figure 5. Rated endorsement of mind and virtue oriented beliefs, by culture.

In addition to the significant main effect, the analysis also yielded a significant interaction effect between orientation and culture ( $F(2,178) = 13.66, p < .001, \eta^2 = .13$ ). Romanian students indicate slightly higher endorsement of the mind oriented beliefs than the other two groups. However, none of the post-hoc tests yielded a significant result, as indicated in Table 4.

In order to explore whether the students' gender or academic discipline would affect their beliefs, two additional within-subjects analyses of variance were conducted within each cultural subsample with either gender



(female / male) or academic discipline (social sciences / sciences / humanities / business / other) as additional between-subjects factor. None of these analyses revealed a significant interaction effect with orientation ( $p$ 's  $> .05$ ). Neither gender nor academic discipline had an effect on the orientation of the learning beliefs of the students.

Table 4. *Post-hoc comparisons mind – virtue scale.*

Culture	Comparison culture	Mean Difference	Std. Error	$p$
Polish	German	-.08	.16	.62
German	Romanian	-.15	.16	.34
Romanian	Polish	.23	.15	.11

#### 4.3.3 Scenarios: *Forced-choices of appropriate behavior*

As described above, the used scenarios are brief descriptions of a student finding him or herself in ambiguous situation. For each scenario two alternative ways of behavior were presented; one in line with the mind orientation and the other reflecting virtue orientation. Participants were first asked to indicate which behavioral alternative they find more appropriate in response to the described situation (see Table 5). In order to look for potential cultural differences with regard to these choices, the mean number of selected mind orientation options (out of a maximum of nine) was submitted to a one-way analysis of variance with culture as between-subjects factor (Polish, Romanian, German). This analysis did not yield a significant effect ( $F(2,161) = 1.87$ ,  $p > .05$ ). Although German students select the mind option slightly more frequently than students from the other two countries, culture was not found to have a significant effect on the frequency with which German ( $M = 6.3$ ,  $SD = 1.16$ ), Polish ( $M = 6.1$ ,  $SD = 1.20$ ) and Romanian students ( $M = 6.1$ ,  $SD = 1.29$ ) selected the mind oriented option as the most appropriate response. In other words, equal percentages of students in the three cultural groups selected the mind oriented option more frequently (5 or more times) than the virtue oriented option as the most appropriate response in the given situation (German: 94.5%; Polish: 92.3%; Romanian: 89.5%,  $\chi^2(1, N = 164) = 0.99$ ,  $p = .61$ ).

Table 5. Overview of results of behavioral scenarios in all three cultures.

			Frequency %			Mean likelihood M (SD)		
			German	Polish	Romanian	German	Polish	Romanian
1. Jennifer is taking a History course. She doesn't agree with the professor on some ideas. Should Jennifer interrupt the professor and discuss it with him in class?	Mind	Yes	65.5%	62.9%	68.1%	3.11 (1.37)	3.56 (2.03)	4.16 (2.03)
	Virtue	No	34.5%	37.1%	27.5%	N.A.	N.A.	N.A.
2. Peter is a motivated Philosophy student and has the ambition to become a professor one day. What should she be more concerned about when working towards this goal?	Mind	Focus on being critical and thinking independently	83.6%	58.2%	60.0%	5.58 (1.36)	4.63 (2.41)	5.52 (1.88)
	Virtue	Focus on self-cultivation toward higher moral and social development.	16.4%	41.8%	34.8%	4.69 (1.27)	4.28 (2.30)	5.43 (1.55)
3. Laura needs to study for a sociology test. She wants to do as well as she can on the test. What learning strategy do you recommend that she <u>start</u> with?	Mind	Discuss the material with other students.	58.2%	68.8%	14.5%	5.09 (1.40)	3.42 (2.25)	3.46 (2.00)
	Virtue	Devote a lot of time to quietly study the material by herself.	41.8%	31.3%	78.3%	5.85 (1.46)	5.22 (2.31)	5.80 (2.00)

4. Daniel just failed on an International Management exam. How do you think she feels?	Mind	Disappointed and demotivated because he has to retake the exam.	80%	78.7%	73.9%	5.33 (1.77)	4.95 (2.31)	4.38 (2.10)
	Virtue	Motivated to study harder in order to do better on the next exam.	20%	21.3%	20.3%	4.20 (1.79)	3.18 (2.13)	4.12 (2.13)
5. Maria has an exam for Political Theory coming up, but she also has a deadline approaching for History of Foreign Policy and needs to finish an assignment for his statistics course. What strategy do you recommend for her?	Mind	Study as quickly as possible, in order to finish as much as possible in the limited time.	56.4%	59.6%	69.6%	5.53 (1.53)	4.74 (2.39)	4.91 (2.22)
	Virtue	It doesn't matter how long it takes, it is more important that she puts in her absolute best effort.	43.6%	40.4%	24.6%	3.31 (1.75)	3.18 (2.14)	3.62 (2.06)
6. Alex is starting university and has to choose a major. He wants to make the right choice. What advice would you give him?	Mind	Choose a subject that you are really curious about and interested in.	94.5%	87.3%%	91.3%	6.53 (.69)	5.76 (2.19)	6.48 (1.49)
	Virtue	The subject of your studies is not that important, it is more important that you dedicate yourself to the process of studying, no the topic.	5.5%	12.7%	2.9%	2.95 (1.51)	2.05 (1.65)	1.67 (1.36)

## Chapter 4

7. Joanne just received her results from an Econometry exam. She received an A, so she completed the exam very successfully. Should she be proud of herself for this accomplishment?	Mind	Yes	100%	90.7%	91.3%	6.47 (.90)	6.15 (1.84)	6.25 (1.30)
	Virtue	No	0%	9.3%	5.8%	N.A.	N.A.	N.A.
8. Chris is an ambitious Literature student and wants to make it to the top. To be able to become a leader in her field, what do you think is most important?	Mind	He should develop his creative thinking skills.	47.3%	47.2%	56.5%	5.05 (1.48)	5.17 (2.16)	5.91 (1.49)
	Virtue	He should work hard with constant effort and perserverance.	52.7%	52.8%	39.1%	5.53 (1.03)	5.13 (1.74)	5.09 (1.88)
9. Cindy is attending a Psychology lecture. The professor is explaining one of the classic theories, developed by an authority in the field. Cindy however recognizes that she has a doubt about the theory. What should she do?	Mind	Pursue her feelings of doubt and follow-up on it. She should express her thoughts openly.	60%	40.4%	47.8%	4.31 (1.74)	3.96 (2.10)	4.35 (2.03)
	Virtue	She should study the theory and the words of the authority better to make sure she fully understands the theory before expressing her thoughts openly.	40%	59.6%	47.8%	5.16 (1.56)	4.79 (2.07)	4.55 (2.02)

Note: Participants who selected both options were excluded from the forced-choice analysis.

#### 4.3.4 Scenarios: predictions for own behavior

The second part of each scenario item consisted of an indication of the likelihood with which students would engage in both the mind oriented option as the virtue oriented option (i.e., two likelihood ratings were assessed for each scenario). For each sample of participants we calculated a mean score over all likelihood ratings to engage in the mind oriented kind of behavior, and a second mean for the virtue oriented behavioral options, respectively. These two scores were subjected to an analysis of variance with culture as between- and orientation as within-subjects factor. The only significant effect this analysis yielded was a main effect for orientation ( $F(2,171) = 90.35$ ,  $p < .001$ ,  $\eta^2 = .35$ , all other  $F$ s  $< 1$ ). In the same direction as the results of the attitudinal ratings, students in all three countries report being more likely to behave mind oriented than virtue oriented in the described situations (see figure 6; Germans:  $t(54) = 5.59$ ,  $p < .001$ ; Polish:  $t(51) = 4.90$ ,  $p < .001$ ; Romanian:  $t(66) = 6.12$ ,  $p < .001$ ).

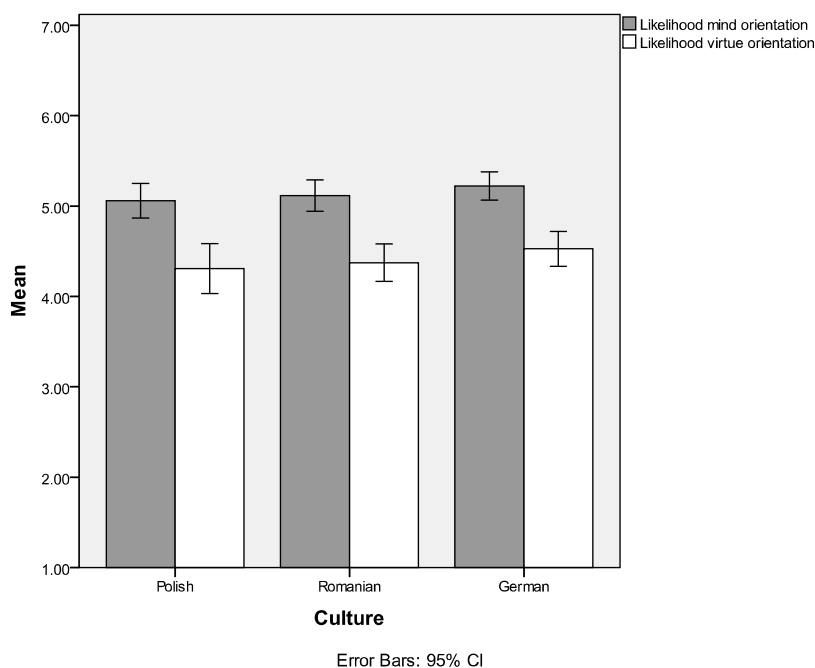


Figure 6. Self-reported behavioral likelihood of engaging in mind and virtue oriented behaviors, by culture.

As illustrated in figure 6, students from all three samples indicate higher likelihood ratings for the mind oriented options than the virtue oriented options. They do so to the same degree in all three countries. In other words, students from Germany, Romania and Poland are found to be equally likely to behave mind oriented. They also report to be equally likely, that is less likely than mind oriented, to behave virtue oriented.

#### **4.4 Discussion**

More than twenty years after the systemic changes that took place in the communist Eastern European countries, the current study finds remarkable similarity in the culturally shaped beliefs about learning in two Eastern European countries and a Western European country. No cultural difference was found in the beliefs about learning of students from two different countries within the Eastern European context either. Students in all three countries indicated to endorse the culturally Western mind oriented beliefs about learning more strongly than the virtue oriented ones, both on an abstract rating scale and in their self-reported indications of behavioral likelihood. Hence, in line with the historical traditions shared by European cultures which relate back to the legacy of Greek philosophers (and Socrates in particular) our analysis revealed a robust stronger emphasis that is placed on mind oriented elements of the concept of learning over virtue oriented aspects across the region. With these findings, our study fails to provide evidence for the influence that the degree of democratic tradition might have on values and cognitive differences between contemporary Eastern and Western European contexts, as has frequently been cited (Varnum et al., 2010). This finding is remarkable, given that previous studies have found similarities between Eastern Europeans and East Asians with regard to some aspects of cognitive functions, such as collectivistic values and holistic cognition (e.g. Varnum et al., 2008; Kühnen, Hannover, & Roeder, 2001; Kolman et al., 2002). Despite these communalities with East-Asians in certain respects, Eastern Europeans in our study showed meta-cognitive learning beliefs that are clearly more in line with the (Western) mind rather than (the Asian) virtue orientation. These findings also suggest that the emphasis on virtue oriented beliefs and learning-related behaviors that has been found in Chinese students may not be merely due to their collectivistic values or holistic cognition, but indeed may reflect the specifically Confucian heritage in learning beliefs.

These findings have important implications on the applied level for Polish and Romanian students pursuing their studies abroad, since the data suggest that they will have few problems adjusting to intellectual environments in which the mind and virtue orientation are endorsed to the same degree as in their countries of origin, such as Western Europe. In line with Van Herk and Poortinga (2011), the current findings suggest that cultural beliefs about learning, of the generation born in Eastern Europe after the fall of Communism are highly similar to the beliefs of young Western Europeans. Adjusting to environments in which the virtue oriented beliefs takes prevalence over mind oriented ones, such as in East-Asia could however be expected to be more problematic. Similarly, Chinese students

who come to Eastern European countries such as Poland and Romania may be expected to have equal difficulty in adjusting to the learning environment in these countries, as in more Western European countries.

The interaction effect of orientation and culture found in the orientation of students beliefs about learning on the rating scale raises interesting questions for future studies. While additional post-hoc tests did not reach significance, the mere pattern of results suggests that the Romanian students scored slightly higher on the mind orientation than the other two groups. While one may be tempted to interpret this slight cultural difference substantively, we believe that one should treat it carefully: Since there was no evidence for cultural differences with regard to the indications of behavioral likelihood, it is at least also conceivable that the interaction effect on the rating scale primarily reflects a deprivation effect. It could be that the Romanian students indicated to value the mind oriented beliefs about learning more because they are aware that these are important beliefs, but that these beliefs are not endorsed as strongly in their educational context as they might wish them to be. The fact that the standard deviations are larger for most of the items in the two Eastern European countries, compared to those in the German sample, also indicate that less consensus exists in beliefs about learning in these countries.

The interpretation of our findings is however complicated by the fact that a lack of evidence in favor of the alternative hypotheses may not be understood as evidence in favor of the null hypothesis. It may for example be that our measure simply did not capture cultural differences that might exist between students in these countries or that our samples or results are biased. Although, as reported above, the measures have been used successfully to identify clear cultural differences between Germans and Chinese, one might argue that there are specifically Eastern European assumptions about learning which are not captured by these measures at all. Moreover, the reliability scores of the scale measure barely reach the threshold of .6 in the German sample. Although the means that were obtained did not differ from previous measurements (Van Egmond et al., 2011), these scores do indicate that some caution has to be taken in the interpretation of the results. In the following, we shall therefore limit ourselves to expressing some limitations of the study. Overcoming these limitations in future studies might yield different results.

First of all, the included samples were large enough to obtain meaningful results, but it is questionable if samples of 50 or more students from each country form truly representative samples of each of the national cultures. The question if the results of this study can be generalized to the wider population could be answered by more extensive data collection in future projects. Moreover, despite the absence of a cultural difference in the

beliefs about learning of students in the countries in our study, the possibility of differences within the Central and Eastern European region, especially concerning other countries should still be considered.

Additionally, it would be reasonable to expect the intensive and quick process of value change that is occurring in this region to continue over the years to come. Also, it would be valuable to include external measures of validity in future studies. Although the reliability of the applied measures was relatively high in both Eastern European settings, it could be examined whether the measures possess construct validity within Eastern Europe, as they do in Western Europe in more detail. Based on the outcomes of such studies, items might be added that capture specific elements of the learning process for students in a context of post-Communist transition.

In conclusion, the cultural similarity that is found in the beliefs and behavioral preferences of students from three countries that are each marked by large social, historical, religious and cultural variation is remarkable. It suggests that students within the European context have more in common with each other than they are different. Within the context of increasing rates of academic exchange within the European Union, these results suggest that intercultural communication between students and faculty from different regions within Europe is not as problematic as might be expected, based on other sources and should not be overestimated.



## Chapter 5.

*Learning beliefs as mental schemata:*

*An implicit measurement of cultural differences<sup>7</sup>*

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<sup>7</sup> A modified version of this chapter has been submitted for publication as: Van Egmond, M.C., Kühnen, U. & Yan, S. (2011). *Learning beliefs as mental schemata: An implicit measurement of cultural differences*. Manuscript submitted for publication.

**Abstract**

Learning is commonly thought of as a universal concept. Research has however found that the meaning people attach to this concept differs between cultures. Survey studies have found that in western contexts, the meaning learning takes on is primarily 'mind oriented' while East-Asians see it as more 'virtue oriented'. The current study aimed to examine whether these orientations represent culturally embedded mental schema on the cognitive level. Based on the findings that processing schema-consistent information is less effortful than processing schema-inconsistent information, it was expected that processing mind oriented words is more effortful for Chinese than for German students and processing virtue oriented words is more effortful for German than for Chinese students. These hypotheses were confirmed in a cued-recall task in the first study. When combined with a dual listening task in the second study to examine the cognitive energy-saving functionality of the orientations, German students performed better on a memory-task when it consisted of culturally congruent (mind oriented) wordpairs, compared to memorization of culturally incongruent wordpairs. The reverse pattern was found for Chinese students. Performance on a secondary auditory task was not impaired for either sample. The two reported studies suggest that cultures differ in the implicit mental frame that is associated to the concept of learning, which influences cognitive processing.

### **5.1 Introduction**

The concept of learning has been found to depend on the cultural, historical and social context in which it is embedded. Different cultures attach different meaning to it. In the Western context, learning has been characterized as primarily 'mind oriented' (Li, 2003; 2005). People's beliefs about learning primarily focus on learning as a process of developing one's thinking skills. Ideally, thinking critically, debating and having a skeptical attitude founded in personal curiosity take precedence as valuable paths in the pursuit of knowledge. In East-Asia, emphasis is placed on the interconnectedness of morality and cognitive development. Learning is thought of as more 'virtue oriented' (Li, 2003; 2005). In the virtue orientation, learners are expected to first acquire and respect pre-existing knowledge, to use quiet contemplation and to be diligent in their pursuit of knowledge.

The definition of the mind and virtue orientations as overarching themes to describe beliefs about learning in Western and East-Asian contexts occurred on the basis of a qualitative study by Li (2005). In this study, European American and Chinese students were asked to freely associate words that they felt best reflected the words 'learn-learning'. Following cluster analyses revealed that the number of learning-related concepts that formed the network was similar in both cultures. However, the kind of terms that were used indicated distinct differences in the concepts that are attached to the mental structure that forms the concept of learning. It is the content of the categories that differs, due to fundamental differences in the meanings that are attached to it. The mind and virtue orientations describe the purposes, processes, personal regard, affects, and social perceptions towards learning in both cultures (Li, 2003). Both orientations towards learning represent ideals and goals that are associated with good learning everywhere, but the relative emphasis that is placed on either orientation has been found to differ between cultural contexts (Van Egmond, Kühnen, Li, Yan, Haberstroh, & Damer, 2011). Based on Li's original study, we argue that the mind and virtue orientation can be conceptualized as mental models of the concept of learning in East-Asian and Western contexts. In other words, the overarching mental frame or cultural schema that is chronically activated in association with the concept of learning differs for people from Western and East-Asian cultures. In the current studies, this theoretical understanding is brought to an empirical test. By applying an implicit measurement, we aimed to assess whether the mind and virtue orientations are mentally stored in the form of general schemas.

In the social-cognition literature, cognitive schemas have been found to function as important mental tools, in the sense that they facilitate information processing and hence free up cognitive resources that would otherwise need to be dedicated to the task of information processing. The

lack of a framework to organize incoming information in on the other hand leads to more effortful processes that require more mental resources. If, as we propose, the mind and virtue orientation represent the mental structure that is associated to the concept of learning in the minds of Western and East-Asian learners, processing information that is consistent with the mind orientation should be easier for Westerners than information that is virtue oriented, when processed in relation to learning-related concepts. For East-Asian students, information that adheres to the virtue orientation should be processed more easily than information that is mind oriented in nature. The current study aimed to test these hypotheses. First, a cued-recall design was applied to assess whether the mind and virtue orientation are represented in the minds of German and Chinese students as cultural frames. This implicit measurement thus aimed to test whether the associative network to learning is shaped by the frames of the mind and virtue orientation. If this is so, the recall of mind oriented words would be easier for German students than of virtue oriented ones and the opposite would be true for Chinese students. Second, we examined whether these orientations share the function of enabling information processing by conducting a dual-task experiment.

#### *5.1.1 Mind and virtue oriented beliefs*

Based on Li's qualitative construction of the mind and virtue orientation, the degree to which these orientations influence the attitudes and behavioral tendencies of contemporary Western and East-Asian students was examined in a previous survey study. Based on the key components of both the mind (reasoning / thinking; debating; having a challenging attitude; efficiency, creativity, curiosity, and an achievement-based motivation) and virtue orientation (learning for self-improvement / virtuousness; respectful learning; concentration; diligence; quietness / contemplation; having heart for studying; and persistence upon failure) a survey was designed that measured both students' and faculty's endorsement of either orientation.

This survey study confirmed the a-priori hypotheses that East-Asians (Chinese) endorse virtue oriented beliefs more strongly than their Western European (German) counterparts, when they are asked to rate their agreement with mind and virtue oriented beliefs about learning on a Likert type scale (Van Egmond et al., 2010). Not only students from Germany and China, but faculty as well, were found to differ in the degree to which they endorse these orientations. Respondents from both cultures however also indicated strong agreement with statements that reflected mind oriented beliefs about learning. Since Likert scales have been found to be subject to a variety of cultural response biases (e.g. acquiescence, moderacy-effect, reference-group effect, social desirability), a behavioral scenario study was added to the survey as well. Although still a self-report measure in nature,

the advantage of a survey with a behavioral scenario design is that it comes closer to measuring behavioral intentions, since respondents are asked to indicate the likelihood with which they would engage in mind and virtue oriented behaviors in specific situations. Moreover, respondents are asked to make a forced-choice for a behavioral response to the described scenario that they would prefer. Such measures have been shown to be less affected by cultural response biases (e.g., Heine, Lehman, Peng, & Greenholtz, 2002; Peng, Nisbett, & Wong, 1997). Interestingly, different results were obtained for the Chinese respondents on this measure than on the attitudinal rating scale. First of all, they selected the virtue-oriented option more frequently than the mind-oriented option, when asked to make a forced-choice for the response they felt was the optimal course of action in the provided scenario. Also, they reported to be more likely to engage in virtue-oriented ways than in mind-oriented ways. German students on the other hand indicated to not only prefer the mind option as the correct response over the virtue oriented response when asked to make a forced-choice, but also indicated to be more likely to act in line with the mind oriented behavioral options than the virtue oriented options. This study thus provided empirical support for a cultural difference in the endorsement of the mind and virtue orientations between German and Chinese students on an attitudinal and behavioral preference level. Both measures were however self-report measures, in which respondents explicitly reported their beliefs. The results that are obtained from both parts of this survey are therefore subject to demand characteristics such as social desirability.

In order to establish whether the mind and virtue orientation are more than attitudinal preferences and behavioral tendencies in specific situations, but instead are embedded as general cultural frames on the cognitive level, the current study was designed. We aimed to test whether an implicit and unobtrusive measurement of the mind and virtue orientations would provide evidence for the expectation that these orientations form more general cognitive schema in the mental representation of the concept of learning that differs between culturally Western and East-Asian individuals. To our knowledge, it has not yet been studied cross-culturally if the cognitive energy-saving mechanism applies to culturally embedded schema and if processing information that adheres to one's own cultural frame is easier than processing information that is not as chronically activated and adheres to a frame of another culture.

To be able to perform well on academic tasks, one needs the maximum possible amount of cognitive resources to be available. As an activity that requires cognitive resources by definition, the efficient use of cognitive resources is therefore especially important in the domain of (academic) learning. Moreover, the higher education context is marked by

increasing numbers of international exchange of students, researchers and faculty. Examining whether processing information in a new cultural environment occurs at a cognitive cost is therefore a very relevant endeavor.

### *5.1.2 Cognitive schema and information processing*

The primary example of the functionality of cognitive schema to enable information processing has been found for stereotypes. When to be processed information about a person can be organized and deposited within a familiar mental framework in the form of a stereotype, processing this information requires less cognitive energy than processing unrelated stimuli. Processing novel stimuli requires more attentional orienting (Reber, Schwarz, & Winkielman, 2004). The ability of mental schemas to enable the efficient use of mental resources has therefore been referred to as a 'cognitive energy-saving device' in the literature (Macrae, Milne, & Bodenhausen, 1994). This function leads to the expectation that performance on a secondary cognitively strenuous task will be enhanced when a cognitive frame is available to assist processing in the primary task (e.g., Winkielman, Halberstadt, Fazendeiro, & Catty, 2006).

In the cross-cultural literature, "interlinked systems of knowledge structures that activate according to the cultural requirements of a situation" are referred to as cultural frames (Fu, Chiu, Morris, & Young, 2007, p. 59). Knowledge of a culture (e.g., values, customs, history, folklore) is organized in a network of associations by individuals with knowledge of the culture. The definition of culturally embedded frames as schemas in which information is encoded and represented in memory is therefore conceptually close to this concept of cultural frames. Results from studies about cultural frames have however focused on illustrating how the presence of cultural cues activates associated cultural frames or mindsets in individuals with knowledge about that culture, especially when two such frames are available as is the case for biculturals. Conceptually, we thus take the reverse approach and aim to first establish what the cultural frame is that is associated to the concept of learning in a Western and an East-Asian context. In other words, which associations are formed when the concept of learning is activated by individuals from these cultural backgrounds.

Based on these findings, it may be expected that a memory task is easier for participants if the information that is to be recalled adheres to the mental model these participants have about the theme of the task, in this case: learning. If the information to be processed does not adhere to the mental schema that persists in their culture about learning, information cannot be organized into a schema. The memorization of these items will therefore require more cognitive resources, which can not be dedicated to

the cognitive task at hand. In this case, it is likely that performance on the secondary task is impaired.

Applying an experimental design, the main aim of the current study was to examine whether these cultural orientations towards learning form cognitive schema that are represented in the memory of students from different cultural backgrounds. Secondly, we examined if this implies that these orientations share the energy-saving function and enable the more fluent processing of culturally congruent information, as compared to a more effortful processing of culturally incongruent information. Specifically, we tested whether evidence can be found for the hypotheses that 1.) the mind and virtue orientations toward learning exist as a mental model of the concept of learning in the minds of German and Chinese students respectively and 2.) whether processing culturally (in)congruent information affects cognitive performance.

### *5.1.3 Overview*

In the current paper we build on the idea that the network of associations that can be described as the mind orientation forms the chronically available cultural frame of the concept of learning for Western students, whereas the virtue orientation functions as the chronically available cultural frame to think about learning for Chinese students. A pre-test was designed with the aim to create culturally valid and meaningful experimental material for both cultures under investigation. German and Chinese students were asked to combine a target word with a word that was either theoretically mind oriented or virtue oriented. Only those words that were generated by the researchers that were combined with a mind oriented combination word by a majority of the German students and with a virtue oriented combination by a majority of the Chinese students were included in the following studies.

In the first experiment, a cued-recall memory-task was conducted in which German and Chinese students memorized word pairs which either represented the mind orientation or the virtue orientation. It was hypothesized that German students would recall more mind oriented pairs than virtue oriented pairs, whereas Chinese students were expected to recall more virtue oriented than mind oriented wordpairs.

In the second study, we measured whether these cultural frames affected cognitive processing in the sense that processing was easier if the activated cultural frame was culturally congruent, rather than incongruent. A dual-task technique was applied for this purpose. If cultural schemas share the function of freeing up cognitive energy, performance on the dual-task should be enhanced in the culturally congruent condition, as compared to the culturally incongruent condition. The prediction therefore was that German students would perform better on a secondary auditory task while having to

memorize mind oriented wordpairs than when having to memorize virtue oriented wordpairs. For the Chinese sample, the hypothesis was that students would perform better on the secondary auditory task when the memory-task consists of virtue oriented wordpairs than when it consisted of mind oriented ones.

## **5.2 Pre-test**

A pilot study was conducted with the aim to develop culturally meaningful material for the following experimental steps in both cultures under evaluation. Since the material was created for the purpose of the current study, it was important to develop material that would be culturally valid within each of the studied contexts. Therefore, we created a list of twenty-one three-word-combinations consisting of one target word and two combination words each. One of the combination words reflected mind, the other one virtue orientation (e.g., student (as a target word), with independent (mind oriented combination) and humble (virtue oriented combination)). German and Chinese students were asked to indicate which of the two combination words fitted better to the target word.

### *5.2.1 Method*

#### *5.2.1.1 Participants*

The German sample consisted of 54 students (48% female) from a variety of academic disciplines at a public German university (Bremen University) (Age:  $M = 24.3$ ,  $SD = 4.0$ ). The Chinese sample consisted of 66 native Chinese students from East China Normal University in Shanghai (36% female). The sampled Chinese students were a little younger than the German students, with a mean age of 19.3 ( $SD = 1.48$ ;  $t(109) = 9.17$ ,  $p < .001$ ).

#### *5.2.1.2 Material and procedure*

Participants were approached by email by a research assistant, in both countries. They were sent an email including an invitation to participate and a link to the online questionnaire. In the questionnaire, respondents in both samples were asked to combine twenty-one target words (e.g., professor) with one of two combination words (e.g., challenge vs. respect). Participants were asked to combine the target word with the combination word that they felt best 'fit' with the target word. Respondents were not informed about the theoretical background of the study nor the category that the combination words belonged to. They were merely asked to make a choice between the two combination words in favor of the one they felt best matched with the target word. Descriptives such as age, gender and academic discipline were completed as a last step as well.



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German participants completed the material in German and Chinese students in Mandarin Chinese, but the same words were included in both translations. The German version was created by the researchers. The method that was applied for the Chinese translation was the back-translation method, supervised by a bilingual German - Chinese co-author.

### *5.2.2 Results and discussion*

In the German sample, from the twenty-one presented target words, eleven words were correctly combined with the mind oriented pairing word by a majority of the students. The threshold was a theoretically correct pairing by a minimum of 60% of the participants. In other words, if 60% or more of the respondents selected 'challenge' as the rightful combination for 'student', the target word was selected to serve as material in the following studies. This led to a selection of eleven targetwords.

In order to select an equal amount of words in both cultures, the threshold was set to a correct pairing (with the virtue oriented combination words) by a minimum of 50% of the participants in the Chinese sample. Three target words (development, authority, and studying) were combined with the virtue oriented combination word by only 50% of the participants, instead of 60% or more. The selected combinations are presented in Table 6. As indicated, different words proved to be the most culturally valid in each culture. Although some overlap exists, Chinese students selected the virtue oriented word as the best combination for eight target words that were different from the ones that the German students selected the mind oriented option as the best combination.

These findings concur with previous survey findings. On the attitudinal Likert-rating scale, Chinese students also indicated to value mind oriented beliefs about learning equally strongly as virtue oriented beliefs. These findings thus imply that Chinese students deem both orientations highly valuable when asked explicitly. Nonetheless, more than half of the Chinese students select the virtue oriented word as the best combination with the target word in eleven out of 21 cases, whereas German students select the mind oriented option as the best combination with the target word in the same amount of cases, but with different target words. This implies that it would have been problematic if we had conducted the experimental studies with material that was created by (culturally Western) researchers. Instead, the pilot-study yielded results that allowed us to include culturally meaningful material in the following experimental studies.

Table 6. *Selected word pairs*

Germany			China		
Target words	Mind orientation	Virtue orientation	Target words	Mind orientation	Virtue orientation
<b>Student</b> (Student)	Selbständig (Independent)	Bescheiden (Humble)	学 (Student)	独立 (Independent)	谦逊 (Humble)
<b>Geist</b> (Mind)	Gehirn (Brain)	Herz (Heart)	脑 (Mind)	脑 (Brain)	心 (Heart)
<b>Schlau</b> (Smart)	Intelligenz (Intelligence)	Ausdauer (Perseverance)	聪 (Smart)	智 (Intelligence)	坚持 (Perseverance)
<b>Wissenschaft</b> (Academia)	Kritisch (Critical)	Zuhören (Listen)	授 (Professor)	挑战 (Challenge)	尊敬 (Respect)
<b>Verständnis</b> (Understanding)	Diskussion (Discussion)	Stille (Quietness)	雄心 (Ambition)	理性 (Rational)	感性 (Emotional)
<b>Anerkennung</b> (Appreciation)	Ergebnis (Result)	Prozess (Process)	成功 (Success)	能力 (Ability)	努力 (Effort)
<b>Motivation</b> (Motivation)	Persönlich (Personal)	Sozial (Social)	哲学 (Philosophy)	辩论 (Debate)	道德 (Morality)
<b>Misserfolg</b> (Failure)	Enttäuschung (Disappointment)	Scham (Shame)	学术 (Academia)	批判 (Critical)	倾听 (Listen)
<b>Nachprüfung</b> (Re-exam)	Demotiviert (Demotivated)	Motiviert (Motivated)	发展 (Development)	认知 (Cognitive)	道德 (Moral)
<b>Denken</b> (Think)	Lernen (Study)	Fühlen (Feel)	权威 (Authority)	怀疑 (Doubt)	信任 (Trust)
<b>Entwicklung</b> (Development)	Geistig (Cognitive)	Moralisch (Moral)	研究 (Studying)	乐趣 (Fun)	艰苦 (Hard work)

### **5.3 Study 1**

The first experimental study was designed to assess whether mind oriented words are in fact remembered more easily than virtue oriented ones by German students, for whom the mind orientation would function as a culturally congruent cognitive schema. Following this logic, Chinese students were hypothesized to remember virtue oriented words more easily than mind oriented ones. These hypotheses were tested in a cued-recall task.

#### *5.3.1 Method*

##### *5.3.1.1 Participants*

The study was conducted with student samples from the same universities in Germany and in China as the pilot study. In Germany twenty participants (8 male, 12 female) completed this study. The mean age of the participants was 24 ( $SD = 3.54$ ). The Chinese sample consisted of twenty-nine participants (15 male, 14 female). The Chinese participants were younger on average than the German participants, with a mean age of 19 ( $SD = 1.63$ ;  $t(48) = 7.07$ ,  $p < .001$ ).

##### *5.3.1.2 Material*

The material of this study was created on the basis of the results of the pilot-study. The target words that were paired with a mind oriented combination word by a majority of the German students were selected to serve as experimental material. The target words that were combined with the virtue oriented combination by a majority of the Chinese students were selected as material in China.

##### *5.3.1.3 Procedure*

Students from Germany and China participated individually. The experiment was introduced as a memory study. The study consisted of two phases – a learning phase that was done at a computer and a cued recall task which was done with paper and pencil. During the learning phase, word pairs appeared on the computer screen for 3 seconds each and participants were instructed to carefully read them, because they were to be recalled from memory later. The word pairs always consisted of a target word and either a mind or virtue orientation combination word. All target words were presented twice during the learning phase, once together with a mind orientation combination word, the other time with a virtue orientation combination word. The order in which the target word was presented in combination with the mind combination and virtue combination, was alternated.

After the learning phase was over, participants were instructed to recall the word pairs that they had just read. This was done as a cued-recall task. A table including the presented target words was provided to the

participants on paper. Participants were asked to provide the combination that the target word had been presented with, that they remembered. Two dependent variables were thus formed; the number of correctly recalled mind oriented combination words and the number of correctly recalled virtue oriented words.

### 5.3.2 Results

It was expected that German students would recall more mind oriented combinations than virtue oriented ones. Chinese students were expected to recall more virtue oriented word pairs than mind oriented ones. In order to test this, the number of recalled word pairs was submitted to a 2 (culture: German / Chinese) X 2 (kind of words: mind / virtue) factorial ANOVA with the latter factor being varied within subjects. As predicted, this analysis yielded a significant interaction effect of culture and the number of correctly remembered mind and virtue wordpairs; ( $F(47) = 5.63$ ,  $p < .05$ ,  $\eta^2 = .11$ ). The results are illustrated in figure 7. As expected, German students were able to recall more mind combinations ( $M = 4.3$ ,  $SD = 1.8$ ) than virtue combinations ( $M = 3.6$ ,  $SD = 1.7$ ;  $t(19) = 1.96$ ,  $p < .03$  (one-tailed)). For the Chinese students, this pattern was reversed ( $M_{\text{mind}} = 4.2$ ,  $SD_{\text{mind}} = 1.43$ ;  $M_{\text{virtue}} = 5.2$ ,  $SD_{\text{virtue}} = 1.61$ ;  $t(28) = 2.06$ ,  $p < .05$ ).

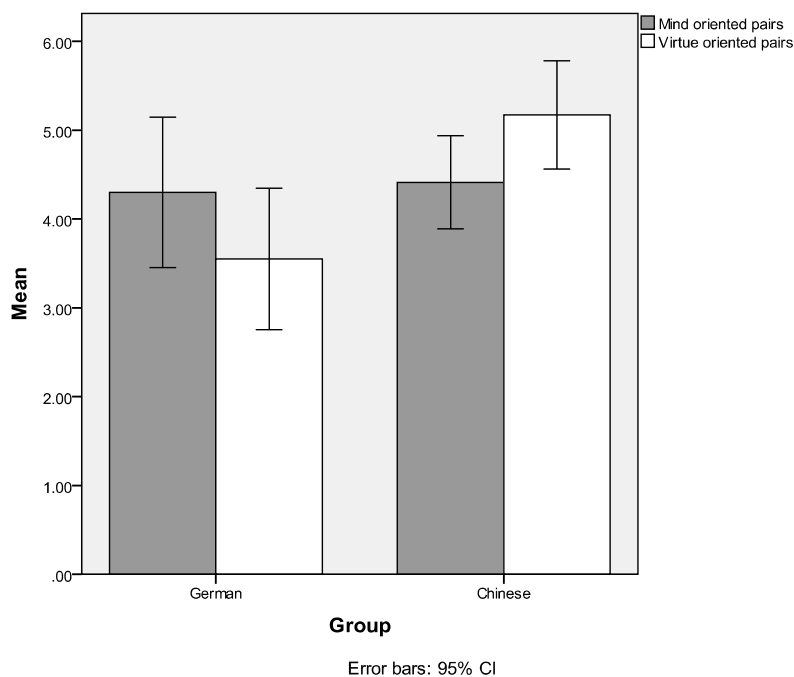


Figure 7. Mean recalled word pairs by German and Chinese students in study 1.

### *5.3.3 Discussion*

In this study, we tested whether the mind and virtue orientations represented cultural frames that are available in the minds of German and Chinese students. It was hypothesized that mind oriented word pairs are more easily remembered than virtue oriented ones by German students and virtue oriented word pairs are more easily recalled by Chinese participants, as compared to mind oriented words. The study confirmed these hypotheses. German students recalled more mind oriented than virtue oriented wordpairs. The opposite was found for Chinese participants. They recalled the virtue oriented learning-related word pairs better than the mind oriented ones. These data support the idea that the mind and virtue orientation represent cultural frames about the concept of learning within these cultural contexts that are readily available in memory. In addition, this cued recall test provides a first implicit test of cultural differences in learning beliefs.

This finding can be regarded as rather strong, when considering the expectation that students enrolled at a highly competitive university in the most Western and modernized region within China could be rather mind oriented in their beliefs about learning, as found at the explicit attitudinal level. The virtue orientation however seems to persist on the cognitive level as an interpretive scheme that is more closely associated to the concept of learning than the mind orientation. Based on these findings, we further examine whether the mind and virtue orientation towards learning share the cognitive energy-saving function that has been found for other cognitive frames.

### *5.4 Study 2*

If, as suggested by Fu et al. (2007), cultural frames are indeed mentally represented as networks of associations similar to cognitive schemata, then it makes sense to predict that they serve similar cognitive functions. Cognitive schemata facilitate information processing of new stimuli and are therefore considered to be 'cognitive energy saving devices' (Macrae et al., 1994). The second study was designed in order to test whether this reasoning holds also for learning beliefs: If they are mentally represented as cultural frames, they should also have energy saving capacities. Hence, it was expected that processing virtue oriented information is more cognitively effortful for German students than processing mind oriented information. For the Chinese students, it was expected that processing mind oriented words would require more cognitive energy than processing virtue oriented information. In order to test this, participants performed a dual-task. First, performance on a similar memory task as in study 1 was measured, but now in combination with a second, auditory task. Two conditions were introduced: one culturally congruent and one culturally incongruent condition. In the culturally

congruent condition, German participants were presented with the target words and their mind oriented combination word. In the culturally incongruent condition, German participants were presented with the target words and their virtue oriented combinations. These conditions were naturally reversed for the Chinese participants, in the sense that the condition with the virtue oriented stimuli was considered the culturally congruent condition and the mind oriented condition the culturally incongruent condition. For the German students, performance on the listening task was therefore expected to be better in the mind condition than in the virtue condition. They were also expected to remember more of the word pairs correctly in the mind oriented condition than in the virtue oriented condition. For the Chinese students it was expected that they would perform better on the listening task in the virtue condition than in the mind condition. And, that they would correctly remember more word pairs in the virtue condition than in the mind condition.

#### *5.4.1 Method*

##### *5.5.1.1 Participants*

The German sample consisted of 49 German students (17 male, 32 female). The mean age was 22.6 ( $SD = 3.1$ ). The Chinese sample consisted of 42 Chinese students (16 male, 26 female). The mean age was 20.1 ( $SD = 2.0$ ), slightly younger than the German students again  $t(89) = 4.48$ ,  $p < .05$ . Participants were enrolled at the same universities as in the pilot-study and study 1.

##### *5.4.1.2 Material*

The material for the cued-recall task consisted of the target words and the mind oriented combination word in condition 1 and the target word and the virtue oriented combination in condition 2. For the German sample, the secondary task consisted of a listening task from an instruction book for German as a foreign language. The level was at the 'near native' level C1 and consisted of an interview between a journalist and an educational policy-maker. Since no listening materials were found for students of Chinese as a foreign language at this level, the listening task for the Chinese sample was newly created. A multiple-choice test was created about a podcast (source: Itunes, Deutsche Welle) of an interview between a journalist and an environmentalist.

##### *5.4.1.3 Procedure*

This study included two conditions. In condition one, participants were continuously presented with the mind oriented word pairs on a computer screen, while the German listening task was running via the audio-output of

the pc. In condition 2, participants were presented with the virtue oriented word pairs during the same listening task. In both conditions, the task was to memorize the presented wordpairs, while also paying attention to the conversation in the listening task, in order to be able to answer ten multiple-choice items about it. The two dependent variables in this study are therefore: number of correct answers on listening task (task performance); and number of correctly remembered word pairs (recalled number of word pairs).

#### 5.4.2 Results

It was hypothesized that German students would perform better on the multiple-choice test about the listening task in the condition in which the memory task consisted of mind oriented wordpairs. They were also expected to recall the words better in the mind oriented condition than in the virtue oriented condition. The reverse effects were expected for the Chinese students. Their performance on the multiple-choice test about the listening task was expected to be better in the virtue oriented condition than in the mind oriented condition and they were expected to recall more of the word pairs when these had been virtue oriented than mind oriented.

To test the expected interaction-effect of culture with the two dependent variables, two univariate analyses of variance were conducted with either 'task performance' or 'recalled number of word pairs' as dependent variable and culture (German / Chinese) and condition (mind / virtue) as factors. As expected, analysis yielded a significant interaction effect between culture and condition for the number of correctly remembered word pairs ( $F(1,87) = 8.36, p < .05, \eta^2 = .09$ ). More specifically, although condition did not have an effect in itself on the number of recalled word pairs ( $F(1,87) = 1.03, p > .05$ ), it does interact significantly with culture. The significant interaction effect between culture and condition on the amount of correctly remembered word pairs is illustrated in figure 8. German participants were better able to recall the presented stimuli in the mind ( $M = 8.7, SD = 2.1$ ) than in the virtue condition ( $M = 7.3, SD = 1.8; t(47) = 2.49, p < .05$ ). This pattern was reversed for the Chinese. They recalled more word pairs in the virtue ( $M = 6.9, SD = 1.3$ ) than in the mind condition ( $M = 6.2, SD = 1.3; (t(40) = -1.64, p = .05)$ ). Thus, the main hypothesis is confirmed and the results from study 1 were replicated.

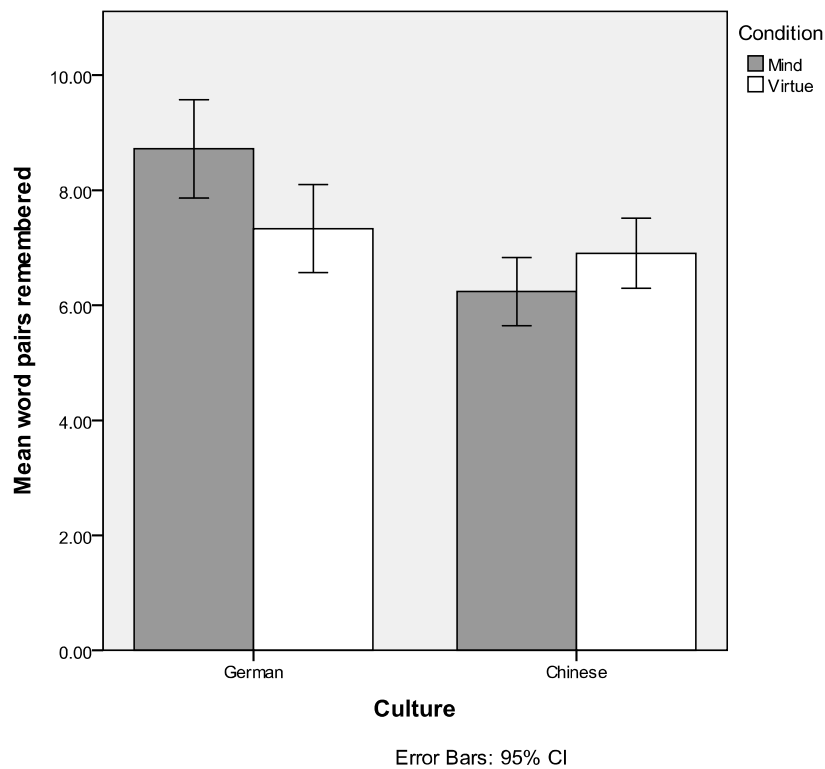


Figure 8. Mean recalled word pairs by culture and condition in study 2.

For the second dependent variable, task performance, no significant effect is found for culture and condition ( $F(1,89) = 1.87, p > .05$ ). In fact, culture did have a significant effect on task performance ( $M_{\text{Germans}} = 8.33, SD_{\text{Germans}} = 1.16$ ;  $M_{\text{Chinese}} = 6.45, SD_{\text{Chinese}} = 1.37$ ;  $F(1,89) = 51.67, p < .001, \eta^2 = .37$ ), but condition did not ( $F(1,89) = .07, p > .05$ ). The main effect of culture is however most likely attributable to the different tasks that were conducted in both cultures. German participants perform equally well with an average of a little more than eight correct answers, in both the mind condition ( $M = 8.2, SD = 1.3$ ) and the virtue condition ( $M = 8.5, SD = 1.0$ ;  $t(49) = -.88, p > .05$ ). For the Chinese participants no significant difference between the conditions on the performance on the listening task was found either ( $t(40) = 1.02, p > .05$ ), although the direction of the effect is opposite to the non-significant effect in the German sample. In the mind oriented condition, students answered 6.7 questions correctly on average ( $SD = 1.3$ ). In the virtue oriented condition, the average number of correctly answered questions was 6.2 ( $SD = 1.7$ ).

#### 5.4.3 Discussion

The second study tested whether evidence could be found for the hypothesis that the mind and virtue orientations towards learning function as ‘cognitive energy saving devices’. It was expected that processing mind oriented information would be less cognitively burdensome for culturally Western



students and processing virtue oriented information for East-Asian students. A dual-task experiment was applied to examine students' performance on a listening task, combined with a memory-task that included either culturally congruent information or culturally incongruent information. Replicating the findings of study 1, significant differences were found for the amount of correctly remembered word pairs between the conditions. Moreover, a significant interaction effect between culture and condition was found for the number of recalled wordpairs. The dependent variable 'task performance' was on the other hand not found to be affected differently by the conditions in the two cultures. Although a significant effect of culture was found for this variable, the relevance of this effect should not be overstated, since German and Chinese participants completed different listening tasks. It is likely that these tasks differed in difficulty in and of itself.

Strictly speaking, no evidence was therefore found for the influence of cultural orientation on task performance. Future studies could examine whether the combination of the memory task and a different type, or more difficult secondary task does yield significant differences in task performance.

### ***5.5 General Discussion***

The reported studies provide evidence in favor of the expectation that Western and East-Asian students attach different meanings to the concept of learning. The mind orientation forms a more prototypical conceptualization of learning for German students and the virtue orientation is closer to the cultural frame that is formed about learning by Chinese students. Both of the studies that have been reported provide evidence in favor of the hypothesis that these orientations form culturally construed cognitive schema. The mind orientation seems to be more chronically activated in the minds of German students and the virtue orientation in the minds of Chinese students. The expectation that these schema would lead to more fluent processing of culturally congruent information than culturally incongruent information is only partly confirmed. In study 1, the culturally congruent word pairs were recalled more frequently in both cultures. Especially for the Chinese sample, this finding is remarkable since it somewhat contradicts results that have been obtained with explicit measures. Both in the pilot-study and previously conducted attitudinal ratings, Chinese students indicated to value both the mind and virtue oriented beliefs about learning strongly. The current study however found that the virtue orientation is cognitively more strongly engraved in the concept they attach to learning than the mind orientation. Although the effect of the easier recall of culturally congruent word pairs was replicated in study 2, the study failed to provide conclusive evidence for the energy-saving device functionality of

these orientations as cognitive schema, since performance on the secondary listening task was not affected by the conditions.

It is striking that German students remember less word pairs in study 1 than in study 2, despite the addition of the listening task. One possible reason for this difference could be that the German students might have lost their attention in the relatively simple memorization task. Many studies into cultural differences in learning strategies have suggested that memorization is a more prevalent and accepted learning strategy in East-Asia, because it is believed to lead to greater understanding. In the West, memorization is however looked down on as a learning strategy. It could therefore be hypothesized that memorization as such is a task that Chinese university students are more familiar with than German university students. The integration of a different type of task could examine the validity of the interpretation of this finding. Additionally, it would be interesting to include a measure of response-time. Based on the assumption that both the memory task and listening task were easier in the culturally congruent condition, it could be expected that these tasks would not only be completed more accurately but perhaps also more quickly.

In conclusion, the reported studies provide further evidence in favor of the relatively different meaning that is attached to the concept of learning in different cultures. These meanings were found to be represented in memory in the form of cognitive schema. Indications were found that students perform better on an academic task when the information to be processed is embedded within the chronically activated frame in the culture, since this requires less mental resources, although this effect should be addressed in more detail in future studies.

These findings have important implications in the context of increasing intercultural exchange in academia. Increasing numbers of students are pursuing higher education in a country other than their country of origin. If these findings can be taken to imply that it is harder to perform academically when the cultural context does not match a person's chronically available cultural cognitive schema, the results have important implications for applied intercultural learning contexts. On the other hand, it has recently been suggested that the cognitively effortful process of overcoming stereotypical social categorization may also place people in culturally diverse environments at an advantage, since individuals who successfully integrate conflicting cultural frames may gain cognitive flexibility (Crisp & Turner, 2011). Increasing awareness of the cultural difference that exists in beliefs about learning among mono-cultural students would allow them to include a multitude of perspectives into their concept of learning. This development could therefore benefit their divergent thinking abilities. Whether empirical support can be found in favor of this hypothesis could be examined in future

studies. The current studies however suggest that students are more likely to perform well on cognitive tasks when the cultural context matches one's cultural beliefs.



## Chapter 6

### *General Conclusion*

THE OVERARCHING THEME of this project is the conceptual difference that was hypothesized to exist in beliefs about academic learning across cultures. The core theoretical framework on which all conducted studies were based was formed by the mind – virtue orientations by Li (2003; 2005). The topic of cultural differences in issues related to, primarily Asian students', learning preferences is not new to the field. Numerous studies have been dedicated to examining cultural differences in learning strategies, approaches, motivational processes, cognition and classroom participation. In fact, the attention this topic has received in the literature demonstrates the importance and relevance of the theme as such. The uniqueness of the current study however lies in the integration of previously unrelated findings in the literature into the framework of the mind – virtue orientations towards learning. The interpretative themes that are formed by the mind and virtue orientation aim to provide a way to allow meaning making and thus increase understanding of a wide range of theories and findings on various aspects of learning, but that have not been meaningfully integrated on the cultural level yet.

All chapters address an overarching theme, yet approach it from diverse (methodological) angles. First, the theoretical base of the mind and virtue orientation is examined, which is followed by the empirical examination of the degree to which mind and virtue orientated beliefs about learning are endorsed by students across three broadly defined cultural regions (Western Europe, Eastern Europe and East-Asia). The fifth chapter examines the degree to which the mind and virtue orientation are represented as cultural schema of learning in the minds of German and Chinese students on a cognitive level.

The diversity in methodological approaches that have been applied to examine the main theme contributes to the strong empirical, but also theoretical and applied significance of the results. Although further research is needed to examine the found cross-cultural differences and their validity across contexts in further detail, the reported studies have found support for the hypothesis that a cultural difference exists in the relative emphasis that is placed on the meaning of learning in a variety of contexts. In the following section the findings of these studies will be critically summarized in response to the research question: Do cultures differ in the meaning that is attached to the concept of learning?

### ***6.1 Discussion of the findings***

The results of the studies presented in this dissertation provide support for the premise that the relative emphasis that is placed on certain beliefs about learning depends on the cultural background of individuals. One general

implication of this research is therefore that the concept of learning might be universally relevant, but that the meaning that is associated with this inherently human psychological process is culturally construed. The literature review that was conducted and presented in chapter 2, illustrates that cultural traditions have shaped the beliefs about 'good' learning of academics in the West and Asia today. Cultural beliefs about concepts such as gaining knowledge and the concept of intelligence are transmitted to children by parents' child-rearing practices from as early as infancy and are found to persist even if formal schooling takes place in a different cultural setting (Greenfield, Keller, Fuligni, & Maynard, 2003).

From the large body of theoretical and empirical research that was reviewed, it can be derived that for East Asian students, the learning process is conceptualized as a lifelong pursuit to develop oneself morally and socially, to achieve mastery of the material, and to contribute to society by doing so. In the West, learning is primarily based on the idea that the student should achieve personal insight into the material and develop the cognitive skills to distinguish truth from falsehood. In this chapter, the mind and virtue orientation were introduced as cultural 'mandates' that represent the ideals and goals of learning within Western and East-Asian cultures respectively. As originally described by Kitayama and colleagues, cultural mandates form abstract constructs that are typically embodied in the culture's philosophical traditions (Kitayama, Park, Sevincer, Karasawa & Uskul, 2009). Cultural mandates do not offer specific routines or procedures for individuals, but they govern 'cultural tasks', which are in turn conceptualized as culturally scripted procedures or means by which to achieve the culture's mandate (Kitayama et al., 2009). Conceptualizing the mind and virtue orientation in this way allows the orientations to be understood as influences on psychological processes on the cultural level. This enables one to make sense of mean differences between cultures, while the existence of hybrid forms on the individual level are accommodated as well. Understanding the concepts of mind and virtue orientation in this way is crucial to prevent these concepts from being characterized as 'yet another' discrete, homogenous and unchanging concept to describe cultural differences between Western and Asian contexts (Ryan & Louie, 2007). Instead, they merely reflect a difference in the degree to which these orientations are differentially salient between cultural contexts, due to a host of societal, cultural and historical influences (Oyserman & Sorensen, 2009).

As one of the main pitfalls of a theory-driven study such as the one presented here, alternative interpretations of cultural differences are often overlooked (Van de Vijver & Leung, 2000). The current study may also have fallen subject to this problem. To offer one main alternative interpretation, it is interesting to note that in his 2010 book, Hofstede relates the finding that

Eastern cultures strive for 'Virtue' and Western cultures for 'Truth' to differences in uncertainty avoidance and long- versus short-term orientation. Firstly, the belief in an absolute truth may be expected to be more relevant in uncertainty avoidance cultures, whereas uncertainty accepting cultures are able to endorse a more relativistic perspective (Hofstede, Hofstede & Minkov, 2010). As an illustration, all three Western religions (Christianity, Judaism, and Islam) are based on the existence of a Truth that is accesible to believers and, all three have a book. The four major Eastern religions (Hinduism, Buddhism, Shintoism, and Taoism) in contrast offer a variety of ways in which a person might improve him- or herself. However, these all include a long-term orientation in the sense that they consist of ritual, meditation and way of living, instead of 'mere' believing.

The second chapter contains the results of the first empirical study. This study examined whether quantitative evidence could be found for the a-priori hypotheses that learning would be primarily mind oriented for Western academics and virtue oriented for Chinese academics. A survey was designed for the purpose of this study, containing two sections. Based on the categories that emerged from the original prototype study by Li, the first part of the survey consisted of an attitudinal Likert-rating scale on which participants indicate their endorsement of relatively abstract mind and virtue oriented beliefs about learning. This part of the survey was conducted among two samples in German and China: university students and teachers. Both students and teachers in Germany were found to endorse the mind oriented beliefs about learning more strongly than the virtue oriented beliefs. The Chinese academics however indicated to strongly endorse both orientations. The inclusion of both samples in one study is a rather unique feature in the current literature. Additionally, the fact that similar findings occurred in both the student sample and the faculty sample has important practical implications. It namely implies that the probability that problems occur in the intercultural communication between students and faculty from different cultural backgrounds is relatively high if either one of these parties is not aware of the cultural embeddness of their own, but also others' beliefs about learning (see also Kühnen et al., 2011). With students from a multitude of cultural backgrounds increasingly choosing to pursue their studies in foreign institutes of higher education, increasing awareness for the cultural embeddedness of the range of beliefs about learning that these students bring with them, is crucial. From the student side, it is important that one is aware of faculty's beliefs in order to at least aim to adhere to their expectations. For faculty, an awareness of the cultural embeddedness of one's own beliefs about learning has the potential to facilitate processes of intercultural communication with students. One may still insist in valuing



some beliefs more than others (e.g., students should actively participate in the classroom vs. students should silently contemplate the material first), but appreciating the fact that these beliefs may be more distant for students who have been exposed to a different cultural background, has the potential to ease processes of intercultural communication.

The second part of the survey consisted of nine behavioral scenarios in which students were asked to make a forced-choice between a mind and a virtue oriented behavioral option to select the 'best' response to situations that students typically encounter during the course of their studies. Additionally, they were asked to rate the likelihood with which they would engage in both options themselves. In contrast to the results that were obtained from the Likert-scale measure, Chinese students chose the virtue oriented behavioral option as the most appropriate response more frequently than the mind oriented option. Moreover, they indicated to be more likely to behave according to the virtue oriented options than the mind oriented options. Chinese students indicated to be more likely to behave in the virtue oriented way than German students, who in turn indicated to prefer the mind oriented behaviors. Lastly, these results were replicated in a sample of Chinese students studying in Germany, indicating the relative stability of the cultural difference even when the academic context is shared. These results imply that beliefs are relatively robust, once they have been internalized. In line with Nisbett and Ross (1980), these data thus suggest that beliefs may persist even when they are no longer accurate representations of a current reality. It is also due to the subjective nature that is inherent of beliefs, that allows them to withstand alteration even when it seems logical or necessary to do so (Pajares, 1992).

Although further validation studies of both scales are needed to examine their cross-cultural equivalence, the results confirmed the hypotheses that the learning beliefs of Western students are more mind oriented and that students from this cultural background are more likely to perform the tasks that are associated with this orientation than with the virtue orientation. The virtue orientation formed a larger part of the learning beliefs of Chinese students than of German students. The discrepancy that is found in the results that are obtained on both types of scales for the Chinese sample, illustrates that divergent findings can be obtained on the basis of the type of measure that is applied. Due to culturally influenced response styles that rating scales are subject to, direct cross-cultural comparisons on the basis of expressed agreement with rather abstractly formulated Likert-scale items are problematic and the results obtained from these measures can not be taken at face-value, as increasingly argued (e.g., see Chen, Lee, & Stevenson, 1995; Heine, Buchtel, & Norenzayan, 2008). Examples of such response styles are acquiescence, moderacy and the reference-group effect.

Due to these influences, cultural differences may emerge or, as was the case in the current project, underestimate the cultural difference that may actually exist. Moreover, not only the responses of East-Asian participants have been found to be subject to biases. The judgments of American participants have for example also been found to be influenced by seemingly trivial alterations in the response format of the question; the sequence of survey questions (Haberstroh, Oyserman, Schwarz, & Kühnen, 2002); whether public or private behaviors are to be reported (Ji, Schwarz & Nisbett, 2000); or whether the response scale includes high or low numerical values (Schwarz, Oyserman & Peytcheva, 2010). The divergent findings that emerged from the scale and scenario measures in the current study are therefore a testament to the previously stated need for a decreased reliance on scale measurement in the field of cross-cultural psychological research (Heine & Ruby, 2010). In order to gain better indications of how people actually behave, a greater move from self-report measures is called for. Firstly, measures need to be less subject to response biases and secondly, they need to more closely reflect behavior and behavioral preferences.

The fourth chapter extended the findings of chapter 3 by examining the beliefs about learning of students in two Eastern European countries: Poland and Romania. The aim of this study was to examine whether the learning beliefs of students from two diverse countries in Eastern Europe concur with those of Western European (German) students. Theoretically, one could expect a large similarity in the beliefs that shape people's concept of learning in these three societies, since all share the Western philosophical history that originated in ancient Greece. On the other hand, the three countries have a different religious influence: Protestantism in Germany, Roman Catholicism in Poland and Orthodoxy in Romania. Moreover, a main difference between Western and Eastern European contexts could be expected due to the influence of Communism, which is still found as one of the primary indicators for cross-cultural differences in value orientation in the European context (Van Herk & Poortinga, 2011). Notwithstanding the influences that distinguish these countries from one another, the present study did not yield significant differences for any of the country comparisons. Contemporary students in Germany, Romania and Poland did not differ in the degree to which they endorse mind and virtue oriented beliefs about learning. Neither did they differ in the self-reported likelihood of behavioral intentions or the frequency with which they see the mind oriented behavioral option as the most appropriate response in typical academic situations. These results imply that cultural differences that are commonly suggested to occur between Western and Eastern European students in different psychological domains, such as cognition (Varnum, Grossmann, Katunar,

Nisbett, & Kitayama, 2008) and values (Schwarz & Bardi, 1997; Ingelhart & Welzel, 2005) are smaller than expected when it comes to beliefs about learning. This finding has an important practical implication for teachers in diverse European classrooms, since the dangers that are posed by stereotype-threat should be prevented. The classic social-psychological theory of stereotype-threat states that teachers' assumptions about students' abilities that are based on stereotypes about cultural background, gender or ethnicity, are likely to lead to a self-fulfilling prophecy where some students are encouraged more than others, leading to stereotype-threat and ultimately impaired performance (e.g., Steele, 1997).

In the context of increasing internationalization of higher education within Europe, this is a finding with important implications. It suggests that students from Eastern European countries might not have such distinct learning preferences from their Western European counterparts. Western European teachers would therefore be mistaken to assume that students from these contexts have very distinct expectations about the learning process, merely based on their cultural background. These results however do not confirm that no differences exist in the beliefs about certain subdomains of the concept of learning. Despite the fact that no overall significant cultural difference was found between the countries, the Polish and Romanian students did endorse items that were related to in-class discussion less than German students did. On the theoretical level, these results are however an indication that the Confucian legacy is one of the primary forces behind the endorsement of the virtue oriented beliefs about learning of Chinese students. Currently, virtue oriented beliefs have only been found to be strongly endorsed by students from this East Asian region. In a cultural comparison between European and Asian contexts, this influence seems to be the factor that makes the distinction.

In the fifth and last empirical chapter, the results of an experimental study are reported. This study examined whether the mind and virtue orientations are represented in the minds of Western and East-Asian students in the form of a cultural frame (Fu, Chiu, Morris & Young, 2007). As interlinked systems of knowledge structures, cultural frames form mental schema, which can be hypothesized to provide an information processing mechanism. After all, the cognitive processing of information that is consistent with a frame that is associated to the concept at hand is easier than processing information that can not be organized into a overarching mental scheme. In a two-fold experiment, student participants in Germany and China therefore completed a cued-recall task. Participants were presented with combinations of words that either reflected a mind oriented or a virtue oriented belief, as assessed in a pilot-study. The dependent variable was the number of correctly reported mind and virtue oriented word

combinations on a subsequent cued-recall task. German students were found to recall more mind oriented words correctly and Chinese participants recalled more virtue oriented word combinations correctly. The implicit measurement that was applied thus allowed answering the question whether the mind and virtue orientation are stored in people's minds in the form of general schema and it validated the findings of the explicit survey measurement. To take one step further and test whether the cognitive schema that the mind and virtue orientations represent share the function of enabling information processing, the cued-recall task was split into two conditions (one culturally congruent and one culturally incongruent) and combined with a secondary listening task in the second experimental study. Not only the number of remembered word pairs was included as dependent variable now, but the performance on a multiple-choice test, following the listening task as well. The findings of the first study were replicated in this study. German students recalled more words when these were mind oriented rather than virtue oriented. Chinese students recalled more words when these were virtue oriented rather than mind oriented. Performance on the listening task was however not found to be affected by the cultural congruency of the conditions for participants in either culture. Although this meant that no evidence was found for the 'cognitive energy-saving' functionality of the mind and virtue orientations as cognitive schema, the two experimental studies did confirm that members of different cultures differ in the implicit mental frame that is associated to the concept of learning.

In general, it may be concluded that the current project contributes to an increasing awareness of the diversity that exists in beliefs about learning. An understanding of the different views that people may have, in addition to one's own taken-for-granted beliefs, has the potential to transform and ameliorate learning outcomes of students on the individual and the societal level. After all, in order to successfully participate in today's global knowledge society, it is crucial for Chinese students to not only be knowledgeable and skillful, but creative and critical as well (Chen, 2009). The same applies from the Western perspective, for example since large scale educational assessments have found the achievements of students in Germany and other Western countries to be above average, but lagging behind those of Asian students, such as Korean, Shanghai-Chinese, Singaporean and Hong Kong-Chinese in both reading and mathematics (OECD, 2010). Ideally, schools and classroom environments might therefore aim to draw on the benefits of both sets of beliefs about learning. The social harmony and respectful dedication to the process of studying that results from a stronger endorsement of virtue oriented beliefs about learning are highly valuable, but so are the cultivation of the mind, the skepticism and

the dedication to rationality (Egan, 1997). It could therefore be speculated that a renewed emphasis on more virtue oriented characteristics such as endurance of hardship, diligence and increasing motivation upon negative feedback could contribute to an improvement in students' academic achievement in the West. In fact, previous studies have found evidence for the assumption that students' concepts of learning are related to their learning approaches in both Western Europe and China (Zhu, Valcke & Schellens, 2008). This might imply that fostering virtue oriented beliefs about learning in Western students could affect the actual learning approaches that the students apply.

### ***6.2 Implications for future research***

The findings of the conducted studies could inspire several further lines of research. On the level of attitudinal and behavioral preferences, the developed surveys could be developed to measure the cultural variation in mind and virtue oriented beliefs about learning in more detail. For example, more detailed items could be added to the existing measures to examine the degree of mind and virtue orientation in the specific beliefs about concepts that are closely related to learning, such as motivation and creativity. Additionally, the existing surveys could be extended to include beliefs about not only good learning, but also bad learning or not learning. Negatively formulated items could be added to the survey measures, also because East-Asians have been found to be more motivated by negative role models - someone that people want to avoid becoming - than Westerners, especially in regards to academic motivation (Lockwood, Marshall, & Sadler, 2005).

Furthermore, research could be dedicated to examining whether the different meaning that learning takes on in different cultures leads to observable behavioral differences between people from diverse cultural backgrounds. Transcending survey research, behavioral experiments could be conducted in order to assess whether students from different cultural backgrounds, who differ in their abstract beliefs about learning also display different behavioral tendencies. For example, are Western mind oriented students indeed more critical of information that is received from authority figures than more virtue oriented East-Asian students? Does the temporary activation of the concept of learning as such lead to different behavioral, affective or cognitive outcomes? Experimental tasks from the advice taking and decision-making field (e.g., Bonaccio & Dalal, 2006) could be applied to address this question empirically. Alternatively, the application of an experimental priming technique could make the virtue or mind orientation towards learning temporarily more accessible in participants from either a Western or East-Asian cultural background. If it is true that individuals of either culture have access to both the mind and virtue orientation, but that

they are just differentially salient, the activation of the virtue orientation should result in significant variations in (e.g.,) the judgment, behavior or affect of Western students. Moreover, the conceptualization of the mind and virtue orientation as cultural mandates that govern cultural tasks, allows speculation about the possible influences on the brain. As indicated by Kitayama and Uskul (2011) recently, once individuals begin practicing cultural tasks, the repeated engagement with these tasks results in systematic influences on the brain. The combination of behavioral experiments with neuro-imaging of the brain would therefore be an innovative new line of inquiry with enormous potential.

Thirdly, as indicated in chapters 2 and 3, it could be examined whether the mind and virtue orientations are applicable to beliefs about learning that are shared by members of other cultures. As reported in chapter 3, no differences were found on the mind and virtue oriented beliefs and self-reported behavioral preferences for two samples of Eastern European students, when compared to a Western European sample. Cultural differences have however been found in the value orientations of for example Hispanic (Hofstede, 1986) and Arab students (Al-Issa, 2005). Since students from these and other regions, such as Africa and India are increasingly participating in international education programs, it would be interesting to examine the degree to which they endorse mind and virtue oriented beliefs about learning.

Lastly, the theory of mind and virtue oriented beliefs about learning lends itself to an empirical measurement of the theoretical assumptions stated by Crisp and Turner (2011) that the opportunity to overcome stereotypical thinking, which a diverse environment provides, places individuals who integrate multiple perspectives into their cognitive schema, at an advantage in the domain of cognitive flexibility. As these authors argue, repeatedly engaging in elaborative processing in order to resolve stereotypical inconsistencies leads to cognitive adaption to this experience, which results in the ability to effortlessly inhibit the influence of stereotypical knowledge under a range of judgmental conditions. It could thus be examined whether individuals who are more 'bicultural' in their beliefs about learning in the sense that their beliefs incorporate elements of both mind and virtue orientation to a high degree, are more flexible in their approaches to learning on both a cognitive and behavioral level, than individuals who endorse either the mind or the virtue orientation.

### **6.3 Conclusion**

In conclusion, the results of all four studies support the main hypothesis that the mind and virtue orientation form interpretative themes to describe a

qualitative difference in the meaning students in Western (including both Western and Eastern Europe) and East-Asian contexts attach to the concept of learning. This conclusion implies that there is not one 'right' way to pursue an academic task. In the context of increasing international exchange in institutions of higher education around the world, the applied implications that these findings have are highly relevant. This understanding should however always include the nuance that the distinction between the mind and virtue orientation is not a hard one. Both the theoretical and empirical findings do not support the premise that the mind and virtue orientation are separate entities, nor that they are stable traits. Instead, the beliefs are expected to change upon intercultural adaption. After all, people are able to rapidly adapt to new cultural environments as this ability forms a defining feature of our evolution (Donald, 1991). Learning thus ideally includes elements of both the mind and virtue orientation, at least on the level of general beliefs, as exemplified by the relatively high endorsement of both the mind and virtue oriented beliefs by the Chinese students. Nevertheless, when asked for behavioral preferences in particular situations, Chinese students express a preference for virtue oriented behavioral options and in the experimental study the virtue orientation is found to be more readily associated to the concept of learning, when measured implicitly. These findings thus stand in contrast to the self-reported behavioral intentions of German students, who report to be more likely to engage in mind oriented behaviors and for whom the mind orientation is more closely associated to learning-related words than the virtue orientation. Overall, the results of the (explicit and implicit) studies that can be expected to be less influenced by response biases than rating scales, indicate that students in Western European and East-Asian contexts differ in the meaning they attach to the concept of learning.

Overall, the presented research has yielded results with a high significance for not only scientific, but applied domains as well. The studies that were undertaken have increased our understanding of the variation that exists in beliefs about learning, and the way in which they are shaped by social and cultural factors. Scientifically, this research thus forms a solid foundation on which to base further empirical investigations and a large variety of studies could be conducted as a continuation of the currently reported line of inquiry. From the applied perspective, the knowledge that this project has yielded increases the potential for effective intercultural communication to occur in diverse higher education classrooms around the world. It is hoped that this project has contributed to an advanced understanding and appreciation for the value of cultural diversity and the potential it has to enrich our lives in general and our learning experiences in particular.

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*Appendices*

*Mind – virtue orientation measures*

**A. Learning beliefs scale**

Please indicate how much you agree with each of the following statements:	1 Strongly disagree	2	3	4	5	6	7 Strongly agree
1. Successful learning requires constant effort and hard work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. A good student challenges a professor on content matters.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Getting good marks motivates me in my learning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Professors should be treated with respect, because they are more knowledgeable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Memorizing the material first leads to better mastery.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Being creative is important for students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Achieving personal insight increases my motivation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. When I get good marks, I try to stay humble.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. The goal of academic learning is to become a critical, independent thinker.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Good learning requires quiet contemplation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. A student must concentrate in learning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Active participation in class facilitates my learning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. It is important for me to work efficiently in my studies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. The goal of learning is to always improve oneself.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Debating a subject is the true path to understanding it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. If I receive negative feedback, I feel motivated to try harder.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. A good student takes his or her study to heart.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Curiosity is a key motivator for me to study a particular subject.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### B. Behavioral scenarios

1. Laura is taking a History course. She doesn't agree with the professor on some ideas. Should Laura interrupt the professor and discuss it with him in class?

☐ Yes ☐ No

**Imagine you were Laura. How likely is it that you would...**

	Not at all likely						Very likely
... discuss with the professor in class?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Peter is a motivated Philosophy student and has the ambition to become a professor one day. What should he be more concerned about when working towards this goal?

- ☐ He should focus on being critical and thinking independently.
- ☐ He should focus on self-cultivation toward higher moral and social development.

**If you were Peter, how likely is it that you would focus on...**

	Not at all likely						Very likely
... becoming a critical and indepent thinker?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... self-cultivation toward higher moral and social development?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Patricia needs to study for a sociology test. She wants to do as well as she can on the test. What learning strategy do you recommend that she start with?

- ☐ Devote a lot of time to quietly study the material by herself.
- ☐ Discuss the material with other students.

**If you were Patricia how likely is it that you...**

	Not at all likely						Very likely
... devote a lot of time to quietly study the material by herself.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... discuss with other students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Mark just failed on an International Management exam. How do you think he feels?

- ☐ Motivated to study harder in order to do better on the next exam.
- ☐ Disappointed and demotivated because he has to retake the exam.

**If you were Mark how likely is it that you would be...**

	Not at all likely						Very likely
... motivated to study harder for the next exam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... demotivated and disappointed because you have to retake the exam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Joanne has an exam for Political Theory coming up, but she also has a deadline approaching for History of Foreign Policy and needs to finish an assignment for her statistics course. What strategy do you recommend for her?

- ☐ Study as quickly as possible, in order to finish as much as possible in the limited time.
- ☐ It doesn't matter how long it takes, it is more important that she puts in her absolute best effort.

**If you were Joanne, how likely is it that you would...**

	Not at all likely						Very likely
... study as quickly as possible, in order to finish as much as possible in the limited time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... study regardless how long it takes, because it is more important that you put in your absolute best effort.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Richard is starting university and has to choose a major. He wants to make the right choice. What advice would you give him?

- ☐ Choose a subject that you are really curious about and interested in.
- ☐ The subject of your studies is not that important, it is more important that you dedicate yourself to the process of studying, no matter what topic.



**If you were Richard, how would you choose your major?**

	Not at all likely						Very likely
I would choose a subject that I am really curious about and interested in.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The subject of my studies is not that important, I am dedicated to studying, no matter what topic.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. Maria just received her results from an Econometry exam. She received an A, so she completed the exam very successfully. Should she be proud of herself for this accomplishment?

☐ Yes      ☐ No

	Not at all likely						Very likely
If you were Maria, how likely is it that you would feel proud of yourself?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. Chris is an ambitious Literature student and wants to make it to the top. To be able to become a leader in his field, what do you think is most important?

- ☐ He should work hard with constant effort and perseverance.
- ☐ He should develop his creative thinking skills.

**If you were Chris, how would you proceed to get to the top?**

	Not at all likely						Very likely
By working hard with constant effort and perseverance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
By developing my creative thinking skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. Samantha is attending a Psychology lecture. The professor is explaining one of the classic theories, developed by an authority in the field. She however recognizes that she has a doubt about the theory. What should she do?

☐ Pursue her feelings of doubt and follow-up on it. She should express her thoughts openly.

☐ She should study the theory and the words of the authority better to make sure she fully understands the theory before expressing her thoughts openly.

**If you were Samantha, how likely is it that you would...**

	Not at all likely						Very likely
... pursue your feelings of doubt and follow-up on it. I would express my thoughts openly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... study the theory and the words of the authority better to make sure you fully understand the theory before expressing your thoughts openly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>