

Learning through the eyes of Eastern and Western European university students: Mind or virtue-oriented?

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Like the majority of cross-cultural studies, cultural differences in learning have primarily been studied in either Western or Asian cultures or comparisons thereof. In such cultural comparisons, the meta-cognitive beliefs about learning of students and faculty in the West have been characterized as primarily ‘mind-oriented’. Based on the philosophical tradition, the development of one’s cognitive thinking skills is seen as at the heart of the concept of learning in this orientation and learners are encouraged to develop their creativity, critical attitude and independence. For academics in East Asia, ‘virtue’ oriented beliefs have been found to 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 students from the Central/Eastern European region. 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, the cultural orientation of students’ beliefs about learning was measured in both Western and Central/Eastern European contexts on both an attitudinal level and on the level of behavioral intentions. In the first study, the beliefs of students from Germany, Poland, Romania and Russia revealed a striking similarity. This finding was replicated in Study 2, in which more diverse samples of students from Russia and Poland were included and compared with Germany and an additional Western European country, the Netherlands. The results suggest greater cross-cultural similarity than diversity in cultural beliefs about learning than differences among young people in these diverse regions within the European context.

Key words: *learning, culture, scenario measure, Poland, Romania, Russia*

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. Such beliefs that people have about different elements of the learning process, i.e., ‘meta-cognitive beliefs about learning’ un-

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derlie their motivation, affect and preferences for learning and learning-related behavior. The mind and virtue orientations represent higher order goals of learning 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 students from (e.g.,) Asian cultural backgrounds (Kühnen et al., 2012).

In the European context, the higher education landscape is continually presented with an increasing number of students from Eastern and Central European countries who choose to pursue their studies abroad. The transition of post-Communist countries to the European Union has promoted the within-European rate of international exchange (Student Statistics Federal Statistical Office, 2007; European Union Press Release, 2008). Take as an illustration that social scientists recently identified this trend toward increased internationalization of the educational system – although later than in many other countries – even in Russia (Lane & Kinser, 2012). 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.

In order to develop such a well-founded understanding the current study explores the cultural orientation of the meta-cognitive beliefs about learning of students from three large Central/Eastern European countries: Poland, Romania and Russia. The orientations towards learning of students from these countries will be compared with each other and with the beliefs of students from two Western European case-countries: Germany and the Netherlands. Because of the exploratory nature of the studies, we will take a culture-equals-nation approach (Hofstede, 2001; Holtbrugge & Mohr, 2010). This approach allows us to examine within-regional differences that are overlooked when comparing the Western European region as such with the Central/Eastern European one. Cultural variations that might have resulted from the different contextual factors that influenced each nation should therefore come to light (e.g., the relative rejection of Communist values on the personal level in Poland).

Like the majority of the cross-cultural literature, research on cultural differences in the domain of learning has primarily focused on comparisons between Western (US American or Western European) and Asian (primarily

Chinese) students (for a comprehensive theoretical review see: Van Egmond, Kühnen, & Li, 2013). Little attention has been paid to the European-relevant and culturally highly interesting region of Central and Eastern Europe. Countries in this region are commonly referred to as being in ‘post-Communist transition’ and are going through major macro-level societal changes (Ammermüller, Heijke, & Wößmann, 2005). Since education is one of the major vehicles through which societal change takes place, institutions of higher education in these countries face multiple challenges. Students 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 conducive to successful socialization during communist times have changed in the direction of values that are needed to succeed in a market economy, like those of initiative taking and independence. Higher education thus plays an essential role in shaping these societies and transmitting societal values. Moreover, in the context of increasing within-European academic exchange a solid understanding of the cultural orientation of students’ meta-cognitive beliefs about learning in these countries is very valuable.

In the following, we will first elaborate theoretically on the concepts of the mind and virtue orientation before reviewing the literature that relates to the issue of cultural differences in beliefs about learning in Western and Eastern Europe. The hypotheses for our empirical investigation are based on this review.

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 relation to

these categories however differed systematically and qualitatively.

In the Western mind orientation, primary importance is 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 dedicated for example 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 sum, learning as a concept centers on the idea of developing the mind and one's thinking skills. Learning forms 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'.

For Chinese students, however, Li (2003) found that the most central elements of the content of their beliefs about learning include a personal-agentic dimension such as diligence, self-exertion, and endurance of hardship, perseverance, and concentration. These characteristics include a moral and virtuous orientation and take prevalence over the mere cognitive elements in the pursuit of learning. In addition to the objective mastery of academic subjects, good learning aims at the unity of knowing and morality in the view of this orientation. Knowledge itself and the process of acquiring it are evaluated by the contribution they make to society. Li (2003) therefore conceptualized the theme that the meta-cognitive beliefs about learning of Chinese students center on as 'virtue-oriented'.

The vast majority of studies that have been conducted on cultural differences in learning solely juxtapose 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). Becoming both a critical, creative thinker and a person who acts in morally accepted ways can be considered important socialization goals for students in most educational systems, regardless of their cultural context. Development and improvement in either domain serves the super-ordinate purpose of being a 'good learner' anywhere. At the same time, what varies between cultures is, the *relative* emphasis that their members place on either mind or virtue oriented aspects of learning.

Previous survey research on the mind and virtue orientation has revealed that the beliefs of Germans (both students and professors) are clearly more mind than virtue-oriented, while Chinese scholars' beliefs (also both of faculty and students) are both highly mind and highly virtue-oriented (Van Egmond, 2011). The cultural differences were even more pronounced when asking students from Germany versus China to make behavioral predictions for specified academic scenarios, in which a given student could act in one of two different ways, one reflecting mind, the other one virtue orientation. When presented with such scenarios, German students were found to see mind-oriented behaviors as more appropriate than virtue-oriented ones, while this preference was reversed for the Chinese. Chinese students are more comfortable with displaying virtue-oriented behaviors than mind-oriented ones (Van Egmond, 2011).

No empirical literature is however available yet regarding the beliefs about learning that persist in other regions, such as the Eastern / Central European post-Communist region (Lammers, Savina, Skotko, & Churlyayeva, 2010). Moreover, studies that examine relative differences in the endorsement of cultural orientations within the post-Communist region are scarce as well, despite the interesting insights that they can provide (see for example Kowalski, 2008). It could however be hypothesized that elements of both orientations constitute the beliefs of students in these regions as well. The aim of the current paper is therefore to analyze how students in three post-communist countries think about learning. The aim is to test whether or not students from these countries differ in the extent to which their meta-cognitive beliefs about learning are mind and virtue-oriented, relative to each other as well as relative to students from Western Europe. In order to derive the direction of our hypotheses, we will review the literature that relates to beliefs about learning in the Eastern European context.

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 (Eröss, 2012). What complicates straightforward predictions for a cross-cultural inquiry into this region further is the fact that the few available studies are inconclusive and sometimes even contradictory in their implications for learning beliefs. 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, Szejnberg, 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 open to debate. 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. Recent work by Lammers and colleagues (2010) also speaks in favor of a high degree of cross-cultural similarity in the perception of 'good' learning at the university level between a typically Western (USA) and post-Communist (Russia) context. Here, it was found that knowledgeable, respectful, effectively communicating and creative teachers are perceived as the most skilled instructors in both cultural settings. These characteristics concur on the theoretical level with the mind orientation towards learning.

So far, we reviewed empirical evidence which points in favor of the similarity between Eastern and Western European cultural beliefs. Yet, one might as well speculate that the communist era has shaped values and behavior

in a way that still might affect students' learning beliefs today, resulting in Eastern-Western European differences. 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 was not encouraged. 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).

Some studies reported Eastern-Western European difference that might result from these historic traces. For instance, Kolman, Noorderhaven, Hofstede, & Dienes (2003) extended Hofstede's classic value research by comparing samples from four different Central European cultures to a Western European one. Despite substantial variation within Central Europe, these authors found all Central European cultures to exhibit a higher degree of power distance, but a lower degree of individualism than Western European participants. Holtbrügge and Mohr (2010) investigated whether cultural values (including individualism-collectivism and power distance) are related to learning style preferences of students from a diverse range of countries, including those of Germany, the Netherlands, Poland and Russia. In particular, students' individualism was found to be related to a preference for active learning style and focus on abstract conceptualizations.

In line with these findings, we (Kühnen, et al., 2012) asked university students from various cultural backgrounds (including Eastern and Western Europeans) to rate how strongly their high school teachers had valued mind oriented classroom behavior, such as displaying critical thinking or challenging the teacher on content matters. Eastern Europeans indicated that these kinds of behavior had been significantly less valued by their previous teachers than Western European students did.

This finding is in line with a study by Schwartz, Bardi, and Bianchi (2000) on basic values among Western and Eastern European teachers. This research showed that “Eastern European nations attributed greater importance to embeddedness and hierarchy values and lower importance to egalitarianism, intellectual and affective autonomy values, when compared with West European samples” (p. 233).

Although not directly related to beliefs about learning, other studies on basic cognitive processes may be relevant in this regard as well. For instance, research on cognitive styles suggests that East Europeans have more in common with East Asians than with Americans or Germans. Kühnen et al. (2001) have for example shown that the visual attention pattern of Russians is more holistic than analytic. Since analytic thinking skills have been linked with the (mind-oriented) emphasis on critical thinking skills (Lun, Fischer & Ward, 2010), it could be hypothesized that the more holistic cognitive style of Eastern Europeans is incongruent with this formal logical tradition that is integral to the mind orientation. More recently, Varnum et al. (2008; 2010) 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.

Further studies show Eastern-Western European differences in self-expression and personal agency. Recent large scale research for instance found Eastern European countries to still represent distinct cultural regions from Western Europe in the domain of values (Inglehart & Welzel, 2005; Schwartz & Bardi, 1997). Specifically, Inglehart and Welzel (2005) found a weaker endorsement of self-expression values among East than West Europeans. Other researchers (e.g., Heine & Lehman, 1997) have argued that the extent to which individuals use choice as a means of self-expression varies between cultures. Only if one conceives choices to reflect one’s own individual preferences, induced preference-inconsistent choice may induce dissonance reduction. A cultural difference was found in this personal-agentic nature of choice between Western and Eastern Europeans by Kokkoris and Kühnen (2013).

Yet again, all possible predictions about differences between Eastern and Western Europe imply that in particular Eastern Europe is a more or less homogenous cultural zone. This assumption may be questioned for at least two reasons. First, this assumption would ignore within country differences, which, however, have been

identified already. For instance, Van Herk and Poortinga (2012) showed that the previously reported differences between Eastern and Western Europeans regarding self-expression values primarily persist for individuals who have actually been raised during the time of the Cold War, not the younger generations. Second, substantial variation between several Eastern European countries in relevant domains has been identified as well. Poles have for example been found to take 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, et al. 2003). Furthermore, 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. 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 (Kolman et al., 2003). Following this line of reasoning, it could be hypothesized that the beliefs about learning should vary between Eastern European countries accordingly.

To summarize, 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. Yet other studies suggest that one might even expect cultural differences within Eastern Europe. In an effort to resolve this ambiguity in the domain of meta-cognitive beliefs about learning for young, contemporary students a survey 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., 2013). For the present studies, the rating scale by which both mind and virtue orientation can be measured on an attitudinal level, as well as the scenarios for which participants are asked to make behavioral predictions were conducted in Poland, Romania, Russia and Germany and The Netherlands. 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. Although the psychological consequences of the different religions are not in the focus of the current investigation,

it is worth noticing that previous studies found positive relations between religiosity and work related values, such as the aspiration to fulfill one's responsibility to contribute to society (Parboteeah, Paik, & Cullen, 2009). This latter aspect is also one important component of virtue orientation in learning beliefs. Russia's values share the Orthodox origin but the country is also more secular when it comes to work ethics. However, this influence that was superimposed during communist times does not prevent the Orthodox religion from having significantly shaped people's contemporary beliefs regarding the meaning of work and the need for mental evolution of the individual into the direction of Orthodox religiosity (Böhmer, 2008). However, whether or not the difference in religious backgrounds will be expressed in a difference in orientation of philosophically inclined meta-cognitive beliefs about learning is a question that is yet to be explored. All in all, the high diversity in both societal and religious characteristics of the included countries would make it highly likely that differences in cultural orientations of meta-cognitive beliefs about learning would emerge between these countries. Lastly, Germany was included as a first case-study for Western Europe since it is the largest non-English speaking Western European country in the number of receiving foreign students (OECD, 2010). The Netherlands was included for replication purposes, in order to assess whether the results that are obtained from Germany would hold in a different Western European setting. Two types of measures were applied for the assessment of students' beliefs about learning in all five samples. First, an attitudinal rating scale was applied that measures both the mind and virtue orientation of students' beliefs about learning on an attitudinal level. Secondly, a behavioral scenario questionnaire was included to obtain an indication of behavioral preferences of students in concrete, everyday academic situations.

STUDY 1

Methods

Participants. The total sample consisted of 274 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, and physics), economics / business administration, other (e.g. logistics, sustainable development). No large differences in distribution across academic discipline occurred between the sub-samples.

The German sub-sample consisted of 55 students (33 female, 22 male), with a mean age of 23.7 ($SD = 3.3$).

A small plurality was formed by students from the social sciences (38%), with the other two largest groups being formed by students from the sciences (26%) and humanities (26%). The Polish sub-sample consisted of 80 students. Twenty-one students were excluded from the analyses because they indicated to have studied abroad, leaving an included sample of 59 (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 sub-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. The student sub-sample from Russia only includes students from the Higher School of Economics (HSE) in Moscow. A total of 93 students participated (67% female). Students from the social sciences were overrepresented in this sample, due to the nature of the institution. However, students from diverse areas of the social sciences were included in the sample in the following distribution: political science, sociology and psychology: 49%; economy, business and law: 30%, other (journalism, advertising, and logistics): 15%.

Material. All participants completed the mind – virtue orientation scale and behavioral scenario questionnaire in their native language and all translations were created using the forward- and back-translation method. The attitudinal rating 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 indicated on a 7-point Likert scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Example items for the mind orientation subscale include “*A good student challenges a professor on content matters*”, and “*Debating a subject is the true path to understanding it.*” The virtue orientation subscale included statements, like “*Professors should be treated with respect, because they are more knowledgeable*”, and “*Good learning requires quiet contemplation*”.

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 in which the protagonist has to make a behavioral decision between a mind oriented and a virtue oriented

way of acting (e.g., *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?*). 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 (1 in the example below) or a virtue-oriented option (2) that they would recommend as the most appropriate response to the described situation for the protagonist (Option 1 = *Pursue her feelings of doubt and follow-up on it. She should express her thoughts openly* and Option 2 = *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*). 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 Samantha, how likely is it that you would...*) on a 7-point Likert scale, ranging from 1 (*very unlikely*) to 7 (*very likely*).

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, Romanian and Russian students completed the questionnaire online. First of all, an invitation to the survey was sent to a mailing list for young Eastern European scholars (www.joe-list.de). Separate data collection strategies were then additionally applied in

Poland, Romania and Russia. For the Romanian sample, the main recruitment strategy consisted of the publication of a call for participation on a web forum 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. In Russia, faculty members of the HSE Moscow were contacted and requested to distribute the link to the survey to their students. All students voluntarily participated in the study.

Results

Reliability. Over all, the reliability scores for all four samples reached satisfactory levels. The reliability scores of the mind and virtue-oriented items of the scale are reported per country in Table 1¹. Moreover, since the reliability scores of the mind and virtue orientation items separately are satisfactory as well, two mean scores were calculated for the mind-oriented items and virtue-oriented items each for all subsamples for the following analyses.

Rating scale: mind and virtue-oriented beliefs. The main research question was whether the beliefs about learning of students from the culturally distinct regions of Poland, Romania, Russia and Germany are more mind-oriented or virtue-oriented and, if cultural differences could be found in the beliefs about learning between these groups of European students.

Table 1
Means and Cronbach's alpha scores by country and sub-scale

		Germany	Poland	Romania	Russia
Mind orientation	<i>M (SD)</i>	5.38 (.64)	5.16 (1.1)	5.76 (.86)	5.53(.80)
	α	.64	.88	.91	.79
Virtue orientation	<i>M (SD)</i>	4.69 (.59)	4.74 (1.07)	4.61 (.94)	4.78 (.88)
	α	.51	.88	.86	.79
Full scale α		.64	.93	.93	.86

¹ It should be noted that the Cronbach's alpha scores are distinctly lower for the German sample, as compared to the three other countries. Since the scale has been applied successfully in similar samples in previous research (e.g., Van Egmond, 2011) and the alpha of the scale as a whole transcends the .6 threshold, the current sample was included in the analyses for comparative purposes.

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 / Russian / German) as between-subjects factor and orientation of beliefs (mind / virtue) as within-subjects factor. This ANOVA revealed a highly significant main effect of orientation, $F(1, 270) = 217.37, p < .001, \eta^2 = .45$. All four groups endorse the mind-oriented beliefs more strongly than the virtue-oriented beliefs. Table 1 includes an overview of the mean scores on the mind and virtue orientation within all four countries. Additional paired-samples t-tests reveal that the difference in endorsement of mind and virtue-oriented beliefs is significant at the $p < .001$ level within all four countries.

In addition to the significant main effect, the analysis also yielded a significant interaction effect between orientation and culture, $F(3, 270) = 8.29, p < .001, \eta^2 = .08$. The difference between mind and virtue orientation endorsement is smallest in the Polish sample and the 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 (all p 's $> .5$).

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.

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 being 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. 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, Russian, German). This analysis did not yield a significant effect, $F(3, 254) = 1.31, p > .05$. Culture was thus not found to have a significant effect on the frequency with

which Polish ($M = 6.08, SD = 1.20$), Romanian students ($M = 6.05, SD = 1.29$), Russian ($M = 6.15, SD = 1.18$) and German ($M = 6.45, SD = 1.17$) select 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 (Polish: 92.3%; Romanian: 89.5%; Russian: 91.4%; German: 94.5%: $\chi^2(1, N = 258) = 10.36, p = .92$).

Scenarios: predictions for own behavior. The second part of each scenario item consisted of an indication of the likelihood with which the participants themselves would engage in both the mind-oriented option as well as the virtue-oriented one (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 one 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 that this analysis yielded was a strong main effect for orientation, $F(1, 268) = 139.08, p < .001, \eta^2 = .34$. Students in all four countries predicted to behave more

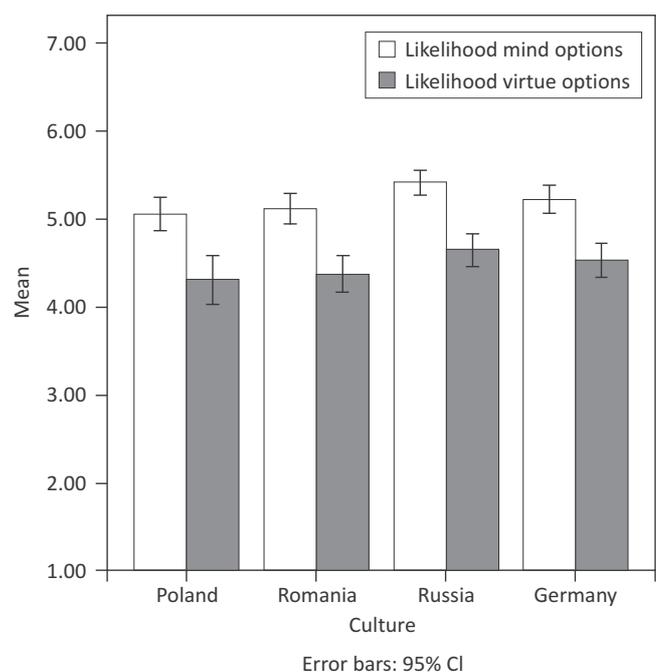


Figure 1. Self-reported behavioral likelihood of engaging in mind and virtue oriented behaviors, by culture.

likely in a mind- than virtue-oriented way in the described scenarios. This pattern of results was in the same direction as the results of the attitudinal scale ratings: Poland $t(51) = 4.90, p < .001$; Romania $t(66) = 6.12, p < .001$; Russian $t(97) = 7.64, p < .001$; Germany $t(54) = 5.59, p < .001$. As illustrated in Figure 1, students from all four samples indicated higher likelihood ratings for the mind-oriented options than the virtue-oriented options. They did so to the same degree in all three countries. In other words, students from Poland, Romania, Russia and Germany were found to be equally likely to behave in a mind-oriented fashion. They also reported to be equally likely, that is less likely than mind-oriented, to behave virtue-oriented.

Discussion

Study 1 provided first evidence for a striking cross-country similarity in the relative endorsement of mind and virtue-oriented beliefs about learning in Western and Eastern European contexts. Irrespective of the culture of origin and irrespective of the kind of measurement being used (scale versus scenarios), we found a clear pattern: Students were strongly more mind- than virtue-oriented. However, several limitations of Study 1 can be identified that question the validity and reliability of the obtained pattern of results. For example, the reliability of the scale was relatively low in the German sample (in contrast to previous research, see Van Egmond, 2011). It might also be argued that the sample of Russian students, all enrolled in Moscow is not representative of other regions in the country or other settings of higher education. Thirdly, the sample that was obtained in Poland through the method of data collection that we applied could be argued to have resulted in a biased sample (e.g., self-selection of highly motivated students). Lastly, the applied Polish translation included some uncommon phrasing and words. For these reasons, Study 2 was designed as a replication and validation study in order to address these shortcomings.

STUDY 2

Study 2 differed from Study 1 with regard to three aspects. First of all, we included a different Western European country (the Netherlands) in order to check the representativeness of the results from Germany for the Western European context. Secondly, a translation-check was conducted for the Polish material by a multilingual German-English-Polish academic, in the intercultural field. This check resulted in a minimal wording adjustment to increase the appropriateness of the survey to the Polish language. Lastly, the data-collection in Russia was extended to two different settings of higher education, both outside of Moscow.

Methods

Participants. The total sample consisted of 313 students from four countries: the Netherlands, Germany, Poland and Russia. The Dutch sub-sample consisted of 70 participants (36 female, 34 male), with a mean age of 21 ($M = 21.03, SD = 2.18$). All participants were enrolled at the University of Groningen at the time of the study. Students from a range of disciplines were represented with the largest sub-sample of participants enrolled in a business / economics major (46.7%). Another 30% of the sample was enrolled in a medical major and only 18.3% studied a social science discipline, such as sociology, psychology or pedagogy. The German sample was recruited through a student mailing list at the University of Osnabrück (a public university in Northern Germany) and resulted in a total sample of 101 participants (76.2% female)². The mean age of the sample was 22 ($M = 22.84, SD = 4.26$) and students were enrolled in the social sciences (21.2%), humanities (20%), business / economics and law (30.6%), and biomedical / engineering / technological sciences (28.2%). The Polish sample consisted of 81 participants in total (75% female), with a mean age of 23 ($M = 23.6, SD = 3.87$). Students were recruited at both public (66.3%) and private institutions. Russian participants ($n = 58$) were recruited in Yaroslavl (Yaroslavl Pedagogical University, 65.5%) and Samara (State Inter-regional Academy for Social Sciences and Humanities, German and English department, 29.3%). The mean age was 20 ($M = 20.12, SD = 2.65$) and included only 13% of males.

Material. The same rating scale and behavioral scenario questionnaire were applied that were used in Study 1. The Dutch translation was developed by forward- and backward translation in cooperation with two English – Dutch research assistants. The Russian translation was conducted by a German – Russian – English trilingual research assistant and back-translated by two critical Russian – English bilingual assistants who were fully informed of the theoretical background. The Polish version was improved linguistically (see Appendix A).

Procedure. Dutch participants were approached by a research assistant at the university library and cafeteria and were requested to anonymously complete a paper

² The full sample that participated in fact consisted of 336 students. However, in order to create a sample that was comparable in size (and thus degrees of freedom) to the samples from the other countries that are included in this study, a random sample of 30% was drawn. Only this 30% of the full sample of participants is included in the following analyses.

Table 2
Cronbach's alpha scores by country and sub-scale in Study 2

	Germany	The Netherlands	Poland	Russia
Mind orientation	.71	.83	.96	.78
Virtue orientation	.65	.77	.91	.78
Full scale	.76	.88	.97	.85

version of the survey material. The German, Polish and Russian participants were sent a link to an online version of the survey by program coordinators at their university departments. All subjects participated voluntarily.

Results

Reliability. The reliability scores for all four samples reached satisfactory levels. The reliability scores of the mind and virtue-oriented items of the scale are reported per country in Table 2.

For all four countries, the Cronbach's alpha scores are above the .6 threshold. More specifically, the alphas for both the separate mind and virtue items and the full scale have improved for the German and Polish samples as compared to Study 1. The scores for the newly included sample of Dutch participants are satisfactory as well and in line with scores that have been obtained for samples of Western European students in other studies (Van Egmond, 2011). The mind and virtue subscale correlate moderately with each other [$r(312) = .65, p < .01$], which is in line with the theory that they both tap the respondents' motivation to be a good student, yet at the same time do address different ideas of how to achieve this goal.

Rating scale: mind and virtue-oriented beliefs. In replication of the first study, the main research question of Study 2 was whether the beliefs about learning of students from the Netherlands, Germany, Poland and Russia are more mind-oriented or virtue-oriented and, if cultural differences could be found in the orientations of beliefs about learning between these groups of European students. To answer this question, the mean scores for mind and virtue orientation were submitted to an analysis of variance with culture (Dutch / German/ Polish / Russian) as between-subjects factor and orientation of beliefs (mind / virtue) as within-subjects factor. This ANOVA revealed a significant main effect of orientation, $F(1, 309) = 103.7, p < .001, \eta^2 = .25$. Students from all four countries endorse the mind-oriented beliefs more strongly than the virtue-oriented beliefs (Dutch: $M_{mind} = 4.70; SD = .77$ vs. $M_{virtue} = 4.43;$

$SD_{virtue} = .65; t(67) = 3.05, p < .01$; German: $M_{mind} = 5.38; SD = .71$ vs. $M_{virtue} = 4.76; SD = .70; t(100) = 8.02, p < .01$; Polish: $M_{mind} = 4.62; SD = 2.1$ vs. $M_{virtue} = 4.04; SD = 1.7; t(91) = 6.12, p < .001$; Russian: $M_{mind} = 5.26; SD = 1.0$ vs. $M_{virtue} = 4.84; SD = 1.0; t(60) = 3.73, p < .001$).

The analysis also revealed a significant interaction effect between orientation and culture, $F(3, 309) = 3.52, p < .05, \eta^2 = .03$. This effect was however mainly driven by the Dutch sample. Fisher's least significant difference post-hoc tests revealed that with regard to mind orientation, students from the Netherlands scored lower than any other cultural group, while the remaining three groups did not differ significantly from one another. By contrast, with regard to virtue orientation the Dutch and Polish sample displayed lower scores (not significantly differing from one another) than both the German and the Russian sample (which also were not significantly different from one another). As also evidence by the small interaction effect, this effect was rather small. Additionally, it is important to recall that our studies have been conducted with the goal to identify potential cultural differences (or similarities) in the *relative* emphasis that people place on mind and virtue orientation, not on absolute differences across cultures. After all, the pattern of a higher endorsement of mind oriented beliefs over virtue oriented ones remained for all four samples. Lastly, within-subjects analyses of variance revealed that the possible mediating variables of gender and academic discipline did not result in a significant interaction with students' orientation beliefs in this study either.

Scenarios: forced-choices of appropriate behavior. In order to look for potential cultural differences with regard to the behaviors that students saw as the most appropriate course of action in the nine academic scenarios that they were presented with, the mean number of selected mind orientation options was submitted to a one-way analysis of variance with culture as between-subjects factor (Dutch, German, Polish, Russian). This analysis also yielded a significant effect, $F(3, 274) = 7.30, p < .001$. Interestingly, the Polish students are the ones

who selected the mind-oriented behavioral option most frequently (Dutch: $M_{\text{mind options}} = 5.74$; $SD = 1.22$; German: $M_{\text{mind options}} = 5.67$; $SD = 1.39$; Polish: $M_{\text{mind options}} = 6.53$; $SD = 1.34$; Russian: $M_{\text{mind options}} = 5.57$, $SD = 1.20$). In all three samples, students thus expressed a preference for the mind oriented responses, as indicated by the finding that all mean scores are above the mid-point of $M_{\text{mind options}} = 4.5$. The degree to which they did so however differed.

Scenarios: predictions for own behavior. The two mean scores for the likelihood with which students indicate to engage in the mind and virtue-oriented behavioral responses were subjected to an analysis of variance with culture (Dutch / German / Polish / Russian) as between- and orientation as within-subjects factor. This analysis also yielded a significant effect for orientation, $F(1, 297) = 73.58$, $p < .001$, $\eta^2 = .20$. Students in all four countries predicted to behave more like the mind-oriented than virtue-oriented ways in the described scenarios. This pattern of results is in the same direction as the results of the attitudinal scale ratings. As illustrated in Figure 2, students from all three samples indicated higher likelihood ratings for the mind-oriented options than the virtue-oriented options. However, in contrast to the results of Study 1, the analysis of variance also yielded a significant interaction

effect for culture, $F(3, 297) = 10.68$, $p < .001$, $\eta^2 = .1$. The LSD post-hoc comparisons reveal that it is primarily the Polish students who significantly differed from all three other groups (all p 's $< .05$) in their likelihood of engaging in virtue-oriented behaviors. Polish students indicated to be less likely to engage in these types of behaviors than students from both other countries.

Further analyses. The aims of Study 2 were to increase the reliability of the findings from Study 1, first by using an improved translation of a Polish version of our scale, and second by collecting data from another western culture (The Netherlands), and third to validate the measures. The size of the included samples does not allow the application of confirmatory factor analyses. Different heuristics exist (e.g., Westland, 2010), but a simple guideline is that a sample size of 150 or more is typically required as a minimum to obtain parameter estimates that have standard errors small enough to be of practical use (Anderson & Gerbing, 1988). We instead asked the question whether the results that are obtained on mind and virtue orientation on the scale measure would correspond to the results that are obtained on the scenario measure. If a correlation is found between mind orientation as measured on the scale and the likelihood of engaging in mind oriented behavior as measured in the scenarios, this would support the convergent validity of both measures. Moreover, if this pattern is found in all four samples to the same degree, this would support the cross-cultural validity of the measures. Of course, the same holds true for the virtue orientation scale and the prediction to engage in virtue oriented behavior. By contrast, the discriminant validity of our measures would be supported, if the measure on the mind (virtue) orientation scale would not correlate with the prediction to engage in virtue (mind) oriented behavior. For this reason, Pearson's correlations were calculated between mind and virtue orientation as measured on the scale and the likelihood of engaging in mind and virtue oriented behavior as measured in the scenarios in all four samples separately. The hypothesis that follows from our above reasoning states that the scores for mind (virtue) orientation as measured on the scale would correlate significantly with the scores that are obtained for mind (virtue) orientation as assessed on the scenario measure. In addition, the correlations between the mind (virtue) orientation on the scale and the virtue (mind) orientation behavioral prediction should be smaller. As can be seen in table 3, the empirical findings support this prediction: Overall the mind orientation subscale correlated highly significantly with the behavioral intention for mind, but not for virtue oriented behavior,

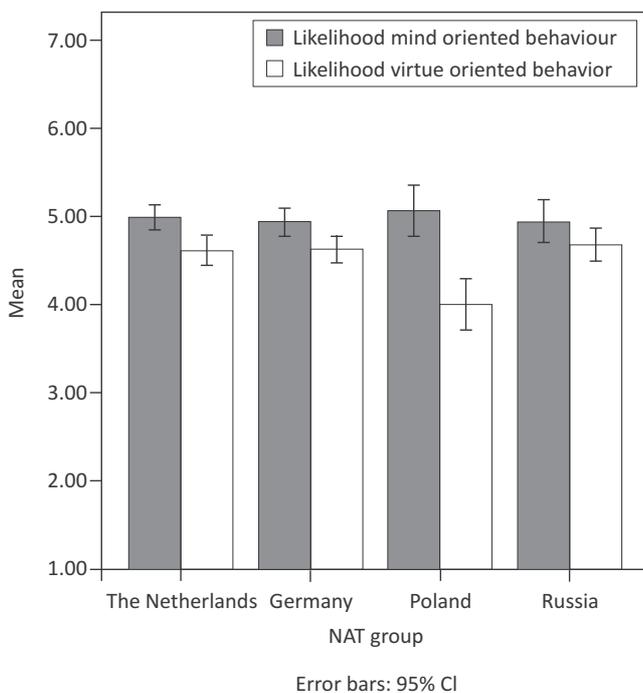


Figure 2. Self-reported behavioral likelihood of engaging in mind and virtue oriented behaviors, by culture.

Table 3
Correlations between mind and virtue orientations scores as measured by the scale and scenarios in all four samples

	Scale measure	Scenario measure (Behavioral likelihood)	
		Mind	Virtue
The Netherlands	Mind	.37**	.10
	Virtue	.11	.39**
Germany	Mind	.51**	.18
	Virtue	.05	.37**
Poland	Mind	.35**	.09
	Virtue	.17	.31**
Russia	Mind	.51**	.19
	Virtue	.17	.35**

while the reverse was true for the virtue orientation subscale. This pattern of correlations was observed in all four samples. In terms of cross-cultural comparison, the largest discrepancy is found between the correlation for the mind orientation on both measures in Germany and Poland. A Fisher *r*-to-*z* transformation however indicates that this difference is not significant ($z = 1.24, p > .05$). These findings thus support the convergent validity across cultures of the applied measures.

Discussion

The results of Study 2 partly replicate the findings of Study 1 and form an interesting replication of the degree to which students in diverse Western and Eastern European contexts think about learning. Study 2 provides additional support for the hypothesis that the meta-cognitive beliefs about learning take on a primarily mind oriented focus across the European region. This study thus supports the finding that students from Poland as well as Russia are oriented towards the culturally Western mind orientation of learning that is also strongly endorsed in the Western European countries of Germany and the Netherlands. Despite relative differences in the degree to which mind orientation is preferred over virtue orientation, it is a rather robust finding that mind orientation takes prevalence over virtue orientation in the domain of meta-cognitive beliefs about learning.

The main cultural difference that emerged is in the degree to which primarily Polish students indicate to be likely to engage in virtue-oriented ways in response to common academic situations. They are less inclined to engage in these types of behaviors than either students

in Germany, Russia or the Netherlands. These results are thus strongly in line with the findings of Sztejnberg, den Brok and Hurek (2004) as well as those of Lammers et al. (2010) and Kowalski (2008) in the sense that they support the conclusion that the ideals for learning that exist in Western and Eastern European contexts are relatively similar.

GENERAL DISCUSSION

The reported studies provide first empirical evidence for a remarkable overlap in culturally shaped meta-cognitive beliefs about learning across diverse European national contexts. That is to say that more than twenty years after the systemic changes that took place in the communist Eastern European countries, the current studies find remarkable similarity in students' perspectives on their academic studies. On the attitudinal level, no cultural difference was found in the degree to which students from Western (German and Dutch) and several Central / Eastern European countries (Poland, Romania and Russia) endorse mind and virtue-oriented beliefs about learning. Students in all countries indicated to endorse the culturally 'western' mind-oriented beliefs about learning more strongly than the virtue-oriented ones. In Study 1, no difference was found for their behavioral intentions either. However, a refined replication study revealed that the orientation of Polish students, when it comes to behavioral intentions in concrete academic settings slightly deviates from both the Dutch and Russian context in the sense that Polish students endorse virtue orientation to an even lesser extent than students from the other two countries do.

Theoretical implications

On a theoretical level, our results are thus in line with the literature that suggests that historical traditions which relate back to the legacy of ancient Greek philosophy (and Socrates in particular) are shared by diverse European contexts. Our analysis reveals a rather robust emphasis that is placed on mind-oriented elements of the concept of learning over virtue-oriented aspects across the included Western and Eastern European countries. It is the ancient philosophical legacy that penetrates contemporary thought over and above temporary and super-imposed socio-political influences. This is remarkable, given that previous studies have also 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, et al., 2001; Kolman et al., 2003). However, in line with recent studies that are related to cultural values and learning preferences, our findings suggest that there exists a high degree of similarity in the cultural orientation towards learning within the European setting. This result also implies that the emphasis on virtue-oriented beliefs and learning-related behaviors that has been found for 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.

Practical implications

On an applied level, the findings have important implications in the domain of international academic exchange. In line with Van Herk and Poortinga's findings (2012) for the value orientations of young Europeans, the current study namely suggests that cultural beliefs about learning are highly similar for European student generations that have been born after the fall of Communism. The stereotypic beliefs of Western European faculty members who welcome students from Central and Eastern European countries into their classroom with the belief that they are at disadvantage, due to the heritage of communism in these countries can be contradicted with our findings. In fact, students from countries as diverse as Poland, Romania and Russia are equally comfortable with mind-oriented beliefs about learning on both the attitudinal and behavioral level. The results thus suggest that once practical and bureaucratic limitations to international academic exchange are improved (Lane & Kinser, 2012), cultural differences on the level of meta-cognitive beliefs about learning should only form a minimal problem for faculty members and students within the European context. Instead, this relative similarity should enable them to take full advantage of the benefits of the Russian

and other Eastern/Central European higher education landscapes that are starting to open up.

Limitations and future research directions

The interpretation of our findings is limited 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 the non-significant findings that we observed are due to the fact that cultural differences that might exist between students in these countries are not captured by the applied instrument. One might argue that there are specific Eastern European assumptions about learning that are not captured by the mind and virtue orientation measures. Moreover, cultural differences in other domains may play a role which are not captured by the mind and virtue orientation framework (e.g., pursuing a university education for the purpose of finding a good job). Secondly, although the included samples were large enough to obtain meaningful results, it is obvious that samples of 50 or more students from each country can hardly be claimed to be truly representative samples of each of the national cultures. Although the similar pattern of findings in studies 1 and 2 point to robustness of our findings, further research should be directed at answering the question whether the results of the current study can be generalized to the wider population. In such pursuits of additional data collection, it would also be advisable to include students from an even more diverse range of countries, academic disciplines and types of higher education settings in order to assess differences that exist within the Eastern and Western contexts themselves. Furthermore, future studies should take a closer look at whether religious orientation is related to learning beliefs and in particular to virtue orientation. As outlined in the beginning, such a relationship might be expected because previous studies have linked religiosity to work related values (Parboteeah et al., 2009). Additional attention could then also be paid to the development of the measure's validity. The divergent validity of the concepts of mind and virtue orientation with other measures of cultural differences on the psychological level could for example be assessed if participants would complete a value orientation or self-construal measure as well. Furthermore, it is important to note that even though we have tried to develop a measurement that is closer to behavior than a pure attitudinal Likert scale, we still assessed behavioral *intentions* – not actual behavior. Strictly speaking our scenario measurement has assessed how students would like to see themselves acting in a concrete situation where they have the choice between mind and virtue oriented behavior. What they actually do,

might still be different. Lastly, it would be reasonable to expect the intensive and quick processes of value change that are currently developing in this region to continue over the years to come. The development of the students' orientations in beliefs about learning and the relationship of these beliefs on an attitudinal level, with their more concrete behavioral preferences in real-life settings could be tracked over time in studies with a longitudinal perspective.

CONCLUSION

In conclusion, the cultural similarity that is found in the beliefs and behavioral preferences of students from diverse West and East European countries that are each marked by large social, historical, religious and cultural variation is remarkable. Even though these cultures differ for example in the endorsement of cultural values (e.g., Inglehart & Welzel, 2005 or Schwartz & Bardi, 1997) and cognitive style (Varnum, Grossmann, Katunar, Nisbett, & Kitayama, 2008), we provide first evidence that students from the Netherlands, Germany, Poland, Romania and Russia share the same meta-cognitive beliefs about learning to a large extent. This finding might be a tentative sign for a relatively harmonious integration of students from highly diverse European regions into a joint Western-oriented higher education system.

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Nauka oczami studentów wschodniej i zachodniej Europy: orientacja na umysł czy na cnotę?

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STRESZCZENIE

W dwóch badaniach porównywano ze sobą studentów z czterech krajów (Niemiec, Polski, Rumunii i Rosji) pod względem ich orientacji w zakresie studiowania: nastawienia na twórczość i rozwój kompetencji vs. posłuszeństwo i pilność. Wyniki pokazują na brak zasadniczych różnic między tymi czterema krajami europejskimi w zakresie orientacji studiowania.

Słowa kluczowe: *studiowanie, kultura, Polska, Rumunia, Rosja*

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APPENDIX A

Polish version of rating scale of mind and virtue oriented beliefs about learning (Study 2)

Zaznacz, jak bardzo zgadzasz się z każdym z tych zdań:

1. Efektywna nauka wymaga ciągłego wysiłku i ciężkiej pracy.
 2. Dobry student kwestionuje wykładany przez profesora materiał.
 3. Dobre oceny motywują mnie do nauki.
 4. Profesorowie powinni być traktowani z szacunkiem, ponieważ mają większą wiedzę.
 5. Nauczenie się materiału od początku na pamięć prowadzi do jego perfekcyjnego opanowania.
 6. Bycie kreatywnym jest ważne dla studentów.
 7. Głębokie zrozumienie tematu zwiększa moją motywację.
 8. Gdy dostaję dobre oceny, staram się pozostać skromnym/ skromną.
 9. Celem studiowania jest stanie się osobą krytycznie i samodzielnie myślącą.
 10. Dobra nauka wymaga cichego rozważania.
 11. Student musi skupić się podczas nauki.
 12. Mój aktywny udział w zajęciach wspomaga moją naukę.
 13. Efektywna praca na studiach jest dla mnie ważna.
 14. Celem nauki zawsze jest stawianie się lepszym/ lepszą.
 15. Dyskusja najlepiej prowadzi do zrozumienia danego tematu.
 16. Negatywne oceny motywują mnie do większych starań.
 17. Dobry student bierze sobie studiowanie do serca.
 18. Ciekawość jest moją główną motywacją do uczenia się danego materiału.
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