ONLINE READINGS IN PSYCHOLOGY AND CULTURE
International Association for Cross-Cultural Psychology

Unit 4 *General Psychological Issues in Cultural Perspective*
Subunit 3 *Intelligence, Abilities, and Creativity Across Cultures*

Article 3

6-1-2011

Creativity in the Brazilian Culture

Denise S. Fleith
Universidade de Brasilia, Brazil, fleith@unb.br

Recommended Citation
Fleith, D. S. (2011). Creativity in the Brazilian Culture. *Online Readings in Psychology and Culture, 4*(3). https://doi.org/10.9707/2307-0919.1037

 ISBN 978-0-9845627-0-1

Creativity in the Brazilian Culture

Abstract

Research has pointed out creativity as a sociocultural and contextually embedded phenomenon. As a consequence, the effect of cultural factors on the manifestation of creativity has been discussed worldwide. The purpose of this chapter is, therefore, to analyze the development of creativity in the Brazilian culture. A brief description of the Brazilian culture is provided. Models of creativity developed by Brazilian researchers, as well as a review of creativity studies conducted in the educational environment, are presented. Guidelines for future cross-cultural studies on creativity are also suggested.

Introduction

Researchers have pointed out that creativity is a social, cultural, and contextually embedded phenomenon (Amabile, 1996; Csikszentmihalyi, 1996; Lubart, 1999; Raina, 1993; Rudowicz, 2003; Simonton, 1994). In this regard, the cultural environment has a strong influence on creativity by supporting or inhibiting the development of creative efforts. Therefore, it is important to investigate in which ways cultural groups are taught to be creative, how culture changes within and across generations (Hunsaker & Frasier, 1999), what norms are used in one culture to assess creativity, and how culture channels creativity toward certain domains and groups (Lubart, 2010). Moreover, Raina (1993) highlights the need of understanding how creativity may foster the cultural change process. Rudowicz (2003) calls attention to the importance of examining the influence of culture on creativity conceptions and on people's attitudes towards the value and utility of creative endeavors. Although much of the research on creativity has been conducted in the United States, several studies have also been implemented in different countries, including Brazil.

Brazilian concern for studying creativity dates from the 70s. Brazilian research on creativity has been conducted mainly in the educational context. From 1970 throughout 1990ies, most of the studies focused on ways for fostering creative abilities in the classroom (Alencar, 1975; Alencar, Fleith, Shimabukuro, & Nobre, 1987). In the last two decades, it can be noticed that the focus of creativity research has switched from enhancing student's creativity to identifying factors that stimulate or inhibit creative talents in the educational setting (Alencar, 1995; Alencar & Fleith, 2004a, 2008; Alencar, Fleith, & Martínez, 2001; Castro & Fleith, 2008; Pinheiro-Cavalcanti & Fleith, 2009; Fleith & Alencar, 2006, 2008; Matos & Fleith, 2006; Sathler & Fleith, in press), as well as factors associated with high creative achievement (Alencar, 1997a; Alencar, Neves-Pereira, Ribeiro & Brandão, 1998; Prado & Fleith, 2010). In addition, instruments for assessing the level of a person's creativity and the climate for creativity have been developed (Alencar, 1999; Alencar & Fleith, 2004b, 2007, 2010; Fleith & Alencar, 2005; Fleith, Almeida & Peixoto, in press; Wechsler, 2001).

In the year 2000, the Creative Processes and Giftedness Research Group was officially created, although the members have been doing research and training people in the area of creativity and talent development for more than 20 years. This research group has been accredited by the National Council for Scientific and Technological Development in Brazil and involves researchers from distinct Brazilian universities. Developing research and disseminating knowledge on creativity and giftedness are the priorities of the group. The studies conducted by this team have contributed to a better comprehension of the creativity phenomenon in Brazil and other Latin America countries (see website[1] http://www.ucb.br/textos/2/687/TalentoCriativo/?slT=8).

This article examines the development of creativity in the Brazilian culture. The first

[1] In Portuguese.

section includes a brief description of the Brazilian culture, and the second section presents two models of creativity developed by Brazilian researchers who are members of the Creative Processes and Giftedness Research Group. The third section reviews studies conducted by members of this research group and discusses their implications. The final section provides guidelines for future cross-cultural studies on creativity.

Brazilian Culture

Brazil is the largest and only Portuguese speaking country in South America. It was colonized by Portugal from 1500 until 1822 when the country became independent. In this regard, Brazilian people has been errouneously considered Hispanic. The Brazilian nation is formed by European immigrants, African slaves and descendants, and natives. It is not, therefore, a homogeneous culture. The Brazilian culture is also marked by a strong influence of the catholic church, which was present since the beginning of the Portuguese colonization. Nowadays, nearly 74% of the inhabitants are catholic. According to Torres and Dessen (2008), Brazilians emphasized conformity and adaptation to social rules, and social hierarchy is accepted. Brazilian people are also characterized by their focus on the collective. Moreover, Torres and Dessen (2008) state that:

> The fact that Brazilians see themselves as members of an in-group, that they accept inequality and differences in status (i.e., social hierarchy), and that they have high income stratification (i.e., ratio of the high and low income), indicates that Brazil as a whole would have a preference for a vertical-collectivist cultural pattern. (p. 8)

Beyond the fact that Brazilian people are group-oriented, they are also able to demonstrate their emotions and can be considered extroverted (Fleith, 1999). With respect to the Brazilian family, it can be described as supportive, protective, and responsible for the maintenance of relationship links. As a consequence, children's independence is not a characteristic encouraged by the culture. Also, as the participation of the women in the workforce increases, the distribution of the domestic tasks between wife and husband are reviewed, leading the husband to perform tasks that were considered traditionally feminine. In addition, especially in the case of low income families, the influence of family members beyond the nuclear unit, such as the grandmother, on educational practices and values adopted by the family is noticed (Dessen & Braz, 2000).

Brazilian Models of Creativity

Creativity has been a topic of interest of Brazilian researchers for almost 40 years. The influence of American creativity studies on Brazilian research is unquestionable. Although the analysis of creativity has indicated similar dimensions across cultures, there are behaviors and procedures that are context-dependent (Kaufman & Sternberg, 2006; Lau, Hui, & Ng, 2004; Lubart, 1999, 2010; Wechsler, 2001). In this regard, Brazilian researchers have developed creativity models based on characteristics of the culture and

results of studies conducted in Brazil.

Alencar (1997b), for example, highlights the importance of intrapersonal and interpersonal factors associated with creativity. Her model of creativity is depicted by a pentagon shape which encompasses the following factors: thinking abilities, personality traits, knowledge and techniques, barriers, and psychological climate. With respect to cognitive abilities, the author mentions divergent thinking abilities such as fluency, flexibility, originality, elaboration, and problem sensitivity. Alencar emphasizes the need of nurturing personality traits associated with creativity such as intrinsic motivation, curiosity, persistence, self-confidence, and tolerance for ambiguity. Also, this author highlights the relevance of knowledge and creative tecnhique acquisition. In order to create, it is necessary that the individual develops domain-relevant skills and creativity-relevant skills. According to Starko (1995), "creative contributions do not spring forth in a vacuum; they are built on the knowledge and efforts of those who have gone before" (p. 114). The fourth ingredient of this model is the reduction of barriers to creativity. The implementation of strategies at school and at workplace to help people to overcome emotional, social, and cultural barriers is essential. The last ingredient calls the attention to the need of a nourishing psychological climate that reflects strong values of support to the creative expression, such as incentive to new ideas, implementation of activities that constitute a permanent invitation to creative actions, valorization of original ideas, and high expectation regarding people's creative potential.

Likewise, Novaes (2001) developed the *Creative Relationship Mediator Model*. Three elements are essential in this model: cognition, language, and action. Cognition, which involves processes of intuition, perception, and definition, identifies and interprets the reality. Language involves the expression and communication of messages, as well as structures and configurates data from the reality. The third element, action, includes intention, option, and decision-making. The person rebuilds and transforms the reality, generating a creative product. According to the author of this model, educational practices should encourage innovation, spontaneity, language enrichment, coherence of educational activities, and tolerance to mistakes. The teacher who acts as a creativity mediator can be characterized by his/her openness to new experiences, adaptative flexibility, self-acceptance and acceptance to his/her students, advanced communication skills, and availability to students.

It is interesting to notice that both Brazilian models of creativity are similar to others described in the American literature (e.g., Amabile, 1996; Csikszentmihalyi, 1996). As expected, the definition of creativity in the Brazilian culture is based on the "western" definition, i.e., creativity as a product-oriented and originality-based phenomenon (Lubart, 1999). Moreover, although creativity is viewed as a positive construct in the Brazilian culture, the researchers have pointed out barriers to the development of creativity. Most of these barriers are consequences of cultural values and traditions disseminated among Brazilian people such as resistance to new ideas, necessity of being practical all the time, consideration of fantasy as a waste of time, fear of taking risks, and passivity.

Brazilian Studies on Creativity

This section presents a brief review of Brazilian studies on creativity. First, studies regarding instrument design are reviewed. Second, research that focused on stimulant and inhibiting factors to the development of creativity is discussed. Third, research related to giftedness and creative talent is presented. Finally, some results of cross-cultural studies are provided.

Instruments Design and Validation

The lack of instruments to assess different facets of creativity, especially in Brazil, has driven researchers from the Creative Processes and Giftedness Research Group to focus on design and validation of creativity measures. Most of instruments aim to examining the classroom climate for creativity at the Elementary grade and university level. For example, Fleith and Alencar (2005) developed an instrument, named *Classroom Climate for Creativity Scale*, to assess the classroom climate with respect to creativity, based on 644 3rd and 4th grade students' perceptions. Evidence of content validity of the instrument was obtained through review of literature and experts' judgment. An exploratory factor analysis was carried out to get evidence on the construct validity and generated five factors: Teacher's Support to Student's Ideas Expression (5 items), Student's Self-Perception on Creativity (4 items), Student's Interest for Learning (6 items), Student's Autonomy (4 items), and Teacher's Incentive to the Production of Student's Ideas (3 items). The reliability coefficients varied from .55 to .73.

The 22 items were written in the affirmative in order to avoid any misunderstanding on the part of young students as recommended by Gable and Wolf (1993). The items were answered in a 5-point scale: (1) never, (2) a few times, (3) sometimes, (4) often (5) always. All five points of the scale were written and plotted using happy faces, but gradually increasing size points[2], once it was noted in the pilot study that students avoided the sad face whether they agreed or disagreed with the contents of the item. Examples of the items are "The teacher pays attention to my ideas", "I think I'm creative", "I learn about things that I really like", "I try to do things in different ways", and "The teacher asks me to think of new ideas". Each factor is scored separatedly by averaging the items comprising each factor.

In another study, Fleith, Almeida and Peixoto (in press) administered the same instrument mentioned before to 504 5th grade students from private and public schools. The students were asked to assess Portuguese Language and Mathematics classes. In Brazil, from this grade level, students go on to have as many teachers as disciplines (Mathematics, Portuguese Language, Sciences, History, Geography etc). In previous grades, there is one teacher responsible for the classroom students. A confirmatory factor analysis was carried out to get evidence on the construct validity and indicated three distinct dimensions: Teacher's Incentive to Creativity (8 items), Student's Self-perception on Creative Characteristics (6 items) and Student's Motivation for Learning (7 items). For

[2] ☺ ☺☺☺ ☺.

both subjects, Portuguese Language and Mathematics, the same factors and items were loaded. The alpha coefficients values varied from .69 to .88. Examples of the items: "My ideas are welcomed", "Work is fun", "The teacher cares about what I have to say", "I can make choices about how to get something done", and "I am encouraged to explore new ways to do things". The 21 items are answered in a 5-point scale from never to always. A score for each factor is obtained by calculating the mean of the items comprising each factor. The findings of this validation study and the other mentioned earlier suggests that factors may change considering the grade level of the respondents. It can be hypothesized that very young students, such as 3rd graders, are not readily able to use reflective thinking and to evaluate classroom climate characteristics with respect to creativity. Better reliability indexes and parsimony concerning the number of factors indicate that the instrument is more appropriate to be answered by 5th grade students.

A second instrument aiming to assess the extent to which creative practices are implemented in the classroom is the *Inventory of Teachers' Practices for Creativity in Higher Education*. Eight hundred and seven university students were asked to assess teachers' practices with respect to creativity (Alencar & Fleith, 2004b). Four factors were extracted: Incentive to New Ideas (14 items), Climate for Expression of Ideas (6 items), Assessment and Teaching Methodology (5 items), and Interest for Student's Learning (12 items). The 37 items are answered on a 5-point scale, ranging from "strongly disagree" to "strongly agree." The internal consistency (alpha) values obtained varied from .72 to .93. Examples of items are: "The instructor encourages the students to examine different aspects of a problem", "Encourages student initiative", "creates an environment of respect and acceptance to students' ideas", "gives students a chance to disagree with their point of views", "makes use of diversified forms of evaluation", "offers important and interesting information regarding the content of the discipline", and "has positive expectations regarding the performance of students". Each factor is scored separatedly by averaging the items comprising each factor.

A new version of this instrument was validated to higher education distance education context by Sathler (2007). The factors generated were: Development of Creative Learning, Climate for Ideas Development and Expression, Stimulating Creative Thinking and Personality, and Content Assessment. The inventory was administered to 122 university students from Business major. The alpha coefficients values varied from .60 to .91. Examples of the items: "The tutor fosters students' independency", "has sense of humor", "fosters students' curiosity", and "asks challenging questions that motivate students to think".

Furthermore, the *Inventory of Teachers' Practices for Creativity in Higher Education* was also administered to 439 professors from public and private universities with the purpose of investigating if the answers provided by professors generate the same factors of the previous study involving university students. An exploratory factor analysis was conducted, providing evidence to the construct's validity. This analysis generated six factors: Incentive to New Ideas, Traditional Teaching Practices, Interest for the Student's Learning, Diversified Teaching Strategies, Atmosphere for the Expression of Ideas, and Personal Attributes Favorable to the Teaching Practice. The alpha coefficients of reliability

were between .55 and .86 (Alencar & Fleith, 2010). To value students' original ideas, to be enthusiastic over the discipline that is taught, to be available to meet students outside the classroom, and to give constructive feedback to students are some examples of the items of the professors' version of the instrument. Due to the low realibility coefficients (most of them below .60), the teacher version of *Inventory of Teachers' Practices for Creativity in Higher Education* needs to be improved.

Another instrument was designed to identify personal barriers to creativity, the *Inventory of Personal Creativity Barriers* (Alencar, 1999). The items were answered by 389 college students using a 5-point scale ranging from (1) strongly disagree to (5) strongly agree. The exploratory data analysis generated four factors: Inhibition/ Shyness (23 items), Lack of Time/ Opportunity (14 items), Social Repression (14 items), and Lack of Motivation (20 items). The alpha coefficients values varied from .85 to .91. Examples of the items: "I would be more creative if…", "I was less shy to expose my ideas", "I had not been afraid to express what I think", "I had more opportunities to put my ideas into practice", "I had more time to develop my ideas", "I had more opportunity to make mistakes without being labeled dumb or stupid", "I had more enthusiasm (reverse item)", and "I was more curious" (reverse item). Likewise the instruments described before, a score for each factor is obtained by calculating the mean of the items comprising each factor.

Most of these instruments were published in Brazil in a book named *Measures of Creativity. Theory and Practice*[3] (Alencar, Bruno-Faria, & Fleith, 2010). The main factor that mobilized the authors to organize the book was the growing demand for permission, by professionals from diverse fields, to use instruments developed by them and cited in their publications. A second factor, mentioned earlier, was the perception of a scarcity of publications in Brazil addressing the measurement of creativity. Although excellent texts related to creativity are already available in the country offering a rich source of information about different elements that are associated with the expression of creativity in different contexts, the question of its measure has not been discussed extensively. Although efforts have been made by Brazilian researchers to make available creativity measurements, still there is a special need to the investment on studies regarding instrument construction and validity in Brazil.

Stimulant and Inhibiting Factors to the Development of Creativity

Most of the recent Brazilian research regarding stimulant and inhibiting factors to creativity was conducted in the educational context, especially at the elementary grade level. It was examined how individual and environmental characteristics, such as gender, learning motivation, study of a second language, birth order, use of computer, type of school (e.g., public or private school), pedagogical methodology (e.g., open, intermediary, or traditional schools), grade level, participation in extra-curricular activities, classroom climate, and teaching experience, were associated with creativity.

With the purpose of examining if creativity climate vary across different grades and

[3] See www.artmed.com.br

schools, Fleith and Alencar (2006) administered the *Classroom Climate for Creativity Scale* (Fleith & Alencar, 2005) to 644 3rd and 4th elementary school students. The findings indicated that 4th grade students evaluated the climate more satisfactorily than 3rd graders. Also students from private schools presented a more positive perception of the classroom climate for creativity when compared to public schools students.

The same study was replicated with 504 5th grade students (Fleith & Alencar, 2010). The classroom climate of two subjects – Portuguese Language and Mathematics –, were assessed by the students. As mentioned int the previous section, the *Classroom Climate for Creativity Scale* was validated for this group age level (Fleith, Almeida & Peixoto, in press). The students had a positive classroom climate perception. Differences were observed for these variables regarding school type. The private school students evaluated the classroom climate for creativity in a more favorable way in comparison to students from public school. The classroom climate for creativity in the discipline of Portuguese language was better evaluated by students when contrasted with the climate of Mathematics.

Differences with respect to creativity level and classroom climate perception among 4th grade students from open, intermediary, and traditional schools were investigated (Matos & Fleith, 2006). The *Torrance Tests of Creative Thinking* (Torrance, 1974, 1990) and the *Classroom Climate for Creativity Scale* (Fleith & Alencar, 2005) were employed. The findings indicated no differences among the groups with respect either to creativity or classroom climate perception. In a research implemented by Pinheiro-Cavalcanti and Fleith (2009), the purpose was to analyze the perception of motivation to learn and classroom creativity climate of 222 5th grade Elementary school students, from public and private schools, considering their academic performance level. The results showed that students from public schools have higher scores on intrinsic motivation to learn as well as a more favorable perception of classroom creativity climate than students from private schools do. Students with high academic performance had higher scores of extrinsic motivation to learn, and also a classroom climate perception more favourable to their autonomy and development of the learning interest.

Also Fleith and Alencar (2008) studied the extent to which individual and environmental characteristics of 239 4th graders, from public and private schools, were associated with creativity. The data was collected through the *Torrance Tests of Creative Thinking* (Torrance, 1974, 1990) and a sociodemographic questionnaire designed for the research. The findings suggested that students from private schools had higher scores on creativity in comparison to students from public schools. Interestingly, students who studied a 2nd language had a better perfomance on the creativity tests when compared to students who did not. On the other hand, no significant differences in creativity were obtained regarding gender, parental occupation, participation in extra-curricular activities, use of computer, and birth order.

A few creativity studies were conducted in the university context. Thy aimed to compare the evaluation of university students and professors with respect to the degree to which different aspects related to creativity had been fostered by the professors (Alencar & Fleith, 2004a). The *Inventory of Teachers' Practices for Creativity in Higher Education*

(Alencar & Fleith, 2004b) was administered to 874 university students and 35 professors. The factors assessed were Incentive to New Ideas, Climate for Expression of Ideas, Evaluation and Teaching Methodology, and Interest for Students' Learning. The scores obtained by university professors in the four factors were higher than their students'scores, indicating that the instructors rated their behaviors as providing significantly more favorable conditions for the nurturing of creativity compared to students' evaluation.

A similar research was conducted by Ribeiro and Fleith (2007) involving 82 university professors and 1,396 students from teaching diploma programs. They answered the *Inventory of Teachers' Practices for Creativity in Higher Education* (Alencar & Fleith, 2004b). The results indicated that the teachers' evaluation on their teaching practices was more favorable than that of the students. The scores obtained by university professors in the four factors were higher than their students'scores. Furthermore, students in advanced semesters evaluated teaching practices in relation to creativity, in the four factors, more positively compared to students from the first semesters. Students from private institutions were more positive in evaluating the factors associated with a classroom climate for creativity than students from public institutions.

With respect to inhibiting factors to creativity, Castro and Fleith (2008) examined differences between 4th elementary grade public and private school teachers of various degrees of teaching experience with respect to personal barriers for creative expression and creativity level. Their students also assessed the classroom climate concerning creativity. The instruments used were the *Inventory of Personal Creativity Barriers* (Alencar, 1999), the *Classroom Climate for Creativity Scale* (Fleith & Alencar, 2005), and the *Torrance Tests of Creative Thinking* (Torrance, 1974, 1990). Lack of time and opportunity was the most mentioned barrier by the teachers regardless type of school and teaching experience. Private school teachers had a higher performance level in figurative and general creativity when compared to teachers from public schools. No differences were noticed between teachers with more and less teaching experience with respect to creativity. Students of the most experienced teachers had a more positive perception of the classroom climate for creativity (in the factors Teacher's Support to Student's Ideas Expression and Student's Interest for Learning) in comparison to students of teachers who had less experience. Furthermore, private school students consider themselves to be more creative (factor Student's Self-Perception on Creativity) when compared to children from public schools.

A checklist including different types of creativity barriers were presented to 1st to 4th grade elementary school teachers from public and private schools (Alencar & Fleith, 2008). They were asked to check the ones that were obstacles to the promotion of favorable conditions to the development of students' creativity. Three hundred and ninety-eight teachers participated in the study. The most mentioned barriers pointed out were the great number of students in the classroom and the presence of students with learning desabilities. A greater number of obstacles was reported by 3rd grade teachers from public schools located in regions where poor income families reside.

In summary, I conclude that factors such as type of school and acquisition of a second language appear to influence creativity development in the educational setting

strongly. Students from private schools have a more positive perception of the classroom climate for creativity, as indicated by many of the studies described above. In Brazil, private schools, in general, offer more teaching and learning conditions such as materials, equipments, and curricular enrichment opportunities when compared to public schools. Moreover, families from middle and high socio-economic backgrounds usually register their children in private schools while students from poor socio-economic backgrounds are enrolled in public schools. Studies concerning the role of the family and socio-economic status on creativity need to be conducted in Brazil. The findings also support the positive relationship between creativity and bilingualism pointed out by the literature (Kessler & Quinn, 1987; Ricciardelli, 1992).

In contrast, pedagogical methodology was not found to influence students' creativity. This result can be explained by the fact that creativity is a topic that has been more discussed and valued in schools nowadays. Furthermore, it is not possible to state *a priori* which methodology is the best. Depending on students' characteristics and needs, one methodology might be more adequate than the others, and, therefore, promote their creativity. No differences were noticed regarding use of computer and creativity. Students who used computer more frequently did not outperform those who used the equipment sometimes or rarely in creativity measures. The question seems to be not the amount of time of computer use, but how it has been used. This is an important topic to be addressed in future studies.

Giftedness and Creative Talent

The Creative Processes and Giftedness Research Group has also examined the role of creativity in giftedness and talent development. Most of the studies are results of master theses or doctoral dissertations guided by members of the research group. Ourofino and Fleith (2005), for example, compared gifted students, hyperactive students and those presenting giftedness/hyperactivity in relation to intelligence, self-concept, and creativity. The data was collected through *Raven's Colored Progressive Matrices* (Angelini, Alves, Custódio, Duarte, & Duarte, 1999), *Self-perception Profile for Children* (Harter, 1985), and the *Torrance Tests of Creative Thinking* (1974, 1990; Wechsler, 2004a, 2004b). The results indicated that the gifted students had a significantly higher performance in relation to the verbal originality aspect, only when compared to the hyperactive students group. Regarding intelligence and self-concept (academic, physical appearance, behavioral conduct, and global self-worth dimensions), the gifted students had a higher score than the other students. In a recent study, Ourofino (2011) examined differences between gifted and gifted underachiever students with respect to creativity, intelligence, motivation to learning, self-concept, academic performance and parental attitudes. The instruments used were the same employed in the previous study besides the *Assessment of Learning Motivation Scale for Elementary School Students* (Neves & Boruchovitch, 2007), *Test of School Performance* (Stein, 1994), and the *Parent Success Indicator* (Strom & Strom, 1998). Gifted students achieved superior results when compared to underachievers in measures of general creativity, verbal creativity, global self-esteem and behavioral

conduct, as well as school performance. On the other hand, gifted underachievers obtained higher scores on extrinsic motivation to learning than gifted students. No significant differences were found between the two groups in relation to parental attitudes.

In another comparative study, Gonçalves and Fleith (in press) examined differences between gifted and non-gifted students in relation to creativity, intelligence, and perception of classroom climate for creativity. *Raven's Colored Progressive Matrices* (Raven, 1956), the *Torrance Tests of Creative Thinking* (1974, 1990; Wechsler, 2004a, 2004b), and *Classroom Climate for Creativity Scale* (Fleith & Alencar, 2005) were administered to the students. The findings indicated significant differences with respect to the creativity (verbal and figural originality dimensions) and Mathematics classroom climate perception. The gifted students presented better scores when compared to the non-gifted students. Also, there was no relationship between intelligence and creativity in either groups.

With the purpose of comparing characteristics of socio-economically disadvantaged families in relation to the development of gifted behavior, Chagas and Fleith (2009) collected data with 28 families, among whom 14 had gifted children and 14 had non-gifted children. The instruments used were *Parent Success Inventory* (Strom & Strom, 1998), the *Test of Creative Thinking – Drawing Production* (Urban & Jellen, 1996), and a questionnaire about individual and family characteristics of the gifted. Parents of gifted students and non-gifted students evaluated the level of communication and parental satisfaction more positively than their children did. The results indicated that the parents of gifted students participated more in the academic lives of their children. The majority of gifted students were boys, who occupied a special family position as the eldest or only child. In addition, no relationship was observed between creativity levels of parents and children. Nevertheless, the evidence showed that gifted students obtained higher performance on creativity tests when compared to non-gifted students. The results highlight the role that the family plays in fostering abilities, talents and interests.

In addition, Prado and Fleith (2010) aimed to identify individual and family characteristics of prominent female researchers in Brazil. The study investigated the researchers' profiles, promoting and inhibiting factors to the development of potential throughout their professional trajectories, as well as family characteristics and the impact of their talent in the family dynamics. The theoretical assumptions of the Model of Talent Realization in Women (Reis, 2005) were adopted. The research occurred in two stages. In the first, 111 top researchers from the National Council for Scientific and Technological Development in Brazil participated in the study. Then, eight researches were selected at random to compose the second stage. Three instruments were selected for the collection of data: a sociodemographic questionnaire, documental analysis and a semi-structured interview. The results indicated the predominance of women researchers in the southeast region of Brazil, in public institutions and in the following areas: Humanities, Biological Sciences and Health Sciences. As for personal characteristics, the most frequent ones were pleasure in the accomplishment of tasks and dedication. This study verified that dedication to the professional career is superior to the devotion of participant's in the personal, family, and social areas. The excess of work demand, the structure and conditions for the accomplishment of Brazilian scientific work were pointed out by

researchers as inhibiting factors. The existence of conflicts to conciliate career and family life were frequently pointed as a result of gender stereotypes presence, both in the division of domestic tasks, as well as the existence of prejudice in the professional environment. The impact of participant's talent and professional success was positive in relation to children, but negative in the marital subsystem.

Our results suggest that creativity is a variable that cannot be neglected in studies on giftedness and talent development. However, creativity cannot be considered isolated. It must be examined in conjunction with other internal and environmental factors (e.g., self-concept, motivation, learning conditions etc). Furthermore, as pointed out by many scholars (Gardner, 1993; Feldhusen, 1986; Renzulli, 1978, 2002; Sternberg, 1986), creativity is a key component in outstanding achievement, and, therefore, must be included in the identification process of gifted students.

Cross-Cultural Studies on Creativity

An effort among Brazilian researchers to implement studies that investigate differences on creativity among cultures, in partnership with scholars from another countries, has been noticed. Fleith, Renzulli and Westberg (2002) investigated the effects of a creativity training program on creative abilities and self-concept in elementary monolingual (American students) and bilingual (Brazilian immigrants students) classrooms. The creativity training program, *New Directions in Creativity* (Renzulli, 1986), slightly improved the creative abilities of students in the treatment group. However, placement in monolingual or bilingual classrooms was not found to affect students' creative abilities nor self-concept. Moreover, the qualitative analysis suggested that a supportive and encouraging classroom climate in which the creativity training program was implemented was an essential factor in the success of the program and that the creativity training program had a positive impact on the self-concept of less academically able students from both monolingual and bilingual classrooms.

Obstacles to the expression of personal creativity were examined among 290 educators from Brazil, Cuba, and Portugal, by Alencar and Martínez (1998). The participants were requested to complete the following sentence: "I would be more creative if ….". Responses were analyzed through content analysis. While Brazilian and Portuguese educators indicated more frequently internal obstacles, Cuban educators pointed out social barriers. It was noticed that the fear of making mistakes, failure, and criticism were the most mentioned personal obstacles by Brazilian and Portuguese professionals. On the other hand, the most common obstacle mentioned by Cubans was the educators' insufficient ability of observation, analysis, and reflection. Lack of time was the social barrier most mentioned by the three groups of participants.

In a cross-cultural study conducted by Alencar, Fleith, and Martínez (2003), personal obstacles to creativity between 385 Brazilian and 305 Mexican University students were investigated. The *Obstacles to Personal Creativity Inventory*, designed and validated by the first author, was administered to these students. Significant differences were observed between Brazilian and Mexican students in the cluster of obstacles named Lack of

Motivation. In this regard, Mexican students obtained higher scores compared to Brazilian students. Significant differences were also noticed between male and female students in the cluster of obstacles named Inhibition/Shyness. The mean of female students was higher than male students' mean on this factor. Differences between Mexicans and Brazilians were not found with respect to factors Lack of Time/Opportunity and Social Repression.

The findings of the studies reported earlier suggested that creativity may be fostered or hindered by cultural characteristics such as socialization process, beliefs, values, and traditions. Moreover, the socioeconomic status and historical roots of a nation can also influence on the development of the creative expression.

Future Directions for Cross-cultural Studies on Creativity

Since creativity cannot be understood by isolating individuals from their context, to investigate the creative expression within and across cultures is imperative. In this regard, the following suggestions concerning theoretical and methodological aspects should be considered in future cross-cultural studies on creativity:

a) to analyze creativity in a culture with raters or norms from that culture, rather than using norms from one culture to assess creativity in another culture (Lubart, 1999);
b) to find out the psychological meanings and variations present in other cultures, avoiding cultural deficit or deprivation theories (Hunsaker & Frasier, 1999);
c) to use both qualitative and quantitative procedures to collect data to broad the researcher's perspective of the phenomenon;
d) to study the emergence of creativity in different sub-cultures within the same nation;
e) to examine the impact of multicultural societies on creative production;
f) to investigate the relationship between creativity and human development processes;
g) to study the impact of values, beliefs, and traditions on women's creative performance in different cultures;
h) to analyze the degree to which creativity is expressed in special populations across cultures;
i) to create a world network to allow research findings on creativity accessible to wider audiences.

The analysis and understanding of the emergence of creativity in different social and cultural contexts can create conditions that will maximize opportunities for the development of creative talents in several domains around the world. In this regard, advances can be noticed with respect to Brazilian studies on creativity. It is our hope that this area of investigation continues fascinating researchers everywhere, including Brazil.

References

Alencar, E. M. L. S. (1975). Efeitos de um programa de criatividade em alunos de 4ª. e 5ª.

séries [Effects of a creativity program on fourth and fifth grade students]. *Arquivos Brasileiros de Psicologia, 27,* 3-15.

Alencar, E. M. L. S. (1995). Developing creative abilities at the university level. *European Journal for High Ability, 6,* 82-90.

Alencar, E. M. L. S. (1997a). Personality traits of Brazilian creative scientists. *Gifted and Talented International, 13,* 14-18.

Alencar, E. M. L. S. (1997b). *A gerência da criatividade* [Managing creativity]. São Paulo, Brazil: Makron Books.

Alencar, E. M. L. S. (1999). Barreiras à criatividade pessoal: Desenvolvimento de um instrumento de medida [Obstacles to personal creativity: The development of a measurement instrument]. *Psicologia Escolar e Educacional, 3,* 123-132.

Alencar, E. M. L. S., & Fleith, D. S. (2004a). Creativity in university courses: Perceptions of professors and students. *Gifted and Talented International, 19*, 24-28.

Alencar, E. M. L. S., & Fleith, D. S. (2004b). Inventário de práticas docentes que favorecem a criatividade no ensino superior [Inventory of teaching practices that favour creativity in Higher Education]. *Psicologia: Reflexão e Crítica, 17,* 105-110.

Alencar, E. M. L. S., & Fleith, D. S. (2007). Escala de Práticas Pedagógicas para a Criatividade no Ensino Fundamental [Scale of Pedagogical Practices for Creativity in Elementary school years]. *Interação em Psicologia, 11,* 231-239.

Alencar, E. M. L. S., & Fleith, D. S. (2008). Barreiras à promoção da criatividade no Ensino Fundamental [Obstacles to the creativity in the Elementary school years]. *Psicologia: Teoria e Pesquisa, 24,* 59-66.

Alencar, E. M. L. S., & Fleith, D. S. (2010). Escala de Práticas Docentes para a Criatividade na Educação Superior [Scale of Teachers' Practices for Creativity in Higher Education]. *Avaliação Psicológica*, *9*, 13-24.

Alencar, E. M. L. S., Bruno-Faria, M. F., & Fleith, D. S. (Eds.). (2010). *Medidas de criatividade. Teoria e Prática* [Measures of creativity. Theory and practice]. Porto Alegre, Brazil: Artmed.

Alencar, E. M. L. S., Fleith, D. S., & Martínez, A. M. (2003). Obstacles to personal creativity between Brazilian and Mexican university students. *The Journal of Creative Behavior, 37,* 179-192.

Alencar, E. M. L. S., Fleith, D. S., Shimabukuro, L., & Nobre, M. A. (1987). Efeitos de um programa de treinamento de criatividade para professores do ensino de primeiro grau nas habilidades de pensamento criativo do aluno [Effects of a creativity training program for elementary school teachers on their students' creative thinking abilities]. *Interamerican Journal of Psychology, 21,* 56-71.

Alencar, E. M. L. S., & Martínez, A. M. (1998). Barreiras à expressão da criatividade entre profissionais brasileiros, cubanos e portugueses [Obstacles to the expression of creativity among Brazilian, Cuban and Portuguese educators]. *Psicologia Escolar e Educacional, 2,* 23-32.

Alencar, E. M. L. S., Neves-Pereira, M. S., Ribeiro, S., & Brandão, S. N. (1998). Personality trais of Brazilian creative scientists. *Gifted and Talented International, 13,* 14-18.

Amabile, T. A. (1996). *Creativity in context.* Boulder, CO: Westview Press.

Angelini, A. L., Alves, I. C. B., Custódio, E. M., Duarte, W. F. & Duarte, J. L. M. (1999). *Manual Matrizes Progressivas Coloridas de Raven. Escala Especial* [*Raven's Colored Progressive Matrices. Special scale*]. São Paulo, Brazil: Centro Editor de Testes e Pesquisas em Psicologia.

Castro, J. S. R., & Fleith, D. S. (2008). Criatividade escolar: relação entre tempo de experiência docente e tipo de escola [School creativity: Relationship between teaching experience years and type of school]. *Psicologia Escolar e Educacional, 12,* 101-118.

Chagas, J. F., & Fleith, D. S. (2009). Estudo comparativo sobre superdotação com famílias em situação socioeconômica desfavorecida **[**Comparative study on giftedness with socio-economically disadvantaged families]. *Revista Brasileira de Educação Especial, 15,* 155-170.

Csikszentmihalyi, M. (1996). *Creativity.* New York: HarperCollins.

Dessen, M. A., & Braz, M. P. (2000). Rede social de apoio durante transições familiars decorrentes de nascimento de filhos [Social support network during family transitions to parenthood]. *Psicologia: Teoria e Pesquisa, 16*, 221-231.

Feldhusen, J. F. (1986). A conception of giftedness. In R. J. Sternberg & J. E. Davidson (Eds.), *Conception of giftedness* (pp. 112-126). New York: Cambridge University Press.

Fleith, D. S. (1999). *The effects of a creativity training program on creative abilities and self-concept in monolingual and bilingual elementary classrooms.* Unpublished doctoral dissertation. University of Connecticut, Storrs.

Fleith, D. S., & Alencar, E. M. L. S. (2005). Escala sobre o clima para criatividade em sala de aula [Classroom Climate for Creativity Scale]. *Psicologia: Teoria e Pesquisa, 21,* 85-91.

Fleith, D. S., & Alencar, E. M. L. S. (2006). Percepção de alunos do ensino fundamental quanto ao clima de sala de aula para criatividade [Perception of Elementary school students about the classroom climate for creativity]. *Psicologia em Estudo, 11,* 513 - 521.

Fleith, D. S., & Alencar, E. M. L. S. (2008). Características personológicas e fatores ambientais relacionados à criatividade do aluno do Ensino Fundamental [Personological characteristics and enviromental factors related to creativity of Elementary school students]. *Avaliação Psicológica, 7,* 35-44.

Fleith, D. S., & Alencar, E. M. L. S. (2011). *Autoconceito e clima de sala de aula para criatividade na percepção de alunos de 5ª. série do ensino fundamental* [Self-concept and classroom climate for creativity according to 5th grade students]. Manuscript submitted for publication.

Fleith, D. S., Almeida, L. S., & Peixoto, F. J. B. (in press). Estudo de validação da Escala Clima para Criatividade em Sala de Aula [Validity study of the Classroom Climate for Creativity Scale]. *Estudos de Psicologia.*

Fleith, D. S., Renzulli, J. S., & Westberg, K. L. (2002). Effects of a creativity training program on divergent thinking abilities and self-concept in monolingual and bilingual

classrooms. *Creativity Research Journal, 14,* 373-386.

Gable, R. K., & Wolf, M. B. (1993). *Instrument development in the affective domain* (2nd ed.). Boston, MA: Kluwer Academic.

Gardner, H. (1993). *Creating minds.* New York: BasicBooks.

Gonçalves, F. C., & Fleith, D. S. (in press). Estudo comparativo entre alunos superdotados e não-superdotados em relação à inteligência e criatividade [Comparative study between gifted and non-gifted students]. *Psico.*

Harter, S. (1985). *Manual for the Self-perception Profile for Children.* Unpublished manuscript. University of Denver, CO.

Hunsaker, S. L., & Frasier, M. M. (1999). Perspectives in studying creativity and cultural diversity. In A. S. Fishkin, B. Cramond, & P. Olszewski-Kubilius (Eds.), *Investigating creativity in youth* (pp. 203-214). Cresskill, NJ: Hampton Press.

Kaufman, J. C. & Sternberg, R. J. (Eds.). (2010). *The Cambridge handbook of creativity*. New York: Cambridge University Press.

Kessler, C., & Quinn, M. E. (1987). Language minority children's linguistic and cognitive creativity. *Journal of Multilingual and Multicultural Development, 8,* 173-186.

Lau, S., Hui, A. N. N., & Ng, G. Y. C. (Eds.). (2004). *Creativity. When East meets West.* Singapore: World Scientific.

Lubart, T. I. (1999). Creativity across cultures. In R. J. Sternberg (Ed.), *Handbook of creativity* (pp. 339-350). New York: Cambridge University Press.

Lubart, T. I. (2010). Cross-cultural perspectives on creativity. In J. C. Kaufman & R. J. Sternberg (Eds.), *The Cambridge handbook of creativity* (pp. 265-278). New York: Cambridge University Press.

Matos, D. R., & Fleith, D. S. (2006). Criatividade e clima criativo entre alunos de escolas abertas, intermediárias e tradicionais [Creativity and creative climate among students from open, intermediary and traditional schools]. *Psicologia Escolar e Educacional, 10,* 109-120.

Neves, E. R. C. & Boruchovitch, E. (2007). Escala de Avaliação da Motivação para Aprender de Alunos do Ensino Fundamental (EMA) [Assessment of Learning Motivation Scale for Elementary School Students]. *Psicologia: Reflexão e Crítica, 20,* 406-413.

Novaes, M. H. (2001). Modelos interpretativos da criatividade e alternativas de atuação psicossocioeducativa [Interpretative models of creativity and psychological, social, and educational alternatives of intervention]. In Z. A. Prette (Ed.), *Psicologia Escolar e Educacional* (pp. 75-86). Campinas, Brazil: Alinea.

Ourofino, V. T. T. A. (2011). *Superdotados e superdotados underachievers: um estudo comparativo das características pessoais, familiares e escolares* [Gifted and underachiever: A comparative study of personal, family and school characteristics]. Unpublished doctoral dissertation. Universidade de Brasília, Brasília, Brasil.

Ourofino, V. T. T., & Fleith, D. S. (2005). Um estudo comparativo sobre a dupla excepcionalidade: superdotação/hiperatividade [A comparative study about double excepcionality: giftedness/ADHD]. *Avaliação Psicológica, 4,* 165-182.

Pinheiro-Cavalcanti, M. M., & Fleith, D. S. (2009). Motivação para aprender, clima de sala

de aula para criatividade e desempenho escolar de alunos do Ensino Fundamental [Motivation to learn, classroom climate for creativity and school performance of Elementary school students]. *Sobredotação, 10,* 117-130.

Prado, R. M., & Fleith, D. S. (2010). *O talento feminino: características individuais e familiares de pesquisadoras de destaque no Brasil* [The female talent: Individual and family characteristics of prominent researchers in Brazil]. Unpublished manuscript. University of Brasília, Brazil.

Raina, M. K. (1993). Ethnocentric confines in creativity research. In S. G. Isaksen, M. C. Murdock, R. L. Firestien, & D. J. Treffinger (Eds.), *Understanding and recognizing creativity: The emergence of a discipline* (pp. 435-453). Norwood, NJ: Ablex.

Renzulli, J. S. (1978). What makes giftedness? Reexamining a definition. *Phi Delta Kappan, 60,* 180-184, 261.

Renzulli, J. S. (1986). *New directions in creativity.* Mansfield Center, CT: Creative Learning Press.

Renzulli, J. S. (2002). Expanding the concept of giftedness to include co-cognitive traits and to promote social capital. *Phi Delta Kappan, 84,* 57-58.

Ribeiro, R. A., & Fleith, D. S. (2007). O estímulo à criatividade em cursos de licenciatura [The enhancement of creativity in teaching courses]. *Paideia, 17,* 403-416.

Ricciardelli, L. A. (1992). Creativity and bilingualism. *The Journal of Creative Behavior, 26,* 242-254.

Rudowicz, E. (2003). Creativity and culture: A two-way interaction. *Scandinavian Journal of Educational Research, 47,* 273-290.

Sathler, T. C. (2007). *Desenvolvimento da criatividade na educação a distância segundo a percepção de universitários* [Creative development in distance education according to university students perception]. Unpublished master's thesis. Universidade de Brasília, Brasília, Brasil.

Sathler, T. C., & Fleith, D. S. (in press). Estímulos e barreiras à criatividade na educação a distância [Stimulants and obstacles to creativity in distance education]. *Estudos de Psicologia.*

Simonton, D. K. (1994). *Greatness.* New York: The Guilford Press.

Starko, A. J. (1995). *Creativity in the classroom.* White Plains, NY: Longman.

Stein, L. M. (1994). *TDE: teste de desempenho escolar*. *Manual para aplicação e interpretação [TDE: Test of School Performance: Manual for administration and interpretation].* São Paulo, Brazil: Casa do Psicólogo.

Sternberg, R.J. (1986). A triarchic theory of intellectual giftedness. In R. J. Sternberg & J. E. Davidson (Eds.), *Conception of giftedness* (pp. 223-243). New York: Cambridge University Press.

Strom, R., & Strom, S. (1998). *Parent Success Indicator Manual.* Bensenville, IL: Scholastic Testing Service.

Torrance, E. P. (1974). *Torrance Tests of Creative Thinking. Technical-norms manual* (2nd ed.). Bensenville, IL: Scholastic Testing Service.

Torrance, E. P. (1990). *Torrance Tests of Creative Thinking.* Bensenville, IL: Scholastic Testing Service.

Torres, C. V., & Dessen, M. A. (2008). Brazilian culture, family, and its ethnic-cultural variety. *Arizona Journal of Hispanic Cultural Studies, 12,* 41-62.

Urban, K. K., & Jellen, H. G. (1996). *Test for Creative Thinking – Drawing Production manual.* Frankfurt a.M., Germany: Swets Test Services.

Wechsler, S. M. (2001). Criatividade na cultura brasileira: Uma década de estudos [Creativity in the Brazilian culture: A decade of studies]. *Teoria, Investigação e Prática, 6,* 215-226.

Wechsler, S. M. (2004a). *Avaliação da criatividade por palavras. Teste de Torrance. Versão brasileira* (2nd ed.) [Creativity assessment through words. Torrance's test. Brazilian version]. Campinas, Brazil: LAMP/PUC Campinas.

Wechsler, S. M. (2004b). *Avaliação da criatividade por figuras. Teste de Torrance. Versão brasileira* (2nd ed.) [Creativity assessment through figures. Torrance's test. Brazilian version]. Campinas, Brazil: LAMP/PUC Campinas.

Questions

1. Is creativity an universal phenomenon?
2. Is the development of creativity culture dependent?
3. What cultural factors may influence on the development of creativity?
4. What components should integrate a theoretical model of creativity?
5. What is the importance of cross-cultural studies on creativity?
6. How are creativity and ethics related?

Denise de Souza Fleith, Ph.D., is a psychologist and an associate professor at the Institute of Psychology, University of Brasília in Brazil. She received her doctoral degree from the University of Connecticut in gifted and talented education. She is the author of books and articles on creativity and giftedness. Her research interests include creativity, gifted education, instrument development, and teacher training. She is also a delegate of Brazil to the World Council for Gifted and Talented Children and associate editor of the Brazilian journal Psicologia: Teoria e Pesquisa [Psychology: Theory and Research].
E-mail: fleith@unb.br
Web page (in Portuguese): http://www.ucb.br/textos/2/687/TalentoCriativo/?slT=8
Vitae (in Portuguese): http://lattes.cnpq.br/1547796890753678

Correspondence concerning this article should be addressed to the author at Instituto de Psicologia, Universidade de Brasília, 70.910-900 Brasília, DF, Brazil, or by email to fleith@unb.br