

The Relationships of Problem Solving Styles to Parenting Styles: Two Studies

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Two independent studies were conducted to examine the relationship of problem solving styles to parenting styles. Both studies used VIEW: An Assessment of Problem Solving Style and the Parental Authority Questionnaire (PAQ). Study 1 included 173 adults recruited using Mechanical Turk and Study 2 included 131 adults recruited using Qualtrics. Data were analyzed with stepwise hierarchical multiple linear regression. After controlling for age and gender, individuals who recalled and rated their mothers' parenting styles as more permissive were also those adults who rated their problem solving styles as more Explorer-type, preferring to work with fewer restrictions and preferring more novel responses to problems. Other findings across the two studies were suggestive of additional theoretical relationships among problem solving and parenting styles.

Since the beginning of the "Space Age" reforms in education have emphasized two themes. The first has been that society needs more critical and creative thinkers to better adapt to change and solve the increasingly complex and far-reaching problems of the modern world (A Nation at Risk, 1983; National Governors Association, 2008; Partnership for 21st Century Schools, 2007; United Nations Committee on Trade and Development and the UNDP Special Unit for South-South Cooperation, 2008). The second theme has emphasized that learners of all ages develop and use different thinking styles, and that educators need to understand styles and use them if instruction is to be more successful (Jonassen & Grabowski, 1993; Sternberg, 2000; Zhang, 2006, 2008; Zhang & Sternberg, 2006).

The focus of the two studies reported below was to examine early life factors that might presage the development of the kinds of creative and problem-solving thinking styles in demand for the 21st Century. A common methodology for this purpose has been to study parenting styles, a well-established field of research (Bornstein, 2002; Maccoby, 2001). Parenting styles have been shown to influence children's psychosocial development and identity formation, problem behavior, school achievement, and numerous other cognitive abilities (Spera, 2005, 2006; Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994; Enright, Lapsley, Drivas, & Fehr, 1980).

Problem Solving Style

Among a number of well-identified and researched thinking, learning, and even creativity styles (Jonassen & Grabowski, 1993; Sternberg, 2000) problem solving style has been the only construct responding to both of the themes identified above. Defined, problem solving styles are "consistent individual differences in the ways people prefer to plan and carry out generating and focusing activities, in order to gain clarity, produce ideas, and prepare for action" (Treffinger, Selby, Isaksen, & Crumel, 2007, p.1). Problem solving style differs from what have often been termed learning styles because the latter have typically focused on what sensory inputs learners prefer when they must deal with well-constructed, known, typically "right and wrong" types of information prepared and presented for learners in K-12 curricula.

In contrast, the range of generating and focusing activities of problem solving style go beyond sensory inputs. They are part of a theory-driven and research-supported model for explaining and developing the kinds of skills and "tools" to respond to poorly constructed and ambiguous types of information for which there are rarely very clear "right or wrong" solutions

(Isaksen, & Dorval, 1993; Treffinger, Selby & Isaksen, 2008; Treffinger, Selby, Isaksen, & Crumel, 2007). This is the kind of information presenting itself to individuals in the 21st Century.

Problem solving style has been shown to relate to both cognitive and affective individual developmental differences, including such important outcomes as academic achievement, learning and teaching preferences, motivation, and even career development (See an extensive compilation in Treffinger, Isaksen, & Selby, 2014). Selby, Treffinger, Isaksen, and Lauer (2004) have identified six individual styles arrayed along three dimensions of problem solving style, termed Orientation to Change, Manner of Processing, and Ways of Deciding.

Orientation to Change (OC)

The Orientation to Change (OC) dimension is defined as “preference for responding to and managing structure, novelty, and authority when dealing with change or solving problems” (Treffinger, Selby, Isaksen, & Crumel, 2007, p. 5). Two styles anchor the Orientation to Change dimension: Explorers and Developers. Explorers prefer to discover new directions and less conventional ways to respond to challenges. They tend to pursue more unique options. Explorers see structure and supervision as a limitations, preferring to make up their own rules. In contrast, Developers prefer clearer situations. They are more comfortable with rules and traditional structures. They may be described as more practical, careful, and methodical. They like plans and details.

Manner of Processing (MP)

The Manner of Processing (MP) dimension has been defined as “how you use your own inner energy and resources, and that of others, when managing change or solving problems” (Treffinger, Selby, Isaksen, & Crumel, 2007, p. 5). Externals

appear to share ideas easily and draw energy from interpersonal interaction whereas Internals appear at first more reserved. They require time to organize and reflect upon one's own thoughts before engaging with others.

Ways of Deciding (WD)

The Ways of Deciding (WD) is “your preference for task concerns or personal and interpersonal needs when focusing your thinking and moving toward decisions and action” (Treffinger, Selby, Isaksen & Crumel, 2007, p. 5). Individuals with a Person-oriented style are concerned with the impact of one choice over another on individuals who might be affected. They value agreement and harmony that may maintain positive interpersonal relationships once decisions are made. On the other hand, individuals with a Task-oriented style focus more on what is rational, sensible, or logical. To Task-orientated individuals, standards and quality are more important when making decisions. Those with a Task style may search for what is wrong, what the facts are, what is the best solution. Those with a Person style may search for the good and pleasing aspect of options and seek plans that everyone can buy into.

Parenting Styles

Parenting styles are defined as a “constellation of attitudes ... communicated to the child... that create an emotional climate in which the parent’s behaviors are expressed “ (Darling & Steinberg, 1993, p. 488). Among the greatest contributors to the field has been Baumrind (1971, 1973, 1989, 1991). Baumrind’s (1971) description of distinct parenting styles includes authoritarian, authoritative, permissive, and a rejecting-neglecting style. These styles are based largely on levels of parental control over their children's lives and behaviors.

The Authoritarian Style

Authoritarian parents have a strict approach to child rearing. These parents demand obedience and structure as well as a respect for authority, order, and work. The children are expected to follow their parents' orders without questioning the authority or having a conflicting opinion. Parents do not provide any reasoning for their rules. Children's feelings and opinions are not considered as children must accept the parents' words and commands as right. Since authoritarian parents do not foster conversation or independent thinking, they can be emotionally detached from their children even though they are providing their basic needs (Baumrind, 1971, 1973).

The Authoritative Style

Authoritative parents have a moderate and rational approach to child rearing. These parents are flexible and look at each issue on an individual basis instead of making decisions based on the children's desires, a predetermined expectation, or group consensus. These parents share reasoning with their children to explain actions and regulations instead of just issuing commands. When their expectations are not met, authoritative parents are more nurturing and forgiving than relying on punitive measures. They are warm, caring, supportive, and receptive to their children's perspectives but will, at times, be firm and in control. Authoritative parents recognize and foster individual interests of children and will use reason, power, encouragement, and positive reinforcement. The children have a balance of freedom and responsibility (Baumrind, 1971, 1973).

The Permissive Style

Permissive or non-conforming parents have a laissez-faire approach to child rearing. They are lenient, supportive, and accepting of their children's actions and wishes. Children are not

expected nor encouraged to conform to standards set by society or a higher authority. Permissive parents provide little or no structure as the children can regulate their own activities and live freely when possible. Their independence and individuality are encouraged. Permissive parents do not believe in controlling or punishing their children nor do they demand children take responsibility in the home or behave in an orderly manner. Instead of using power to control children, permissive parents consult with their children in making decisions and provide explanations when there are family rules. In comparison to authoritarian and authoritative parents, permissive parents may seem more like their children's friend than the parent (Baumrind, 1971, 1973).

Purpose and Hypotheses of the Research

Based on theory and descriptions of the parenting and problem solving styles above, Neyen (2016) and Volpe (2016) were able to test the following hypotheses from data collected in their respective doctoral dissertations.

1. That a more Authoritative and/or Permissive parenting style would be predictive of a more Explorer problem solving style.
2. That a more Authoritative and/or Permissive parenting style would be predictive of a more External and/or Person-oriented style.
3. That a more Authoritarian parenting style would be predictive of a more Developer, Internal, and/or Task-oriented problem solving style.

Method Participants

Study 1

Two-hundred thirty-five adults were recruited by Amazon Mechanical Turk, a private data collection service. Sixty-two individuals did not complete all surveys. Of the 173 participants with complete data, 91 indicated male gender, 86 indicated female. Ages ranged from 18 to 75, with a mean age of 35.10 ($SD = 10.94$). No data were gathered about race, ethnic background, education, or other demographic characteristics.

Study 2

Two-hundred ten undergraduate and graduate students were recruited via Qualtrics, another private data collection service. Seventy-nine individuals did not complete all surveys. Of the 131 participants with complete survey data, there were 65 who indicated male and 66 who indicated female. Ages ranged from 18 to 25 with a mean age of 22.30 years ($SD = .20$). Some ethnic identification and educational background data were gathered. Caucasian ($n = 85$), African/American ($n = 28$), and Hispanic ($n = 11$) were the majority ethnic backgrounds indicated. There were 82 who indicated Freshman through Senior undergraduate years, 25 who indicated graduate school; the rest left that item blank.

Instruments Used in Both Studies

VIEW: An Assessment of Problem Solving Style

VIEW: An Assessment of Problem Solving Style measures problem solving style across three dimensions: Orientation to Change (the Explorer or Developer style), Manner of Processing (External or Internal style), and Ways of Deciding (People or Task style) (Selby, Treffinger, Isaksen, & Laurer, 2004; Treffinger, Selby, Isaksen, & Crumel, 2007). It was designed to help people identify their own personal problem-solving

preferences and how these preferences can be used constructively in situations that require dealing with change and making decisions. The instrument contains 34 items on a 7-point Likert-type scale. Each item poses two descriptive statements anchoring each end of the scale. Individuals are asked to mark their preference closer to one end of the scale or the other. A middle-scale mark would suggest no clear preference.

Orientation to Change scores range from 18 to 126 with a hypothetical mean of 72. Lower scores indicate an Explorer style and higher scorers are Developers. Manner of Processing scores range from 8 to 56 with a hypothetical mean of 32. Low scores on this dimension indicate an External style and high scorers are deemed Internals. Ways of Deciding scores also range from 8 to 56 with a hypothetical mean of 32. Low scores indicate a People-oriented style and high scores indicate a Task-oriented style.

There is extensive evidence in support of the internal consistency and test-retest reliability of VIEW (high 70's to high 80's). There also is construct and criterion validity support from exploratory and confirmatory factor analyses and correlations with other measures of personality, style, and creativity (Treffinger, Isaksen, & Selby, 2014). VIEW has been reviewed for Buros' Mental Measurements Yearbooks (Schraw, 2007; Staal, 2007).

Parental Authority Questionnaire (PAQ).

The PAQ measures each parent's disciplinary practices and authority from the child's perspective using Baumrind's classification (Buri, 1991). The instrument consists of 30 items on a 5-point-Likert-type scale. Individuals complete 30 items for both mother and father. The six scores include Mother Authoritarianism, Father Authoritarianism, Mother Authoritativeness, Father Authoritativeness, Mother Permissiveness, Father Permissiveness. Higher scores indicate

greater perceived levels of the parenting style being measured. Extensive reliability and validity for the PAQ have also been demonstrated (Reitman, Rhode, Hupp, & Altobello, 2002).

Procedures Used in Each Study

Study 1 (Volpe, 2016)

Individuals who were participating on Mechanical Turk were given a link to an invitation to the study consisting of a general information and research purpose statement and consent document to indicate their willingness continue. Those who agreed were then linked to the Parental Authority Questionnaire (PAQ). Upon completing the PAQ, participants then were linked to the VIEW assessment website to complete VIEW. Participants were instructed to create and use a unique identifier consisting of letters and/or numbers so that both instruments could be correctly matched without personal names.

Study 2 (Neyen, 2016)

Identical procedures were used by Dr. Neyen, with the exception that participants were recruited using the data collection program Qualtrics. Prospective participants were provided with an on-line link developed by the Qualtrics website. The opening page of the link contained an informed consent document with a description of the study's purpose and procedures, asking participants to click a button stating that they agree to participate. If the participant agreed, he or she was directed to a second page containing instructions for providing demographic information. Individual participants' responses were matched via embedded identification codes created by participants, themselves. Participants' personal names were not used. Table 1 presents the descriptive statistics for participants in Study 1 and Study 2.

Results of Both Studies

To test the ability of parenting styles to predict problem solving style, a series of hierarchical linear multiple regression analyses were computed. In each study, gender and age of participants were entered first in each analysis. Entered in the second step were individuals' ratings of their mothers' and fathers' parenting styles (Permissive, Authoritarian, or Authoritative). The dependent variables were always the problem-solving styles (Orientation to Change, Manner of Processing, or Ways of Deciding). In all, six regression analyses were computed in each study.

Tables 1 and 2 present descriptive statistics and reliabilities of each study's VIEW and PAQ scores. Pearson intercorrelations between parenting and problem-solving styles for Study 1 and Study 2 are presented in Table 3. Also computed (but not shown) were intercorrelations among the parenting style measures, themselves, and the intercorrelations among the three VIEW dimensions, themselves. Multicollinearity between the six parenting style ratings was extensive in both studies, as participants' ratings of mothers' and fathers' parenting styles were significantly correlated in almost every case. For Study 1, the absolute value of these correlations ranged from .147 ($p < .05$) to .445 ($p < .01$). For Study 2, the absolute value of the correlations ranged from .165 ($p < .05$) to .558 ($p < .01$). We say "absolute value" because without exception, participants' ratings of the Authoritarian style were negatively significantly correlated with Permissive and Authoritative styles. As for VIEW styles, the Orientation to Change and Ways of Deciding dimensions did correlate significantly with each other in both Study 1 ($r = .378, p < .01$) and Study 2 ($r = .249, p < .01$).

Table 1. Descriptive Statistics for Problem Solving Styles and Parenting Styles for Study 1

Variable	N	M	SD	SE	Min	Max	Reliability
Orientation to Change	173	78.445	17.834	1.318	34	126	.914
Manner of Processing	173	36.867	11.098	.793	8	56	.893
Ways of Deciding	173	37.139	9.092	.678	10	56	.855
Father Permissive	173	25.029	8.184	.614	10	45	.829
Father Authoritarian	173	33.058	8.621	.640	13	50	.866
Father Authoritative	173	31.000	9.319	.697	10	50	.882
Mother Permissive	173	26.324	8.210	.596	10	48	.831
Mother Authoritarian	173	32.416	8.660	.615	10	50	.865
Mother Authoritative	173	32.983	9.031	.646	10	50	.880

Table 2. Descriptive Statistics for Problem Solving Styles and Parenting Styles for Study 2

Variable	N	M	SD	SE	Min	Max	Reliability
Orientation to Change	131	77.282	15.845	1.384	36	123	.888
Manner of Processing	131	34.496	9.439	.843	11	56	.866
Ways of Deciding	131	35.298	9.001	.787	9	56	.854
Father Permissiveness	131	27.542	7.291	.654	11	46	.835
Mother Permissiveness	131	25.817	7.370	.661	10	45	.794
Father Authoritativeness	131	32.664	8.460	.768	10	49	.672
Mother Authoritativeness	131	34.809	7.668	.709	14	50	.594
Father Authoritarianism	131	35.183	7.976	.715	10	50	.807
Mother Authoritarianism	131	35.420	7.177	.591	18	50	.629

Table 3. Pearson Intercorrelations between Parenting and Problem Solving Styles

Study 1	OC	MP	WD	Study 2	OC	MO	WD
Father Permissive	-.135	-.126	-.114	Father Permissive	-.113	-.148	-.161
Mother Permissive	-.223**	-.071	-.165*	Mother Permissive	-.075	-.144	-.284**
Father Authoritative	.004	-.159*	-.105	Father Authoritative	.009	-.245**	-.155
Mother Authoritative	-.031	-.055	-.043	Mother Authoritative	-.064	-.164	-.148
Father Authoritarian	.164*	.035	.011	Father Authoritarian	.111	.155	.161
Mother Authoritarian	.228**	-.032	.072	Mother Authoritarian	.049	.129	.224**

* $p < .05$; ** $p < .01$

Note: OC is Orientation to Change (Higher score on OC is Developer); MP is Manner of Processing (Higher score on MP is Internal); WD is Ways of Deciding (Higher score on WD is Task-oriented)

Table 4 presents the results of the significant multiple regression analyses predicting Orientation to Change from Mothers' Permissiveness ratings. The results are similar, with the negative regression weights signifying that as mothers' permissiveness was increasing, participants were exhibiting a more Explorer problem solving style. In both analyses, gender also was a significant predictor in the first step of the regression, accounting for the first three percent of the variance in Orientation to Change in both studies. Thus, Mother Permissiveness added another approximately 2 to 5 percent of variance to the prediction.

Table 4. Significant Multiple Regression Analyses for Study 1 and Study 2 Predicting Orientation to Change from Mothers' Permissiveness

	Study 1	Study 2
B	-.464	-.472
Standard Error B	.178	.160
<i>Beta</i>	-.222	-.217
95% Confidence Interval	-.817 to -.111	-.788 to -.155
(B>		
<i>F</i>	5.698 (p<.01	7.245 (p < .01)
<i>R</i>	.286	.280
<i>R</i> ²	.049	.079

Table 5 presents the results of the significant multiple regression analyses predicting Manner of Processing from Father Authoritativeness. In both studies the negative regression weights signify that as fathers' Authoritativeness was increasing, participants were exhibiting a more External problem-solving style. Regression analyses for Ways of Deciding were significant and similar to those predicting Orientation to Change from Mothers' Permissiveness due to collinearity with the OC dimension mentioned above and are not included.

Table 5. Significant Multiple Regression Analyses for Study 1 and Study 2 Predicting Manner of Processing from Fathers' Authoritativeness

	Study 1	Study 2
Mother's Permissiveness		
B	-.263	-.181
Standard Error B	.092	.090
<i>Beta</i>	-.245	-.152
95% Confidence Interval (B)	-.445 to -.082	4.051 ($p < .05$)
<i>F</i>	8.236 ($p < .01$)	4.051 ($p < .05$)
<i>R</i>	.245	.152
<i>R</i> ²	.060	.023

Additional Results

In both studies there were a relatively large number of participants who did not complete all of the instruments. Simple *t*-test comparisons on age and gender between the complete responders and those with incomplete data in Study 1 or Study 2 were computed but no significant differences were observed.

It must also be mentioned that there were other variables included in the respective dissertations of Drs. Volpe and Neyen. In the Neyen dissertation, sex role identity was investigated along with parenting styles and in the Volpe dissertation it was birth order that was the additional variable. Sex role and birth order were both variables theorized to play a part in the family climate created by parenting styles and contributing to the development of problem solving styles. While there were numerous interesting correlations among these variables, their entry into regression analyses did not alter the significance of Permissive style as predictor of an Explorer problem solving style.

Separate regressions by gender were also computed but the relationship of mother's permissive style to problem solving style remained significant. Regressions also were computed using mothers' and fathers' parenting styles separately rather than together, and these analyses revealed no relationships more consistent than the mother Permissiveness reported above.

Discussion

There is partial support for the hypotheses guiding these studies. For Hypotheses 1 and 2, mothers' permissiveness was a significant predictor of an Explorer style and father's authoritativeness was a significant predictor of an External problem-solving style. But no prediction was significant related to the authoritarian parenting style. At best, the generally negative correlations between the permissive and authoritative styles and the authoritarian style on the PAQ may suggest some support for Hypothesis 3 and continued construct validity of the PAQ, itself.

We argue, however, that the significance of the results of Study 1 and Study 2 derives from the consistency across two participant samples recruited from two different sources and differing substantially in average age. The results are correlational and direct causality cannot be inferred, but the finding that ratings of parental permissiveness predict an Explorer and External problem-solving style have a basis in theory. The characteristics of permissiveness and preferences of an Explorer style described by VIEW researchers overlap reasonably. Individuals who grew up in a home where rule-obedience was not a prime characteristic, where parents allowed more freedom in their children's behavior, where less structure was provided, for examples, appear to have rated their own preferences in responding to change and challenges with less need for clarity, with more interest in following their own inclinations, even ignoring given boundaries and restrictions, and seeking different or novel approaches.

As for the External problem-solving style, recall that authoritative parenting is characterized by more parent-child interaction of a positive nature that is supportive of questioning and use of reasoning and explanation. Parent-child interaction of this kind is inviting and welcoming, never punitive. There is less reason for the child to develop a reluctance to share ideas or hold inward one's thoughts. Engaging with others and deriving enjoyment from the openness of interactions becomes a natural experience, and thus a more External style preference when confronted with questions and challenges.

The authoritative style that has been regarded in the general literature as the style associated with the most positive outcomes was not a significant predictor of problem solving style, but its ratings and those of the permissive style were positively correlated and both were negatively related to ratings of the authoritarian style. From a conceptual viewpoint, one may argue that the permissive style might be the more "extreme" style compared to authoritativeness and, thus, easier for individuals to identify via the questions on retrospective surveys. Consequently, the variability of Permissiveness ratings may be more likely to overlap the variance of problem solving style should there be, in fact, a truly significant relationship between the two.

The link between permissiveness and an Explorer style is also consistent with the broader literature on the characteristics of environments that appear to support the development of creativity and creative problem solving (Hennessy & Amabile, 2010; Houtz, 1990; Sternberg & Lubart, 1995). The central quality of a creative environment is "freedom." Environments at work or in classrooms that support creative thinking allow children and adults to explore alternatives and experiment with new combinations. They have some degree of control in the selection of what problems to work on and are not afraid that a failure will result in punishment. As mentioned earlier, Baumrind's development of parental style constructs drew considerably on the issue of "control;" that is, the degree to which parents controlled their children's lives or allowed children to gain and experience control over their own lives.

Limitations and Future Research

Limitations of this study are important. Besides the correlational, non-causal nature of the statistical analyses, the data gathered and analyzed are self-report and, in the case of the PAQ, retrospective and requiring participants to consider their parents' behaviors from years earlier. In addition, only age and gender of participants were controlled. One can hypothesize that a number of other variables, including education and socioeconomic level of the parents, racial, ethnic and cultural backgrounds, and even

geographic region might influence the type of parenting style and climate in the home as an individual grows up.

Research using true experimental designs is needed, especially if causal links to the development of problem solving styles are to be established and validated. Numerous reviews and critics of “style” research (Kozhevnikov, Evans & Kosslyn, 2014; Pashler, McDaniel, Rohrer, & Bjork, 2009; Peterson, Rayner, & Armstrong, 2009) have pointed out the lack of evidence for the effectiveness of learning style and instructional style “matches.” Therefore, if problem solving style is to become an important construct and its research is to lead to substantive educational reforms of any kind, we must advocate for the type of research that style critics, themselves, call for and will accept.

The two studies reported above also did not include Baumrind's fourth category of Rejecting-Neglectful style (Baumrind, 1971; Spera, 2005). The PAQ did not yield a score for this style. Other instruments for future studies might include such a measure to try to establish a distinction between the Permissive and Neglectful styles.

Implications of the Research

Despite the limitations noted above, there are implications of the research for educators and others committed to the goal of building critical and creative thinkers. The first is the idea that thinking skill development need not wait for the school years. If, in fact, parenting and thinking styles are connected, whether in a causal way or by other intervening or moderating factors, we might look to our parent education and early childhood policies and programs as ways to promote our thinking skills goal. Second, with our continuing focus on improving overall school achievement and “best methods” to teach needed skills in K-12 schools, the specific link between permissiveness and more open and critical thinking should suggest to curriculum designers and teacher-trainers that more effective methods might involve greater participation and autonomy by students, themselves, in the planning, conduct, and even assessment of instruction.

Conclusion

Despite its limitations, what might reasonably be concluded from the research reported above is the need for continued research into the qualities and characteristics of growing, living and working environments that are associated with creativity and creative problem solving. Should additional research support similar or stronger links between parenting styles and problem solving style, surely parent education programs may be improved and better arguments can be made and directions offered for broader reforms to educational practices that prepare individuals to meet the increasing challenges of modern life.

References

- A nation at risk: The imperative for educational reform* (1983). Washington, DC: President's Commission on Excellence in Education.
- Baumrind, D. (1971). Current patterns of parental authority. *Developmental Psychology*, 4, 1-103. doi:10.1037/h0030372
- Baumrind, D. (1973). The development of instrumental competence through socialization. In A. D. Pick (Ed.), *Minnesota Symposia on Child Psychology*, 7 (pp. 3-46). Minneapolis, MN: University of Minnesota Press.
- Baumrind, D. (1989). Rearing competent children. In Damon, W. (Ed.), *Child development today and tomorrow* (pp. 349-378). San Francisco, CA: Jossey-Bass, Inc.
- Baumrind, D. (1991). Parenting styles and adolescent development. In J. Brooks-Gunn, R. Lerner, & A. C. Petersen (Eds.), *The encyclopedia of adolescence* (pp. 746-758). New York, NY: Garland.
- Bornstein, M. H. (Ed.) (2002). *Handbook of parenting, Volume 1: Children and parenting* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum.
- Buri, J. R. (1991). Parental authority questionnaire. *Journal of Personality Assessment*, 57, 110-119.
- Darling, N. & Steinberg, L. (1993). Parenting style as context: An integrative model, *Psychological Bulletin*, 113(3) 487-496. doi: 10.1037/0033-2909.113.3.487

- Enright, R. D., Lapsley, D. K., Drivas, A. E., & Fehr, L. A. (1980). Parental influences on the development of adolescent autonomy and identity. *Journal of Youth and Adolescence*, 9, 529-545. doi:10.1007/BF02089889
- Hennessey, B., & Amabile, T. (2010). Creativity. *Annual Review of Psychology*, 61, 569-598.
- Houtz, J. C. (1990). Environments supportive of creative thinking. In C. Hedley, J. Houtz, & A. Baratta (Eds.). *Cognition, curriculum, and learning* (pp. 61-76). Norwood, NJ: Ablex.
- Isaksen, S. G., & Dorval, K. B. (1993). Toward an improved understanding of creativity within people: The level-style distinction. In S. G. Isaksen, M. C. Murdock, R. L. Firestein, and D. J. Treffinger (Eds.), *Understanding and recognizing creativity: The emergence of a discipline*. (pp. 299-330). Norwood, NJ: Ablex.
- Isaksen, S. G., Kaufmann, A. H. and Bakken, B. T. (2016). An examination of the personality constructs underlying dimensions of creative problem-solving style. *The Journal of Creative Behavior*. 50, 268-281. doi: 10.1002/jocb.75
- Jonassen, D. H., & Grabowski, B. L. (1993). *Handbook of individual differences, learning, and instruction*. Hillsdale, NJ: Erlbaum.
- Kozhevnikov, M., Evans, C., & Kosslyn, S. M. (2014). Cognitive styles as environmentally sensitive individual differences in cognition: A modern synthesis and applications in education, business, and management. *Psychological Science in the Public Interest*, 15(1), 3-33.
- Maccoby, E. E. (2001). Parenting and its effects on children: On reading and misreading behavior genetics. *The Science of Mental Health: Personality and Personality Disorder*, 51, 201-228.
- National Governors Association, Council of Chief State School Officers, and Achieve, Inc. (2008). *Benchmarking for success: Ensuring US students receive a world-class education*. Retrieved from www.Nga.org/Files/pdf/0812BENCHMARKING.PDF.
- Neyen, J. (2016). *Correlates of problem solving styles: The impact of parenting styles and sex typing*. (Unpublished doctoral

- dissertation). Fordham University, New York City, New York.
- Pashler, H., McDaniel, M., Rohrer, D., & Bjork, R. (2009). Learning styles: Concepts and evidence. *Psychological Science in the Public Interest*, 9, 105-119.
- Partnership for 21st Century Schools (2007). *Beyond the three Rs: Voter attitudes toward 21st Century skills*. Public Opinion Strategies and Peter D. Hart Research Associates. Tucson, AZ. Retrieved from www.p21.org/storage/documents/p21_pollreport_singlepg.pdf.
- Peterson, E. R., Rayner, S. G., & Armstrong, S. J. (2009). Researching the psychology of cognitive style and learning style: Is there really a future? *Learning and Individual Differences*, 19, 518-523.
- Reitman, D., Rhode, P. C., Hupp, S. D. A., & Altobello, C. (2002). Development and validation of the Parental Authority Questionnaire. *Journal of Psychopathology and Behavioral Assessment*, 24, 119-127.
- Schraw, G. (2007). Review of VIEW: An Assessment of Problem Solving Style. In K. F. Geisinger, R. A. Spies, J. F. Carlson, & B. S. Plake (Eds.). *The seventeenth mental measurements yearbook* (pp. 832-833). Lincoln, NE: Buros' Institute of Mental Measurements, University of Nebraska.
- Selby, E. C., Treffinger, D. J., Isaksen, S. G., & Lauer, K. J. (2004). Defining and assessing problem-solving style: Design and development of a new tool. *Journal of Creative Behavior*, 38, 221-243.
- Spera, C. (2005). A review of the relationship among parenting practices, parenting styles, and adolescent school achievement. *Educational Psychology Review*, 17, 125-146. doi: 10.1007/s10648-005-3950-1
- Staal, M. A. (2007). Review of VIEW: An Assessment of Problem Solving Style. In K. F. Geisinger, R. A. Spies, J. F. Carlson, & B. S. Plake (Eds.). *The seventeenth mental measurements yearbook* (pp. 832-833). Lincoln, NE: Buros' Institute of Mental Measurements, University of

Nebraska.

- Spera, C. (2006). Adolescents' perceptions of parental goals, practices, and styles in relation to their motivation and achievement. *The Journal of Early Adolescence*, 26, 456-490. doi: 10.1177/0272431606291940
- Steinberg, L. Lamborn, S. D., Darling, N., Mounts, N. S., & Dornbusch, S. M. (1994). Over-time changes in adjustment and competence among adolescents from authoritative, authoritarian, indulgent, and neglectful families. *Child Development*, 65, 754-770. doi: 10.2307/1131416
- Sternberg, R. J. (2000). *Thinking styles*. New York, NY: Cambridge University Press.
- Sternberg, R. J., & Lubart, T. I. (1995). *Defying the crowd: Cultivating creativity in a culture of conformity*. New York: The Free Press.
- Treffinger, D. J., Isaksen, S. G., & Dorval, K. B. (2006). *Creative problem solving: An introduction* (3rd ed.). Sarasota, FL: Center for Creative Learning, Inc.
- Treffinger, D. J., Isaksen, S. I., & Selby, E. C. (2014). *Evidence supporting VIEW*. Orchard Park, NY: Creative Problem Solving Group, Inc.
- Treffinger, D. J., Selby, E. C., Isaksen, S. G., & Crumel, J. H. (2007). *An introduction to problem-solving style*. Sarasota, FL: Center for Creative Learning, Inc.
- Treffinger, D.J., Selby, E.C., & Isaksen, S.G. (2008). Understanding individual problem-solving style: A key to learning and applying creative problem solving. *Learning and Individual Differences*, 18, 390-401.
- United Nations Committee on Trade and Development and the UNDP Special Unit for South-South Cooperation (2008). *Creative economy report 2008*. New York: United Nations.
- Volpe, C. (2016). *The relationship of parenting styles and birth order to problem solving styles*. (Unpublished doctoral dissertation). Fordham University, New York City, New York.
- Zhang, L. (2006). Does student-teacher thinking style match/mismatch matter in students' achievement? *Educational Psychology*, 26, 395-409.

- Zhang, L. (2008). Preferences for teaching styles matter in academic achievement: Scientific and practical implications. *Educational Psychology, 28*, 615-625.
- Zhang, L., & Sternberg, R. J. (2006). *The nature of intellectual styles*. Mahwah, NJ: Erlbaum.