CLEARINGHOUSE
FOR MILITARY FAMILY READINESS

Critical Thinking and Decision Making in Positive Youth Development:

Rapid Literature Review

Clearinghouse Technical Assistance Team

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Executive Summary

This report was conducted in response to a request from CYFAR (Children, Youth, and Families at Risk) with the University of Minnesota in partnership with Penn State University. These findings address research related to short and long-term outcomes obtained through both decision making (DM) and critical thinking (CT) components in positive youth development programs.

Adolescence as a developmental period is marked by a number of physical, developmental and emotional changes. Positive youth development programs seek to ensure that youth thrive into adulthood and to protect them from succumbing to risk factors during adolescence (e.g., substance abuse, unplanned pregnancies, school delinquency). Two competencies that are addressed in PYD programming are critical thinking and decision making skills, both of which promote positive outcomes in youth and reduce problematic behaviors.

This report provides:

- Definitions of key terms;
- Critical thinking and decision making in positive youth development;
- List of studies associated with decision making and critical thinking; and
- Online Resources.

Please note that this rapid review provides a preliminary examination of the research on outcomes related to critical thinking and decision making; however, it is not intended to serve as a comprehensive review of the literature.

Introduction

The Technical Assistance team at the Clearinghouse for Military Readiness at Penn State (Clearinghouse) conducted a brief, rapid review of the literature on the topic of positive youth development including components of critical thinking and decision making with a focus on research promoting positive outcomes and resiliency in youth and adults.

Research examining the impact of decision making and critical thinking in adolescents were identified by searching peer reviewed journal articles with an emphasis on research published between 2000 and 2019. Search queries included various combinations of the terms *positive youth development, youth development programs, critical thinking, decision making, executive function[ing], cognition, positive outcomes,* and *risk factors,* and *adolescents.*

Defining Key Terms

Critical Thinking (CT)

Critical thinking is defined as "the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, or communication, as a guide to belief and action" (Paul, 1993, page 22). Critical thinking involves using a set of cognitive skills or strategies to consider various solutions to problems. One makes judgements on a course of action or what to believe and then pursues a final course of action through making a decision (Halper, 1999).

Decision Making (DM)

Linked to the process of critical thinking, decision-making involves weighing potential rewards and consequences (Balogh, Mayes, & Potenza, 2013). Poor decision making may occur with a lack of understanding about factors within one's control or understanding about the decision itself, a confused or underdeveloped understanding of one's personal values, a lack of information in order to weigh assumptions, or the impact of a time constraint (i.e., real or perceived as being real) (Taylor, 2018).

Critical Thinking and Decision Making in Positive Youth Development

In the past few decades, programming aimed towards developing youth has shifted in focus from eliminating the deficits youth face to an approach focused on promoting youths' strengths and assets, a framework referred to as positive youth development (PYD) (Roth & Brooks-Gunn, 2003). Connected to theories of human development, PYD concurrently promotes positive outcomes in youth while reducing adolescent risk behaviors (Ciocanel, Power, Eriksen, & Gillings, 2017).

Five Cs

One well-supported framework in the literature on PYD conceptualizes adolescent development using the "Five Cs:" Competence, Confidence, Connection, Character, and Caring (Lerner, Fisher, & Weinberg, 2000; Pittman, Irby, Tolman, Yohalem, & Ferber, 2003). For the purposes of this review, the construct of competence is of particular interest given its connection to decision making and critical thinking skills.

Competence includes possessing positive perceptions of one's choices and actions in various areas including social, academic, cognitive, health, and vocational realms and is a vital part of PYD programs (Eccles & Gootman, 2002; Lerner et al., 2005). More specifically, cognitive competence encompasses elements of both decision-making and critical thinking. Programming including activities which promote the 5 C's show promise in guiding youth towards better outcomes (e.g., employment, educational attainment, healthy relationships) (Lerner & Lerner, 2013). In the context of programming, this provides further support for the inclusion of components which

promote critical thinking and decision-making as key outcomes of effective evidence-informed PYD programs (Benson, Scales, Hamilton, & Sesma, 2006; Lerner, 2005).

Framework of Developmental Assets

Beyond the 5C's, decision-making and critical thinking are skills highlighted in other frameworks of promising PYD programming as well. For example, the Framework of Developmental Assets for youth ages 12 to 18 presents a list of 40 age appropriate adolescent skill strengths that when applied in youth programming prevent high-risk youth behaviors such as dropping out of school or unplanned pregnancies and increase resilience and positive outcomes (Benson et al., 2006). Of the list of assets in the framework, half include internal social-emotional assets such as skills, competencies and values, including developing both decision-making and critical thinking skills.

Resilience and PYD

The constructs of decision-making and critical thinking also appear in the research literature on resiliency. In studies of youth who succeed in spite of challenges (resiliency research), youth who have a consistent relationship with caring adult(s), high expectations, and opportunities to actively participate in their personal growth and development are more likely to overcome life obstacles (Masten, 2001). While outcomes for children and adolescents who have faced trauma and other challenges can be dire, resiliency demonstrates that the same youth who face very difficult challenges or threats to their overall well-being can still achieve positive outcomes and be successful in life (Masten, 2001).

The question of what ingredients are needed to foster resiliency has been the focus of varied research studies (Taylor, 2018; Fergus & Zimmerman, 2005). Resilient children and youth have a unique skill set that sets them apart from other children who do not fare as well in overcoming life challenges. Resilient children have been found to have strong cognitive skills: children can think critically and problem solve well (Pittman et al., 2003). Adolescents who can think deliberatively about what course of action to take are less likely to engage in problematic behaviors such as getting drunk, engaging in risky sex, and using drugs (Balogh et al., 2013; Wolff & Crockett, 2011).

Studies Associated with Decision Making and Critical Thinking

The following 8 studies relate to the relationship between outcomes and risk factors in youth, PYD Programming, and decision-making and critical thinking. It is important to note that the studies vary by research focus, design, and methodology, with some using a less rigorous design and methodology. Further investigation on the strength of the research design as well as a more comprehensive review of the literature is recommended before generalizing the results of the studies. They provide an overview of current themes and trends within the literature around the topic of interest and are provided to inform future investigation.

Study	Population	Decision-Making (DM) and Critical Thinking (CT) Components	Positive Outcomes (Desirable)	Risk Factors	Reference and Notes
Study: ***The Impact of Enhancing Students' Social and Emotional Learning: A Meta-analysis of School-Based Universal Interventions*** Summary: Meta-analysis of 213 school-based, universal social and emotional learning (SEL) programs involving 270,034 students. The study found that SEL promoted increases in positive outcomes, and risk factors decreased.	Grades K-12 students	Social-emotional Learning (SEL) Programs target social-emotional skill performance, which includes social-cognitive and affective competencies such as emotions recognition, stress-management, empathy, problem solving, or DM skills.	• **Social-emotional skills** (i.e., identifying emotions using social cues, goal setting, perspective taking, conflict resolution, and decision making) • **Attitudes toward self and others** • **Academic performance** • **Social behaviors** (i.e., getting along with others)	• **Conduct problems** (i.e., bullying, school delinquency, aggression) • **Internalized mental health issues** (i.e., depression, anxiety, stress, social withdrawal)	Durlak, Weissberg, Dymnicki, Taylor, & Schellinger (2011) Within the study, the largest effect size occurred for social-emotional skill performance, including problem solving and decision-making skills.
Study: ***The Role of Deliberative Decision Making, Parenting, and Friends in Adolescent Risk Behaviors*** Summary: The study examined the link between deliberative decision making and risky behaviors in 7,748 adolescents. The study also examined the relationship social contexts have on decision making (i.e., friends, and the influence of parents). Data from the National Longitudinal Study of Adolescent Health (Add Health) was analyzed. In general, as DM increased, risk factors decreased; however parents and friends did impact quality of DM and participation in risky behaviors.	Adolescents (50% female) in Grades 7–11 from the Add Health dataset (M age = 14.87, SD = 1.54)	Deliberative DM is the focus of the study which is described as "thinking through various aspects of a decision. (p. 1608). This article further lists a five-step process to decision making as proposed by decision theory.	N/A	• **Substance use** • **Delinquency** • **Unprotected sex**	Wolff & Crockett, (2011) Youth from single-parent homes were excluded from the survey, which particularly impacted the representation of African American youth in the sample. Further study would be merited to explore the effects of race and family structure. Used a 4-item Likert scale on the DM process based on Beyth-Marom & Fischoff (1997)

Study	Population	Decision-Making (DM) and Critical Thinking (CT) Components	Positive Outcomes (Desirable)	Risk Factors	Reference and Notes
The Relationship of Resiliency to Decision Making and Risk Behaviors of Cancer-Surviving Adolescents Summary: A correlational study of 52 teenage cancer survivors from upstate NY. Low resiliency and decision making were found to be highly significant predictors of one or more risk behaviors.	Cancer Survivors (ages 14-19)	The study explored decision making, cognitive functioning and resiliency and risky behavior (substance use). The degree to which a person adhered to 7 quality DM criteria during consequential decision making was assessed: 1. Searches for three or more choices; 2. Considers desired values and goals; 3. Weighs the pros and cons of consequences; 4. Seeks out more information about the pros and cons, when needed; 5. Thinks about new information and what experts say, even if this conflicts with the first choice; 6. Reviews choices carefully before making a final choice; 7. Forms detailed plans including backup plans.		• **Smoking** • **Alcohol use** • **Illicit drug use**	Hollen, Hobbie, Finley, & Hiebert (2001) Study results are limited by a small sample size. Used the *Decision Making Quality Scale (DMQS),* a 7 item Likert-type rating scale to assess DM (Hollen, 1994)

Study	Population	Decision-Making (DM) and Critical Thinking (CT) Components	Positive Outcomes (Desirable)	Risk Factors	Reference and Notes
Study: ***Culturally Grounded Substance Use prevention: An Evaluation of the Keepin' it REAL Curriculum*** Summary: An evaluation of the keepin' it REAL curriculum which targets substance use among urban middle-school students at 35 schools. An increase, over time, in alcohol, tobacco, and marijuana use was found for control and treatment groups. However, at 2- and 14-months post program implementation, the increase in alcohol use was less for the treatment group. A smaller increase in tobacco use was found for the treatment group at 8-months post implementation, but this was not sustained at 14 months.	12 to 14 year old middle school students: 3,318 Mexican or Mexican American students (47% female), 1,141 students of other Latino or multiethnic Latino origin (e.g., Mexican and White, Mexican and American Indian; 50% female), 1,049 non-Hispanic White students (48% female), and 527 African American students (44% female)	keepin' it REAL (kiR), a school-based, substance abuse prevention program for youth 12-14 years old, is designed to teach students to evaluate dangers, develop resistance skills, and think critically about drug use by learning to apply the REAL acronym (i.e., refuse, explain, avoid, leave) when in a situation that involves drugs.		• **Substance use** (i.e., alcohol, cigarettes, marijuana)	Hecht et al. (2003). Program placed as Promising on the Clearinghouse Continuum of Evidence.

Study	Population	Decision-Making (DM) and Critical Thinking (CT) Components	Positive Outcomes (Desirable)	Risk Factors	Reference and Notes
Study: ***Effects of 2 Prevention Programs on High-Risk Behaviors among African American Youth: A Randomized Trial*** Summary: A randomized, longitudinal study conducted in 12 Chicago schools implementing the Aban Aya Youth Project, a multi-sector program designed to prevent or reduce risky behavior in youth. The study compared two versions of the intervention (i.e., one that included community and family involvement and one that did not) and a control condition that provided only basic healthy living and hygiene information. Boys who participated in either of the intervention conditions showed reduced violent, provoking, and sexual behavior; reduced substance use and school delinquency; and increased condom use compared to the control group. This study also found that boys who participated in the intervention condition that included community and family involvement had significantly less school delinquency than boys who participated in the intervention condition that did not include community and family involvement. There was no significant difference between the two intervention conditions on violence, provoking violence, sexual behavior, or condom use.	African American students in grades 5-8	Aban Aya teaches cognitive-behavioral skills to build self-esteem and empathy, manage stress and anxiety, develop interpersonal relationships, resist peer pressure, and develop decision-making, problem-solving, conflict-resolution, and goal-setting skills and emphasizes practical application of skills.		• **Violence** • **Aggressive behavior** • **Delinquency** • **Sexual activity** • **Substance use**	Flay et al. (2004) Program placed as Promising on the Clearinghouse Continuum of Evidence. This study also included girls but did not find any significant effects of either intervention condition on girls' outcomes.

Study	Population	Decision-Making (DM) and Critical Thinking (CT) Components	Positive Outcomes (Desirable)	Risk Factors	Reference and Notes
Study: ***Measuring Life Skills: Standardizing the Assessment of Youth Development Indicators*** Summary: Literature reviews were conducted for 10 life skill domains to identify common definitions and, if available, appropriate outcome measures. Data from an ethnically diverse sample of 758 elementary, middle, and high school aged youth for the 10 identified instruments were collected.	4th grade and older youth who were signed up for a school district sponsored after-school program in an urban setting	The 10 life skill areas examined include communication, community volunteering, critical thinking, decision making, leadership, problem solving, responsible citizenship, self-esteem, self-responsibility, and teamwork.	• **Life skills** • Note: In this study, the authors point out that there is a lack of consensus in the research around which life skill domains should be included in PYD.	N/A	Duerden, Witt, Fernandez, Bryant, & Theriault (2012) Critical Thinking in Everyday Life Scale (CTEL; Perkins & Mincemoyer, 2002) was chosen to assess Critical Thinking and The Making Decisions in Everyday Life Scale (Mincemoyer & Perkins, 2003) to assess decision making.
Study: ***Decision Making and Perceived Postdetention Success among Incarcerated Youth*** Summary: This cross-sectional study analyzes data from a 2001 survey administered to youth in two Nevada youth detention facilities. Youth with higher levels of decision-making competence scored higher on a post-detention success scale, suggesting youth with better decision making skills may have a greater likelihood to succeed after being released from detention.	197 male and female detainees from two different facilities, Las Vegas and another in a rural area outside of the city	Authors study the connection between decision-making skills and detainees' perception of their potential success once released after incarceration.	• **Post-detention success** (i.e., involvement in prosocial activities, conflict resolution skills, avoiding substance use, etc.)	• **Recidivism**	Evans, Brown, & Killian, (2002) A scale to measure decision-making was created for this study, with items based on the competencies of generating options, considering consequences, evaluating decisions" and decision-making efficacy.

Study	Population	Decision-Making (DM) and Critical Thinking (CT) Components	Positive Outcomes (Desirable)	Risk Factors	Reference and Notes
Study: ***Report of the Findings from the First Seven Years of the 4-H Study of Positive Youth Development*** Summary: 4-H Study of Positive Youth Development is a longitudinal study that began in 2002 and was repeated annually for eight years. The study began with fifth graders during the 2002-2003 school year (Wave 1) and ended with twelfth graders (Wave 8) in 2010. 4-H is a community based, out-of-school time youth development program. Results indicated that higher scores on PYD were associated with lower risk and problem behaviors (e.g., external behaviors such as bullying and substance abuse and internal behaviors such as depression). Greater intentional self-regulation (ISR) (i.e., including DM and CT), hope, and PYD decreases adolescent risk and problem behaviors within and across grade levels.	5th through 12th grade students	One of the key constructs measured in the study is intentional self-regulation, which is part of both DM and CT. Intentional self-regulation can be described as "how people make choices, plan actions to reach their goals, and regulate the execution of their actions (Gestsdóttir & Lerner, 2007 p. 508). Self-regulation is viewed as critical to overall human functioning and is foundational to PYD.	• **Civic engagement** • **Academic Competence** (i.e., school performance) • **School Engagement** • **Health-related behaviors** (i.e., sleep habits, seeking professional health and oral care, wearing a seat belt, etc.)	• **Substance use** (e.g., cigarettes, alcohol, marijuana, or other drug use) • **Delinquent behaviors** (e.g., theft, fighting, vandalism, etc.) • **Depression**	Lerner & Lerner (2013) Selection, Optimization, and Compensation (SOC) questionnaire (Freund & Baltes, 2002) to measure intentional self-regulation

Online Resources

The following 4 resources were identified to provide information on how to connect positive outcomes of PYD programs to determining the return on investment (ROI) for the programs and initiatives of PYD.

Social Impact Research Center
The Value of the Nonprofit Youth Development Field in Illinois

- Explores the impact of youth development for the state of Illinois. The main chapter, Determining Value, walks through the steps of the youth development Social Return on Investment (SROI) analysis process. SROI compares the investment made into youth development initiatives with the social and economic value it creates for the youth and families who experience the programs and for society as a whole. Additional information on methodologies, data sources, and figures are provided for reference in the appendices.
- http://buildingstrongeril.com/wp-content/uploads/DFROI_YD_Report_Together.pdf

Teammates Mentoring
Analyzing the Social Return on Investment in Youth Mentoring Programs

- Presents a framework for quantifying the value of the benefits of youth mentoring programs and comparing them to program costs in order to calculate the social return-on-investment (SROI) for mentoring programs for youth.
- https://teammates.org/wp-content/uploads/2016/05/Analyzing-the-Social-Return-on-Investment-for-Youth-Mentoring.pdf

USAID's YouthPower Learning
Positive Youth Development Measurement Toolkit: A Practical Guide for Implementers of Youth Programs

- Provides implementers of youth programming a variety of references, resources, and tools on how to use a positive youth development (PYD) approach for evaluating youth-focused programming. The guide offers assistance from the beginning with program design all the way through to dissemination of and learning from findings.
- https://www.icrw.org/wp-content/uploads/2017/02/PYD-Measurement-Toolkit-Final.pdf

Youth.gov
Positive Youth Development

- Presents research on the effectiveness of PYD programs and offers resource guides including a toolkit for evaluation and a number of other resources. The Interagency Working Group on Youth Programs also created a national research agenda for youth development initiatives that can be accessed on this website.

- https://youth.gov/youth-topics/effectiveness-positive-youth-development-programs

Conclusion

Decision making and critical thinking components of youth development programs have been linked to positive outcomes and decreased risk factors for children and youth. Continued research on DM and CT, particularly rigorously designed research, demonstrating outcomes into adulthood, remains an opportunity for further study. However, based upon the body of research conducted to-date, both DM and CT hold promise in affecting positive outcomes in children and adolescents as they move into adulthood.

Suggested Citation

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