Evaluating Common Measures 2.0 in 4-H: Intra- and Interpersonal Skills Predict Engaged Citizenship

Abstract

Research indicates that positive youth development (PYD) programming leads to improved developmental outcomes. Yet there continues to be a lack of clarity about how PYD programs are defined and measured. Therefore, Common Measures 2.0 was created for assessing 4-H youth development programs. We examined the universal skills (intrapersonal and interpersonal) and engaged citizenship scales of Common Measures 2.0 through a survey of 175 participants at a 4-H youth leadership conference. Intrapersonal and interpersonal skills were significantly positively associated with engaged citizenship. The universal skills and engaged citizenship scales showed acceptable factor loadings and Cronbach's alpha values. Limitations and future directions are discussed.

Keywords: positive youth development, Common Measures, 4-H, program evaluation

Shane A. Kavanaugh
Postdoctoral Research Associate

Brenda S. Allen
4-H Youth Development Program Specialist

Iowa State University

An early review of the literature by Roth et al. (1998) showed that there was no single definition of what constitutes a positive youth development (PYD) program. At that time, Roth et al. (1998) proposed the following definition: "Youth development programs are developmentally appropriate programs designed to prepare adolescents for productive adulthood by providing opportunities and supports to help them gain the competencies and knowledge needed to meet the increasing challenges they will face as they mature" (p. 427). Twenty years later, the PYD field has progressed but still lacks a clear definition or agreed on characteristics of an effective youth development program (Lerner et al., 2012; Roth & Brooks-Gunn, 2016; Walker et al., 2011). In 2016, Roth and Brooks-Gunn acknowledged the great strides made in operationalizing the core elements of PYD programs but recommended that those in the field continue to strengthen design and evaluation of programs using theory-driven and evidence-based frameworks and that they consider using the same metric across evaluations for a more evidence-based practice. We follow this recommendation by examining the utility of Common Measures 2.0 in assessing PYD outcomes from a statewide 4-H youth conference in Iowa. As the largest PYD program in the United States, 4-H reaches nearly 6 million youths through Cooperative Extension programs affiliated with over 100 public universities across the country (National 4-H Council, 2018b). The 4-H organization is in a position to be a leader in defining PYD and determining best practices.

Catalano et al. (2004) analyzed 150 PYD program evaluations and identified the need for standardized measures of PYD outcomes. Historically, the targeting life skills model (Hendricks, 1998) has been used as a

measure of PYD in 4-H programming (e.g., Fox et al., 2003; Garst & Bruce, 2003; Junge et al., 2003). Additionally, in a longitudinal study of 4-H PYD impacts, Lerner & Lerner (2013) identified three core areas of focus for effective youth development programs. However, the lack of consistency in the conceptualization, definition, and measurement of these life skills leaves us unable to accurately compare outcomes across 4-H programming (Heck & Subramaniam, 2009; Roth & Brooks-Gunn, 2016). Although strides have been made in developing standardized PYD measures (e.g., Lerner et al., 2013; Oman et al., 2010; Theokas et al., 2005), further research is needed to provide valid and reliable measures that are also convenient to administer to meet PYD program evaluation needs.

Understanding the need for standardized measures, the National Institute of Food and Agriculture and National 4-H Council developed a set of common measures for consistent program evaluation. Now a second iteration, Common Measures 2.0 consists of six scales in the areas of 4-H experience; universal skills (intrapersonal and interpersonal skills); engaged citizenship; college and career readiness; healthy living; and science, technology, engineering, and math (STEM). The goals of Common Measures 2.0 are to "(a) describe youths' 4-H experiences, (b) evaluate 4-H programming, and (c) inform professional development practices" (National 4-H Council, 2018a, p. 2). In our study, we focused specifically on the universal and engaged citizenship scales, which are framed by the "five Cs" model of positive youth development (Lerner, 2005; Roth & Brooks-Gunn, 2003a, 2003b) and social and emotional learning (SEL; Weissberg, & Cascarino, 2013).

4-H, Universal Skills, and Engaged Citizenship

The World Health Organization (1999) defined a core set of life skills, including decision making, problem solving, self-awareness, coping with stress and emotions (e.g., intrapersonal skills), empathy, and interpersonal relationship skills, as integral to PYD. As a national youth development organization, 4-H is a model of PYD, providing opportunities for intrapersonal and interpersonal skill development that can lead to engaged citizenship, which has been defined by Zaff et al. (2010) as possession of a sense of civic duty, feelings of social connection to one's community, confidence in one's abilities to effect change, and commitment to engagement in civic behaviors. A longitudinal study examining 4-H programming outcomes showed that youth experiences led to developmental outcomes consistent with the five Cs of PYD: competence, confidence, connection, character, and caring (Lerner & Lerner, 2013). The five Cs also led to the development of a "sixth C"—youth contribution (Lerner et al., 2003). Youth contribution is a core component of PYD (Lerner et al., 2015). Engaged citizenship, which Iowa 4-H defines as "the opportunity, right, and responsibility to contribute to shaping the world around [oneself] and provide service to others" (Allen et al., 2005, p. 5), also can be seen as youth contribution. A study by Allen and Lohman (2016) showed that youths who attended the Iowa 4-H Youth Conference reported enhanced skills in the areas of engaged citizenship, leadership, and communication. In other words, through engaged citizenship, youths can enact the five Cs by making positive contributions to self, family, community, and society overall (Davis, 2014; Lerner et al., 2005).

Prior research (e.g., Bobek, 2007; Levine & Youniss, 2006; Sherrod & Lauckhardt, 2009) has identified at least four indicators of engaged citizenship for youth. These four indicators are (a) social cohesion, a sense of trust and bonding to others; (b) civic commitment or duty, the mind-set or desire to make contributions to society; (c) civic skills, the ability to be involved in civil society and democracy; and (d) civic action, participation in activities to improve communities. Past studies have suggested that participation in community-based programs leads to the development of certain skills that in turn lead to engaged citizenship

in youths (Benson et al., 2006; Sherrod & Lauckhardt, 2009). Engaged citizenship among youths has been associated with lower drug and alcohol use, prosocial behavior, and enhanced school performance (Lawford & Ramey, 2017; Peterson et al., 2011; Vézina & Poulin, 2017). Therefore, it is important to be able to assess predictors of engaged citizenship with standardized measures.

The universal skills indicator of Common Measures 2.0 encompasses the broad construct of SEL, which is defined as "the process through which children and adults understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions" (Collaborative for Academic, Social, and Emotional Learning, n.d., SEL is, para. 1). The concept of SEL was established to target interventions that enhance protective factors for PYD while also reducing risk of problem behaviors (Guerra & Bradshaw, 2008). The overall construct of SEL is categorized into intrapersonal and interpersonal competencies (Pellegrino & Hilton, 2012). Similarly, the Common Measures 2.0 universal skills indicator assesses SEL competencies in terms of intrapersonal and interpersonal skills. The SEL competencies are positively associated with engaged citizenship (Hawkins et al., 2008). Thus, we examined Common Measures 2.0 as a standardized tool to uniformly measure and assess PYD outcomes of universal skills (intrapersonal and interpersonal) and engaged citizenship from participation at a state 4-H youth leadership conference. Specifically, we examined the validity and reliability of the universal skills (intrapersonal and interpersonal) indicator and engaged citizenship indicator of Common Measures 2.0. We also tested the extent to which universal skills (intrapersonal and interpersonal) predicted engaged citizenship.

Purpose and Objectives

Standardized measures for evaluation are critical for assessing outcomes across programming. Therefore, as part of a pilot study of Common Measures 2.0, we evaluated the utility of the universal skills and engaged citizenship scales of Common Measures 2.0 as measures of youth development program outcomes. In addition, we collected demographic data, including age, gender, race, and hours per week participants spent in 4-H activities. Our study had four main objectives:

- Evaluate the validity and reliability of the universal skills and engaged citizenship scales of Common Measures 2.0.

- Test the hypothesis that the universal skills (intrapersonal and interpersonal) scale and engaged citizenship scale would be positively associated.

- Test the hypothesis that the associations between universal skills (intrapersonal and interpersonal) and engaged citizenship would significantly vary by age, gender, and number of hours per week spent in 4-H activities (as identified by participants).

- Assess whether our findings support the specific aims of Common Measures 2.0.

Method

Participants

Our data came from youths who attended a statewide 4-H youth conference. The conference is available to all Iowa youths in Grades 8–12. There were 601 youth attendees in 2018. The total number of youths who completed our survey was 175 (29% response rate). Respondents ranged in age from 13 to 18 (M = 15.9) and were in Grades 8–12. The sample included 115 females (77%), 32 males (21.5%), and two participants who selected *I don't want to say* (1.1%); gender information was missing for 26 participants. The majority were White (98.4%). Participants spent an average of 3.1 hr in 4-H activities per week.

Procedure

The event coordinator of the Iowa 4-H Youth Conference sent letters via email with an electronic survey link to all participants in July 2018, following the conference. All items were self-reported and completed online. There were no incentives or reminders to complete the survey.

Measures

Universal Skills Scale

The universal skills scale consists of 23 items. Three items are negatively worded to encourage deeper processing and are not included in the composite score. The response set for each item is a 4-point Likert scale with the response options 1 (*no*), 2 (*not really*), 3 (*usually*), and 4 (*yes*). The 10 positively worded intrapersonal items address growth mind-set, persistence/grit, decision making, goal setting, and ethics. The 10 positively worded interpersonal items address leadership, teamwork, communication, and respect for diversity. We averaged the scores from each set of items to create overall composite scores.

Engaged Citizenship Scale

The engaged citizenship scale consists of 10 items. The response set for each item is either a 3-point scale with the response options 1 (*no*), 2 (*maybe*), and 3 (*yes*) or a 4-point scale with the response options 1 (*no*), 2 (*not really*), 3 (*usually*), and 4 (*yes*). Through conducting a confirmatory factor analysis (CFA), we found that all items showed acceptable loadings onto one factor except the item "Have you ever done a community service project?" Responses to this item were either 1 (*no*) or 3 (*yes*); therefore, as a dichotomous variable, it was not included in the composite score. We created z scores with the remaining items and then averaged those to create an overall composite score.

Demographics

Age

Participants were asked "How old are you?" Participants could select options ranging from 13 (13 years old) to

19 (19 years old).

Gender

Participants were asked "Which of the following best describes your gender?" Participants could select 1 (*male*), 2 (*female*), or 3 (*I don't want to say*).

Race

Participants were asked "Which of the following best describes your race?" Participants could select 1 (*Asian*), 2 (*Black or African-American*), 3 (*Hispanic or Latino*), 4 (*Native American*), 5 (*Native Hawaiian/Other Pacific Islander*), 6 (*White or Caucasian*), 7 (*more than one race*), or 8 (*I don't know*).

Time Spent on 4-H Activities

Participants were asked "How many hours do you typically spend on 4-H activities each week?" Participants could select 1 (*Less than 1 hr*), 2 (*1 hr*), 3 (*2 hrs*), 4 (*3 hrs*), 5 (*4 hrs*), or 6 (*5 or more hrs*).

Data Analysis

We conducted all analyses using SPSS Version 25. To begin, we examined the data to explore homoscedasticity, linearity, outliers, and normality. After conducting descriptive and correlational analyses, we ran independent-samples t tests to assess whether the study variables significantly differed across age, gender, and average time spent in 4-H activities per week. Next, we conducted CFA and Cronbach's alpha analyses to test the fit of the universal skills and engaged citizenship scales. CFA factor loadings below 0.4 are considered weak (Garson, 2010), and Cronbach's alpha values of 0.7 and higher indicate acceptable internal consistency (Hair et al., 2010). Last, we conducted a regression analysis to predict associations between each of the intrapersonal and interpersonal subscales (independent variables) and the engaged citizenship scale (dependent variable).

Results

The means, standard deviations, factor loadings, and number of respondents for all universal skills and engaged citizenship items are presented in Table 1.

Table 1.

Descriptive Statistics and Factor Loadings of Study Variables

Survey item	*M*	*SD*	Factor loadings	No. of respondents
Intrapersonal				
Do you like to learn new things?	3.84	0.42	0.62	175
Are you willing to try something you might get wrong?	3.40	0.70	0.58	171

Do you try to learn from your mistakes?	3.70	0.54	0.65	173
Are you willing to work hard on something difficult?	3.57	0.60	0.74	174
Before making a decision, do you stop to think about your choices?	3.34	0.65	0.63	175
Do you think about how your choices affect others?	3.37	0.72	0.61	173
Do you set goals for yourself?	3.51	0.71	0.59	175
Do you keep trying until you reach your goals?	3.42	0.61	0.69	173
Do you treat others the way you want to be treated?	3.56	0.61	0.52	173
Do you follow the rules even if no one is watching?	3.44	0.62	0.65	172
Interpersonal				
Do you help others reach their goals?	3.47	0.64	0.58	170
Do you show respect for others' ideas?	3.69	0.50	0.49	173
Are you comfortable working in groups?	3.54	0.68	0.65	174
Do you think about other people's feelings before you say something?	3.33	0.64	0.62	173
Do you look for ways to involve all members of a group?	3.49	0.61	0.57	174
Do you get along with others who are different from you?	3.39	0.75	0.54	173
When someone makes you upset, can you still work with them?	3.12	0.64	0.55	172
Do you like to learn about people who are different from you?	3.51	0.74	0.51	173
Are you comfortable being a leader?	3.57	0.77	0.43	174
Is it easy for you to speak up in a group?	3.27	0.81	0.45	169
Engaged citizenship				
Do you like helping people in your community?	3.80	0.49	0.72	161
Because of 4-H, did you meet leaders in your community?	2.70	0.55	0.52	161
Have you ever done a community service project?	1.97	0.16	—	159
Have you ever helped plan a community service project?	2.60	0.64	0.63	160
Have you ever led a community service project?	2.24	0.82	0.58	157
When you learn about a problem, do you look for ways to help?				
in the community	3.14	0.68	0.63	151
across the country	2.61	0.79	0.67	153
around the world	2.43	0.82	0.53	152

Do you like helping people?	3.77 0.50	0.62	150
How much has 4-H inspired you to volunteer in your community?	2.72 0.51	0.67	150

Correlations of composite study variables are presented in Table 2. The demographic variables (age, gender, and average time spent per week in 4-H activities) were not significantly correlated with the intrapersonal, interpersonal, or engaged citizenship variables and, therefore, are not included in Table 2.

Independent-samples t tests revealed that participant outcomes did not significantly vary by age, gender, or average time spent per week in 4-H activities. The CFA indicated acceptable loadings onto one factor (see Table 1). Cronbach's alpha analyses indicated acceptable reliability for the intrapersonal ($\alpha = .83$), interpersonal ($\alpha = .72$), and engaged citizenship ($\alpha = .81$) scales.

Table 2.

Correlations Among Study Variables

Variable	Intrapersonal skills	Interpersonal skills	Engaged citizenship
Intrapersonal skills	—		
Interpersonal skills	.70**	—	
Engaged citizenship	.53**	.53**	—
**$p < .01$.			

The regression model was statistically significant, $F (2, 173) = 45.24$, $p < .001$, and 32% of the variance in the engaged citizenship measure was explained by intrapersonal skills and interpersonal skills (see Table 3). Specifically, the intrapersonal measure was positively significantly associated ($\beta = .32$, $p < .001$) with engaged citizenship, and the interpersonal measure was positively significantly associated ($\beta = .30$, $p < .001$) with engaged citizenship.

Table 3.

Standardized Coefficients of Multiple Regression Predicting Engaged Citizenship

Variable	F, R^2	β	SE
Intrapersonal skills		.32***	.14
Interpersonal skills		.30***	.14
F	45.24***		
Adjusted R^2	.32***		
Note. n = 175.			
***$p < .001$.			

Discussion

The purpose of our study was to examine the universal skills (intrapersonal and interpersonal) and engaged citizenship scales of Common Measures 2.0 as well as the extent to which intrapersonal and interpersonal skills predicted engaged citizenship. We conducted CFA and Cronbach's alpha analyses of the scales. Additionally, regression results indicated that the intrapersonal and interpersonal measures positively predicted engaged citizenship, in line with prior research and our hypothesis. Our study builds on prior research calling for theory-driven measures of PYD that are valid and reliable. In addition, our findings highlight the importance of intrapersonal and interpersonal skills for engaged citizenship. Therefore, our study supports the use of Common Measures 2.0 as a standardized measure of the broader PYD constructs of SEL and youth contribution.

We found evidence to support our first two objectives and use of Common Measures 2.0 for future evaluation efforts. Regarding our first objective, the universal and engaged citizenship measures showed acceptable factor loading and Cronbach's alpha values, therefore indicating initial support for Common Measures 2.0 as a potential tool for evaluation of PYD in 4-H programming. In support of our second objective, the intrapersonal and interpersonal subscales of the universal skills scale were both positively associated with engaged citizenship. Our third objective was to examine whether the universal skills (intrapersonal and interpersonal) and engaged citizenship indicators significantly varied according to participants' age, gender, and time spent in 4-H activities. Our results showed that the demographic variables were not significantly associated with the universal skills or engaged citizenship indicators. This finding is in line with Allen and Lohman's 2016 study of participants in a state 4-H youth conference. However, others have found differences across demographics with regard to engaged citizenship (Collins et al., 2016). Although we found no differences across age, gender, or time spent in 4-H activities per week, future research should examine demographic differences and their effects on engaged citizenship. Regarding our fourth objective, our findings support the specific aims of Common Measures 2.0 to "(a) describe youths' 4-H experiences, (b) evaluate 4-H programming, and (c) inform professional development practices" (National 4-H Council, 2018a, p. 2). Specifically, 4-H provides opportunities for building intrapersonal and interpersonal skills, which in turn lead to engaged citizenship. These outcomes support prior research that showed SEL to be positively associated with engaged citizenship (Hawkins et al., 2008). Additionally, our study findings will be used in professional development workshops to illustrate how Common Measures 2.0 can be applied to inform best practices for staff preparing and delivering 4-H programming. Overall, our results indicate that Common Measures 2.0 may be used to capture youth experiences in 4-H and provide a standardized assessment of programming for 4-H practitioners and policy makers.

Limitations and Directions for Future Research

Although our study adds promising findings to the literature, there are limitations that should be noted. First, the sample is cross-sectional and therefore causal relationships cannot be confirmed. Second, selection bias is important to consider given that youths in organizations such as 4-H are more likely to come from families with time and transportation resources (Bobek, 2007). Third, majorities of participants were female and White; therefore, results do not represent how varying social identities may affect the study variables (Bedolla, 2007). Fourth, we recognize that establishing validity and reliability involves several types of evaluation; in our study we conducted only CFA and Cronbach's alpha analyses. Future research should include additional tests to further examine the validity and reliability of Common Measures 2.0.

Future research should compare measures from multiple venues and more diverse participants. For example,

researchers have called for the study of youth development programs among specific groups, such as youths in foster care or homeless youths (Donlan et al., 2017). Indeed, examining intersectionality (Wernick et al., 2013) and ways to engage marginalized youths is a critical next step in measuring effectiveness of youth development programs (Delgado, 2015). The next step in assessing the utility of Common Measures 2.0 as a measurement of components of PYD is to examine the remaining scales; these include the scales of 4-H experience, college and career readiness, healthy living, and STEM. Future studies will allow us to further assess the utility of Common Measures 2.0 in not only 4-H youth development programming but other PYD and Extension programming as well.

Conclusion

As 4-H is a leader in providing youth development programs, it is important that 4-H practitioners and researchers capture PYD outcomes with reliable and valid measures. Moreover, using a standard measure will allow 4-H program leaders and policy makers to better specify how outcomes are achieved (Arnold, 2015; Arnold & Silliman, 2017; Heck & Subramaniam, 2009). We examined the utility of the universal skills and engaged citizenship scales of Common Measures 2.0 as measures of PYD. The results further highlight what is needed to constitute a youth development program, such as development of intrapersonal and interpersonal skills and engaged citizenship. Further refinement and specification of how these scales are measured will in turn enhance how programs are delivered.

Author Note

Correspondence concerning this article should be addressed to Shane Kavanaugh. Email: shane@kccames.org

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