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Project HOPE

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Initial Validity Evidence for the HOPE Scale: An Instrument Designed to Find Talent Among Underserved Populations

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Overview
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- Project HOPE background
- Theoretical rationale
- Instrument design
- Sample
- Data analysis
- Results
- Revisions
- Next steps

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Project HOPE
(**H**aving **O**pportunities **P**romotes **E**xcellence)

A project funded by the Jack Kent Cooke Foundation to provide enriched educational services to high-ability, low-income, K-5 students

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Project HOPE: Team
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- Marcia Gentry, PI
- Jean Peterson, Co-PI
- Rebecca Mann, Co-PI
- Jillian Gates, doctoral candidate
- Scott Peters, doctoral candidate
- Rachelle Miller, doctoral student
- Eliza Lofton, URT
- Contact persons from each district

Project HOPE: Goals
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1. **Develop procedures for recognizing ability and talent among low-income children**
2. Serve HOPE scholars in GERI's Saturday and Summer programs at Purdue
3. Develop follow-up services for HOPE Scholars
4. Evaluate program effects on students and on identification of low-income children in schools
5. Develop on-going, sustainable funding to continue services to high-potential, low-income children and to facilitate long-term follow-up study of HOPE Scholars

Project HOPE

- Part of GERI's diversity initiative
- Fall 2007 through Summer 2010
- $598,000 provided by JKCF to identify and serve high-ability, low-income, K-5 students from surrounding school corporations
- Super Saturday
- Super Summer
- 2007-2010

Project HOPE Provides

- Full tuition for K-5 students to attend GERI programs
- Busing to and from 5 school corporations
- Staff-development in area schools
- Parent workshops and support
- Counselor training
- **Instrument development and identification assistance**

Project HOPE: Outcomes

- **Development of the *HOPE Nomination Scale* to help teachers recognize potential among low-income students**
- Baseline school identification data, with follow-up analyses
- Evaluation, observation, interviews of participants
- Comparative achievement study
- Longitudinal study of participants

Project HOPE: Participation

- Super Saturday Spring 2008: 107 students
- Super Summer 2008: 63 students
- Super Saturday Fall 2008: 110 students
- Funding from JCKF will provide continued enrichment for 100 students to attend each GERI Saturday and Summer program through Summer 2010

Theoretical Rationale

- Traditional identification measures underidentify low-income and minority students
- Low-income and minority students are more likely to drop-out of school and gifted programs

Theoretical Rationale

- There is strong evidence for the inclusion of teacher-judgment measures in identification procedures
- Most instrument / rating forms suffer from poor design or norms

Instrument Design

- Stem items were created based on g/t literature of student behaviors
- Included demographic information
- Included instructions to focus teacher assessment and comparisons:
  "*When completing this form please respond by thinking about the student compared to other children similar in age, experience, and/or environment*"

Instrument Design

- Initial 13 items were reviewed by 19 content experts
- Word-level changes were made for clarification
- The initial instrument had two proposed factors with 10 and 3 items, respectively

HOPE Scale Items

1. Performs or shows potential to perform at remarkably high levels
2. Is curious, questioning
3. Is empathetic
4. Shows compassion for others
5. Has desire to work with advanced concepts and materials
6. Questions authority
7. Is eager to explore new concepts

HOPE Scale Items

8. Exhibits a strong sense or social justice and fairness
9. Uses alternative processes
10. Is insightful and intuitive
11. Thinks "outside the box"
12. Has intense interests
13. Shows outstanding talent in specific content area(s)

HOPE Teacher-Rating Scale

Sample

- HOPE Nomination Scales were sent to all Project HOPE school teachers (n=357)
- 349 teachers completed HOPE Scales on approximately 7000+ students
- Information on NWEA and ISTEP+ scores was also collected

Sample

Table 1. Demographics of Targeted Districts for 2007/8 School Year

|	School A	School B	School C	School D	School E
Designation	Rural	Rural	Rural	Metro	Metro
K-5 population	410	840	705	1561	3425
Free/Reduced Lunch Students	36%	38%	34%	62%	58%
Caucasian	96%	90%	91%	59%	60%
African American	0%	<1%	<1%	<1%	10%
Hispanic	2%	5%	8%	37%	21%
Asian	<1%	<1%	0%	<1%	<1%
Multi-racial	<1%	4%	1%	3%	8%
Native American	0%	<1%	0%	<1%	<1%

Data Analysis

- Exploratory factor analysis of a randomly-selected group of 1500 HOPE Scales
- Data were checked for multivariate normality
- Descriptive statistics were run to look at score distribution by gender and race/ethnicity

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Data Analysis

- Oblique rotation methods were used because of correlation among social-science factors
- Items were retained if loadings were >.4 on a single factor
- Parallel analysis was used to determine the number of factors to retain

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Results

Table 1. EFA Eigenvalues

	Eigenvalue	Difference	Proportion	Cumulative
1	8.72979295	7.59902941	0.8784	0.8784
2	1.13076354	0.92156823	0.1138	0.9921
3	0.20919531	0.06214751	0.0210	1.0132
4	0.14704781	0.09317548	0.0148	1.0280
5	0.05387233	0.00790223	0.0054	1.0334
6	0.04597010	0.02114468	0.0046	1.0380
7	0.02482542	0.06140590	0.0025	1.0405

The Evil Eigenvalue

(Maller, 2008)
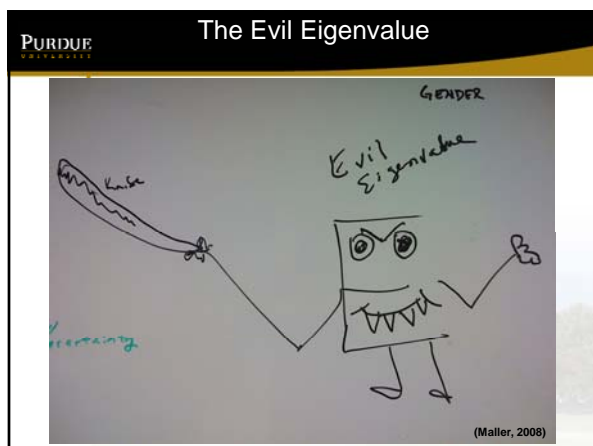
Results

Table 2. Results of Parallel Analysis

Eigenvalue #	Random Eigenvalue	Standard Dev
1	1.2742	.0366
2	1.2064	.0272
3	1.1550	.0216
4	1.1108	.0203

Results

Table 3. Factor structure and pattern coefficients after Promax rotation

	Factor Structure (Correlations)		Rotated Factor Pattern	
	Factor1	Factor2	Factor1	Factor2
H1	0.89147	0.62381	0.81341972	0.12807226
H2	0.87018	0.60710	0.79575569	0.1221222
H3	0.52436	0.91306	-0.0510811	0.94419118
H4	0.48567	0.92862	-0.1277089	1.00644982
H5	0.89486	0.62305	0.81955024	0.12357756
H6	0.39036	0.02126	0.60041105	-0.3446599
H7	0.86216	0.58834	0.80116873	0.10007094
H8	0.70238	0.76545	0.3752534	0.53675196
H9	0.90551	0.61204	0.84717542	0.09572447
H10	0.91705	0.67194	0.80743772	0.17985134
H11	0.93042	0.60440	0.89419593	0.05943656
H12	0.87363	0.58986	0.81795315	0.09135953
H13	0.88642	0.62111	0.80800234	0.1286769

Results

- The EFA was also run with Spearman correlations, which are more appropriate for ordinal data
- Maximum-likelihood estimations were also used to determine whether a different factor structure existed based on method of analysis

Results

- Two factor structure with eight and two items on the academic and socio-emotional factors
- Three items cross-loaded or were removed for poor loading on a single factor
- Alpha reliabilities of .86 (social) and .92 (academic)

Revisions

- Increase the number of items for the social factor
- Decrease the number of academic items?
- Include "mixed-race" category
- Remove Hispanic and Asian-specific categories

Next Steps

- CFA on remaining sample not used in EFA
- Make revisions and additions and re-administer to approximately 1000 students
- Multi-group CFA to test for factor invariance
- Analyze data nested within individual teachers

Project HOPE: Next Steps

1. Engage in research, evaluation, and dissemination of project results
2. Secure funding to enable continued participation of low-income children in GERI programs (tuition, transportation, coordination)
3. **Disseminate validated HOPE Nomination Scale**
4. Develop summer enrichments in participating school corporations with visitations to Purdue

Think Big. Work Hard. Achieve.
(Jack Kent Cooke Foundation)