Supports for High School Success: An Evaluation of the Texas Ninth Grade Transition and Intervention Program

Kelly Hallberg
Andrew Swanlund
Lisa Hoogstra

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Importance of Ninth Grade

• Make or break year for determining whether students will be on track for graduation (Allenworth & Easton, 2007; Herlihy, 2007; Kennelly & Monrad, 2007)

• More students fail ninth grade than any other grade and students who are held back are less likely to graduate (Herlihy, 2007)

• Ninth grade course performance is more predictive of high school graduation rates than student background characteristics or prior achievement (Allensworth & Easton)
Troubled Transition

• Transition to high school brings both academic and non-academic challenges
  – More challenging coursework (Herlihy, 2007)
  – Declines in student motivation (Kennelly & Monrad, 2007)
  – Less monitoring from teachers and principals (Barber & Olson, 2004)
  – Greater need for time management, behavioral, and social skills (Zeedyk et al., 2003)
Promising Interventions

• Explicit ninth grade transition programs (Morgan & Hertzog, 2001; Reents, 2002; Smith, 1997)

• Early warning data systems (Heppen & Bowles Therriault; Allensorth & Easton)

• Targeted interventions (Finkelstein & Fong, 2008; Kennelly & Monrad, 2007; Roderick & Camburn, 1999)
Texas Ninth Grade Transition and Intervention Program (TNGTI)

• Texas State Legislature General Appropriations Act, Article III, Rider 53(b) allocated $25 million to decrease state’s dropout rate

• TNGTI grant program funded through this allocation
Elligibility

• Districts and open enrollment charter schools were eligible to receive grants if the served economically disadvantaged students, had a sufficient number of 8th grade students, and had a history of poor ninth grade retention

• 27 eligible districts and charter schools participated

• Grants ranged from $37,472 to $425,000
TNGTI Program Components

• Three central program components
  – Summer transition program
  – Ninth grade Early Warning Data System
  – Fall and Spring Interventions
Effectiveness Study

• Learning Point Associates, now an affiliate of AIR, was hired to conduct a rigorous evaluation of the TNGTI grant program

• Included propensity score analysis comparing students who participated in the summer transition program to similar students who did not participate
Methodology: Estimating Propensity Scores

• Rich set of middle school, high school, and student level covariates were used in a logistic regression to estimate students propensity of participating in the TNGTI summer program

\[ \text{logit}(Z_i) = \alpha + X_i'\beta \]

• Indicator variables were used to account for missing data
Initial Overlap on the Logit Propensity Score

Control Group: PS-logit

Treatment Group: PS-logit
Balance on the Covariates
Modeling Student Outcomes

Level 1 – Students

\[ y_{ij} = \beta_{0j} + \beta_{1j} TNGT I_{ij} + \sum_{s=2}^{15} \beta_s L_{aij} + \beta_{3j} LP_{ij} + \beta_{4j} Pretest_{ij} + r_{ij} \]

Level 2 – High Schools

\[ \beta_{0j} = \gamma_{00} + u_{0j} \]

\[ \beta_{1j} = \gamma_{10} \]

\[ \beta_{2j} = \gamma_{20} \]
Weighting

• Marginal mean weighting approach used to calculate the treatment on the treated

• Equivalent to including treatment strata interactions and calculating the ATT with strata weights
Findings

• Small, but statistically significant effects on math and English Language Arts ninth grade TAKS scores

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<tr>
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<th>ELA TAKS</th>
<th>Math TAKS</th>
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<tbody>
<tr>
<td>Score</td>
<td>24,714</td>
<td>24,347</td>
</tr>
<tr>
<td>Significance</td>
<td>14.3**</td>
<td>10.8*</td>
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Concluding Thoughts

• Small effects
  – Short intervention – Two weeks
  – Distal rather than proximal outcomes

• Study limitations
  – Assumes strong ignorability

• Need for additional research
Kelly Hallberg

P: 312-288-7641

E-Mail: Khallberg@air.org

20 N Wacker, Suite 1231
Chicago, IL 60606

General Information: 800-356-2735

Website: www.air.org