Graduates, Dropouts, andPersisters: A NovelApproach to Understandingthe Correlates andConsequences of Non-Graduation

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Presented at the Society for Social Work and Research22nd Annual Conference on January 11, 2018

https://mldscenter.maryland.gov/
Why focus of High School Graduation?

Educational achievement is a key social determinant of health that is closely linked to both individual and community wellbeing.

Not graduating is associated with an increased odds of multiple adverse outcomes

- Unemployment (U.S. Department of Labor, 2014)
- Lower lifetime earnings (Rouse, 2005)
- Poor health outcomes (Pleis et al., 2010)
- Arrest and incarceration (Aud et al., 2011; Maynard et al., 2015)
- Reliance on welfare programs (Levin et al., 2007; Maynard et al., 2015)
Prior Research on High School Graduation and Dropout

- Historical focus on student factors
  - E.g. characteristics, behaviors, academic performance
  - Few findings relate to school-level factors

- Gaps
  - Problem Definition has focused on dropout or on-time graduation
  - Excludedpersisters
  - Individual vs. Institutional focus

(Bowers, Sprott, & Taff, 2013; De Witte et al., 2013; Rumberger & Lim, 2008)
Current Study

**Purpose:** examine the secondary, postsecondary, and workforce outcomes for the population of students who do not earn a high school diploma in four years.

**Goal:** Inform policy, programming, and practice in order to promote high school graduation, preparation for the workforce, and post-secondary readiness.
Trends in High School Graduation

- National trend towards lower dropout and increasing graduation rates
  - In 2013
    - Record high four-year graduation rate of 81%
    - Event dropout rate of 3%
    - \(81 + 3 = 84\%\)
  - Where are the 16% who are not counted here?

(Kena et al., 2015; Stark & Noel, 2015)
Data Source

- Independent unit of State government
- Statewide longitudinal data system that includes linked K-12, post-secondary, and workforce data
- De-identified individual level data starting in ~2008
School Exit Status

- **On-time graduate** – Students who graduate with a regular diploma four years after entering the ninth grade as first-time freshmen (MSDE, 2015)

- **Dropout** – Students who formally withdraw from school (MSDE, 2015)

- **Persister** – Students who do not formally withdraw from school and do not earn a regular diploma four years after beginning high school as first-time freshmen
Student-level Sample Selection

Inclusion Criteria:
Enrolled in Maryland public high school in the 2010-2011 school year
  ○ as first-time freshmen
  ○ for more than 90 days
AND
Enrolled in Maryland public high school in the 2013-2014 school year

Exclusion Criteria:
Attended a school that exclusively enrolled special education students
OR
Sought a certificate of completion
OR
Passed Away
Graduates, Dropouts, andPersisters???
Fourth Year Exit Status

- 91% Graduate
- 2% Dropout
- 7% Persister

Year 4
What are the secondary school outcomes for students who do not graduate on time?
Fourth and Fifth Year Exit Status

Year 4
- Graduate: 91%
- Dropout: 7%
- Persister: 2%
- GED: 0%
- Not Enrolled: 10%

Year 5
- Graduate: 32%
- Dropout: 10%
- Persister: 22%
- GED: 35%
- Not Enrolled: 2%
Educational Pathway For Non-Graduates

- 4,560 Non-Graduates
- 78% Persisted through Year 4
- 62% Enrolled in Year 5
- 32% Earned a High School Diploma
- 9% Enrolled in College in Year 6

- 22% Dropped out of school in Year 4
- 5% Earned a GED
- 61% Had No Achievement by the end of Year 5
- 36% Worked 3 or More Quarters in Year 6
Does post-secondary and workforce participation vary based on exit type?
### Post Secondary Enrollment

One Year Post Graduation

<table>
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<tr>
<th>4-year Graduate</th>
<th>67%</th>
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<tbody>
<tr>
<td>5-year Graduate</td>
<td>18%</td>
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A Note on Workforce Data

- For persons employed in Maryland who also attended a public Maryland secondary or postsecondary institution
- The data do not include wages related to Military Service, Federal Government employment, or independent contractors
Workforce Participation in the Year Following Final High School Enrollment

- **Year 4 Graduate**
  - No Work: 30%
  - 1 or 2 Quarters: 26%
  - 3 or 4 Quarters: 44%

- **Year 5 Graduate**
  - No Work: 34%
  - 1 or 2 Quarters: 22%
  - 3 or 4 Quarters: 44%

- **Year 4 Persister**
  - No Work: 54%
  - 1 or 2 Quarters: 21%
  - 3 or 4 Quarters: 25%

- **Year 5 Persister**
  - No Work: 45%
  - 1 or 2 Quarters: 24%
  - 3 or 4 Quarters: 31%

- **Year 4 Dropout**
  - No Work: 46%
  - 1 or 2 Quarters: 23%
  - 3 or 4 Quarters: 32%
What are the student- and school-level factors related to graduation in the fifth-year of high school?
Method

- Multilevel logit models
  - SAS 9.3 - Glimmix module
  - Random intercept for schools
- Fixed effects
  - Student-level factors
  - School characteristics
Covariance Parameter Estimates ($N=2,845$)

<table>
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<th>Cov Parm</th>
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</table>
Results From the Multilevel Model Examining the Odds of Earning a Regular Diploma in the 5th Year of High School
Strengths and Limitations

○ Strengths
  ○ Understudied phenomenon
  ○ Multilevel analysis
  ○ Administrative data collected by schools

○ Limitations
  ○ Available variables and constructs
Implications

- The phenomenon of persisting should be considered along with dropout as a critical element of a more informative analysis of high school graduation.

- High school graduation should be examined as a function of students within their academic environments.

- Students who do not graduate in the fourth year of high school need additional attention and intervention.
Implications for Practice

Prevention science perspective

- Dropout
- Persister
- On-time Graduate
- 5th year + Graduate

...
Future Research

- Assess effectiveness of credit recovery options
- Identify common obstacles to graduation
  - e.g. specific courses
- Expanded set of school-level factors
- Compare alternative forms of remediation
  - e.g. developmental coursework at postsecondary
- More nuanced look at wages earned and postsecondary degrees earned
- Replication of findings with other state longitudinal data systems


Acknowledgement

We are grateful for the data, technical, and research support provided by the MLDS Center and its agency partners. The views and opinions expressed are those of the authors and do not necessarily represent the views of the MLDS Center or its agency partners.

The MLDS Center is an independent agency of the State of Maryland. The mission of the Center is to develop and maintain the Maryland Longitudinal Data System in order to provide analyses, produce relevant information, and inform choices to improve student and workforce outcomes in the State of Maryland.
High School Persisters: An Examination of College and Workforce Outcomes

October 2016

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