

Keeping Students on Track to Graduate: A Synthesis of School Dropout Trends, Prevention, and Intervention Initiatives

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Abstract: This article reviews the literature on dropout trends, prevention, and intervention initiatives for school-aged children. Theoretical and consequential trends are highlighted to offer educators a perspective in which to view the dropout problem. This article also examines current trends in prevention and intervention initiatives aimed at reducing dropout. Drawing from current research, practical suggestions and recommendations are provided to guide dropout prevention and intervention planning efforts.

High school graduation rate is often looked upon as a barometer of the performance of the American school system, as well as a proxy for the general health of American society (Heckman & LaFontaine, 2010). Unfortunately for the United States, almost one-third of all public secondary students drop out of school each year (Snyder & Dillow, 2010). This high percentage of students leaving school prior to graduation does not bode well for the performance of America's educational system. To combat this problem, policymakers and school districts need to work together to implement effective dropout prevention initiatives. To assist in these efforts, this paper offers educators an examination of theoretical and consequential trends associated with dropping out of high school, data-driven prevention and intervention initiatives designed to reduce dropout rates, and practical suggestions and recommendations to guide dropout prevention and intervention planning efforts.

Theoretical Perspective on Dropout Trends

A robust body of research highlights the negative consequences associated with dropping out of high school and how these outcomes impact individuals, families, and communities (Edmonson & White, 1998; Levin, Belfield, Muennig, & Rouse, 2006; Lochner & Moretti, 2004; Mitra, 2014; Moretti, 2007; Muennig, 2007). For example, over the course of a lifetime, projections are that a student who drops out will earn \$630,000 less than a high school graduate earns (Rouse, 2007). Despite these well-known negative outcomes, students continue to drop out of school. To combat this societal problem, understanding why students drop out of school is necessary. While specific reasons for dropping out vary from person to person, several theories have emerged to provide a lens through which to investigate this problem.

In an attempt to explain dropout behavior, Jordan, Lara, and McPartland (1994) and Watt and Roessingh (1994) pioneered a framework which articulates how students are either *Pushed*, *Pulled*, or *Fall* out of school. "Pull-out" theories rely on a contextual framework to explain dropout and assume that school is only one part of the adolescent's life that coincides with other external factors, which include family, peers, and the economic climate

(Stearns & Glennie, 2006). Based on this perspective, a variety of external factors pull students out of school, including financial obligations, employment, family needs, childbirth, or illness (Doll, Eslami, & Walters, 2013). Within this framework, it can be argued that students examine the opportunity cost for staying in school based on these proximal variables, and this analysis guides their decision to remain in school or drop out. If the external factors are weighed more heavily than the benefits of remaining in school, the student will choose to drop out.

In contrast, "Push-out" theories focus on internal school factors that influence a student's decision to remain in school. This framework concentrates on factors located within a school that could potentially push students out, such as poor academic supports, mismatch between instruction and student ability level, transportation resources, and discipline policies (Doll et al., 2013; Stearns & Glennie, 2006; Rotermund, 2007). For example, schools with limited busing systems may inadvertently cause decreased student attendance which could impact the student's decision to remain in school. While individual Push-out factors may impact a student, a student likely will experience a combination of these factors. For instance, a student who misses a large amount of school over the course of a year (e.g., attendance rate below 90%) due to transportation issues likely will fall behind in his/her courses also. Without proper intervention or academic support, the student may feel discouraged and unsupported by the school. It is important to remember the major tenet of the Push-out theory is that the aversive situation was created within the school environment (Doll et al., 2013).

Finally, "Fall-out" theories posit that students drop out as a result of inadequate academic progress, which causes them to fall off track. Fall-out and Pull-out factors can be easily confused; the major difference between the two theories is that Pull-out factors have distinct external attractions/distractions that are directly pulling the student out of school whereas Fall-out factors do not have these attractions and/or distractions. Fall-out factors highlight a process in school dropout whereby a student's disengagement in school gradually increases over time (Doll et al., 2013). Students who are influenced by Pull-out factors may not become disengaged with school because they are not

making adequate progress. Rather, other circumstances in their lives (e.g., family facing financial hardship) may have more immediate value than going to school. In contrast, poor study habits, lack of parental interest or support, negative student attitude towards school, and overall dissatisfaction with school have all been cited in the research literature as Fall-out factors (Doll et al., 2013). Because these students fall off track, Watt and Roessingh (1994) speculated that this causes students to become apathetic and disillusioned with school completion, which results in overall academic disengagement.

Push-, Pull-, and Fall-out theories attempt to provide educators a more parsimonious outlook on dropout behavior. Unfortunately, dropping out of school is a complex process influenced by a variety of variables, including developmental level (e.g., Doll et al., 2013) and personal characteristics, such as gender (e.g., Stearns & Gleannie, 2006). To more fully understand the complexity of the dropout process, research has begun to examine variables within the student's larger environmental context.

Moving Beyond Student-Level Characteristics

Historically, research on dropout behavior has focused on factors associated with student behavior and background characteristics, such as academic ability, course completion and failures, and socioeconomic status (Allensworth & Easton, 2007; Belfanz, Herzog, & Mac Iver, 2007; Curran Neild, 2009; Curran Neild, Stoner-Eby & Furstenberg, 2008). This type of research generally revolves around the concept of *risk factors*, which are divided into two categories: (a) social risk factors and (b) academic risk factors (Lee & Burkam, 2003). Several researchers have argued that when research frames dropping out as a function of the student's behavior and background characteristics, it places the blame on the student and does not consider organizational implications of the school (Christle, Jolivet, & Nelson, 2007; Jerald, 2006; Lee & Burkam, 2003). Another downfall of focusing dropout research on student-level characteristics is that many of these variables are not amendable to change. Fortunately, the current trend in dropout research is framed around a more flexible school-level perspective (Fall & Roberts, 2012).

Christle et al. (2007) implemented a mixed methods design to investigate the relationship between school characteristics and dropout rates. In this study, the authors examined dropout rates for 196 Kentucky high schools. The authors found significant negative correlations between dropout rate and academic achievement, school attendance rate, and rate of successful transition to adult life (as measured by postsecondary enrollment, full-time employment, or active military duty), and percentage of students of White ethnic background, where a higher percentage of White students was associated with lower rates of drop out. Academic achievement had the strongest relationship with dropout, followed by school attendance rate. Gender, school size, and expulsion rate variables were not significantly correlated with dropout rate. In addition to the correlational analyses, the authors used purposeful sampling procedures to compare 20 schools within the

sample representing the lowest dropout rates (LDOS) and 20 schools reporting the highest dropout rates (HDOS). The results indicated that HDOS schools had a higher percentage of students from low socioeconomic backgrounds, higher annual grade-level retention and suspension rates, and more board of education violation incidents. The two groups did not differ on law violation rates, student body ethnicity, gender composition, enrollment, or expulsion rate. Finally, eight schools (four schools from the LDOS sample and four from the HDOS sample) were selected to gather qualitative information through administrator surveys, staff interviews, and on-site observations to investigate school process and climate characteristics. Results from the qualitative analysis revealed that HDOS schools had administrators with less experience, poor family involvement, and a more negative overall school climate compared to LDOS schools. For example, onsite observations revealed LDOS schools were in better physical condition, staff were dressed more professionally (e.g., male staff wearing ties), and more students were smiling in the halls compared to HDOS schools.

Lee and Burkam (2003) recommend that research on dropout go beyond examining general high school demographic characteristics, such as the average family's socioeconomic status and minority enrollment. They recommend extending the investigation to school characteristics that can actually be changed through policy interventions. In their study, Lee and Burkam used a nationally representative sample of urban and suburban schools from the High School Effectiveness Supplement (HSES), a subsample drawn from the National Educational Longitudinal Study of 1988 (NELS: 88). The NELS: 88 was the first stage in a longitudinal effort designed to provide national trend data highlighting students' experiences as they progress through the educational pipeline (National Center for Educational Statistics, 2015). Lee and Burkam (2003) examined dropout behavior and school composition for 190 schools serving 3,840 students in the 30 largest metropolitan areas of the United States. This study identified several malleable variables associated with dropout. For example, schools that provided more challenging courses and offered fewer remedial/nonacademic courses tended to have higher graduation rates. School size was also found to influence dropout rates. Interestingly, medium-sized schools ($n = 601 - 1,500$) demonstrated the highest graduation rates, with large schools ($n > 1,500$) producing the lowest rates. Lee and Burkam argued that school size does not produce a direct influence over dropout behavior, but rather the organizational factors associated with size mediate the influence. For example, smaller schools tend to have a lower student-teacher ratio which has been found to be correlated with higher graduation rates.

In a similar study using the same national dataset (HSES from the NELS: 88), Rumberger and Thomas (2000) found that school-level characteristics accounted for almost half the variance in dropout and student turnover rates within 247 urban and suburban schools across the nation. School-level characteristics included: *student composition* (e.g., mean SES of students in the school); *structural*

characteristics (e.g., size of the school); school resources (e.g., student-teacher ratio); and school processes (e.g., the turnover of teachers). School resources were found to significantly influence dropout rates. For example, schools with lower student-teacher ratios had lower rates of dropout. Rumberger and Thomas also found that schools in which students reported higher ratings for quality teachers, as measured by a student administered survey, had substantially lower dropout rates than schools with lower rated quality teachers. The importance of a quality student-teacher relationship is further corroborated from research that found students who leave high school prior to graduation often cite a lack of support or feeling unconnected with teachers as a reason for dropping out (Lee & Burkam, 2003). These findings provide support for malleable school-level characteristics, including quality student-teacher relationships, as a student retention safeguard.

Research extending beyond student-level characteristics to examine more flexible school-level variables provides practitioners a more malleable outlet to impact student dropout. Policymakers and districts can influence the number of rigorous courses (e.g., Advanced Placement) offered far more easily than changing a student's socioeconomic status. For this reason, districts are encouraged to adopt and implement multidimensional dropout prevention and intervention programs that aim to enhance the overall school climate.

Prevention Efforts

By definition, prevention efforts should occur prior to a dysfunction or problem, with the aim of these efforts focusing on mitigating risk factors, while reinforcing protective factors (Coie et al., 1993; Strein, Hoagwood, & Cohn, 2003). Broadly speaking, two major dimensions characterize prevention efforts: the level at which services are delivered and the method in which the populations are targeted (Durlak & Wells, 1997). The level of intervention can occur either at the individual level or at the systems level (including building, district, or state levels) and there are three ways to target selected populations: primary, secondary, and tertiary prevention initiatives (Durlak & Wells, 1997; Mac Iver, 2011).

As school districts begin to develop and design dropout prevention programs, they should consider the Institute for Education Sciences (IES) *Dropout Prevention Practice Guide* as a potential resource to inform programming decisions (Dynarski et al., 2008). This comprehensive guide addresses all levels of prevention (i.e., primary, secondary, and tertiary) as well as provides a mix of recommendations at both the individual and the systems level. The IES Practice guide provides six general recommendations for reducing dropout rates. These include: (a) Utilize data, (b) Assign adult advocates to students, (c) Provide academic support, (d) Improve students' social skills and classroom behavior, (e) Personalize the learning environment, and (f) Provide relevant instruction. These six recommendations are divided into three broad categories: (a) diagnostic, (b) targeted interventions, and (c) school-wide reform.

The first recommendation category encompasses a data-driven diagnostic method to identify student-level and school-wide dropout factors. IES recommends that this diagnostic system include, at a minimum, data on student absences, grade retention, and low academic achievement. The second category recommends the use of targeted interventions for students identified at-risk in middle and high school. Under the umbrella of targeted interventions, IES includes assigning an adult advocate to students who are at-risk, encouraging classroom teachers to provide academic support and enrichment to improve student performance, and implementing programs to improve students' classroom behavior and social skills. Finally, the third recommendation category focuses on school-wide reforms which include personalizing the learning environment to foster a sense of belonging and providing rigorous instruction to better engage all students.

Early Warning System

In line with the first recommendation from the IES Dropout Prevention Practice Guide, an early warning system can serve as a diagnostic tool designed to identify student-level and school-wide dropout problems. Research has found that the strongest indicators of dropping out of school are attendance, behavior, and course failure, known as the ABC's of dropout (Allensworth & Easton, 2007). While prior research can serve as a guide to help districts identify variables to include in their early warning system, it is recommended that school administrators explore local data to identify the most salient variables related to dropout within their district (Jerald, 2006). Since most schools already track several student-level variables, such as grades, attendance, and disciplinary referrals, implementing this tool should be relatively easy. The major challenge with implementing an early warning system is moving educators beyond viewing these variables as stagnant numbers and shifting their focus to investigating the dynamic trends captured by these variables (Jerald, 2006). There are several comprehensive guides available to aid school districts with creating an early warning system, including *National High School Center's Better High Schools Guide* (Heppen & Therriault, 2008) and Jerald's (2006) article *Identifying Potential Dropouts: Key Lesson for Building an Early Warning Data System: A Dual Agenda of High Standards and High Graduation Rates*.

Middle School

Traditionally, studies examining dropout predictors have utilized samples of students who are in high school. Although this research has yielded excellent information that can inform early warning system practices, research has demonstrated that the trajectory for dropping out of school begins prior to the time that students actually step foot on a high school campus (Curran Neild, 2009; Balfanz, Herzog, & Mac Iver, 2007). To combat emerging disengagement, early warning systems must adhere to their namesake and identify students as early as possible.

Balfanz et al. (2007) used longitudinal analyses to investigate and identify indicators in sixth grade that

predicted future dropout. Consistent with findings from other studies (e.g., Allensworth & Easton, 2007), Balfanz et al. identified five highly predictive indicators of dropout: attendance rate less than 80% of the time during sixth grade, failure of sixth-grade math, failure of sixth-grade English, at least one out-of-school suspension, and a final unsatisfactory behavior grade in any subject during sixth grade. Although each of these indicators alone was found to be predictive of dropout, the odds of dropping out significantly increased with each additional flag that student acquired, regardless of the combination of variables. For example, a student who has an F in both sixth-grade English and sixth-grade math is at a greater risk for dropping out of school compared to a student who has an F in math only. Given this prominent finding (e.g., Bowers, 2010; Casillas et al., 2012), it is critical that districts employ early warning systems throughout both middle and high school.

Simply identifying at-risk students does nothing to alleviate the risk these students face. For early warning systems to make an impact and prevent students from dropping out, school districts must tailor intervention and prevention efforts based on the data. Pinkus (2008) recommends that when school districts are building an early warning system, they should think about how each selected variable will inform future interventions. If school districts do not have the resources to provide at-risk students with supplemental academic and behavioral supports, then the effectiveness and integrity of the early warning system will be reduced (Pinkus, 2008). The flexibility afforded from an early warning system allows districts to track the most prominent variables related to dropout within their district.

Targeted Interventions

After districts have created an early warning system, the next step recommended by the IES Practice Guide is to design targeted interventions for students flagged as being at risk for dropout. There is consensus among the research literature which indicates that interventions aimed at remediating dropout rates must focus on enhancing students' overall academic and social development (Christenson & Thurlow, 2004). In a comprehensive review of the intervention literature on school dropout, Prevatt and Kelly (2003) identified 217 articles, spanning the 20-year period from 1982-2002. Of the 217 articles, only 18 met the following rigorous criteria: (a) article published in a peer-reviewed journal; (b) article described an intervention program that was identified by the authors as relating to dropout prevention; (c) study included an empirical analysis of the effectiveness of the intervention; and (d) study included a measure of dropping out as one of the dependent variables. *The Procedural and Coding Manual for Review of Evidence Based Instructions* developed by the Task Force on Evidence Based Interventions in School Psychology (2003) was used to evaluate each study. In their review, Prevatt and Kelly (2003) identified four key intervention focus areas: academic enhancement, mentoring and supportive relationships, psychosocial skill development, and teacher training in child behavior management. Of the four areas,

the most frequently employed intervention strategy was adult mentoring. Unfortunately, the authors found that the majority of studies utilized a multi-modal approach to intervention, which made teasing apart the specific aspects of the program that were most effective difficult. The following section outlines examples of dropout interventions focusing on each of the four key areas identified by Prevatt and Kelly (2003).

Academic Enhancement

Service-learning and community engagement projects have traditionally been used as character development programs; however, research has found that these activities also promote school retention and engagement (Manzo, 2008). Focus group interviews revealed that students involved in service-learning projects indicated that these projects provided relevant hands-on activities that were more engaging than traditional classroom instruction. An example of a service-learning activity is students collecting and distributing food or clothing items to a local homeless shelter.

Mentoring and Supportive Relationships

Research has found that social connectedness to school is linked to higher rates of student academic success (Bradshaw, O'Brennan, & McNeely, 2008). Both teachers and peers can serve as sources for facilitating this social connection. Blum (1993) found that weekly peer-support group meetings that focused on enhancing students' academic and interpersonal skills, combined with daily one-on-one interactions with an adult mentor, resulted in improved outcomes for students flagged as potential dropouts. The peer-support group consisted of six to eight same-sex participants in the 6th, 7th, or 8th grades who had problems such as poor academic performance, low self-esteem, poor study habits, or poor interpersonal relationships. The group met once a week for 10 weeks, with each session lasting one class period. For a full description of each session, see Blum (1993). Adult mentors in Blum's study were volunteers from the school (e.g., teachers, secretaries, cafeteria workers). Results included improved classroom behavior, increased academic engagement, and more positive peer and teacher interactions.

Psychosocial Skill Development

Disruptive behavior and poor social skills are considered academic risk factors that have the potential to influence a student's decision to drop out of school. To avoid this trajectory, several dropout interventions centered on prosocial skill development have been created (e.g., Tremblay, Pagani-Kurtz, Masse, Vitaro, & Pihl, 1995). Vitaro, Brendgen, and Tremblay (1999) investigated the impact of Tremblay et al.'s prevention program aimed at reducing early disruptiveness in grade-school children on subsequent dropout. This intervention included a social skills training component for children, as well as a parent-training piece. Vitaro et al. reported a 12% dropout rate for the treatment group at age 17 compared to the 22% dropout rate for the active control group.

Teacher Training in Child Behavior Management

As students move from middle to high school, there appears to be a shift in behavior management techniques that schools utilize to address rule violation (Davis, 2011). During middle and elementary school, positive behavior support systems are put in place to prevent rule violations; however, these preventive systems are often neglected at the high school level and more punitive measures are utilized to address rule violations. For example, high school administrators tend to address rule violations through exclusionary consequences, such as detention, suspension, and expulsion (Sugai & Horner, 2002). Positive behavior interventions and supports (PBIS; U.S. Department of Education, 2014) is an approach to discipline that encourages and rewards positive behavior, as opposed to solely focusing on the negative behavior. Research found several positive student outcomes in high schools that had implemented a schoolwide PBIS system. Davis (2011) reported a significant decrease in dropout rates for a western Kentucky school district that had implemented PBIS within its high schools.

Each of these intervention strategies offers educators a starting point to address dropout factors and issues. Unfortunately, the dropout problem is complex and stems from many different causes. Despite the methodological issues associated with studying a multimodal intervention, educators are encouraged to espouse this approach for dropout prevention planning. Further research that helps tease apart the individual effects of the different components of intervention efforts (i.e., component analysis) is needed. To aid in this effort, the IES Practice Guide recommends that districts adopt comprehensive schoolwide reform.

Schoolwide Reform

Freshman year of high school is a pivotal year for preventing subsequent dropout. Since freshman year of high school is the first opportunity students have to begin earning credits towards graduation, success within this year is crucial to keeping students on track. Allensworth and Easton (2007) found that students who were on track at the end of their freshman year (as defined by successful completion of all freshman course requirements) were four times more likely to graduate than students who were off track. Unfortunately, it is easy for freshman to quickly fall off track. Research has found that approximately 35-45% of students entering high school demonstrated a need for additional behavioral or academic support (McCallumore & Sparapani, 2010; McIntosh, Flannery, Sugai, Braun, & Cochrane, 2008). Given this high percentage of students who are underprepared, it comes as no surprise that ninth grade marks the year with the highest percentage of grade retention (nonpromotion) rates (Cohen & Smerdon, 2009; Curran Neild, 2009).

To lessen the impact of this sensitive transition from middle to high school, comprehensive school reform models are being implemented nationwide. Effective transition programs are comprehensive programs that focus on improving attendance, achievement, and retention and include diversified activities for parents, teachers, and students (Cauley & Jovanovich, 2006). On average, schools

that implement transition programs report an 8% dropout rate, while schools without such programs report average rates close to 25% (McCallumore & Sparapani, 2010). The following section highlights two comprehensive models implemented in large, urban school districts as a method to reduce dropout.

Project Transition

The Project Transition reform model was piloted at two high schools, Pulaski High School in Milwaukee, WI; and Schlagle High School in Kansas City, KS. This model was created by the private, nonprofit organization Manpower Demonstration Research Corporation (MDRC). This reform model established student-teacher learning teams comprising approximately 120 students paired with a set of four core academic teachers (math, English, science, and history). The primary purpose of these learning teams was to create a small learning community of students who shared schedules. This model also set aside time during the academic day for daily teacher collaboration and professional development (PD) team meetings. A specialized coaching position was created to enhance PD efforts. Quint, Miller, Pastor, and Cytron (1999) evaluated the impact of this model using a cohort comparison design and found that the Project Transition model created a more supportive school environment by improving student-teacher and student-peer relationships at both schools. The evaluation also found that the model produced small effects in student achievement for students with low attendance rates at Schlagle High School; however, the same academic effects were not found at Pulaski High School. The evaluators speculated that the difference in findings was largely due to implementation issues since the model was not implemented with adequate fidelity at Pulaski High School.

Talent Development High School

The Talent Development High School model is another reform model targeted at keeping students on track in ninth grade. Researchers at the Center for Research on Education of Students Placed At Risk at Johns Hopkins University developed this comprehensive model. A central component of this model is systemic restructuring, which includes relocating all ninth graders to their own floor or wing and dividing this cohort into smaller learning communities based on career themes. These smaller learning communities constitute the Ninth Grade Success Academy, aimed at fostering a strong relationship between teachers and students. Students remained in their small learning communities throughout high school. Additional elements to this model included a Freshman Seminar designed to help students improve their study skills and a Twilight Academy in which students can make up credits and receive additional academic services outside of the traditional school day. Using a comparative interrupted time series analysis, Kemple, Herlihy, and Smith (2005) found that first-time freshman attending a school using the Talent Development model demonstrated significantly higher attendance rates, increased number of academic

course credits earned, and improved promotion rates to the next grade as compared to first-time freshmen from non-Talent Development schools. Furthermore, the evaluation found that impacts on credits earned and promotion rates sustained through eleventh grade. These gains may have sustained longer than 11th grade; however, the study concluded follow-up evaluations at 11th grade. Therefore, no further information was available. It is important to note that despite the conclusion of the evaluation, students continued to receive programming through their small learning communities throughout their 12th grade year. The evaluation findings also indicated that the Ninth Grade Success Academy was the most consistently implemented element of the reform effort.

Both the Project Transition and Talent Development reform models highlight activities high schools can implement to help keep students on track and reduce dropout rates. Based on the evaluation results from each of these models, it is apparent that fostering a positive school climate is an essential ingredient for a successful transition. Furthermore, these two examples provide evidence that fidelity of implementation is crucial to maintaining and sustaining positive impacts.

Summary

Remediating the dropout crisis that plagues our nation has proven to be a challenge. Despite well-known negative consequences, students continue to drop out of school each year. Traditional dropout theories tend to examine the issue through a lens that primarily focuses on student-level variables, which fail to account for the complex interplay between individuals and their environments (Allensworth & Easton, 2007; Balfanz et al., 2007; Curran Neild, 2009). Incorporating a more robust system-level perspective into dropout research has served to shed light on identifying variables that are more responsive to change (Curran Neild et al., 2008).

The dropout problem is complex, but an improved American educational system is possible. Synthesized from findings from current research, the following recommendations encourage educators to refine their dropout prevention and intervention practices to include comprehensive, evidenced-based strategies:

- Utilize current district data to develop an early warning system that spans across middle and high school. The IES *Dropout Prevention Practice Guide* and the National High School Center's *Better High Schools Guide* can aid districts with the development.
- Select variables for the early warning system that are responsive to change. Districts are encouraged to focus on variables that they have the resources to modify. For example, if the district does not have the resources to provide adequate transportation for students, including a variable measuring absenteeism may not be appropriate to include in the early warning system. If districts cannot provide students additional transportation support,

flagging students with this variable may cause the student to further feel pushed out by the school. While this variable is important and should be monitored by schools, it should not be included in the early warning system until the appropriate infrastructure is in place to provide supports.

- Encourage teachers to implement service-learning as part of their traditional curriculum activities. Service-learning has been found to be more engaging for students than traditional lectures (Manzo, 2008). If students are engaged with the curriculum, they will be less tempted to leave school early.
- Incorporate a multimodal approach to dropout intervention planning that extends across both middle and high schools. For example, to encourage a smooth transition from middle to high school, districts could implement a summer bridge program in which high school students serve as peer mentors for middle school students. Promoting these positive peer relationships will not only aid students as they make the transition to high school, but will also encourage a more positive school climate.

By heeding current research trends, policymakers and district administrators can continue to implement additional effective ways to keep students *in school and on track* for a high school diploma.

References

- Allensworth, E. M., & Easton, J. Q. (2007). *What matters for staying on-track and graduating in Chicago public high schools: A close look at course grades, failures, and attendance in the freshman year*. Chicago, IL: Consortium on Chicago School Research.
- Balfanz, R., Herzog, L., & Mac Iver, D. J. (2007). Preventing student disengagement and keeping students on the graduation path in urban middle-grades schools: Early identification and effective interventions. *Educational Psychologist, 42*, 223-235.
- Blum, D. (1993). Academic growth group and mentoring program for potential dropouts. *School Counselor, 40*, 207-210.
- Bowers, A. J. (2010). Grades and graduation: A longitudinal risk perspective to identify student dropouts. *Journal of Educational Research, 103*, 191-207.
- Bradshaw, C. P., O'Brennan, L. M., & McNeely, C. A. (2008). Core competencies and the prevention of school failure and early school leaving. *New Directions for Child and Adolescent Development, 122*, 19-32. doi: 10.1002/cd
- Casillas, A., Robbins, S., Allen, J., Kuo, Y., Hanson, M. A., & Schmeiser, C. (2012). Predicting early academic failure in high school from prior academic achievement, psychosocial characteristics and behavior. *Journal of Educational Psychology, 104*, 407-420.
- Cauley, K. M., & Jovanovich, D. (2006). Developing an effective transition program for students entering middle school or high school. *The Clearing House, 80*, 15-25.

- Christenson, S. L., & Thurlow, M. L. (2004). School dropouts: Prevention considerations, interventions, and challenges. *Current Directions in Psychological Science, 13*, 36-39.
- Christle, C. A., Jolivette, K., & Nelson, C. M. (2007). School characteristics related to high school dropout rates. *Remedial and Special Education, 28*, 325-339.
- Cohen, J. S., & Smerdon, B. A. (2009). Tightening the dropout tourniquet: Easing the transition from middle to high school. *Preventing School Failure, 53*, 177-184.
- Coie, J. D., Watt, N. F., West, S. G., Hawkins, J. D., Asarnow, J. R., Markman, H. J., Ramey, S. L., . . . Long, B. (1993). The science of prevention: A conceptual framework and some directions for a national research program. *American Psychologists, 48*, 1013-1022.
- Curran Neild, R. (2009). Falling off track during the transition to high school: What we know and what can be done. *The Future of Children, 19*, 53-76.
- Curran Neild, R., Stoner-Eby, S., & Furstenberg, F. (2008). Connecting entrance and departure: The transition to ninth grade and high school dropout. *Education and Urban Society, 40*, 543-569, doi: 10.1177/0013124508316438
- Davis, K. S. (2011). *Program evaluation of universal positive behavior interventions and supports in Kentucky* (Unpublished doctoral dissertation). Western Kentucky University, Bowling Green, KY.
- Doll, J. J., Eslami, Z., & Walters, L. (2013). Understanding why students drop out of high school, according to their own reports: Are they pushed or pulled, or do they fall out? A comparative analysis of seven nationally representative studies. *SAGE Open, 3*, 1-15. doi: 10.1177/2158244013503834
- Durlak, J. A., & Wells, A. M. (1997). Primary prevention mental health programs for children and adolescents: A meta-analytic review. *American Journal of Community Psychology, 25*, 115-152.
- Dynarski, M., Clarke, L., Cobb, B., Finn, J., Rumberger, R., & Smink, J. (2008). *Dropout prevention: A practice guide* (NCEE 2008-4025). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Science, U.S. Department of Education. Retrieved from <http://ies.ed.gov/ncee/wwc>
- Edmonson, J. H., & White, J. D. (1998). A tutorial and counseling program: Helping students at risk of dropping out of school. *Professional School Counseling, 4*, 43-52.
- Fall, A., & Roberts, G. (2012). High school dropouts: Interactions between social context, self-perception, school engagement, and student dropout. *Journal of Adolescents, 35*, 787-798. doi: 10.1016/j.adolescence.2011.11.004
- Heckman, J. J., & LaFontaine, P. A. (2010). The American high school graduation rate: Trends and levels. *NIH Public Access, 92*, 244-262. doi: 10.1162/rest.2010.12366
- Heppen, J. B., & Therriault, S. B. (2008). *Developing an early warning system to identify potential high school dropouts*. Washington, DC: National High School Center.
- Jerald, C. D. (2006). *Identifying potential dropouts: Key lessons for building an early warning data system*. Washington, DC: Achieve, Inc.
- Jordan, W. J., Lara, J., & McPartland, J. M. (1994). *Exploring the complexity of early dropout casual structures*. Retrieved from The Center for Research on Effective Schooling for Disadvantaged Students, Baltimore, MD: <http://files.eric.ed.gov/fulltext/ED375227.pdf>
- Kemple, J. J., Herlihy, C. M., & Smith, T. J. (2005). *Making progress toward graduation: Evidence from the Talent Development High School Model*. Retrieved from the Center for Research on the Education of Students Placed At Risk: http://www.mdrc.org/sites/default/files/full_432.pdf
- Lee, V. E., & Burkam, D. T. (2003). Dropping out of high school: The role of school organization and structure. *American Educational Research Journal, 40*, 353-393.
- Levin, H., Belfield, C., Muennig, P., & Rouse, C. (2006). The costs and benefits of an excellent education for all of America's children. Retrieved on 5/15/2014 from http://www3.nd.edu/~jwarlick/documents/Levin_Belfield_Muennig_Rouse.pdf
- Lochner, L., & Moretti, E. (2004). The effect of education on crime: Evidence from prison inmates, arrests, and self-reports. *American Economic Review, 94*, 155-189.
- McCallumore, K. M., & Sparapani, E. F. (2010). The importance of the ninth grade on high school graduation rates and student success. *The Education Digest, 76*(2), 60-64.
- McIntosh, K., Flannery, K. B., Sugai, G., Braun, D. H., & Cochrane, K. L. (2008). Relationships between academics and problem behavior in the transition from middle school to high school. *Journal of Positive Behavior Intervention, 10*, 243-255. doi: 10.1177/1098300708318961
- Mac Iver, M. A. (2011). The challenges of improving urban high school graduation outcomes: Findings from a randomized study of dropout prevention efforts. *Journal of Education for Students Placed at Risk, 16*, 167-184. doi: 10.1080/10824669.2011.584497
- Manzo, K. K. (2008). Engaged for success: Service-learning as a tool for high-school dropout prevention. *Education Week, 27*, 5-10.
- Mitra, D. (2014). *Pennsylvania's best investment: The social and economic benefits of public education*. Retrieved from Education Law Center, Pennsylvania State University: http://www.elc-pa.org/wpcontent/uploads/2011/06/BestInvestment_Full_Report_6.27.11.pdf
- Moretti E. (2007). Crime and the costs of criminal justice. In C. R. Belfield & H. M. Levin (Eds.), *The price we pay: Economic and social consequences of inadequate education* (pp. 142-159). Washington, DC: Brookings Institution Press.
- Muennig, P. (2007). Consequences in health status and costs. In C. R. Belfield & H. M. Levin (Eds.), *The price we pay: Economic and social consequences of inadequate education* (pp. 125-141). Washington, DC: Brookings Institution Press.

- National Center for Educational Statistics. (2015). *National Education Longitudinal Study of 1988 (NELS:88)*. Retrieved from <https://nces.ed.gov/surveys/nels88/>
- Pinkus, L. (2008). Using early-warning data to improve graduation rates: Closing cracks in the education system. *Alliance for Excellent Education*, 4, 2-14.
- Prevatt, F., & Kelly, F. D. (2003). Dropping out of school: A review of intervention programs. *Journal of School Psychology*, 41, 377-395.
- Quint, J. C., Miller, C., Pastor, J. J., & Cytron, R. E. (1999). *Project Transition: Testing an intervention to help high school freshman succeed*. Retrieved from the United States Department of Education, Office of Educational Research and Improvement: <http://files.eric.ed.gov/fulltext/ED432637.pdf>
- Rotermund, S. (2007). *Why students drop out of high school: Comparisons from three national surveys*. Retrieved from Santa Barbara California Dropout Research Project, University of California Santa Barbara: http://www.hewlett.org/uploads/files/CDRP_WhyStudentsDropOutofHighSchool.pdf
- Rouse, C. E. (2007). Quantifying the costs of inadequate education: Consequences of the labor market. In C. R. Belfield & H. M. Levin (Eds.), *The price we pay: Economic and social consequences of inadequate education* (pp. 99-124). Washington, DC: Brookings Institution Press.
- Rumberger, R. W., & Thomas, S. L. (2000). The distribution of dropout and turnover rates among urban and suburban high schools. *Sociology of Education*, 73(1), 39-67.
- Snyder, T. D., & Dillow, S. A. (2010). *Digest of education statistics 2009 (NCES 2010-013)*. Washington, DC: National Center for Education Statistics.
- Stearns, E., & Glennie, E. J. (2006). When and why dropouts leave high school. *Youth & Society*, 38(29), 29-56. doi: 10.1177/0044118X05282764
- Strein, W., Hoagwood, K., & Cohn, A. (2003). School psychology: A public health perspective I. Prevention, populations, and systems change. *Journal of School Psychology*, 41, 23-38.
- Sugai, G., & Horner, R. H. (2002). The evolution of discipline practices: School-wide positive behavior supports. *Child and Family Therapy*, 24, 23-50.
- Tremblay R. E., Pagani-Kurtz, L., Masse, L. C., Vitaro, F., & Pihl R. (1995). A bimodal preventive intervention for disruptive kindergarten boys: Its impact through mid-adolescence. *Journal of Consulting and Clinical Psychology*, 63, 560-568.
- U.S. Department of Education. (2014). *Positive behavioral interventions and supports*. Retrieved from <https://www.pbis.org/>
- Vitaro, F., Brendgen, M., & Tremblay, R. E. (1999). Prevention of school dropout through the reduction of disruptive behaviors and school failure in elementary school. *Journal of School Psychology*, 37, 205-226.
- Watt, D., & Roessingh, H. (1994). Some you win, most you lose: Tracking ESL dropout in high school. *English Quarterly*, 26, 5-7.

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