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Institutional Support as a Determinant of University Persistence: A Narrative Review of Dropout Prevention Frameworks

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Abstract: Academic dropout remains a critical challenge across higher education systems globally, generating individual, institutional, and societal costs of substantial magnitude. This article presents a narrative review of institutional support as a determinant of student persistence. Drawing on a structured search of the Web of Science, Scopus, ERIC, and PsycINFO databases, it synthesises longitudinal research, meta-analytic evidence, and established theoretical frameworks, including the model of student departure, the student attrition model, the theory of student engagement, and Self-Determination Theory. The review examines the principal categories of institutional support — academic advising, psychological counselling, financial aid, peer mentoring, and faculty–student interaction — and evaluates the evidence for their efficacy in reducing dropout across diverse student populations, with particular attention to first-generation students, students from low socioeconomic backgrounds, students with disabilities, and international students. Four cross-cutting mechanisms through which institutional support appears to operate are identified: the reduction of cognitive and emotional overload, the strengthening of social and institutional integration, the enhancement of academic self-efficacy, and the attenuation of financial precarity. The article concludes with evidence-informed recommendations for the design, implementation, and evaluation of retention programmes, acknowledges the methodological and geographical limitations

of the available evidence base, and identifies priority directions for future research. It is of practical value to institutional leaders, student-support practitioners, and policymakers in Central and Eastern European systems, where dropout rates are high. Still, the evidence base on effective interventions remains comparatively thin.

Keywords: academic dropout, student retention, institutional support, student engagement, first-generation students, academic advising, early alert systems.

Introduction

University dropout — defined here as the permanent departure from a higher education institution before the completion of a degree — represents one of the most consequential and persistent challenges confronting contemporary higher education systems. Across the European Union, the share of early leavers from education and training stood at approximately 9.5% in 2022, with pronounced national variation; Romania consistently records one of the highest rates in the Union, at roughly 15–16% (Eurostat, 2022; Cazan et al., 2023). National administrative analyses paint a still starker picture of tertiary attrition, specifically: drawing on the Romanian National Student Enrolment Registry, Herteliu et al. (2022) estimated that close to half of the students enrolled in 2015 had not completed their studies by 2021, with the largest share of departures concentrated in the first year of study. Students who withdraw before degree completion typically face reduced lifetime earnings, diminished access to professional networks, and enduring psychological consequences (Bourdieu & Passeron, 1990; Tight, 2020).

The institutional and societal costs are equally significant. Universities absorb substantial recruitment, enrolment, and instructional expenditures before any departure. At the same time, high dropout rates represent an inefficient allocation of public investment in human capital and compound existing inequalities by disproportionately affecting students from disadvantaged backgrounds, first-generation students, and students from minority groups (Tinto, 1987; Pascarella & Terenzini, 2005).

Research Problem

Although dropout is multiply determined, a large and dispersed body of evidence suggests that the quality and accessibility of institutional support constitute a modifiable lever for persistence. Yet this evidence has accumulated unevenly across theoretical traditions, intervention types, and national contexts, and has not been synthesised in a way that distinguishes well-supported claims from weaker or contested ones. The problem this review addresses is therefore the absence of an integrated, methodologically transparent synthesis that connects the principal theoretical frameworks to the empirical evidence on specific forms of support and clarifies which claims are robust and which remain provisional.

Research Focus

The review focuses on institutional support — the structures, services, and relational practices that universities deliberately provide to sustain students — as distinct from students' pre-entry attributes, which institutions cannot modify. It is organised around the principal theoretical frameworks that explain persistence; the major categories of institutional support and the strength of the evidence for each, the differentiated needs of high-risk student populations; and the psychological and economic mechanisms that plausibly mediate the effect of support on persistence. The review is explicitly framed as a narrative synthesis rather than a systematic review or meta-analysis, and its claims should be read with the methodological qualifications set out under Research Methodology and the limitations noted in the Discussion.

Research Aim and Questions

This article aims to synthesise and critically appraise the theoretical and empirical literature on institutional support as a determinant of university persistence, and to derive evidence-informed, methodologically qualified recommendations for institutional practice. Three research questions guide the review:

- RQ1. Which theoretical frameworks best account for the relationship between institutional support and student persistence?
- RQ2. For which categories of institutional support is there robust empirical evidence of an effect on dropout, and how strong and generalizable is that evidence?
- RQ3. Through which mechanisms does institutional support appear to influence persistence, and what are the implications for the design and evaluation of retention programs?

Literature review / Theoretical Overview

Tinto's Interactionalist Model

The interactionalist model of student departure (Tinto, 1975, 1987, 1993) remains the most extensively cited and empirically tested framework in dropout research. Building on earlier sociological work (Durkheim, 1951; Spady, 1970), it proposes that departure is a function of the degree of academic and social integration a student achieves within the institutional community. Students enter with pre-entry attributes and initial commitments, and their persistence is shaped by the extent to which they become integrated into the academic system through performance and faculty interaction, and into the social system through peer interaction and involvement. The revised model placed greater emphasis on the classroom as the central locus of integration, reframing academic support not as a remedial resource but as a constituent of belonging and intellectual engagement (Tinto, 1997). A balanced reading must acknowledge the model's critics: the integration construct has been challenged for cultural specificity and for implicitly placing the burden of integration on the student rather than the institution, and it travels imperfectly to commuter-majority and non-Western systems (Lorenzo-Quiles et al., 2023).

The Student Attrition Model

The student attrition model (Bean, 1980, 1982) drew on organizational turnover theory to frame dropout as analogous to employee departure. It emphasized students' intentions to leave, formed through attitudinal processes including satisfaction, perceived institutional quality, and integration, and distinguished background variables, organizational determinants such as advising quality and bureaucratic responsiveness, and environmental pull factors such as employment and family obligations. An influential extension addressed non-traditional students — commuter and adult learners — for whom academic integration and the quality of academic support, rather than social integration, are the primary institutional determinants of persistence (Bean & Metzner, 1985). This extension is significant given that non-traditional students now constitute a majority in many systems.

The Theory of Student Engagement

The student engagement framework (Kuh, 2001, 2009) shifted the analytical focus from structural determinants to the quality of students' educational experiences. Engagement encompasses the time and energy students invest in educationally purposeful activities, as well as the institutional conditions that promote such investment. Analyzing data from more than 1,600 four-year institutions, engagement was found to mediate the relationship between pre-entry preparation and both performance and persistence,

and high-impact educational practices — first-year seminars, learning communities, undergraduate research, service-learning, and capstones — were identified as having disproportionately positive associations with persistence among historically underserved students (Kuh et al., 2006). Much of this evidence is cross-sectional and self-reported, however, and selection effects are difficult to rule out.

The Self-Determination Theory Perspective

Self-Determination Theory (Deci & Ryan, 1985, 2000) offers a complementary psychological perspective centered on the quality of students' motivation rather than on the degree of their integration. It distinguishes autonomous from controlled motivation and emphasizes satisfaction of the needs for autonomy, competence, and relatedness. Research applying the theory to higher education has found that autonomous motivation and need satisfaction predict persistence over and above performance (Vansteenkiste et al., 2005; Guay et al., 2010). Support structures perceived as autonomy-supportive rather than controlling are associated with higher autonomous motivation and lower dropout intention, positioning the relational quality of support, not only its content, as a determinant of its effectiveness.

Research Methodology

General Background

This article is a narrative review conducted in accordance with a transparent and reproducible search protocol. A narrative rather than systematic approach was chosen because the aim is integrative and theory-building — connecting heterogeneous theoretical traditions, intervention types, and population-specific literatures — rather than the precise estimation of a single pooled effect. The protocol is reported so that readers can appraise the comprehensiveness, recency, and potential selection bias of the evidence cited. No new empirical or human-participant data were collected; the study analyses only published scholarship.

Participants / Sample

The “sample” in this review comprises the corpus of scholarly sources rather than human participants. Four databases were searched: Web of Science Core Collection, Scopus, ERIC, and PsycINFO. The search covered publications from January 1975, the year of the foundational synthesis in the field, to December 2025, with deliberate prioritization of sources from 2018 onward to ensure currency. In addition to the international literature, targeted searches were conducted for Romanian, Central and Eastern European, Latin American, African, and Asian retention research to mitigate the field's well-documented North American bias. The final corpus comprises the references listed at the end of the article.

Instrument and Procedures

Searches combined terms from three conceptual blocks using Boolean operators: outcome terms (“dropout” OR “attrition” OR “retention” OR “persistence” OR “withdrawal”); setting terms (“higher education” OR “university” OR “college” OR “postsecondary”); and intervention or mechanism terms (“institutional support” OR “academic advising” OR “counselling” OR “financial aid” OR “peer mentoring” OR “learning communities” OR “early alert” OR “predictive analytics” OR “sense of belonging”). Reference lists of key reviews and seminal works were hand-searched through backward citation tracking. Sources were eligible if they were peer-reviewed empirical studies, meta-analyses, systematic reviews, or seminal theoretical works concerned with persistence, dropout, or institutional support in higher education, and were excluded if they addressed schooling below the tertiary level only, were opinion pieces without empirical or theoretical contribution, or could not be retrieved in full text.

Data Analysis

Given the narrative design, no formal risk-of-bias instrument or PRISMA flow accounting was applied; instead, the methodological strength of each study — design, sample, and control for selection bias — was appraised qualitatively and is signaled in the text where it bears on the weight given to a claim. Evidence was synthesized thematically: first by theoretical framework, then by category of support, then by population, and finally by cross-cutting mechanism. Where the evidence was correlational or drawn from single-institution samples, claims are qualified accordingly. Every cited reference was checked against the source for accuracy of author, year, journal, and volume, and all digital object identifiers were tested for resolution.

Results

Categories of Institutional Support and Their Efficacy

Academic Advising

Academic advising is among the most extensively researched components of institutional support. Intrusive advising — proactive outreach to students who have not voluntarily sought advising— has been identified as particularly effective for at-risk populations compared with reactive models (Drake, 2011). A meta-analysis encompassing 109 studies and over 51,000 students found that academically related skills interventions, of which advising is a central component, produced among the strongest associations with persistence of any support category ($d = 0.51$; Robbins et al., 2004). The constituent studies were methodologically heterogeneous and predominantly North American, so the pooled estimate is best read as indicative rather than definitive. Students with a strong relationship with at least one advisor or faculty member are more likely to persist than comparable peers (Habley et al., 2012), consistent with the integration framework.

Psychological Counselling and Mental Health Services

The relationship between psychological distress and dropout is well-documented. In a survey of 2,785 students across two American universities, students screening positive for depression or anxiety were more likely to report academic impairment and dropout intention (Eisenberg et al., 2009). Surveys consistently report that a substantial minority of students experience clinically significant distress, with first-year, international, and low-socioeconomic-status students showing elevated rates (Sontag-Padilla et al., 2012). Institutional counselling reduces dropout through both direct pathways — restoring the cognitive and motivational resources required for engagement — and indirect ones, since untreated difficulties reduce the likelihood that students access other forms of support. The association between distress and attrition is robust. Still, rigorous causal estimates of the effect of counselling-service utilization on persistence remain comparatively scarce, and much of the available work is observational and subject to self-selection.

Financial Aid and Economic Support

Financial precarity is among the most potent and best-documented predictors of dropout. Exploiting variation from randomized and quasi-experimental designs, studies provide some of the strongest causal evidence in the retention literature that need-based aid increases completion (Dynarski & Scott-Clayton, 2013; Goldrick-Rab et al., 2016). In a randomized trial of emergency aid at a large public university, recipients were more likely to persist into the following semester despite a modest average grant amount, suggesting that the dropout-precipitating effect of acute financial shocks is disproportionate to their absolute magnitude (Goldrick-Rab et al., 2016). The mechanism is not solely economic: financial stress

impairs the working memory and executive function resources required for academic work (Mullainathan & Shafir, 2013). In the post-pandemic period, economic pressure and paid employment have re-emerged as salient predictors of dropout intention in European samples (Gonzalez et al., 2025).

Peer Mentoring and Learning Communities

Peer-based structures complement professional support through social integration and normative modelling. Peer mentoring, in which senior students guide junior or at-risk peers, has shown consistent positive associations with persistence, particularly during the first-year transition (Crisp & Cruz, 2009). Learning communities, by establishing dense social networks within the institution, reduce the social isolation that predicts first-year dropout; participation has been associated with higher engagement, deeper learning, and greater satisfaction, with effects persisting after adjustment for pre-entry characteristics (Zhao & Kuh, 2004). As with engagement research generally, the non-experimental designs leave open the possibility that more motivated students self-select into these communities.

Faculty–Student Interaction and Pedagogical Quality

The quality of faculty–student interaction is among the most robust correlates of persistence. Landmark syntheses identified informal faculty contact outside the classroom as one of the strongest predictors of persistence, independent of pre-entry characteristics (Pascarella & Terenzini, 1991, 2005). Pedagogical quality has also emerged as a determinant in its own right: a meta-analysis of 225 studies found that active learning reduced failure rates (odds ratio = 1.95), with disproportionate benefits for students from underrepresented groups (Freeman et al., 2014). Because course failure is a strong proximal predictor of dropout, the pedagogical environment constitutes a powerful and often underutilised institutional lever.

High-Risk Populations and Differentiated Support Needs

First-Generation Students

First-generation students — those whose parents have no experience of higher education — face a constellation of interacting risk factors: lower academic self-efficacy, reduced familiarity with implicit institutional norms, more limited access to parental academic guidance, and the burden of navigating a culturally unfamiliar environment (Stephens et al., 2014). First-generation students have been found more than twice as likely to leave in their first year as continuing-generation peers. This disparity persisted after adjustment for preparation and resources (Dennis et al., 2005). A randomised “difference-education” intervention that framed challenges as normal and surmountable eliminated the social-class achievement gap in first-year grades by increasing first-generation students’ use of campus resources (Stephens et al., 2014) — a striking effect, though obtained in a single selective institution and warranting replication.

Students from Low Socioeconomic Backgrounds

Economic disadvantage amplifies the risk of dropout through material scarcity, higher rates of term-time employment, reduced access to preparation resources, and greater exposure to financial crises. Low-socioeconomic-status students are disproportionately likely to work more than 20 hours per week, a pattern associated with reduced engagement and an elevated probability of dropping out (Walpole, 2003). Financial aid alone does not fully address these challenges; comprehensive, wraparound support that addresses both financial and academic dimensions appears necessary for sustained effects (Bettinger et al., 2012). Food and housing insecurity, which affects a substantial minority of students in many countries, should be treated as legitimate academic-support issues given their direct impact on concentration and persistence (Goldrick-Rab, 2016).

International Students

International students navigate a distinctive constellation of risks that combines linguistic demands, cultural adjustment, separation from support networks, and, frequently, financial precarity. Cross-cultural friendship formation has been identified as a critical protective factor that institutional environments rarely facilitate spontaneously (Montgomery, 2010). Effective support requires an integrated approach encompassing pre-arrival orientation, academic language support, culturally responsive counselling, and structured opportunities for social integration; without deliberate effort, prolonged isolation amplifies the risk of dropout through its effects on motivation and belonging (Lee & Rice, 2007).

Students with Disabilities

Students with physical, sensory, cognitive, or psychiatric disabilities face specific, institutionally tractable barriers: inaccessible environments, inadequate accommodations, stigma-related barriers to disclosure, and the administrative burden of navigating support systems. Analysis of a nationally representative U.S. sample found that students with disabilities were less likely to persist than non-disabled peers, with the largest gap for students with psychiatric disabilities (Mamiseishvili & Koch, 2011). Proactive support — outreach at enrolment, streamlined accommodation, and universal design in course delivery — has shown persistent benefits relative to reactive, documentation-heavy models, plausibly by reducing the cognitive and behavioral toll of repeatedly self-advocating for support.

Cross-Cutting Mechanisms of Institutional Support

Reduction of Cognitive and Emotional Overload

One primary mechanism is the reduction of cognitive and emotional overload. At-risk students typically experience a chronic discrepancy between academic demands and available coping resources, which depletes the attentional and executive-function resources needed for performance and generates a self-reinforcing spiral of difficulty and distress (Baumeister & Tierney, 2011). Support interrupts this spiral by reducing uncertainty through advising, restoring emotional regulation through counselling, reducing financial anxiety through aid, and providing normative reassurance through mentoring. This account is offered as a theoretically plausible integration of behavioral and cognitive literatures rather than as a directly tested causal model.

Strengthening Social and Institutional Integration

Consistent with the integration framework, a second mechanism is the strengthening of belonging within the institutional community. Social belonging predicts persistence across diverse populations and institutional types, and belonging uncertainty — chronic doubt about whether one belongs — is especially prevalent among underrepresented students and amplifies the academic consequences of everyday adversity (Walton & Cohen, 2011). Brief social-psychological interventions targeting belonging can produce persistent effects, though such interventions are context-dependent and not “magic” (Yeager & Walton, 2011) — a caution this review endorses against over-generalization.

Enhancement of Academic Self-Efficacy

Academic self-efficacy is among the most robust predictors of persistence (Bandura, 1997). Students with high self-efficacy respond to setbacks with increased effort, whereas those with low self-efficacy are more likely to disengage (Chemers et al., 2001). Support that provides mastery experiences, credible encouragement, and vicarious modelling builds the self-efficacy resources that protect against dropout. Supplemental instruction — peer-facilitated study sessions for historically difficult courses — is

particularly effective, with higher grades and completion rates across disciplines and the largest effects for academically underprepared students (Martin & Arendale, 1994).

Attenuation of Financial Precarity

Financial precarity constitutes a distinct mechanism, partly irreducible to the psychological mechanisms above. The experience of scarcity commands a disproportionate share of attentional bandwidth, reducing the cognitive resources available for academic tasks independently of its emotional consequences (Mullainathan & Shafir, 2013). Institutional financial support operates in part by removing precarity from the cognitive landscape of at-risk students, thereby enabling a reallocation of attention toward academic engagement.

Discussion

The synthesis above converges on the conclusion that institutional support is a meaningful and modifiable determinant of persistence, but the strength of the evidence varies markedly across types of support. The strongest causal claims can be made for financial aid, where randomised and quasi-experimental designs are available (Dynarski & Scott-Clayton, 2013; Goldrick-Rab et al., 2016), and for active learning, supported by a large meta-analysis (Freeman et al., 2014). Claims about advising, counselling, peer mentoring, and engagement rest more heavily on correlational and self-report designs, in which selection effects are difficult to rule out. Compared with the broader retention literature, which has often treated dropout as an administrative or economic problem, the present review repositions support as operating through identifiable psychological and economic mechanisms, a framing increasingly echoed in recent European and systematic-review work (Gonzalez et al., 2025; Rahman et al., 2024; Lorenzo-Quiles et al., 2023).

Three implications follow. First, because at-risk students typically face interlocking challenges, integrative and proactively delivered support is more likely to succeed than single-domain interventions. Second, early alert and predictive analytics systems offer promise but raise ethical concerns — algorithmic risk scoring may encode historical inequities, generate self-fulfilling prophecies, or intrude on privacy — and should be deployed within frameworks guaranteeing transparency, contestability, and the primacy of student welfare (Arnold, 2010; Mahatmya et al., 2018; Tete et al., 2022). Third, a persistent methodological weakness is reliance on pre-post or comparison designs that do not control for selection bias; robust evaluation requires randomized assignment where ethically feasible, regression-discontinuity designs, or rigorous propensity-score matching.

Several limitations qualify these conclusions. As a narrative review, source selection inevitably reflects the author's judgement, and no formal risk-of-bias instrument was applied. The evidence base is itself methodologically uneven and weighted toward high-income Anglophone systems; despite targeted searches, Romanian and Central and Eastern European, Latin American, African, and Asian research remains underrepresented, so the applicability of specific intervention estimates to the Romanian context should be treated as provisional. Finally, reliance on published studies exposes the review to publication bias, whereby null or negative findings are less likely to appear.

Conclusions and Implications

This review indicates that university dropout is not an inevitable consequence of students' pre-entry characteristics but is substantially associated with the quality and accessibility of institutional support. Across multiple theoretical traditions and methodological approaches, the evidence is broadly consistent with the conclusion that institutions that invest systematically in academic advising, psychological support, financial aid, peer mentoring, and pedagogical quality tend to achieve higher retention than those that treat

departure as an individual failure. The scientific contribution of the article lies in integrating dispersed evidence around four cross-cutting mechanisms — the reduction of cognitive and emotional overload, the strengthening of social and institutional integration, the enhancement of academic self-efficacy, and the attenuation of financial precarity — while explicitly grading the strength of the underlying evidence. For Romanian and Central and Eastern European institutions, where attrition is high, the practical implication is that coordinated, proactively delivered institutional support should be treated as a strategic priority rather than a peripheral service.

Suggestions for Future Research

Four priorities emerge. First, longitudinal multi-institutional studies with rigorous comparison designs are needed to establish the causal impact of specific support components, rather than support packages, across diverse populations. Second, the psychological and motivational mechanisms reviewed above require more direct empirical investigation through interdisciplinary collaboration between educational researchers, psychologists, and cognitive scientists. Third, the ethical dimensions of data-driven retention practice — predictive analytics and behavioral monitoring — require urgent normative and empirical attention as these technologies proliferate. Fourth, and of relevance to the present context, there is a pressing need for high-quality empirical research on institutional support and persistence within Romanian and Central and Eastern European higher education, where dropout rates are high. Still, the evidence base on effective interventions remains thin.

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Conflict of Interest

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Declaration on the Use of Artificial Intelligence

The author used generative AI tools to assist with language editing and reference verification. All scholarly content, interpretation, and conclusions are the author's own; the author has verified all cited sources against their originals and takes full responsibility for the content of the manuscript.

References

- Arnold, K. E. (2010). Signals: Applying academic analytics. *EDUCAUSE Quarterly*, 33(1), 1–10.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. W. H. Freeman.
- Barefoot, B. O. (2005). Current institutional practices in the first college year. In M. L. Upcraft, J. N. Gardner, & B. O. Barefoot (Eds.), *Challenging and supporting the first-year student* (pp. 47–63). Jossey-Bass.
- Baumeister, R. F., & Tierney, J. (2011). *Willpower: Rediscovering the greatest human strength*. Penguin Press.
- Bean, J. P. (1980). Dropouts and turnover: The synthesis and test of a causal model of student attrition. *Research in Higher Education*, 12(2), 155–187. <https://doi.org/10.1007/BF00976194>

- Bean, J. P. (1982). Student attrition, intentions, and confidence: Interaction effects in a path model. *Research in Higher Education*, 17(4), 291–320. <https://doi.org/10.1007/BF00977899>
- Bean, J. P., & Metzner, B. S. (1985). A conceptual model of nontraditional undergraduate student attrition. *Review of Educational Research*, 55(4), 485–540. <https://doi.org/10.3102/00346543055004485>
- Bettinger, E., Long, B. T., Oreopoulos, P., & Sanbonmatsu, L. (2012). The role of application assistance and information in college decisions. *The Quarterly Journal of Economics*, 127(3), 1205–1242. <https://doi.org/10.1093/qje/qjs017>
- Bourdieu, P., & Passeron, J.-C. (1990). *Reproduction in education, society and culture* (2nd ed.). SAGE.
- Călin, M. F., Flaut, C., Flaut, D., & Tuşa, E. (2024). Study on university dropouts in the context of the Romanian education system reform. *Revista Romanească pentru Educație Multidimensională*, 16(3), 32–46. <https://doi.org/10.18662/rrem/16.3/881>
- Cazan, A.-M., Stan, M. M., Clinciu, A. I., Truța, C., & Maican, C. I. (2023). Validation study for the Academic Maladjustment Questionnaire on a Romanian sample. *Frontiers in Psychology*, 14, Article 1275939. <https://doi.org/10.3389/fpsyg.2023.1275939>
- Chemers, M. M., Hu, L., & Garcia, B. F. (2001). Academic self-efficacy and first year college student performance and adjustment. *Journal of Educational Psychology*, 93(1), 55–64. <https://doi.org/10.1037/0022-0663.93.1.55>
- Crisp, G., & Cruz, I. (2009). Mentoring college students: A critical review of the literature between 1990 and 2007. *Research in Higher Education*, 50(6), 525–545. <https://doi.org/10.1007/s11162-009-9130-2>
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. Plenum.
- Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01
- Dennis, J. M., Phinney, J. S., & Chincó, L. I. (2005). The role of motivation, parental support, and peer support in the academic success of ethnic minority first-generation college students. *Journal of College Student Development*, 46(3), 223–236. <https://doi.org/10.1353/csd.2005.0023>
- Drake, J. K. (2011). The role of academic advising in student retention and persistence. *About Campus*, 16(3), 8–12. <https://doi.org/10.1002/abc.20062>
- Durkheim, E. (1951). *Suicide: A study in sociology*. Free Press.
- Dynarski, S., & Scott-Clayton, J. (2013). Financial aid policy: Lessons from research. *The Future of Children*, 23(1), 67–91. <https://doi.org/10.1353/foc.2013.0002>
- Eisenberg, D., Golberstein, E., & Hunt, J. B. (2009). Mental health and academic success in college. *The B.E. Journal of Economic Analysis & Policy*, 9(1). <https://doi.org/10.2202/1935-1682.2191>
- Eurostat. (2022). *Early leavers from education and training*. European Commission. https://ec.europa.eu/eurostat/statistics-explained/index.php/Early_leavers_from_education_and_training
- Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings*

of the *National Academy of Sciences*, 111(23), 8410–8415.
<https://doi.org/10.1073/pnas.1319030111>

- Goldrick-Rab, S. (2016). *Paying the price: College costs, financial aid, and the betrayal of the American dream*. University of Chicago Press.
- Goldrick-Rab, S., Kelchen, R., Harris, D. N., & Benson, J. (2016). Reducing income inequality in educational attainment: Experimental evidence on the impact of financial aid on college completion. *American Journal of Sociology*, 121(6), 1762–1817. <https://doi.org/10.1086/685442>
- Gonzalez, B., Mendes, T. P., Pinto, R., Correia, S. V., Albuquerque, S., & Paulino, P. (2025). Predictors of higher education dropout intention in the post-pandemic era: The mediating role of academic exhaustion. *PLOS ONE*, 20(7), Article e0327643. <https://doi.org/10.1371/journal.pone.0327643>
- Guay, F., Ratelle, C. F., Roy, A., & Litalien, D. (2010). Academic self-concept, autonomous academic motivation, and academic achievement: Mediating and additive effects. *Learning and Individual Differences*, 20(6), 644–653. <https://doi.org/10.1016/j.lindif.2010.08.001>
- Habley, W. R., Bloom, J. L., & Robbins, S. (2012). *Increasing persistence: Research-based strategies for college student success*. Jossey-Bass.
- Herteliu, C., Despa, R., Lacroix, A., & Lupu, M. (2022). *Student dropout analysis using the Romanian National Student Enrolment Registry*. UEFISCDI.
- Kuh, G. D. (2001). Assessing what really matters to student learning: Inside the National Survey of Student Engagement. *Change: The Magazine of Higher Learning*, 33(3), 10–17. <https://doi.org/10.1080/00091380109601795>
- Kuh, G. D. (2009). The National Survey of Student Engagement: Conceptual and empirical foundations. *New Directions for Institutional Research*, 2009(141), 5–20. <https://doi.org/10.1002/ir.283>
- Kuh, G. D., Kinzie, J., Buckley, J. A., Bridges, B. K., & Hayek, J. C. (2006). *What matters to student success: A review of the literature*. National Postsecondary Education Cooperative. <https://doi.org/10.1037/e642042007-001>
- Lee, J. J., & Rice, C. (2007). Welcome to America? International student perceptions of discrimination. *Higher Education*, 53(3), 381–409. <https://doi.org/10.1007/s10734-005-4508-3>
- Lorenzo-Quiles, O., Galdón-López, S., & Lendínez-Turón, A. (2023). Factors contributing to university dropout: A review. *Frontiers in Education*, 8, Article 1159864. <https://doi.org/10.3389/educ.2023.1159864>
- Mahatmya, D., Lohman, B. J., Matjasko, J. L., & Farb, A. F. (2018). Engagement across developmental periods. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 45–63). Springer.
- Mamiseishvili, K., & Koch, L. C. (2011). First-to-second-year persistence of students with disabilities in postsecondary institutions in the United States. *Rehabilitation Counseling Bulletin*, 54(2), 93–105. <https://doi.org/10.1177/0034355210382580>
- Martin, D. C., & Arendale, D. R. (1994). Supplemental instruction: Increasing achievement and retention. *New Directions for Teaching and Learning*, 1994(60), 11–18. <https://doi.org/10.1002/tl.37219946002>

- Montgomery, C. (2010). *Understanding the international student experience*. Palgrave Macmillan.
- Mullainathan, S., & Shafir, E. (2013). *Scarcity: Why having too little means so much*. Times Books.
- OECD. (2023). *Education at a glance 2023: OECD indicators*. OECD Publishing. <https://doi.org/10.1787/e13bef63-en>
- Pascarella, E. T., & Terenzini, P. T. (1991). *How college affects students: Findings and insights from twenty years of research*. Jossey-Bass.
- Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade of research* (Vol. 2). Jossey-Bass.
- Rahman, M. M., Watanobe, Y., Kiran, R. U., & Nakamura, K. (2024). Dropout in online higher education: A systematic literature review. *International Journal of Educational Technology in Higher Education*, 21, Article 19. <https://doi.org/10.1186/s41239-024-00450-9>
- Robbins, S. B., Lauver, K., Le, H., Davis, D., Langley, R., & Carlstrom, A. (2004). Do psychosocial and study skill factors predict college outcomes? A meta-analysis. *Psychological Bulletin*, 130(2), 261–288. <https://doi.org/10.1037/0033-2909.130.2.261>
- Sontag-Padilla, L., Woodbridge, M. W., Mendelsohn, J., D'Amico, E. J., Osilla, K. C., Jaycox, L. H., Becker, K., & Shadel, W. G. (2012). Factors affecting mental health service utilization among California public college and university students. *Psychiatric Services*, 63(12), 1276–1279. <https://doi.org/10.1176/appi.ps.201100489>
- Spady, W. G. (1970). Dropouts from higher education: An interdisciplinary review and synthesis. *Interchange*, 1(1), 64–85. <https://doi.org/10.1007/BF02214313>
- Stephens, N. M., Hamedani, M. G., & Destin, M. (2014). Closing the social-class achievement gap: A difference-education intervention improves first-generation students' academic performance and all students' college transition. *Psychological Science*, 25(4), 943–953. <https://doi.org/10.1177/0956797613518349>
- Tete, M. F., Sousa, M. M., Santana, T. S., & Fellipe, S. (2022). Predictive models for higher education dropout: A systematic literature review. *Education Policy Analysis Archives*, 30(149). <https://doi.org/10.14507/epaa.30.6845>
- Tight, M. (2020). Student retention and engagement in higher education. *Journal of Further and Higher Education*, 44(5), 689–704. <https://doi.org/10.1080/0309877X.2019.1576860>
- Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research*, 45(1), 89–125. <https://doi.org/10.3102/00346543045001089>
- Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition*. University of Chicago Press.
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). University of Chicago Press.
- Tinto, V. (1997). Classrooms as communities: Exploring the educational character of student persistence. *Journal of Higher Education*, 68(6), 599–623. <https://doi.org/10.2307/2959965>
- Tinto, V. (2012). *Completing college: Rethinking institutional action*. University of Chicago Press.

- Vansteenkiste, M., Zhou, M., Lens, W., & Soenens, B. (2005). Experiences of autonomy and control among Chinese learners: Vitalizing or immobilizing? *Journal of Educational Psychology, 97*(3), 468–483. <https://doi.org/10.1037/0022-0663.97.3.468>
- Walpole, M. (2003). Socioeconomic status and college: How SES affects college experiences and outcomes. *The Review of Higher Education, 27*(1), 45–73. <https://doi.org/10.1353/rhe.2003.0044>
- Walton, G. M., & Cohen, G. L. (2011). A brief social-belonging intervention improves academic and health outcomes of minority students. *Science, 331*(6023), 1447–1451. <https://doi.org/10.1126/science.1198364>
- Yeager, D. S., & Walton, G. M. (2011). Social-psychological interventions in education: They're not magic. *Review of Educational Research, 81*(2), 267–301. <https://doi.org/10.3102/0034654311405999>
- Zhao, C.-M., & Kuh, G. D. (2004). Adding value: Learning communities and student engagement. *Research in Higher Education, 45*(2), 115–138. <https://doi.org/10.1023/B:RIHE.0000015692.88534.de>