

The Impact of Long-Term Disruptions on Academic Success in Higher Education and Best Practices to Help Students Overcome Them

Jay Sholes
New York University

Adam Sullivan
Purdue Global University

Stanley Self
Purdue Global University

Disruptions in the delivery of academic content in higher education had been minimal as recently as 2020. Learning obstacles have not only become more frequent but also exhibit increased duration due to climate related natural disasters, and most recently, global health pandemics. The primary investigators explore the negative impacts these events have had on students' academic success, and the best practices implemented by colleges and universities to help students overcome these issues, and persist in attaining personal and academic goals. Analysis will examine institutional-based efforts for academic student support, guidance, and motivation together with the students' resiliency efforts. Analysis will also describe the effects on the online delivery of academic content. Findings demonstrate that one of the best ways institutions can encourage academic success is through self-resiliency, and that proactive steps mitigate stressful events.

Keywords: academic success, student support, student guidance, online education

INTRODUCTION

Even before the Covid-19 pandemic, higher education had been experiencing incremental evolution throughout the early 21st century. Similar changes have been manifesting in the modern workplace. Employers demand new skills in virtually work-all aspects, including: critical thinking, communication, creativity, team work and entrepreneurship. College-graduates must incorporate these new skills, skills that have been relegated to senior executives in the past (Smith, et al., 2019).

According to Wolf (2021),

The COVID-19 pandemic brought about an unprecedented disruption to both K-12 and higher education at a national and worldwide scale. Classrooms across the country and the globe were forced to adjust to a new virtual educational landscape. Students are no

strangers to this considering all of the past academic year was conducted fully online. (Para. 1)

Since 2020, the COVID-19 pandemic has been a significant motivating factor for abrupt incorporation of cutting-edge pedagogic practices throughout academia, but more especially in online learning environments. The primary investigators will explore how significant disruptions to higher education affect student success, and what strategies might mitigate some of the long-term effects.

ACADEMIC IMPACT OF NATURAL DISASTERS

The increasing number of climate related natural disasters exacerbates the challenges encountered by institutions; the resulting impact on students in higher education can vary depending on type of disaster, demographics of the students as well as institutional preparation and response. In 2004, Hurricane Katrina affected over 50,000 students in the New Orleans area (L'Orange, 2010). Of the students impacted by this storm, almost 75% of them perceived a negative impact on their academic performance and over a third of them withdrew from classes (Ladd et al., 2007). In 2011, Thailand experienced monsoon flooding that lasted for months and resulted in two major universities delaying the start of the semester by 3 months and caused students to have to adjust their educational plans due to damaged infrastructure and limited educational resources (Kanthawongs, 2013). Students impacted by these prolonged floods had a significant decline in their overall test scores (Thamtanajit, 2020).

In spring 2015, severe snowstorms affected the northeast United States resulting in multiple extended interruptions of in-class instruction. Wynne, et al. (2018) evaluated how these snowstorms impacted students' perceptions of their academic experience. Faculty members were encouraged to recover missed contact hours by either holding asynchronous online meetings, adding in-class weekend sessions, or assigning additional homework. Using a survey, the authors measured the perceived impact by comparing self-identified student groups. The statistical analysis found that students attending a suburban university perceived a significantly greater impact in their overall educational experience, their preparation for remaining required courses for degree completion, and the level of rigor to the course compared with their urban university peers. The study went on to find a similar perception issue when the student groups were categorized into resident and commuter students.

Wynne et al. (2019) went further into evaluating these long-term disruptions and their perceived impact on students within different years of study, different business majors, grade point average (GPA) groups, and between genders. This study found that students in the junior and senior year perceived a greater impact, as compared to freshmen and sophomore students, in their overall educational experience, additional hours to catch up on course work, as well as a negative impact in preparation for remaining course work. Students with lower GPA had similar concerns when compared to their higher GPA peers. However, neither the student's major nor gender had an impact on these categories of concern.

Much has been learned about the impact of these extended weather disruptions specifically focused on traditional college students. In 2017, Hurricane Harvey stalled over the Houston, Texas area. "While face-to-face students were not severely impacted, more than a thousand online students were in the impact zone and in danger of dropping out" (Holzweiss et al., 2020, p. 22). With widespread electric and internet outages, institutional communications announced campus closures, but failed to differentiate between student types leaving online students confused and anxious about their academic responsibilities. The institution had a dedicated support team for online students and ultimately delayed the start of the semester as well as shortened the instructional period in half. The results showed there was a slight increase in students receiving failing grades, but the incomplete/withdrawal rate remained similar to previous years.

ACADEMIC IMPACT OF COVID-19

Natural disasters have proven to be a challenge for college students, but no one could have been prepared for the problems created by a global pandemic. In early 2020, the rapid spread of COVID-19 led

to a global shutdown of educational institutions. There were 106 countries that implemented national quarantine mandates impacting an estimated 1.4 billion students (Jain, 2020). In response, many traditional face-to-face institutions of higher education quickly transitioned to an online learning model. The e-learning approach proved to be the best option under these circumstances, but it does not come without challenges (Maatuk et al., 2021).

One of the major hurdles of online learning is the stigma it carries of being a lesser quality educational experience than traditional methodologies (Schultz & DeMers, 2020). Younas et al. (2022) studied how student attitudes toward e-learning impacted their academic success and achievement. They surveyed 1,200 students varying in age and educational background, and inquired about their motivation for and attitude toward online learning, adoption of online education channels, and students' digital competence. The analysis found that a positive attitude in each component had a positive correlation with satisfaction about e-learning, which in turn resulted in a positive academic achievement. Although a positive attitude suggests positive academic outcome, there are other factors that may impact overall perception and ultimately success.

Early in the pandemic, Besser et al. (2022) evaluated 1,217 college students and the impact of a sudden migration to synchronous online learning. They surveyed students focusing on their cognitive focus, depth of learning, and expected performance along with other mental health questions. Overall, students had a negative perception of the synchronous online learning experience compared to the traditional model. The study further correlated students' personality variables with their perception of the unfamiliar online learning experience. Those students who had tendencies of neuroticism and conscientiousness perceived a more negative impact in their academic experience than those who had tendencies of extraversion, openness, and agreeable personality traits.

Despite positive attitudes and personality traits, research shows that minority and first-generation college students can have some unique challenges to overcome (Palmer et al., 2011). Many of these students lack community support, experience elevated financial need, and lack guidance needed to navigate the higher education environment (Blackwell et al., 2014; Pratt et al., 2019; Folger et al., 2004). Boserup, et al. (2020) suggested that COVID-19 had higher infection and death rates within racial and ethnic minorities communities. DeRossett et al. (2021) explored how the pandemic impacted this community's academic success. Using a self-reporting survey to collect the data, they found that minorities exhibited lower academic motivation than their white peers; however, first-generation college students and those with essential worker status did not experience the same negative effect. Despite the perceived impact on students, academic institution can often measure success by different standards.

Some of the some of the supplementary metrics used include: non-cognitive factor scores, predictive risk scores, degree of co-curricular engagement, level of classroom engagement and academic performance, campus resource usage, assessment responses, and, number and type of early alerts (Anthology, 2019). The effort to better accommodate individual students can help identify unique needs, and identify intercessions that will enhance opportunities for success. A better understanding of each distinctive student's journey will in turn advance the success of the student population at-large.

ACADEMIC SUCCESS

Academic success is often used as a performance metric for higher education institutions (Alyahyan & Düştegör, 2020; "National Commission for Academic," 2015). Thus, it is important for these institutions to understand how best to manage the student experience to maximize success. Academic success is defined in a variety of ways in literature. The bulk of existing literature associates academic success with academic achievement (Cachia et al. 2018; Self, et al., 2018). Others use retention as a measure, which is challenging as it is "is simply a marker in time and does not demonstrate whether a student is making progress towards their intended goal" (Moore, 2019, para. 3). Recent definitions have emerged that more comprehensively reflect the student experience. York et al. (2015) argued that the concept of academic success is subjective and can change depending on the perspective. In their study of the term in literature, they identified six elements of academic success: academic achievement, satisfaction, acquisition of skills and competencies,

persistence, attainment of learning objectives, and career success. Fishman et al. (2021) described academic success as a “a combination of affordable access, persistence, completion, and transition to the workforce” (para. 1).

Stress has been reported as the foremost barrier to academic success (Benson et al., 2021). Students already have a higher level of stress than other populations (Eskin et al., 2016), and long-term college disruptions resulting from the COVID-19 pandemic have further increased that level of stress (Barbayannis et al. 2022, Son et al. 2020). Clabaugh et al. (2021) found that in addition to the emotional impact of COVID-19, students also experience increased stress from an unfamiliar online learning environment. As online learning has become the solution for long-term college disruptions, it is more important than ever that institutions of higher education refine and evolve their approach to academic success and disruption planning. This review of best practices is focused on four major aspects of the student experience: student support, student guidance, student motivation, and student resiliency, which encompass many of the elements listed above.

Best Practices: Student Support

Advising

When it comes to student support, most institutions currently support a holistic approach (Karp, 2016; Escobedo, 2007; Scrivener et. al, 2009). According to Karp et al. (2021), although student advisors have traditionally served the role of helping students choose and register for courses, more and more institutions of higher education are asking these advisors to serve a more holistic role. Further, they view the holistic approach to student advising as providing,

all students with the types and intensities of information, services, and resources they need to identify, select, and progress on the best pathway toward achieving their educational and career goals; as well as engaging students where they are developmentally, addressing their individual needs, leveraging their strengths, and focusing on student learning and development. (p. 55)

Additionally, they recommend incorporating mentoring and coaching to support academic success.

Mintz (2019) envisioned a support structure that would give students access to financial aid, registration, as well as other support services with a single contact. Unfortunately, many of these holistic services go unused, as students have been conditioned to consider student advisors as a last-minute resource for course selection and registration (Thach, 2022). To increase the use of holistic student advisor services, Bailey et al. (2016) recommend incentivization. They proposed that small stipends could be provided to students for attending a minimum number of advising sessions throughout a specified period. Studies have shown that there is a statistically significant effect between students who attend mentoring and holistic advising sessions and college-level credit accumulation (Cousert, 1999; Scrivener et al., 2009; Visher et al., 2010).

Tutoring

Tutoring has long been a support mechanism for the student academic experience, which provided indispensable social and academic opportunities for students during the COVID pandemic because face-to-face interaction with faculty was limited (Gregg & Shin, 2021). Research has shown that students benefit from the individual attention and safe environment provided by tutoring (Martin et al. 2018; Lee 2015; Felder-Strauss et al., 2016). According to Ciscell et al. (2016) many students encounter barriers to tutoring access, such as lack of service awareness, and personal and systemic obstacles found that educational institutions can mitigate the systemic obstacles by providing better education on the benefits of tutoring, while also socially normalizing participation in tutoring services. Others are finding that embedded tutoring, in which the tutoring is integrated into the class, can help to mitigate personal obstacles (Moore, 2019).

Zhang (2021) found in their study that embedded tutoring allowed students to alleviate confusion that had accumulated in class, and in a safe environment free of peer-pressure, resulting in increased confidence.

Not only are there social benefits to embedded tutoring, but academic benefits as well. Marshall et al. (2019), conducted a pilot program, in which they found that embedded tutors positively affected students' writing ability. Koselak (2017) found that not only did all students benefit from the increased attention of tutoring, but it also provided a significant change in the experience of nondominant students. Channing and Okada (2020) concluded that embedded tutoring strategies improved grades as well as retention rates.

Community

McMillian and Chavis (1986) proposed that a sense of community requires a combination of membership, influence, integration and fulfillment of needs, and a shared emotional connection. Greenfield and Marks (2010) found that a sense of community improves mental health, regardless of whether past trauma had occurred. Thomas and Bowie (2016) concluded that a sense of community builds resilience, another major aspect of the student experience. A sense of community is important for students, as it is how they connect with their college experience, and how they obtain information crucial to the academic experience (Karp, 2016). Jacobs and Archie (2008) found sense of community to be positively related to student persistence, and McCarty et al. (1990) found sense of community to be negatively related to burnout.

Benson et al. (2022) concluded that a sense of community may have the potential to increase the ability of college students to manage the COVID-19 pandemic. Given the increased emotional impact of the COVID-19 pandemic (Reuter et al., 2021), one would presume this finding would generalize to other long-term college disruptions with lesser emotional stress. Moore (2019) recommends building community into the student academic experience with learning communities, courses in which students enroll as a group that are linked by course activities and integrated around specific themes. Weiss et al. (2015) found that learning communities had a positive effect on credit accumulation. Although a lack of sense of belonging directly contributes to decreased retention, a sense of community is one of the factors most closely correlated with student success (Mintz 2019; Morrow & Ackermann, 2012).

Best Practices: Student Guidance

Planning

Academic planning allows students to build out a long-term education plan, which in turn increases their confidence and belief in their own success (Moore 2019). However, many academic institutions do not provide the necessary guidance for new students to plan for success (Venezia et al., 2010). Moore (2019) recommends providing guided pathways or road maps to help students more efficiently navigate academic programs and degrees. Guided pathways are a significant reform for community colleges, increasing student persistence and easing the transfer process to four-year institutions (Wheeler, 2019).

According to Jenkins and Cho (2013), properly implemented guided pathway strategies, academic programs are mapped out with clearly defined learning outcomes that align with further study and career advancement; they further suggested that this approach is not meant to limit students, but to enhance their choices and increase their chance of success. Hope (2017) found that guided pathways have led to increased completion rates. Visher et al. (2016) emphasized the importance of scaling academic planning programs, so that students can continue to receive the support they need as enrollments increase.

Transfer

However, academic planning can begin before a student even enrolls at a four-year college. Over one-third of undergraduate students attend a community college (2022 Community College Statistics, n.d.). However, only 31% of students entering a first semester of community college in 2014 transferred to a four-year educational institution within six years (Community College FAQs, n.d.). Only 13% of students who start at a community college earn a bachelor's degree in six years (Barshay, 2020). Zinshteyn (2019) points to funding, lack of information, and transfer shock as obstacles in transferring from a community college to a four-year institution. Enhancing success for students transferring from community colleges can be problematic.

Mintz (2019) recommends collaboration between community colleges and four-year institutions, allowing for the simplification of the degree pathway and increased student success. Fishman et al. (2021) stated that this is already underway at some universities, with special programs being coordinated with two-year feeder schools to create holistic guided pathways. The key to increased transfer success is to create a more seamless and frictionless transfer process (Mintz, 2019; Fishman et al., 2021). Moore (2019) has also seen increased success with reverse transfer programs, whereby transfer students are automatically awarded an associate degree by the community college after transferring to a partner four-year institution and earning the requisite credits. She found that students who earn one degree are more likely to earn a higher degree, thus increasing the potential for success on the bachelor level.

Best Practices: Student Motivation

Career Advancement

Planning and training are important, when establishing a holistic approach to student support; the resources offer no benefits if they are not used. Motivating students to seek out these resources to succeed in completing their degrees is of the utmost importance (Morrow et al., 2012). The cost of tuition continues to increase, and at almost eight times faster than wages (Maldonado, 2018). So, it's never been more important to help students connect their education with their career in a meaningful way. When students associate value with what they are learning, and connect with it in a practical way, their commitment and persistence is increased, which in turn improves academic outcomes (Karp, 2016).

Lynam and Cachia (2017) found that students attributed more value in their assessments if those assessments substantially related to their career. Mintz (2019) concluded that a perception of value in their courses increased the level of persistence in students. Thus, students are more likely to engage when there is a connection between their academic achievements and their career goals (Cachia, 2018). Many educational institutions have long provided a career services or placement office; however, some are recommending a more integrated approach in the form of career coaching (Moore, 2019). Moore further suggested embedding coaches into introductory courses to establish early relationships with students that can be built on throughout their academic career. She further recommended an approach called "stacked credentials" in which a series of courses lead to credentials, which when combined would not only result in a degree but would also align with a specific career plan.

There are varying ideas on whom should be responsible for career coaching, ranging from faculty (Waddell et al., 2015) to academic advisors (Karp et al., 2022) to alumni (Jenkins & Cho, 2022) to industry representatives (Tudor, 2018). In fact, Tudor (2018) found that industry help in career coaching resulted in increased student retention, higher graduation rates, and increased completion rates. Regardless of the source of career coaching, there is a consensus related to the benefits provided to students. Hur et al. (2018) found that a career coaching program increased the career preparation of students.

Villachia et al., (2020) concluded that career coaching builds confidence as well as contributes positively to workplace performance. Lee et al. (2022) conducted a study in which students participated in online career coaching. They concluded that the students responded positively, and that there were advantages in not being limited by space or time. This is encouraging, given the increase in online education because of the COVID-19 pandemic (Diaz-Infante et al., 2022). Support for career advancement can go beyond coaching, however. Jenkins and Cho (2022) recommend backward mapping college programs to ensure they properly prepare students to secure jobs after graduation. Curriculum design and assessment should be structured to ensure that students reach their career goals (Gaze, 2018).

Incentives

Another way to motivate students to academic success is to provide incentives. Financial incentives have a significantly positive effect on academic success (Le, 2020). Barrow et al. (2020) found that performance-based scholarships increased the quantity and quality of effort students spent on educational activities. Ding (2022) concluded that incentive methods improved student learning and the psychological well-being of students. Recognizing the importance of academic advising on student retention, success, and

career preparation, Karp et al., (2022) recommends incentivizing continued student participation with scholarships based on academic milestones, or small stipends or other financially related campus benefits.

Bailey et al. (2016) also encouraged financial benefits for achieving academic milestones, and for participation in student support services. They further recommend that incentives be targeted to low-income students and other at-risk student populations. Mintz (2019) recommends incentivizing a minimum number of credit hours per semester, by not charging students for courses over the credit hour threshold. Moore (2019) suggests completion scholarships, to aid in student retention and degree completion.

Best Practices: Student Resiliency

Self-Efficacy in Time Management

Possibly the most important way to support students in achieving academic success is to teach them how to support themselves. Broadbent and Poon (2015) found that time management and self-regulation were predictors of academic success. And in modern education, students are expected to operate with increasing autonomy and initiative (Wegner et al., 2013). This was never truer than during the COVID-19 pandemic, when a complete move to online education rendered self-learning the only option (Heo et al., 2021).

Eom (2019) found that intrinsic motivation was a stronger predictor of academic success in online learning than external motivation. Bai and Gu (2022) concluded that self-regulated learning was the key predictor of the success of online learning. Further, Heo et al. (2021) found that self-efficacy in time management improved self-efficacy in online learning and significantly influenced learning engagement. Students who practice good time management, are aware of their personal learning style, and are persistent in understanding course content achieve higher grades, despite the challenges posed by online learning (Broadbent & Poon, 2015). Learning strategies have been shown to be closely related to academic success and significantly influence students' learning satisfaction and their performance in an online setting (Wu et al., 2021). However, many students begin their undergraduate education without knowledge of how to learn or awareness of which study strategies work best for them (Bailey et al., 2016).

Because learning strategies are closely related to academic success, it's important to ensure that students have the strategies they need to succeed. Barbayannis et al. (2022) findings suggested time management and study strategy training improved the stress level of students, which has been shown to improve academic success (Benson et al., 2021). Cachia et al. (2018) suggested that educational institutions should incorporate time management training into their academic programs. Mintz (2019) recommends integrating time management and study skills strategies into lower-level courses to ensure that students have these skills at the outset. Karp et al. (2022) advocate integrating time management training and study skill development into the holistic student support paradigm.

Self-Efficacy in Online Learning

As a result of the COVID-19 pandemic, over 1.5 billion individuals around the world have had to adjust to learning online ("Startling Disparities," 2020). Darby (2020) suggested that this is likely a permanent pivot in the higher education landscape. Given the increased enrollments in online learning ("Growth in Online Learning", 2022) and the trend of many educational institutions moving towards hybrid courses and programs (McMurtrie, 2020), it is more important than ever to ensure that students have the technological background and resources necessary to navigate this new learning landscape. Yusuf (2021) stated that online learning is essential in an education environment, and that students must be prepared to engage with related technological tools. Heo et al. (2021) found that self-efficacy in technology use improved self-efficacy in online learning, which in turn improved learning engagement. Cho and Herron (2015) concluded that motivational and emotional variables of self-regulated learning were significant predictors of academic success.

Karp et al. (2022) recommend using peer mentors to assist students in learning and using technology. Educational institutions should also target low income and other at-risk student populations with online learning support, as they have less access to technology resources (Bacher-Hicks et al., 2020). According to Bacher-Hicks et al., it is these students who lagged most during the COVID-19 pandemic. Preparing

students for self-efficacy in online learning and with technological resources, although important, is not enough. These self-efficacies must be combined with self-efficacy in time management in a holistic approach to truly prepare students to be resilient in achieving academic success (Heo et al., 2021).

CONCLUSION

Whether it is climate disasters or public health crises, higher education institutions must meet the academic needs of a diverse group of students when long-term disruptions occur. The authors' research found that institutional student services like holistic advising, embedded tutoring, and purposeful community building can have a positive impact on academic success.

Similarly, institutions that provide clear academic plans, goals, and transfer pathways setup their students for higher levels of academic success. Institutions that provided student motivation through connecting academic success to career goals and those who provided monetary incentives to academic achievement also helped students persist to graduation.

Finally, one of the best ways institutions can encourage academic success is through self-resiliency. Teaching students how to manage their time and navigate an online learning environment can also increase their opportunity for successful completion of a degree. These are the proactive steps colleges and universities can implement before these stressful events happen. Further research into the best practices for providing mental health student support is needed.

REFERENCES

- Alyahyan, E., & Düştögör, D. (2020). Predicting academic success in higher education: Literature review and best practices. *International Journal of Educational Technology in Higher Education*, 17(1), 3. <https://doi.org/10.1186/s41239-020-0177-7>
- Anthology. (2019). *Seven Key Metrics for Tracking Student Success*. Retrieved from <https://www.anthology.com/blog/seven-key-metrics-for-tracking-student-success#:~:text=Seven%20Key%20Metrics%20For%20Tracking%20Student%20Success%201,7.%20Number%20and%20Type%20of%20Early%20Alerts%20>
- Bai, X., & Gu, X. (2022). Effect of teacher autonomy support on the online self-regulated learning of students during COVID-19 in China: The chain mediating effect of parental autonomy support and students' self-efficacy. *Journal of Computer Assisted Learning*, 38(4), 1173–1184. <https://doi.org/10.1111/jcal.12676>
- Bailey, T., Bashford, J., Boatman, A., Squires, J., Weiss, M., Doyle, W., . . . Young, S.H. (2016). *Strategies for Postsecondary Students in Developmental Education – A Practice Guide for College and University Administrators, Advisors, and Faculty*. Institute of Education Sciences, What Works Clearinghouse. Retrieved from https://ies.ed.gov/ncee/wwc/Docs/PracticeGuide/wwc_dev_ed_112916.pdf
- Barbayannis, G., Bandari, M., Zheng, X., Baquerizo, H., Pecor, K.W., & Ming, X. (2022). Academic Stress and Mental Well-Being in College Students: Correlations, Affected Groups, and COVID-19. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.886344>
- Barrow, L., Rouse, C.E., & McFarland, A. (2020). Who has the time? community college students' time-use response to financial incentives. *Atlantic Economic Journal*, 48(1), 35–52. <https://doi.org/10.1007/s11293-020-09649-3>
- Barshay, J. (2020). *Why so few students transferring from community college to university*. Retrieved from <https://hechingerreport.org/why-so-few-students-transfer-from-community-colleges-to-four-year-universities/>
- Benson, O.M., & Whitson, M.L. (2022). The protective role of sense of community and access to resources on college student stress and COVID-19-related daily life disruptions. *Journal of Community Psychology*, 50(6), 2746–2764. <https://doi.org/10.1002/jcop.22817>

- Besser, A., Flett, G.L., & Zeigler-Hill, V. (2022). Adaptability to a sudden transition to online learning during the COVID-19 pandemic: Understanding the challenges for students. *Scholarship of Teaching and Learning in Psychology*, 8(2), 85–105. <https://doi.org/10.1037/stl00001981>
- Blackwell, E., & Pinder, P.J. (2014). What are the motivational factors of first-generation minority college students who overcome their family histories to pursue higher education? *College Student Journal*, 48(1), 45–56. Retrieved from <https://www.bing.com/search?q=college+student+journal&form=ANSPH1&refig=d7269824622e4ee981cd5bcd45825393&pc=U531>
- Boserup, B., McKenney, M., & Elkbuli, A. (2020). Disproportionate impact of COVID-19 pandemic on racial and ethnic minorities. *The American Surgeon*, 86(12), 1615–1622. doi:10.1177/0003134820973356
- Broadbent, J., & Poon, W.L. (2015). Self-regulated learning strategies & academic achievement in online higher education learning environments: A systematic review. *The Internet and Higher Education*, 27, 1–13. <https://doi.org/10.1016/j.iheduc.2015.04.007>
- Cachia, M., Lynam, S., & Stock, R. (2018). Academic success: Is it just about the grades? *Higher Education Pedagogies*, 3(1), 434–439. <https://doi.org/10.1080/23752696.2018.1462096>
- Channing, J., & Okada, N.C. (2020). Supplemental instruction and embedded tutoring program assessment: Problems and opportunities. *Community College Journal of Research and Practice*, 44(4), 241–247. <https://doi.org/10.1080/10668926.2019.1575777>
- Cho, M., & Heron, M.L. (2015). Self-regulated learning: The role of motivation, emotion, and use of learning strategies in students' learning experiences in a self-paced online mathematics course. *Distance Education*, 36(1), 80–99. <https://doi.org/10.1080/01587919.2015.1019963>
- Ciscell, G., Foley, L., Luther, K., Howe, R., & Gjsedal, T. (2016). Barriers to Accessing Tutoring Services among Students Who Received a Mid-Semester Warning. *Learning Assistance Review*, 21(2), 39–54. Retrieved from <https://learningassistantalliance.org/>
- Clabaugh, A., Duque, J.F., & Fields, L.J. (2021). Academic Stress and Emotional Well-Being in United States College Students Following Onset of the COVID-19 Pandemic. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.628787>
- Community College FAQs. (n.d.). Retrieved October 9, 2022, from <https://ccrc.tc.columbia.edu/community-college-faqs.html>
- Cousert, D.K. (1999). *The effects of a mentoring intervention program on retention of students in a community college*. Bell & Howell Information and Learning. Retrieved from <https://id.loc.gov/authorities/names/no99030970.html>
- Darby, F. (2020, June 16). Sorry not sorry: Online teaching is here to stay. *The Chronicle of Higher Education*. Retrieved from <https://www.chronicle.com/article/Sorry-Not-Sorry-Online/248993>
- Diaz-Infante, N., Lazar, M., Ram, S., & Ray, A. (2022). *Demand for online education is growing. Are providers ready?* Retrieved from <https://www.mckinsey.com/industries/education/our-insights/demand-for-online-education-is-growing-are-providers-ready>
- Ding, X. (2022). Management work mode of college students based on emotional management and incentives. *Frontiers in Psychology*, 13, 963122–963122. <https://doi.org/10.3389/fpsyg.2022.963122>
- Eom, S. (2019). The effects of student motivation and self-regulated learning strategies on Student's perceived E-learning outcomes and satisfaction. *Journal of Higher Education Theory and Practice*, 19(7), 29–42. <https://doi.org/10.33423/jhetp.v19i7.2529>
- Escobedo, G. (2007). A Retention/Persistence Intervention Model: Improving Success Across Cultures. *Journal of Developmental Education*, 31(1), 12–14, 16–17, 37. Retrieved from <https://journals.library.appstate.edu/index.php/jde/index>
- Eskin, M., Sun, J.-M., Abuidhail, J., Yoshimasu, K., Kujan, O., Janghorbani, M., . . . Voracek, M. (2016). Suicidal Behavior and Psychological Distress in University Students: A 12-nation study. *Archives of Suicide Research*, 20(3), 369–388. <https://doi.org/10.1080/13811118.2015.1054055>

- Felder-Strauss, J., Franklin, P., Machuca, A., Self, S., Offil, T., & Kuhlman, B. (2015). Best practices and creation of an online tutoring center for accounting, finance, and economic disciplines. *International Journal of Education Research*, 10(1). Retrieved from <https://www.iabpad.com/journals/international-journal-of-education-research/>
- Fishman, T., Ludgate, A., Malik, N., Reed, S.-L., Fleurimond, B., Peterson, K., & Roberts, R. (2021). *Five strategies for student success*. Retrieved from <https://www2.deloitte.com/us/en/insights/industry/public-sector/student-success-best-practices.html>
- Folger, W.A., Cater, J.A., & Chase, P.B. (2004). Supporting first generation college freshmen with small group intervention. *College Student Journal*, 38(3), 472–476. Retrieved from <https://www.bing.com/search?q=college+student+journal&form=ANSPH1&refig=d7269824622e4ee981cd5bcd45825393&pc=U531>
- Gaze, E. (2018). Quantitative Reasoning: A Guided Pathway from Two- to Four-Year Colleges. *Numeracy*, 11(1), 1. <https://doi.org/10.5038/1936-4660.11.1.1>
- Greenfield, E.A., & Marks, N.F. (2010). *Sense of community as a protective factor against long-term psychological effects of childhood violence*. Deutsches Zentralinstitut für soziale Fragen/DZI. <https://doi.org/10.1086/652786>
- Gregg, D., & Shin, S.J. (2021). Why We Will Not Return to Exclusively Face-to-Face Tutoring Post-COVID: Improving Student Engagement Through Technology. *Learning Assistance Review*, 26(2), 53–79. Retrieved from <https://learningassistantalliance.org/>
- Heo, H., Bonk, C.J., & Doo, M.Y. (2021). Enhancing learning engagement during COVID-19 pandemic: Self-efficacy in time management, technology use, and online learning environments. *Journal of Computer Assisted Learning*, 37(6), 1640–1652. <https://doi.org/10.1111/jcal.12603>
- Holzweiss, P.C., Walker, D.W., Chisum, R., & Sosebee, T. (2020). Crisis planning for online students: Lessons learned from a major disruption. *Online Learning*, 24(2), 22–37. <https://doi.org/10.24059/olj.v24i2.2135>
- Hope, J. (2017). Boost completion rates via effective guided pathways program. *Student Affairs Today*, 20(8), 1–3. <https://doi.org/10.1002/say.30396>
- Hur, Y., Cho, A.R., Song, E.J., & Kim, S. (2018). Evaluation of a systematic career coaching program for medical students in Korea using the career readiness inventory. *Journal of Educational Evaluation for Health Professions*, 15, 10. <https://doi.org/10.3352/jeehp.2018.15.10>
- Jacobs, J., & Archie, T. (2008). Investigating sense of community in first-year college students. *The Journal of Experiential Education*, 30(3), 282–285. <https://doi.org/10.1177/105382590703000312>
- Jain, G. (2020). Emerging trends of education during & post COVID 19: A new challenge. *Solid State Technology*, 63(1s), 796–806. Retrieved from <http://solidstatetechnology.us/index.php/JSST>
- Jenkins, D., & Cho, S. (2013). Get with the program . and finish it: Building guided pathways to accelerate student completion. *New Directions for Community Colleges*, 2013(164), 27–35. <https://doi.org/10.1002/cc.20078>
- Kanthawongs, P. (2013). Individual and social factors affecting student’s usage intention in using learning management system. *Procedia – Social and Behavioral Sciences*, 88, 89–95. Retrieved from <https://www.sciencedirect.com/journal/procedia-social-and-behavioral-sciences>
- Karp, M. (2016). A holistic conception of nonacademic support: How four mechanisms combine to encourage positive student outcomes in the community college. *New Directions for Community Colleges*, 2016(175), 33–44. <https://doi.org/10.1002/cc.20210>
- Karp, M., Ackerson, S., Cheng, I., Cocatre-Zilgien, E., Costelloe, S., Freeman, B., . . . Richburg-Hayes, L. (2022). *Effective advising for postsecondary students: A practice guide for educators (WWC 2022003)*. National Center for Education Evaluation and Regional Assistance (NCEE), Institute of Education Sciences, U.S. Department of Education. Retrieved from <https://eric.ed.gov/?q=it4&pg=186&id=ED615137>

- Koselak, J. (2017, February). The revitalized tutoring center: an embedded tutoring center closes achievement gaps by harnessing the power of peer tutors and collaborative teacher teams. *Phi Delta Kappan*, 98(5), 61. Retrieved from https://link.gale.com/apps/doc/A485578946/BIC?u=vic_liberty&sid=summon&xid=7343f0ee
- Ladd, A.E., Gill, D.A., & Marszalek, J. (2007) Riders from the storm: Disaster narratives of relocated New Orleans college students in the aftermath of Hurricane Katrina. *Journal of Public Management & Social Policy*, 13(2), 51–80. Retrieved from <https://digitalscholarship.tsu.edu/jpmisp/styleguide.html>
- Le, V. (2020). Do student-level incentives increase student achievement? A review of the effect of monetary incentives on test performance. *Teachers College Record (1970)*, 122(3), 1–34. <https://doi.org/10.1177/016146812012200304>
- Lee, C. (2015). More than just language advising: Rapport in university English writing consultations and implications for tutor training. *Language and Education*, 29(5), 430–452. <https://doi.org/10.1080/09500782.2015.1038275>
- Lee, S.Y., Shim, T.E., & Yoo, Y.E. (2022). Perceptions of experience of online coaching for college students' career planning. *Studies in Educational Evaluation*, 75. <https://doi.org/10.1016/j.stueduc.2022.101201>
- L'Orange, H.P. (2010). Impact of incidents on enrollments at higher education institutions. *New Directions for Institutional Research*, (146). <https://doi.org/10.1002/ir.346>
- Lynam, S., & Cachia, M. (2018). Students' perceptions of the role of assessments at higher education. *Assessment and Evaluation in Higher Education*, 43(2), 223–234. <https://doi.org/10.1080/02602938.2017.1329928>
- Maatuk, A.M., Elberkawi, E.K., Aljawarneh, S., Rashaideh, H., & Alharbi, H. (2022). The COVID-19 pandemic and e-learning: Challenges and opportunities from the perspective of students and instructors. *Journal of Computing in Higher Education*, 34, 21–38. Retrieved from <https://www.springer.com/journal/12528>
- Marshall, H., Valentic, G., & Rasmussen, S. (2019). Embedded tutoring to enhance dialogic feedback and improve student self-regulation. *The Learning Assistance Review*, 24(2), 87. Retrieved from <https://learningassistantalliance.org/>
- Martin, M., Ramjan, L.M., Everett, B., Glew, P., Lynch, J., & Salamonson, Y. (2018). Exploring nursing students' experiences of a drop-in support-centre: A mixed-methods study. *Nurse Education Today*, 69, 1–7. <https://doi.org/10.1016/j.nedt.2018.06.026>
- McMillan, D.W., & Chavis, D.M. (1986). Sense of community: A definition and theory. *Journal of Community Psychology*, 14(1), 6–23. [https://doi.org/10.1002/1520-6629\(198601\)14:1<6::AID-JCOP2290140103>3.0.CO;2-I](https://doi.org/10.1002/1520-6629(198601)14:1<6::AID-JCOP2290140103>3.0.CO;2-I)
- McMurtrie, B. (2020). Colleges Say Hybrid Courses Will Make the Fall a Success. But Will Students Get the Worst of Both Worlds? *The Chronicle of Higher Education*. Retrieved from <https://www.chronicle.com/article/colleges-say-hybrid-courses-will-make-the-fall-a-success-but-will-students-get-the-worst-of-both-worlds>
- Mintz, S. (2019). Strategies for Improving Student Success. *Inside Higher Ed*. Retrieved from <https://www.insidehighered.com/blogs/higher-ed-gamma/strategies-improving-student-success>
- Moore, A. (2019). *Strategies for student success: Preparation, progression, and completion*. Retrieved from <https://www.aacrao.org/resources/newsletters-blogs/aacrao-connect/article/best-practices-to-help-students-prepare-progress-and-complete>
- Morrow, J., & Ackermann, M. (2012). Intention to persist and retention of first-year students: The importance of motivation and sense of belonging. *College Student Journal*, 46(3), 483–491. Retrieved from <https://www.bing.com/search?q=college+student+journal&form=ANSPH1&refid=d7269824622e4ee981cd5bcd45825393&pc=U531>

- National Commission for Academic Accreditation. (2015). *Assessment Standards for Quality Assurance and Accreditation of Higher Education Institutions*. Retrieved from <https://www.inqaahe.org/national-commission-academic-accreditation-and-assessment>
- Palmer, R.T., Maramba, D.C., & Holmes, S.L. (2011). A Contemporary Examination of Factors Promoting the Academic Success of Minority Students at a Predominantly White University. *Journal of College Student Retention: Research, Theory & Practice*, 13(3), 329–349. <https://doi.org/10.2190/CS.13.3.d>
- Pratt, I.S., Hardwood, H.B., Cavazos, J.T., & Ditzfeld, C.P. (2019). Should I stay or should I go? Retention in first-generation college students. *Journal of College Student Retention: Research, Theory, & Practice*, 21(1), 105–118. doi: 10.1177/1521025117690868
- Reuter, P.R., Forster, B.L., & Kruger, B.J. (2021). A longitudinal study of the impact of COVID-19 restrictions on students' health behavior, mental health and emotional well-being. *PeerJ (San Francisco, CA)*, 9, e12528–e12528. <https://doi.org/10.7717/peerj.12528>
- Schultz, R.B., & DeMers, M.N. (2020). Transitioning from emergency remote learning to deep online learning experience in geography education. *Journal of Geography*, 119(5), 142–146. <https://doi.org/10.1080/00221341.2020.1813791>
- Self, S., Fudge, T., Hall, L., & Sullivan, A. (2018). Online class activities: An empirical study of success factors in post-secondary curriculum. *International Journal of Education Research*, 13(1). Retrieved from <https://www.iabpad.com/journals/international-journal-of-education-research/>
- Smith, C., Ferns, S., & Russell, L. (2019). Placement quality has a greater impact on employability than placement structure or duration. *International Journal of Work Integrated Learning*, 20(1), 15–19. Retrieved from <https://www.ijwil.org/>
- Thach, K. (2022). *The Importance of Academic Advising in Higher Education - ED.gov Blog*. Retrieved from <https://blog.ed.gov/2022/08/the-importance-of-academic-advising-in-higher-education/>
- Thamtanajit, K. (2020). The impacts of natural disaster on student achievement: Evidence from severe floods in Thailand. *The Journal of Developing Areas*, 54(4). doi:10.1353/jda.2020.0042
- ThinkImpact. (n.d.). *2022 Community College Statistics - Data and Trends*. Retrieved from <https://www.thinkimpact.com/community-college-statistics/>
- Thomas, V.J., & Bowie, S.L. (2016). Sense of community: Is it a protective factor for military veterans? *Journal of Social Service Research*, 42(3), 313–331. <https://doi.org/10.1080/01488376.2015.1109575>
- Tudor, T.R. (2018). Fully integrating academic advising with career coaching to increase student retention, graduation rates and future job satisfaction: An industry approach. *Industry & Higher Education*, 32(2), 73–79. <https://doi.org/10.1177/0950422218759928>
- United Nations. (2020). *Startling disparities in digital learning emerge as COVID-19 spreads: UN education agency*. Retrieved from <https://news.un.org/en/story/2020/04/1062232>
- Venezia, A., Bracco, K.R., & Nodine, T. (2010). *One-shot deal? Students' perceptions of assessment and course placement in California's community colleges*. San Francisco, CA: WestEd.
- Villachica, S.W., Stieha, V., Giacumo, L., Becker, L., & Fenner, J.A. (2020). A formative evaluation of a master's-Level Career-Coaching course for performance improvement students. *Performance Improvement Quarterly*, 32(4), 427–459. <https://doi.org/10.1002/piq.21302>
- Visher, M.G., Butcher, K.F., & Cerna, O.S. (2010). *Guiding developmental math students to campus services: An impact evaluation of the Beacon program at South Texas College*. MDRC. Retrieved from <https://www.mdrc.org/publication/guiding-developmental-math-students-campus-services>
- Visher, M.G., Mayer, A.K., Johns, M., Rudd, T., Levine, A., & Rauner, M. (2016). *Scaling academic planning in community college: A randomized controlled trial*. Institute of Education Sciences - National Center for Educational Evaluation and Regional Assistance. Retrieved from <https://files.eric.ed.gov/fulltext/ED570335.pdf>
- Waddell, J., Spalding, K., Navarro, J., & Gaitana, G. (2015). Integrating a career planning and development program into the baccalaureate nursing curriculum: Part III. impact on Faculty's

- career satisfaction and confidence in providing student career coaching. *International Journal of Nursing Education Scholarship*, 12(1), 183–190. <https://doi.org/10.1515/ijnes-2015-0070>
- Wegner, C., Minnaert, L., & Strehlke, F. (2013). The importance of learning strategies and how the project ‘Kolumbus-Kids’ promotes them successfully. *European Journal of Science and Mathematics Education*, 1(3). Retrieved from <https://www.scimath.net/>
- Wheeler, E.L.J. (2019). Extending “guided pathways” beyond the community college: Lessons for university transfer orientation. *Community College Journal of Research and Practice*, 43(4), 275–279. <https://doi.org/10.1080/10668926.2018.1460283>
- Wolf, E. (2021, August 06). Op-ed: GW should explore blended classroom models. *University Wire; Carlsbad*. Retrieved from <https://www.uwire.com/about/>
- Wu, C., Jing, B., Gong, X., Mou, Y., & Li, J. (2021). Student’s learning strategies and academic emotions: Their influence on learning satisfaction during the COVID-19 pandemic. *Frontiers in Psychology*, 12, 717683–717683. <https://doi.org/10.3389/fpsyg.2021.717683>
- Wynne, K., Leary, D., & Sholes, J. (2018). Natural disasters and their policy implications for business schools. *Journal of Applied Research in Higher Education*, 10(1), 100–114. Retrieved from <https://www.resurchify.com/impact/details/21100448939#:~:text=Journal%20of%20Applied%20Research%20in%20Higher%20Education%20is,of%20Applied%20Research%20in%20Higher%20Education%20is%2014206>
- Wynne, K., Sholes, J., Nam, J., & Leary, D. (2019). College disruptions and effect on academic experiences of college students across demographics. *Business Education Innovation Journal*, 11(2), 180–192. Retrieved from <http://bejournal.com/>
- York, T.T., Gibson, C., & Rankin, S. (2015). Defining and measuring academic success. *Practical Assessment, Research & Evaluation*, 20, 5. Retrieved from <https://scholarworks.umass.edu/pare/>
- Younas, M., Noor, U., Zhou, X., Menhas, R., & Qingyu, X. (2022). COVID-19, students satisfaction about e-learning and academic achievement: Mediating analysis of online influencing factors. *Frontiers in Psychology*, 13, 1–12. doi:10.3389/fpsyg.2022.948061
- Yusuf, N. (2021). The Effect of Online Tutoring Applications on Student Learning Outcomes during the COVID-19 Pandemic. *ITALIENISCH*, 11(2), 81–88. Retrieved from <https://italienisch.nl/index.php/VerlagSauerlander/article/view/100>
- Zhang, X. (2021). After-class academic support: Does course-embedded faculty tutoring matter to student writers? *Teaching in Higher Education*, 26(1), 129–144. <https://doi.org/10.1080/13562517.2019.1636223>
- Zinshteyn, M. (2019). *Success at Scale: Strategies to Improve Outcomes for Underserved Students*. Inside Higher Ed. Retrieved from <https://www.insidehighered.com/>