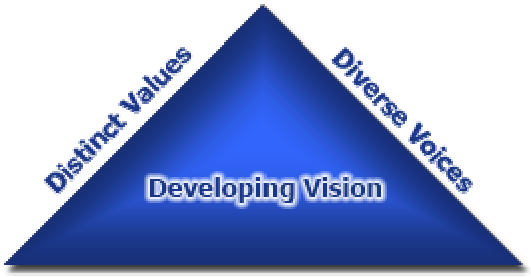

Using Research to Improve Student Success: What More Could Be Done?

Bridget Terry Long
Harvard University

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USING RESEARCH TO IMPROVE STUDENT SUCCESS: WHAT MORE COULD BE DONE?

1. Introduction

The organizers of this symposium commissioned five papers to reflect on the theory and literature that has informed our understanding of student collegiate success. More specifically, the authors were asked to identify the major domains, themes, and theories in the research on student success and to discuss what is known about the student and institutional characteristics that are associated with positive postsecondary outcomes.[1] The authors were also asked to note issues of concern within the current literature, including problems with the assumptions that are made, core concepts, theories, approaches, findings, and how results are applied to practice and policy. Underlying these tasks is the question of how to define success, and so the conveners of the symposium first asked the authors to further develop our understanding of the term.

Given the large expanse of ideas and research related to postsecondary success, the charge given to the writers is quite substantial. Each paper examines the literature with careful consideration of the tasks given to them. From five different points of view, the papers provide a rich set of perspectives that are very informative about the theories, approaches, and factors believed to influence student outcomes. The first goal of this essay is to review the conclusions of these papers in order to reflect on how they might be used to address the needs of underserved populations.[2] In Section 2, I highlight some of the major points of the five studies to comment on the general frameworks used to research issues related to student success.

The rest of the paper discusses ways in which research on student success could be made more relevant for policy and practice and considers new directions in which the literature needs to develop and grow. Section 3 argues that researchers need to do a better job translating their work for broader audiences and being prescriptive about concrete steps that could be taken to address issues related to student success. In addition, I assert that researchers need to focus on work that identifies the root

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[1] Braxton, J. M. (in press). *Faculty professional choices in teaching that foster student success*.

Kuh, G. D., Kinzie, J., Buckley, J. A., Bridges, B. K., & Hayek, J. C. (in press). *What matters to student success: A review of the literature*.

Perna, L. W., & Thomas, S. L. (in press). *A framework for reducing the college success gap and promoting success for all*.

Smart, J. C., Feldman, K. A., & Ethington, C. A. (in press). *Holland's theory and patterns of college student success*.

Tinto, V., & Pusser, B. (in press). *Moving from theory to action: Building a model of institutional action for student success*.

[2] Students who are underserved in higher education include low-income students as well as students of color, students in urban centers and rural areas, and students following nontraditional pathways through college.

cause of a problem (i.e., establishes a causal relationship) as this type of research is more useful in making decisions about policy than research that only describes factors that are correlated in some unknown way. Section 4 considers what additional data, information, research, and theoretical models are needed to promote postsecondary student success for underserved populations. I suggest ways for researchers to improve standard educational models and encourage them to go beyond the boundaries of a particular discipline. Section 5 offers my conclusions.

2. What is Known About Student Success? Conclusions From the Commissioned Papers

The commissioned papers each take a slightly different approach to evaluating the literature on student success and suggesting new models or perspectives on how to consider the problems facing students. Each provides insight into the barriers and hardships faced by students and discusses the implications of the authors' findings in terms of policy and practice. This section highlights some of the major findings of these papers that could be used to better understand and serve disadvantaged populations trying to access higher education.

Defining Student Success

As discussed in the five papers, student success is a multidimensional issue with varying definitions of the benchmarks. Through their essays, the authors utilize many of these different definitions, again highlighting the varied nature of the concept of postsecondary student success. For example, Perna and Scott explain that student success is a generic term for a larger array of benchmarks ranging from middle school into adulthood. The authors organize the many definitions of success into a chronological map of four transitions: college readiness, college enrollment, college achievement, and post-college attainment.

Braxton instead lists "markers of student success" and suggests that if a student meets any one of them, he/she has had some degree of success. These markers include academic attainment, the acquisition of general education, the development of academic competence, the development of cognitive skills, occupational attainment, preparation for adulthood and citizenship, personal accomplishments, and personal development. Braxton then focuses on student learning in a course, which he states is a fundamental contributor to collegiate outcomes.

To add to the definition of success, Smart, Feldman, and Ethington highlight the importance of judging student success within a particular context. They suggest that rather than using a common or

uniform set of criteria, the particular college major should be taken into account given that different academic environments seek to reward different types of competencies. In this way, they propose that judgment of success should be relative to the "interests, abilities, and values that the respective academic environments seek to reinforce and reward at the time students enter the program." Smart, Feldman, and Ethington emphasize the importance of this not only for researchers but also for faculty members and academic leaders.

The Multiple Approaches to the Study of Student Success

It is apparent from the commissioned papers that there are many different approaches, theories, and methodologies used to study issues related to postsecondary student success. There is variation in the literature in terms of the aspects of student success examined, the theoretical models used, the sources of data and methodological approaches, and the units of analysis. Often these different frameworks are identified with particular disciplines, fields of study, or research methods. However, as several of the papers point out, no single research approach will provide all the answers for how to improve the outcomes of students, and there are advantages to having these multiple approaches. Given the complexity of the educational process and the many varying contexts in which it takes place, it is extremely valuable to have researchers approaching its study from every angle imaginable. Unfortunately, the tradeoff to this strength is the difficulty in understanding how the various approaches are related and connect. Moreover, without more exchanges between the disciplines and fields of study, there is the potential that the work of one area will not inform that of another.

The Importance of Postsecondary Institutions and Faculty

Another idea emphasized by the papers is that student outcomes are at least partly the result of interactions between the individual and his/her school or college. For example, Tinto and Pusser examine the role institutional policies can have on student success. They review past research to determine what conditions within colleges and universities are associated with student success. These conditions include the climate established by faculty, staff, and administrators; types of supports offered to students; use of feedback on performance; and activities that involve students as valued members of a community.

Kuh, Kinzie, Bridges, and Hayek also highlight the types of interventions found helpful in improving student outcomes. They note that early interventions and continued attention along the college pipeline can be beneficial. In addition, they conclude that students are more likely to engage in beneficial

educational activities during college if they are able to engage and connect with others within the postsecondary environment. Like Tinto and Pusser, Kuh et al. attempt to provide a picture of actions within the control of colleges and universities to impact their students in positive ways.

Braxton focuses almost exclusively on the role of faculty within an institution. He suggests this focus is warranted because "faculty members bear the primary responsibility for most forms of postsecondary student success." He suggests institutions need to communicate clear expectations to faculty on their teaching role performance, but also maintains that there is a role for state policymakers.

Smart, Feldman, and Ethington use a different theoretical framework but come to the same conclusion about the importance of institutions and, in particular, college departments or major fields. They write, "Our conviction regarding the centrality of academic environments in understanding and facilitating student success grows from our findings that students learn…the distinctive repertoire of professional and personal self-perceptions, competencies, attitudes, interests, and values that their respective academic environments distinctly reinforce and reward." The authors take the idea about the role of college environment a step further in their endorsement of the applicability of Holland's person-environment fit theory to issues of student success. This theory emphasizes the importance of not only the academic environment, but also its degree of match with the student's particular personality type (i.e., realistic, investigative, artistic, social, enterprising, or conventional).

Going Beyond Schools: Families, Communities, and the Larger Policy Context

While the important role of institutions in postsecondary student success is documented, there are many other factors that also matter in determining a student's outcomes. As noted by Kuh et al., family and community support are essential in efforts to increase a student's likelihood of success. Perna and Thomas also emphasize the role of the family context in influencing student attitudes and behaviors. Parents and neighborhoods may be especially important in initiatives to raise education aspirations and improve academic preparation.

Beyond the family, Perna and Thomas also highlight the larger social, economic, and policy context in their conceptual model of student success. The external policy context is also emphasized by Tinto and Pusser. They present a model of contemporary policymaking and suggest how institutional leaders and policymakers could enhance postsecondary student success. To be most effective, they conclude, leaders should consider linked strategies, make achieving goals and strategy consensus a high priority, and design legitimate policies. Again emphasizing the multiple environments affecting students, Tinto and Pusser also write that policies should be designed to "address the myriad of contextual factors

that affect a student's probability of success." Perna and Thomas also observe policies and programs "are enacted through multiple layers of context" and so "policymakers and practitioners should recognize the limitations on student success that may be imposed by a student's situated context."

When designing policy, Kuh and colleagues note the importance of considering the function and limitations of each particular player when designing interventions. What can a government or institution realistically do? Tinto and Pusser give examples from the literature of policies that have had the greatest impact on improving postsecondary student success. These include policies that support teacher development, address the needs of underprepared students, direct outreach programs to populations that have traditionally been underserved, and direct aid to financially needy students. Financial aid is also mentioned by Kuh et al. They advise that the right amount and kind of money matters to student success as "too little can make it impossible for students to pay college bills" but "too much loan debt can discourage students from persisting."

Multiple papers also remark on the need for partnerships across the many players and stakeholders to address the problems facing students. As Perna and Thomas suggest, "policies and programs do not operate in isolation, but interact with other policies and programs and with the characteristics of schools, families, and students." Therefore, there is a need for coordination among the various policies and programs. Also on the Tinto and Pusser list of successful policies for improving student outcomes are those creating linked P–16 systems or improving course articulation between 2-year and 4-year institutions.

College Success: A Lifelong Process

Beyond the multiple contexts that matter in student success, it is also important to note that the events over a student's life matter in determining student success. To attack the barriers a student faces, researchers and practitioners must be conscious of more than just a student's present environment and conditions. As Kuh and colleagues write, "The trajectory for academic success in college is established long before students matriculate." Perna and Thomas also emphasize the process shaping a student's propensity to succeed in college is longitudinal in nature. The implication is that to overcome disadvantage, we need interventions that can make a difference at multiple stages of a student's life.

The Importance of Assessment

Not surprisingly, the authors comment on the importance of assessment in efforts to improve student outcomes. Tinto and Pusser find early and continuous evaluation of student preparation is associated with policies known to positively impact postsecondary student success. To be more specific, Kuh et al. propose the focus of assessment and accountability efforts should be on the factors that matter to student success because organizations tend to value whatever is measured. While the need for assessment is acknowledged, progress still needs to be made on how to use this information. Kuh et al. further suggest that society needs to find "responsible ways to accurately measure, report, and use student success indicators for purposes of accountability and improvement."

The Need for Additional Research

While there is an extensive literature on issues related to student success, there is still a great need for more research. The authors list a number of topics that deserve further consideration. For example, Kuh et al. suggest there should be more research on effective approaches for encouraging different types of students to participate in and benefit from postsecondary encouragement programs. They also discuss the need for more research on the effective uses of financial aid, initiatives that help academically underprepared students, and approaches to learning that foster success of different groups of students. Tinto and Pusser recommend that more research is needed on issues related to faculty development and the use of part-time faculty. They also see a need for more research on student course-taking patterns at 2-year colleges and various aspects of P–16 policies such as the alignment of standards, outreach, improved data collection, and quality assessments.

3. Recommendations for Making the Research More Relevant

As noted above, the commissioned papers provide a wealth of information on what is known about factors impacting student success. They also extend the literature by introducing new models and approaches to improve postsecondary outcomes. While there has been a great deal of research on the factors related to student success, there is still a need to make these theories, frameworks, and analyses more relevant. The following two sections attempt to add to the recommendations already suggested by these authors. Some of the topics are issues mentioned by the authors that I believe deserve further elaboration. They are essential to improving the applicability of research in order to promote postsecondary student success for underserved populations. I also discuss several other topics that are not mentioned in the commissioned papers but need attention. In general, the section encourages the authors,

as well as researchers in general, to push the literature forward in ways that might be even more useful for policymakers and practitioners. In addition, a careful distinction needs to be made between research that establishes a causal relationship between factors and research that instead provides a more descriptive background of correlated patterns.

Going Beyond Studying the Problem: The Importance of Being Prescriptive

As researchers, we are trained to analyze problems. We are rewarded for documenting the barriers that exist, highlighting the unequal distribution of resources, and describing what happened during a past event. However, to be useful to policymakers and practitioners, an additional step is needed to translate this work into practical suggestions. Tinto and Pusser also note the importance of translation, lamenting that much of the research on student attrition does not suggest what institutions and states could do to help students persist. Instead, researchers need to consider the implications of their work and spend time giving more prescriptive recommendations, which involves predicting what steps and actions could remedy a problem that has been documented. Because recommendations of this sort are not grounded in evidence nor are there guarantees about what could happen in the future, academics are often less comfortable with such an exercise. However, this step of considering how to actually solve a problem is key to being useful to policymakers and practitioners. In many respects, the problems are clear. What is less certain are the possible solutions to these problems.

The translation process for practitioners and policymakers should also involve the consideration of *how* to bring about a particular solution. As noted above, one strength of the papers commissioned for the symposium, as well as the underlying literatures they review, is the focus on the factors associated with success. Looking at successful students and the best practices exhibited by institutions is the first step in identifying possible methods for addressing the hazards that limit student success. However, while many studies do identify the factors related to student success, often they do not take the next step to discuss *how* institutions and governments can create these conditions. A key question is how to get from the current circumstance to the one described as being successful. Unfortunately, the transition from point A to point B is often difficult and unclear. For example, there is much discussion among researchers, policymakers, and practitioners about the potential benefits of having an integrated K–16 system. There is research on the factors that are identified with strong systems, and the advantages of such structures have been detailed. However, how does one create such a system within the complicated morass of political and administrative challenges? When highlighting a successful K–16 policy, it would be useful to detail the actions and steps taken to create that positive environment. These types of considerations could bring out the more practical elements of research and better enable decisionmakers to put them into action.

Another problem worth noting in the translation of results for a policy or practitioner audience is that the academic community often uses vague words to describe ways to support students or fails to adequately define its terms. Tinto and Pusser also point out that the literature often uses terms that are "too abstract to be practically useful." Therefore, if research is going to be valuable to the outside world, it must be in language that can be easily understood or is properly defined. Format can also matter as long, technical papers are not the currency used by policy audiences.

Making the Right Recommendation: The Importance of Getting to the Root Cause

In addition to translating the practical implications of research on college success, it is also essential that reviews of the literature help readers to judge the applicability of results to decisions that must be made about policy and programs. Most notably, summaries for practitioners and policymakers should highlight work that identifies the *root* cause(s) of a problem. This issue is emphasized by the debate about whether a given pattern or result is due to correlation or causation. For example, female students tend to score lower on standardized tests. This does not mean, however, that gender *causes* students to perform in a certain way. Instead, we must ask ourselves whether this characteristic is really a proxy for other conditions that matter much more. In this case, differences in socialization by gender may largely explain the differences in achievement. Therefore, one should be extremely cautious in interpreting variables that appear related as causally linked.

This suggestion is not meant to discredit the contributions of descriptive and correlation studies. Descriptive studies will often present a vivid picture of what is happening and the factors at play. This type of work can give us clues about a problem or hint at the possible effects of an intervention, and often the first attempt to study a problem is in the form of describing the major trends. However, as the authors of the commissioned papers highlight, many factors in education are interrelated, and so the distinction between correlation and causation is an especially important one. For instance, the quality of one's high school education is highly correlated with family income. As such, a descriptive and correlation study may not identify the root cause of a problem but only see two factors that happen to move together (e.g., higher income goes with better school quality). Such studies cannot definitively point to the culprit or recommend a particular plan for how to solve a problem.

Although many researchers will caution readers not to interpret their results as causal effects, the discussion in those papers often quickly turns back to language of one factor "affecting," "impacting," or "influencing" another. This is incredibly confusing for a lay audience. The issue of selection is often not explained or emphasized, thereby misleading decisionmakers when they look to the literature for

answers on how to address the problems related to student success. However, it is especially critical to distinguish between correlation and causation in a policy or practice environment. If a policy is based on research that really only documents a correlation between two factors, then the policy may not fulfill the original intent of improving student outcomes.

The debate about college loans and persistence is an example of the importance of identifying a root cause in research to help inform policy. A robust pattern found in the literature is that students who take out college loans are more likely to graduate. If one assumes this relationship is causal (i.e., the loans are the reason the student's chances of graduation are higher), then the policy implication would be to encourage students to assume more debt. However, there are many reasons to believe the relationship between loans and graduation is not causal at all, and such a policy could have dire consequences. The key issue is that students do not randomly take out debt; instead, each must decide individually whether it is worthwhile for them to do so. From the perspective of an economist, they might consider whether the costs of taking out a loan (e.g., the fact they must repay it along with interest) are worth the benefits that the loan makes possible (i.e., getting more education). Other considerations within this model are risk and uncertainty. If a student believes that attending college is a risky proposition and getting a degree is uncertain, that belief reduces the expected value of the benefit associated with college attendance. The prediction from this model is therefore that students who are more confident in their ability to complete a college degree and/or get a high-paying job are more likely to take out a loan. In other words, students who take out college loans are *more* likely to believe that the benefits exceed the costs of the loan. In this way, at least part of the relationship between loans and college graduation has to do with a student's assessment of his or her likelihood of success and a high salary rather than just the idea that loans cause a certain outcome.

A student's prediction about his or her likelihood of college success may in fact be based on factors that actually matter in student success. One example is academic preparation: students with more academic preparation are likely to be more confident in their chances of graduation. If that is the case, then this underlying factor that makes the student believe he or she will succeed (i.e., academic preparation), not the loan, is the real root cause influencing the chances of college graduation. By distinguishing between a correlation and a causal effect, it becomes clear that the true implication for policy is not to encourage debt but to improve academic preparation if one wants to improve college graduation rates.

Another example to illustrate this point involves the evaluation of college intervention programs in which participation is voluntary. When presented with a support program, the students who choose to participate are likely to differ from other students who elect not to use the service. They may be more motivated, more likely to acknowledge that they need the additional help, or just more able to

accept the service because they live nearby or do not have other commitments such as a full-time job or dependents to consider. While the evaluation of this program might show a positive effect on student outcomes, it will be unclear whether the results are due to the services provided by the program or the fact that the students who received the treatment were different from other comparable students. If the treatment group was more motivated than the control group even before the program, it will be difficult to identify the root cause of the improvement in student outcomes. Is it due to student motivation within the treatment group or the services provided by the intervention program? These issues create some complications when trying to expand the program to a larger audience of students who perhaps would not have volunteered to accept the service. Because these new students are fundamentally different than the original students in the study, it is unclear whether the program will have the same effect on them.

This example again emphasizes the special importance of determining the root cause of an outcome when trying to develop policy. With limited funds (and political and institutional will at times), we must ensure that policy and programs are designed based on what is actually *known* about root causes. Otherwise, we will find that the effects of such policies fail to meet our expectations and hopes. Unfortunately, the literature often does little to emphasize which results give the best information for forming policy or designing programs. However, it is our responsibility to help decipher this distinction for an audience that is trying to navigate through a myriad of results to make government and institutional policy.

Context Matters, and One Size Does Not Fit All

While the commissioned papers acknowledge the multiple contexts and environments that matter in the determination of student outcomes, it is also important to note the role of these factors differs by student. One needs to take the particular family, community, and policy context of a specific student into account when forming policies or programs. As Perna and Thomas suggest, student success processes vary across groups. Not all students face the same barriers, nor do they need the same things to be successful in college. Identifying the particular barrier, or relative role of a list of barriers, is important for designing an appropriate policy or program for a particular student or set of students.

The sometimes individualized nature of the problems facing students makes policy and program design much more difficult. Even if a particular initiative was effective at one place, it will not necessarily also be effective for another group in another environment and time. The constantly evolving needs of students, particularly with the changing demographics of the country, make this even more challenging. For this reason, we should be careful when making general conclusions that are actually based on studies about particular types of students or campuses. Again, it is essential to get at the real

cause of an observed change in outcomes—is the change due to the policy or program, or is there something about the particular context or environment that influenced the results? Attention to this issue helps us to reflect on whether a particular initiative could be replicated elsewhere. Learning about the particular context of a target population is essential to understanding the implications of a result.

4. What Else is Needed? Pushing the Literature to the Next Step

This section continues to consider ways to improve research on the factors that affect student success. It encourages researchers to push the literature in new directions so as to better address the issues faced by students. Rather than focusing on how to translate our results and make recommendations to policymakers and practitioners, this section considers the more academic side of research on postsecondary outcomes.

Pushing Our Models Further

The commissioned papers discuss some of the models used in the literature to investigate the factors that impact student success. Several of the commissioned papers also introduce new models to address areas previously receiving little attention. While this is a positive step in the literature, I urge researchers to push our models even further. First, many of the models in the literature are actually just general maps that represent the multiple contexts in which educational outcomes are determined. They summarize a great deal of material to give an overview of a topic. While the overview fulfills an important need, this type of model often provides little direction on how to deal with a particular barrier or environment. How can we incorporate more of the theories of *how* these different parts interact rather than just the fact that they exist? For example, families are known to be important in student outcomes, but how? How do they influence students in positive and negative ways? Pushing the models forward in this way would also give way to more testable propositions and help frame research questions. Second, rather than having general models, it might be more helpful to develop more specialized models that apply to a particular circumstance or type of student. That would give researchers the freedom to emphasize the factors that are particularly important for a certain circumstance rather than having to give everything equal weight. Finally, it would be useful to share our models with practitioners to check their validity. The models represent the understanding of the academic community, but the best sense of feedback might be from people who actually work with the focus populations.

Getting Beyond the Disciplinary Silos: Integrating the Multiple Perspectives

As noted above, the educational process is incredibly complex and involves a variety of factors, both for the present and from the past, in a multitude of environments. No one academic approach or area "owns" the field of education, and in fact, reading across the disciplines and fields is essential to more fully understanding the multiple aspects of the topic. Being able to integrate the multiple approaches only helps to better inform practice and policy. More so than in many other topics, researchers in education are more likely to cross-pollinate in terms of ideas, theories, and methods. Educational researchers are also more likely to publish in outlets other than the primary ones of their particular discipline, perhaps because educational research is of interest to many different audiences beyond those in a particular discipline, including practitioners, policymakers, and education researchers who sit in other disciplines. The silos of the disciplines and fields are not useful when it comes to taking the initiative to improve student outcomes.

Unfortunately, as researchers, we are often trained from a particular perspective. We have strengths in a particular area but often miss the nuances of the contributions of other fields. Also, given the wealth of research done on the subject, it is sometimes necessary to organize the information around the particular contributions of specific departments. For this reason, literature reviews often result in highlighting the somewhat false lines that exist between areas of study. While mentally convenient, this is not very useful for practitioners and policymakers. Because education is such a complicated and pervasive issue in the human experience, it is difficult and misleading to define it as something that happens in silos.

A more useful approach is to organize the information by particular issue related to student success. The paper by Kuh et al. is one example of this approach to the literature. However, there needs to be more of a push to integrate the frameworks and models into clear information. For example, quantitative and qualitative research methods are often discussed separately. Instead, they need to inform each other as complementary approaches of study. One can often help us quantify *if* something works on a large scale while the other helps us understand *how* something works (i.e., the mechanisms at play).

Expanding Our Horizons: What is Considered Educational Research?

It also important to note all research relevant to college success does not appear in publications with the stated mission of focusing on education. Education is the focus of research in a far greater number of journals and other publications. As a result, looking at only the "usual suspects" of publications gives us only a partial view of the research being done. Within the disciplines, education is

also a topic shared by many subfields. In economics, for example, educational topics have been pursued by labor economists as well as those focused on public finance, industrial organization, behavioral economics, macroeconomics, and so on. Therefore, by focusing only on the general interest economics journals, one would miss the major disciplinary journals related to education (e.g., *The Journal of Labor Economics* and the *Journal of Human Resources*). It is improper to make conclusions about the relative contribution of various disciplines based on such a limited review of what is considered a publication on education.

In addition, some very relevant topics do not necessarily even have the name *education* included in their titles. As noted by the commissioned papers, student success is influenced by the larger context of an individual's life. Therefore, the health of families and neighborhoods matter a great deal. This suggests that to fully understand educational trends, it is important to have some sense of general social policy including topics such as welfare, health, and labor markets.

Areas for Additional Research on Underserved Populations

Although there are many factors that researchers know have some role in student success, there are others that receive little attention but could make a major difference in the likelihood of success for a student. Foremost, the role of information is often overlooked. Clearly, in order to make good decisions, students need to have good information about their options and the consequences of decisions. However, underserved students often have little access to such information, which affects how programs and policies do or do not work. Related to this issue is the importance of the format, design, and marketing of an intervention or policy. How students perceive something is vitally important. Other topics that need further investigation include the role of uncertainty, feelings about risk, and the ability to delay reward. All are important when considering such a long-term investment as education.

Continuing on an idea discussed above, more research is also needed that takes into account specific contexts or types of students. Much work needs to be done to figure out which solutions work for particular circumstances. This effort will involve sharing the results of both quantitative and qualitative research to determine not only if something works, but also how and why it works. Finally, as also noted above, it is essential to push for causal analyses. Given the many different initiatives being implemented across the country, there are many opportunities to evaluate various types of initiatives. Often, due to limited resources, not everyone can have the benefit, which can sometimes lead to a possible control group and quasi-experimental research approaches. Also, with the growing desire for assessment and the increased collection of data, researchers are equipped like never before to examine educational problems.

5. Conclusion

In conclusion, this essay reviewed some of the major conclusions of the commissioned papers to reflect on what is known about helping underserved populations be successful in higher education. First, there are many different definitions of student success, and the relevant criteria may be those defined by the particular academic environment. There are also many different approaches to studying college success, and the relevant contexts include schools, colleges, families, communities, and the larger policy environment. Continued assessment is important to understanding the factors that impact student success, and as noted by the commissioned papers, there are areas that still need additional attention and research.

The paper also attempted to build on the ideas presented by the authors to discuss the ways in which researchers could make their work more relevant for policymakers and practitioners. Translating research results for a broader audience is vitally important. It is also the responsibility of researchers to distinguish between results that document a correlation as opposed to a causal relationship; the latter gets closer to the root cause of a problem and is much more useful in the design of policy. Context also has an important role. Because students come from a variety of backgrounds and face different complex environments, no single solution should be applied to everyone. Careful consideration should be given to applying the proper solution to the appropriate circumstance.

The last section of the paper considered how the literature should grow in the future. Additional research is needed on the role of information, the importance of the design and marketing of an intervention or policy, and how uncertainty and risk affect college decisions. I also encourage researchers to extend the standard educational models. In addition, it is important for researchers who study postsecondary success to get beyond the disciplinary silos. The multiple approaches used by researchers should complement each other. Finally, we should broaden our view of what is considered educational research as there are many larger factors at play.