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## Volume 1 Issue 1 Spring 2022



The aim of NCCCJTI is to provide all North Carolina Community College faculty and staff with an outlet for publishing manuscripts of research and practice, as well as provide open access to readers or scholars interested in higher education topics surrounding North Carolina community colleges.



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#### The Journal of North Carolina Community Colleges

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#### **Editor's Note**

This pandemic changed everything. In the spring of 2020 I remember hearing about the virus, and how it could spread to the United States. Like most people, however, I didn't think it would affect me to the extent that it did. My college soon made the jump to virtual, my dissertation was to be defended virtually, my weekly happy hour would start meeting through Facebook Messenger through the comfort of our individual homes. When I finished my dissertation, I graduated on my front porch, with a parade of faculty wearing N95 masks maintaining those six feet.

This project started because of the pandemic. Nobody tells you what to do when you finish a dissertation, only *welcome to the club.* I had edited for my current college's literary magazine, had been an assistant editor for *Higher Education Politics and Economics*, and had assisted with the *Inquiry* journal for the VCCS. Early in my career I had been employed for Tidewater Community College, and when the *Inquiry* journal made it to my mailbox twice a year, a smile came across my face. It was so amazing to see what faculty, staff, and administrators were researching, reviewing, and pondering across the state. Now that I had more time on my hands could the same journal be brought to North Carolina? I started making connections with faculty across the state. I met with Audrey Jaeger from the Belk Foundation, with James "JW" Kelley from the NCCCS, and was eventually steered toward the North Carolina Community College Faculty Association. With the blessing of the system office, I was advised to write up a proposal for the NCCCFA. Brittany Hochstaetter, Rodney Powell, and NCCCFA president John Etheridge were incredibly pleased at my *pitch*, and John made a comment, "Looks like we have our Editor-in-Chief!"

The NCCCFA was on board, but now what? I had never spearheaded a journal. To get started, I sent out a call for editors. I was surprised to receive thirty responses. I had no idea how this journal would go, so I decided to accept them all. I was pleased to have an editorial staff that was diverse in discipline, demographics, and location. I then decided we needed our aim, vision, mission, logo, and a color scheme (which we borrowed from the NCCCS). John and Brittany had already been instrumental and supportive, so I met with them and JW to construct a blue-print. I then held an editor's meeting through Zoom so that everyone could meet, and asked for any constructive feedback they had. From there, we made minor revisions and moved on toward marketing. John set up the website, and I worked to create a Facebook and LinkedIn page (which I hope you the reader will follow).

Still unsure how this would turn out, we moved toward marketing. I want to personally thank each and every individual who received my various emails, Nation Hahn and the entire EdNC staff, the presidents of all 58 community colleges (my president Jack Bagwell especially), and my editorial staff for continuing to push our call for manuscripts and spread the word about the journal. After our call for manuscripts closed we were happy to accept 11 manuscripts, presented here in our first issue. I am incredibly proud of this first issue, and I think you will be too.

So there are numerous people I need to thank because this is now a reality. To John Etheridge, thank you for listening to me amalgamate this vision, and for all your work with our website. To Brittany Hochstaetter, thank you for being an amazing motivator and for assisting with social media. To James JW Kelley, thank you for helping connect me with NCCCFA and for getting the message out to the presidents. To Sylvan Allen, thank you for helping with intake of manuscripts, countless editing, and reviewing this entire issue a hundred times. To the editorial staff, thank you for reviewing articles, sharing with colleagues, and sharing social media posts. And finally, to all the faculty, staff, and administrators reading this, thank you for being champions of higher education in this great state of North Carolina.

Happy Reading!

Dr. Josh Howell-Editor-in-Chief

#### **Research Paper**

Exploring OER as a Mediator for Equity Gaps in Student Course Success Rates for Introductory Biology Courses in the NCCCS Dr. C. Caleb Marsh, Dr. Joshua J. S. Marsh, and Dr. Katherine Chesnutt

#### Abstract

From reducing costs (Dimeo, 2017; Saldutti, 2017) to enhancing instructor autonomy (Bongiovanni & Buljung, 2020) and improving student success (Colvard & Watson, 2018; Winitzky-Stephens & Pickavance, 2017), Open Educational Resources (OER) have been impactful to the higher education sphere. The potential of implementing such resources has led organizations, like NC LIVE, to incentivize adoption through the application and distribution of faculty grants. The Open Education North Carolina (OENC) grant has been shown to improve success rates in introductory biology courses in North Carolina community colleges (Marsh & Chesnutt, 2021) but the question remained, which students benefited most? This study viewed the OENC grant as a proxy for adoption of OER and examined the impacts of the grant program on equity gaps in colleges employing faculty receiving an OENC award. After application of a propensity score matching algorithm, the authors of this study identified that success gaps between students identifying as White and students identifying as Black/ African American or Hispanic/Latinx were significantly decreased during the implementation year of an OENC award to a faculty member at that institution. This study further reinforces the body of academic literature supporting the application of open resources in STEM and adoption as a means for decreasing equity gaps in North Carolina community colleges. Keywords: open educational resources (OER); equity; success gaps; science, technology, engineering, mathematics (STEM)

Exploring Open Educational Resources as a Mediator for Equity Gaps in Student Course Success Rates for Introductory Biology Courses in the North Carolina Community College System

Access to resources that can support teaching and learning in the current age of information is of interest to educators and educational researchers at all levels and content areas. Such resources that come at no cost to the user, often referred to as Open Educational Resources (OER), can be accessed by a broad audience and have the potential to shift teaching and learning in a variety of contexts. OER in science, technology, engineering, and mathematics (STEM) content areas have been under investigation for myriad reasons, including the cost of attending many STEM based courses (Dimeo, 2017; Saldutti, 2017), the customizability and access to course resources (Bongiovanni & Buljung, 2020), and student success rates (Colvard & Watson, 2018; Marsh & Chesnutt, 2021; Winitzky-Stephens & Pickavance, 2017). Proponents of open resources argue that the cost passed to students in STEM based programs can range from hundreds to thousands of dollars a year for books and materials (Bongiovanni & Buljung, 2020); however, others note that the quality and accessibility of such resources can annul any potential benefits of such an adoption (Melnikova et al., 2017). Differences in opinion of the costs and benefits of open resources notwithstanding, scholars report that students in courses utilizing OER believe that these resources comparably align with, or are slightly better than, texts used in other courses (Hendricks et al., 2017), and that belief translates

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into higher grades and an increased number of students successfully completing courses (Winitzky-Stephens & Pickavance, 2017). Although many studies have focused on general student success (students successfully completing coursework with a grade of C or higher), this study explores OER as a potential mechanism for addressing inequities in student success in STEM courses. The disparity in STEM course success rates between minority (i.e., Black/African American, Hispanic/Latinx) students and White students (Arnim, 2019) warrants further investigation of potential resources that might support all students. Variables such as access (Schneider et al., 2006) and costs (Krogstad, 2016; Schneider et al., 2006) have been shown to play an important role in enhancing educational opportunities for historically underrepresented students. Since OER has been shown to reduce the costs of educational resources for students (Bongiovanni & Buljung, 2020), there is a need to examine the impact of OER in STEM based courses for students across racial/ ethnic groups.

#### The OENC Grant Program

Open Education North Carolina (OENC) is an initiative hosted by NC LIVE that supports the adoption of open educational resources in North Carolina's community colleges and universities. This initiative, in part, funded \$1000 adoption grants to individual faculty applicants to support their training and implementation of these resources. Upon application, faculty members must provide evidence of their eligibility as a faculty member employed by an NC LIVE member institution, indicate that there would be significant cost savings to students, and be prepared to adopt an open educational resource as the primary textbook for their course ("OENC Grant Application," n.d.). Although grant awardees came from a variety of subjects and institutions between 2018 and 2020, 103 grants were awarded to faculty employed by NC community colleges and 36 were focused on implementation in STEM coursework ("OENC: Awarded Grants," n.d.). Incentivizing faculty to utilize OER is an area of research that has potential for increasing OER opportunities for students.

Providing financial incentives for faculty members to adopt OER has been shown to increase adoption of OER (Bongiovanni & Buljung, 2020; Todorinova & Wilkinson, 2020). Incorporating new

resources into an existing curriculum can be challenging. Aligning content from a syllabus or course outline to a new text, particularly when the burden of alignment is carried primarily by an instructor without the aid of a publisher, is time consuming and commendable. Furthermore, merely finding available resources is a barrier; however, financial incentives can assist faculty members assuming this task and can even promote faculty members in their own authorship of their course texts when other texts are unavailable (Todorinova & Wilkinson, 2020). By providing appropriate incentives for faculty adoption, universities and colleges are more likely to see more OER implementation by their faculty members (Annand & Jensen, 2021). The body of academic work around this area of focus highlights barriers to faculty adoption of OER but has concurrently shown open resources to provide new opportunities to increase student success and address success rates for historically underrepresented students in STEM courses.

#### Literature Review

Though not without its challenges, adopting open resources has the potential to benefit students financially and academically (Dimeo, 2017). Given this, many researchers have supported the adoption of open resources in courses that have exhibited higher non-tuition costs and those that maintain lower course success rates (Marsh & Chesnutt, 2021; Winitzky-Stephens & Pickavance, 2017). While concurrently impacting all students, historically underserved populations have been disproportionately impacted by the financial burden of coursework or coursework that is not suited to their individual needs, which can lead to lower success rates (Jenkins et al., 2020; Shaw et al., 2019). This is especially true when dealing with courses in STEM which already garner lower success rates for students of historically underrepresented populations such as African Americans, Latinxs, and Native Americans (Hurtado et al., 2010). OER presents a unique opportunity to address some of these inequities by decreasing cost related barriers to educational resources.

#### **OER** in STEM

The implementation of OER in STEM based courses has been shown to reduce student costs on course related materials and provide students with similar or better resources when compared to their non-OER courses (Bongiovanni & Buljung, 2020; Hendricks et al., 2021). Additionally, many OER based courses provide a customizable approach to instruction, which has been reported to be particularly helpful in STEM courses (Bongiovanni & Buljung, 2020). In an investigation of open educational resources in an entry level physics course, 57% of students did not purchase a textbook due to its cost and 40% dropped a specific course due to the cost of a given textbook (Henricks et al., 2021). Researchers also determined a significant difference in the number of students who completed an introductory biology course when OER were available versus when they were unavailable to students (Fisher et al., 2015). While OER presents many opportunities to reduce costs and enhance course materials, OER is still not the normal means of delivering content to students in STEM courses (Dimeo, 2017).

In a survey of 400 college professors, over 200 instructors had no experience in using OER (Dimeo, 2017). While some institutions are providing financial incentives to adopt OER, there remain individuals teaching in STEM fields who are either unaware of the availability of OER for their content area or unaware of the programs that incentivize such adoption (Bharti & Leonard, 2021). According to a study of students attending the Colorado School Latinx students are far more likely to enroll in twoof Mines, students were expected to spend over \$1,500 on books and supplies each year (Bongiovanni & Buljung, 200). While these costs may not be detrimental to all students, this can have detrimental implications for students from lower socioeconomic levels. Currently, over a third of Black/African American and Hispanic/Latinx students leave STEM majors compared to White students (Arnim, 2019). One of the reasons researchers speculate for this disparity is that many minority students come from low income families and do not have access to high cost educational resources (Arnim, 2019). While OER is important specifically for disparities of representation in STEM fields, OER also addresses issues within the greater spectrum of educational equity.

#### Equity in OER

The rising costs of textbooks present a barrier for students as a non-tuition expense for those pursuing higher education. These barriers disproportionately impact underserved populations and serve

as a redistributive justice issue for many students (Jenkins et al., 2020). Beyond costs, other researchers have lauded open resources as being customizable because they provide instructors with the opportunity to differentiate instruction to the diverse needs of their students (Jenkins et al., 2020; Shaw et al., 2019). With customizability in mind, instruction must be driven through an equity oriented process to provide equal access for all learners (Kalir, 2018).

The benefits of OER have been well documented with respect to costs, differentiating instruction for diverse populations, and benefiting student performance in underserved populations. For example, Colvard & Watson (2018) investigated the impact of open resources on a variety of student metrics that included students from lower socioeconomic backgrounds and those from historically underserved populations. In their study of nearly 20,000 students, they found that not only did non-White students benefit from open resources when reporting their academic performance, but their improvement exceeded the improvement of White students in the study. Their findings added to a body of literature that supports the use of open resources as a mechanism for social justice.

Open resources may benefit Hispanic/Latinx students more than any other group. Hispanic/ year colleges citing the reduced cost of attendance (Krogstad, 2016; Schneider et al., 2006) and location relative to their home (Schneider et al., 2006). As costs play a significant part in the decision to enroll in higher education, providing low or no cost options for textbooks may play a significant role in accessibility of these resources (Jenkins et al., 2020). In addition to costs, the modifiable nature of open resources (Saldutti, 2017) provides instructors an opportunity to meet the needs of students who are more likely to be nonnative English speakers and who are more likely to be first generation, or the children of first generation, immigrants (Schneider et al., 2006).

#### Potential Disadvantages of OER Adoption

Although there is a wealth of research espousing the benefits of OER adoption, many authors would caution potential adopters. Melnikova et al. (2017) conducted a comparative analysis of faculty members from a wide array of disciplines. In this analysis, many of the aforementioned benefits were echoed

by their respondents; however, respondents were also careful to chronicle some concerns. Of these disadvantages, respondents noted that quality was a major concern as peer review and author experience are not requirements for many resources. Second, with many open resources having electronic only access, the burden of access is placed on the student 2. If such a decrease was evident, what was the esto obtain devices and internet service capable of retrieving the information. Third, although there is a mechanism to obtain copyright protections through Creative Commons, many find the copyright process cumbersome. Finally, academia is in part funded through royalties to authors and revenue generated through the campus bookstore. Large scale OER adoption may impact these revenue streams (Melnikova et al., 2017).

#### Gaps in the Literature

While previous research has examined the impacts of OER for underserved students in STEM coursework, less is known about the impacts of OER from an institutional lens with the added incentive of stipends to the faculty for such adoption. The OENC grant program applied in introductory biology courses provided an opportunity to address that gap.

#### **Research Questions**

This research was guided by two specific questions with three research subquestions that will be addressed through data collection and analysis.

- 1. Was there a statistically significant decrease in the equity achievement gap, measured by the percentage of successful student completers, in introductory biology courses for colleges that employed an OENC grant recipient in the impact year of the OENC grant?
  - a. Was the decrease evident in a comparison of White students and Black/African American students?

#### Figure 1

b. Was the decrease evident in a comparison of White students and Hispanic/Latinx students?

- c. Was the decrease evident in a comparison of Black/African American and Hispanic/ Latinx students?
- timated effect size of the decrease?
  - What was the estimated effect size of the a. decrease in a comparison of White students and Black/African American students?
  - b. What was the estimated effect size of the decrease in a comparison of White students and Hispanic/Latinx students?
  - c. What was the estimated effect size of the decrease in a comparison of Black/African American students and Hispanic/Latinx students?

#### Methods

This study's treatment group was set based on the availability of the OENC grant to North Carolina community colleges. Although there were multiple STEM instructors of different disciplines, introductory biology courses were selected for specific scrutiny to align with the work of Marsh and Chesnutt (2021). Any college that employed a faculty member who received an OENC award for introductory biology coursework was observed according to the variables listed in later parts of this section. In order to observe potential impacts of the OENC grant on student success, a comparison sample was developed using a propensity matching algorithm.

#### **Obtaining a Matched Sample**

Following the recommendations of Caliendo and Kopeinig (2018) a propensity matching algorithm was developed to identify colleges that were most similar to those in the treatment group. The algorithm used for this study is visualized in Figure 1

Propensity Matching Algorithm Match 1: Course Match 2: Impact Match 3: Student Match 4: Proportion Match 5: Proportion (introductory population (size) of White students of students vear receiving Pell biology)

The result of the propensity matching algorithm produced a sample of comparison colleges (n=9)that all offered coursework in the same course numbers as those in the comparison group. Additionally, the comparison colleges maintained observable data from the year prior to and after faculty at treatment colleges were awarded the OENC grant. As for matches 3, 4, and 5, two-sample *t*-tests were implemented to determine the degree to which comparison colleges differed from those in the treatment group. Table 1 displays the results of those tests.

#### Table 1

Student	t- <i>Test</i>	Results	for	Match	ies 3—5
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Match Number	Group	Mean	<i>t</i> -Score	<i>p</i> -Value
Match 3	Control	4833	0.032	0.975
	Treatment	4799		
Match 4	Control	0.6033	772	.451
	Treatment	0.6300		
Match 5	Control	0.336	1.106	.285
	Treatment	0.317		

Analysis of the table above would indicate that the comparison group created through the propensity matching algorithm was not statistically different from the treatment group as evidenced by *t*-scores not significantly deviating from zero. In the case of Match 3 (student population size), the comparison group created through the matching algorithm maintained an average student population size only slightly larger than the treatment group, but that difference was negligible when tested for statistical significance (t=0.032, p=.975). As for Match 4 (proportion of White students), the treatment group on average contained a slightly larger proportion of White students than the comparison group, but that difference was negligible when tested for statistical significance (t=-.772, p=.451). Finally, Match 5 indicated that the average proportion of Pell grant recipients in the control group was slightly larger than the treatment group, but that difference again was negligible when tested for statistical significance (t=1.106, p=.285). These findings indicate that the matches developed through the propensity matching algorithm were sufficient to meet the guidelines recommended by Caliendo and Kopeinig (2018) for comparison.

#### Defining Student Success

Student success is a metric that is often operationally defined by authors. For the purposes of this study, student success has been defined simply as successful completion of the course with a grade of C or higher. As many of the courses under review by this work are considered college transfer courses, students must obtain a grade of C or higher at the conclusion of the course to be considered for transfer under the Comprehensive Articulation Agreement (CAA) between the North Carolina Community College System and the University of North Carolina System (Board of Governors, 2014). Although certain courses may not meet the conditions of the CAA, student success for those courses was assessed using the same metrics.

#### **Data Collection Procedures**

Once a reasonable match had been established, each institution in both the control and treatment groups were observed. Data were made publicly available by the North Carolina Community College System ("Curriculum Course Outcomes by Student Demographics," n.d.) documenting student success

#### Table 2

Description of Variables

in introductory biology courses. These data were available in both aggregated and disaggregated formats related to student demographics (sex, race, etc.). The availability of the data was somewhat restricted in that the NCCCS suppressed data from any group that registered fewer than 20 members. This fact limited this study in disaggregating the data for certain ethnic groups. As such, those comparisons were removed for observation. Table 2 lists each variable collected for the purposes of analysis.

Variable Name	Variable Type	Description
Course Name	String	The name and course number aligned with the NCCCS Com- mon Course Catalog indicating the type of introductory biolo-
Year Awarded	Continuous	The year that the institution was awarded an OENC grant or the year that a matched institution was observed that corre-
Group	Binary	A code indicating whether the school was awarded an OENC grant (TREATMENT) or was a matched institution
Percent White Success (Pre-OENC Award)	Continuous	The percentage of students that identified as White and suc- cessfully completed the selected introductory biology course in
Percent White Success (OENC Implementation Year)	Continuous	The percentage of students that identified as White and suc- cessfully completed the selected introductory biology course in the year awarded.
Percent Black/ African American Success (Pre- OENC Award)	Continuous	The percentage of students that identified as Black/African American and successfully completed the selected introducto- ry biology course in the year prior to the year awarded.
Percent Black/ African American Success (OENC Implementation	Continuous	The percentage of students that identified as Black/African American and successfully completed the selected introducto- ry biology course in the year awarded.
Percent Hispanic/ Latinx Success (Pre-OENC Award)	Continuous	The percentage of students that identified as Hispanic/Latinx and successfully completed the selected introductory biology course in the year prior to the year awarded.
Percent Hispanic/ Latinx Success (OENC Imple- mentation Year)	Continuous	The percentage of students that identified as Hispanic/Latinx and successfully completed the selected introductory biology course in the year awarded.

#### **Research Design & Data Analysis**

The research questions proposed in this document were best addressed by the comparison of student performance in the courses scrutinized in this study. Data were prepared according to Table 2, and equity gaps (the difference in the percentage of successful students in each identified ethnic group) were calculated in each pre-OENC award and OENC implementation year. These calculated changes in success outcomes constituted either an increase or decrease in each equity gap as a function of the OENC implementation year. Comparisons were constructed to align with the research questions:

- Change in White and Black/African American equity gap (White—Black/African American)
- Change in White and Hispanic/Latinx equity gap (White—Hispanic/Latinx)
- Change in Black/African American and Hispanic/Latinx equity gap (Black/African American— Hispanic/Latinx)

Since each institutional gap was calculated by subtracting the percent success of group two from the percent success of group one, any positive value would indicate that group one maintained a larger percentage of successful students than group two. Once each change had been calculated, two-sample *t* -tests were used to determine if the change in equity gap from the pre-OENC award year to the OENC implementation year were statistically significant. Finally, the effect size for any significant differences were calculated using Cohen's *d*.

#### Delimitations

Although precautions were taken to limit the influence of potential bias, this design was delimited by several factors. First, any institution may adopt open resources at the behest of their faculty, students, or administrators without being awarded an OENC grant. As such, it was not possible to determine if any matched institution had already implemented such resources during either of the two observed years. Pursuant to this limitation, this research may not be generalizable to the larger body of work regarding open resources but was carefully applied to OENC recipient colleges. Second, data sup-

pression by the NCCCS made comparisons for certain groups unavailable to the described research design. As such, potential pairs for unavailable comparisons were omitted. Third, the application of a quasi-experimental design was applied in lieu of a randomly controlled trial. Propensity matching is generally accepted as a reasonable approach given the lack of control over the trial (Caliendo & Kopeinig, 2018). Fourth, award participants are incentivized to adopt resources. Although the award funding was not contingent on documenting success, faculty could have been primed to adjust their grading policies to reflect impact, although it is doubtful that such an adjustment would have occurred intentionally. Finally, and perhaps most noteworthy, the span of time for OENC implementation was interrupted by the COVID-19 pandemic. Although the applied propensity matching technique should help filter some of the impacts of the pandemic on student performance as all schools, treatment or otherwise, were affected by the crises, every student, school, and system assimilated those impacts differently. No attempt was made to accommodate for the COVID-19 pandemic beyond observing all schools equally over the same time span.

#### Results

The results of this study were partitioned into three sections to organize findings according to the research questions. Descriptive statistics for the variables, significance tests, and effect sizes are given for each comparison of success gaps between White and Black/African American students, White and Hispanic/Latinx students, and Black/African American and Hispanic/Latinx students. All tables can be found in the text.

#### Success Gaps Between White and Black/ African American Students

Table 3 displays the descriptive statistics for the success gaps between White and Black/African American students for control and treatment institutions for the pre-OENC year and the OENC implementation year.

#### Table 3

Statistic	Pre-OENC Year		OENC Implementa- tion Year	
	White—Black/ African American Control ( <i>n</i> =8)	White—Black/ African American Treatment ( <i>n</i> =8)	White—Black/ African American Control ( <i>n</i> =8)	White—Black/ African American Treatment ( <i>n</i> =8)
Mean Gap	16.94	19.88	20.00	13.88
Standard Deviation Gap	6.59	7.21	7.19	7.97

Descriptive Statistics for White and Black/African American Students' Success

Pure comparison of the mean gaps for the control group from the pre-OENC year to the OENC implementation year would indicate that the average equity gap for those institutions had increased ( $xbar_{Pre-OENC} - xbar_{implementation} = -3.06$ ) whereas the same comparison for the treatment group declined ( $xbar_{Pre-OENC} - xbar_{implementation} = 6.00$ ). When the change in gaps was analyzed using a two-sample *t*-test, the difference between the gaps was statistical-

ly significant (t = -2.264, p = .04) and the effect of the OENC award was large (Cohen's d = -1.132). Success Gaps Between White and Hispanic/ Latinx Students

Table 4 displays the descriptive statistics for the success gaps between White and Hispanic/Latinx students for control and treatment institutions for the pre-OENC year and the OENC implementation year.

#### Table 4

Descriptive Sta	itistics for Whi	te and Hispanic,	/Latinx Students	' Success
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Statistic	Pre-OENC Year		OENC Implementa- tion Year	
	White—Hispanic / Latinx Control ( <i>n</i> =6)	White—Hispanic / Latinx Treatment ( <i>n</i> =6)	White—Hispanic / Latinx Control ( <i>n</i> =6)	White—Hispanic / Latinx Treatment ( <i>n</i> =6)
Mean Gap	0.50	9.00	7.67	3.83
Standard Devia- tion Gap	9.32	6.19	6.71	6.71

Pure comparison of the mean gaps for the control group from the pre-OENC year to the OENC implementation year would indicate that the average equity gap for those institutions had increased (*xbar*<sub>Pre-OENC</sub> - *xbar*<sub>implementation</sub> = -7.17) whereas the same comparison for the treatment group declined (*xbar*<sub>Pre-OENC</sub> - *xbar*<sub>implementation</sub> = 5.17). When the change in gaps was analyzed using a two-sample *t*-test, the difference between the gaps was statistically significant (*t* =-2.192, *p* =.05) and the effect of the OENC award was large (Cohen's *d* =-1.132).

#### Success Gaps Between Black/African American and Hispanic/Latinx Students

Table 5 displays the descriptive statistics for the success gaps between Black/African American and Hispanic/Latinx students for control and treatment institutions for the pre-OENC year and the OENC implementation year.

#### Table 5

Statistic	Pre-OENC Year		OENC Implementa- tion Year	
	Black/African American—Hispanic/ Latinx Control ( <i>n</i> =5)	Black/African American— Hispanic/Latinx Treatment ( <i>n</i> =5)	Black/African American— Hispanic/Latinx Control ( <i>n</i> =5)	Black/African American— Hispanic/Latinx Treatment ( <i>n</i> =5)
Mean Gap	-9.10	3.90	-16.80	-12.90
Standard Deviation Gap	11.80	7.62	11.64	6.15

Descriptive Statistics for Black/African American and Hispanic/Latinx Students' Success

Pure comparison of the mean gaps for the control group from the pre-OENC year to the OENC implementation year would indicate that the average gap between Black/African American and Hispanic/Latinx students for those institutions had increased (*xbar*<sub>Pre-OENC</sub> - *xbar*<sub>implementation</sub> = 7.70) while the same comparison for the treatment group also increased but by a greater magnitude (*xbar*<sub>Pre-OENC</sub> - *xbar*<sub>implementation</sub> = 16.80). When the change in gaps was analyzed using a two-sample *t*-test, the difference between the gaps was statistically significant (*t* =-2.343, *p* =.05) and the effect of the OENC award on the average gap was large (Cohen's *d* =-1.482).

#### **Discussion and Conclusions**

Overall, this study indicates that institutions that employed faculty who received an OENC grant requiring the implementation and application of open resources experienced significant declines in equity success gaps between White and non-White students enrolled in introductory biology coursework. Although the magnitude of the change in the gap varied between comparisons of White students and Black/African American or Hispanic/ Latinx students, all comparisons between White and non-White students exhibited large effect sizes. This finding is consistent with work by Colvard and Watson (2018) and Shaw et al. (2019) supporting the use of open resources in reducing equity gaps and in application for STEM coursework.

The implications for these findings are vast in that although implementation of open resources as evidenced in these findings and the work of others (Colvard & Watson, 2018; Shaw et al., 2019)— seems to improve student success for students regardless of race/ethnicity, there were different impacts aligned to the race/ethnicity observed. Institutions, faculty, and systems may find success in decreasing success gaps within their populations by exploring the use of OER in the STEM curricula. Furthermore, although OER implementation is not a panacea for student success gaps, it is a reasonably inexpensive approach to addressing equity issues at both the institutional level and at the classroom level. Furthermore, OER could be adopted piecemeal for instructors as they transition from traditional course resources, with the goal of using all OER after a set amount of time.

Another noteworthy finding from the results of this study is the change in the success gap between the two observed non-White groups. Unlike comparisons between White and non-White students, the success gap between Black/African American and Hispanic/Latinx students appeared to grow in favor of Hispanic/Latinx students with institutions that employed faculty who were recipients of OENC grants. Although there are many potential implications of this finding, one might conclude that the OENC grant, although benefiting all students, disproportionately aided the success of Hispanic/Latinx students over all other measured groups. This finding supports the work of other researchers who have identified disadvantages experienced by Hispanic/Latinx students (Krogstad, 2016; Schneider et al., 2006) and the potential for open resources in aiding in student success through the alleviation of certain financial burdens disproportionally experienced by these students.

#### Limitations

This study was limited by several factors. The first is related to the use of the OENC grant as a proxy for student success as a result of open resources. Recipients of the OENC grant were incentivized to implement open resources in their courses. Gritz (2004) argued that providing incentives prior to requirement of a task, as was the case in the OENC grant, resulted in better response and quality of work. Adopting open resources is a complicated endeavor and even more so if done voluntarily. Readers of this study should be cautious in attempting to separate the financial incentive of participation from the impact of open resources alone.

Second, the sampling frame for both treatment and control groups was limited to two-year public institutions in North Carolina. All courses observed were introductory biology courses that all applied common topics from a statewide set of course descriptions. Any attempt to generalize these findings to other coursework, states, or systems of higher education is not recommended.

Finally, this study examined the gap in the percentage of successful students at institutions disaggregated by their self-reported race/ethnicity. There was no attempt to account for student achievement measured by grades, test scores, or other academic characteristics beyond successful attempts in the course examined. Examination of academic achievement as a result of either the OENC grant or other implementation of open resources remains an area for further research.

#### Areas for Further Research

The investigation presented here focused on the impact of OER on historically underrepresented students within one specific STEM course: introductory biology. Future investigations should look within other STEM related courses in order to compare findings of this study with other courses where OER is being implemented (i.e., chemistry, physics, etc.). The impact of incentivizing faculty members for OER implementation could also produce a litany of information relating to the opportunities of funding faculty-led authorship in courses which do not currently have OER available. Addressed within the limitations of this study was the fact that it focused on two-year community college students. Future research is needed to investigate the impact across institutions, such as universities, and how OER impacts historically underrepresented groups across those institutions. Additional insight could be gained from case studies of the impact of OER on success rates and lived experiences of students, as well as the impact of funding on OER implementation and whether funding provided long term implementation success. Finally, investigating the impact of OER in non-STEM fields or on variables other than course success rates may bring to light other ways in which lowering the barrier to access can impact teaching and learning for all.

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#### **Research Paper**

Pathways to Learning: Preliminary Findings of a HyFlex Pilot Implementation Dr. Makena N. Stewart and Carl Bishop

#### Abstract

Technological advances have provided community colleges with unique opportunities to address the diverse needs of their student populations, specifically instruction for nontraditional adult learners. Hybrid flexible, or HyFlex, is an innovative approach to teaching and learning that provides learners with the freedom to select their method of course participation based on their individual needs. As a multimodal approach, HyFlex allows the student to choose from face-to-face, synchronous, or asynchronous attendance all in the same course. This article provides an overview of a summer HyFlex pilot implementation at one community college. Preliminary findings of a formative assessment and implications for institutional scale up are discussed.

*Keywords*: community college, HyFlex, student success, adult learning

## Pathways to Learning: Preliminary Findings of a HyFlex Pilot

As open access institutions, community colleges have often struggled to fully meet the diverse needs of the various student populations they serve, particularly nontraditional adult learners (Pratt, 2017). Nontraditional adult learners comprise nearly 40% of the postsecondary population in the United States, yet there is still a reliance on traditional educational practices particularly with teaching and learning (Singh, 2021). Several factors contribute to this situation including deeply rooted traditions, faculty comfort, and routine outreach

and recruitment efforts focused primarily on current and recent high school student populations. Together these factors continue to reinforce standard course delivery and instruction. As a result, adult learners often feel that their individual needs are being lumped into a larger group and they are not recognized as having individual pressures or goals which impact their success (Kachur & Barcinas, 2020). With the need for adult learners to be self-directed in their learning, educational institutions must consider alternative ways to engage these students in the classroom (Abdelmalak & Parra, 2016). A hybrid flexible, or HyFlex, teaching method leverages digital technology to help adult learners meet the demands of their lives by providing them with greater control over how they will receive their learning (Rosen, 2021).

#### Significance

Although multiple universities have offered HyFlex instruction at the program and departmental levels (Miller et al., 2013; Rosen, 2021; Wigal, 2021), there is limited research on how institutions of higher education, particularly community colleges, have scaled up institutionally. The void in this literature is concerning for several reasons. With limited funding, community college practitioners may be reticent to implement practices that appear promising but lack a blueprint or roadmap for execution. The desire to prevent costly mistakes results in fewer institutions at-

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tempting these efforts, thereby exacerbating the void of best practices in a cyclical effect. Additionally, much of the extant literature examines the effectiveness of HyFlex across large course sampling at universities (Lakal et al., 2014; Miller et al., 2013). Community college courses often have low student-tofaculty course enrollment ratios resulting in fewer students available to participate in each modality. As such, more research is needed to determine whether the student learning experience and course effectiveness are impacted when offered in smaller courses (Lakal et al., 2014).

This article provides an overview of a summer HyFlex pilot implementation and preliminary formative evaluation findings. As other practitioners have looked to document institutional response to the global COVID-19 pandemic (Ensmann et al., 2020), this article details how one community college turned a challenge into an opportunity to meet the instructional needs of nontraditional students to improve student success.

#### Needs of Adult Learners

Adult learners are often plagued with multiple challenges that impact their ability to attend class over the course of a semester. Concerns such as childcare and transportation often lead to students having to prioritize their life needs over their education.

This type of prioritization happens frequently with adult learners and work responsibilities. Students with a high school diploma or equivalency as the highest level of academic attainment are often enrolled in school to acquire the skills needed for a steady living wage job. These students often work part-time jobs with varying schedules, making a traditional course attendance model with structured in person meeting times challenging (Singh, 2021).

Another challenge is technology. Much has been written about online learning for students and the challenges they encounter (Moore & Shemberger, 2019; Singh, 2021). Bouchey, Gratz, and Kurland (2021) noted that online learning should:

1) identify the needs of its online and face-toface learners, 2) ensure that services are available when learners want them, rather than when the institution is ready to provide them, and 3) ensure that the virtual services are as good as or better than the in person equivalents. (p. 30) While many adult learners prefer online or hybrid course offerings due to the flexible schedule, these students vary in their ability and comfort in using technology (Singh, 2021). Lakal et al. (2014) found that students who primarily attended courses synchronously reported being more comfortable with the use of technology in comparison to students who attended asynchronously.

This comfort level may play a role in student success. While there are often differences as to how institutions define student success and how adult learners perceive the factors associated with their success (Kachur & Barcinas, 2020), course level outcomes tend to be a consistent motivator for students. Institutional research revealed differences in student performance based on modality. Fall 2020 data showed that students in virtually blended courses had the lowest success rate at 79.3%, in comparison to 82% for asynchronous online classes, and 90.4% for traditional face-to-face courses (Institutional Research and Effectiveness, personal communication, February 2021). The disparity in outcomes across these modalities has implications for the needs of all students, even digital natives who have familiarity with technology.

The positive impact on student attendance that is seen in face-to-face classes is present in a HyFlex model when equivalent alternatives to in class participation are built into the course design. Through robust course design, HyFlex removes the previously identified class attendance barriers of transportation and scheduling conflicts while also allowing students who need more assistance an avenue to come in person (Beatty, 2019).

#### HyFlex

While there are many variations of HyFlex, it is important to begin with a working definition. As a multimodal approach, hybrid flexible, or HyFlex, allows the student to choose from face-to-face, synchronous, or asynchronous participation all in the same course. HyFlex serves as a solution to both institutional needs such as lower enrollments and space utilization, as well as an innovative approach to serving students learning at a distance (Beatty, 2007; 2019).

Beatty (2007) identified four pillars to the HyFlex instructional design. First, the selection of the modalities must be learner choice. The flexibility for a student to direct their own participation is essential, as institutions are unable to predict which of the numerous attendance patterns a student may follow over the course of a semester. Beatty (2019) estimated that when students were offered in class, synchronous, and asynchronous options of attendance, the possibility of *participation paths*—the various attendance combinations—would exceed 500,000 in just 12 weeks. With this type of variability, it is essential that community colleges undertaking this endeavor have a blueprint, or roadmap, for a successful implementation.

The second pillar, or principle, relates to the equity of activities across all modalities. According to Beatty (2019), the activities should align with meeting the learning outcomes regardless of modality. Inclusion of activities that provide faculty feedback as well as peer-to-peer interactions are instrumental design elements. While these activities may vary in the level of social interaction, students should have the opportunity to reflect on the instruction and share and engage with the contributions of their peers.

Third, the artifacts from each modality should be included as learning resources for all students enrolled in the class. This principle of reusability includes examples such as course sessions being recorded and posted for all students to reference or written notes and transcripts being available for students who attend face-to-face (Beatty, 2007; 2019). Employing this and other universal design principles assists students in finding the tools they need to be successful in mastering the course learning objectives.

Lastly, the course must be accessible. Beatty (2019) refers to accessibility in two ways: the acquisition of hardware, software, and networking technologies and the skills to navigate and troubleshoot them. Accessibility also refers to students' ability to select and participate in each of the modalities without barriers.

#### **Pilot Design**

During the 2020-2021 academic year, college leadership began planning for a HyFlex pilot to be offered in summer of 2021. For the purpose of this pilot, the institution adopted Beatty's aforementioned definition of HyFlex that allows participation flexibility across in person and virtual modalities.

As Beatty (2019) shared, factors such as enrollment characteristics, faculty capacity, and student interest impact an institution's readiness to implement HyFlex course design. These factors were considered. The summer schedule was primarily comprised of general education courses, and it was determined that courses would be piloted within the School of Arts and Sciences. The Dean of Arts and Sciences collaborated with the Director of eLearning to identify criteria for courses to be included in the pilot. It was determined that selected courses would be primarily lecture based and courses with a clinical or work experience component would be omitted. A total of 12 courses were selected across the disciplines of English, psychology, math, art, history, humanities, biology, drama, music, and Spanish. In addition, courses were scheduled broadly to accommodate both daytime and evening learners. A total of nine instructors, representing both full-time and adjunct faculty, participated in the summer pilot. Three faculty taught more than one section of a HyFlex course.

Rosen (2021) noted that students are often not familiar with the HyFlex model when they begin a course, which can lead to student success barriers. As a result, care and attention was taken to distinguish between this modality and others offered at the college. HyFlex course sections were given an Fnotation in the course section numbering. Advisors made students aware at the time of registration that they were enrolling in a HyFlex section that provided them the flexibility to determine how they would participate in each class session. A HyFlex descriptor was included in the online schedule for designated sections to signal to students who self-registered. Faculty were also asked to notify students enrolled in their classes through emails and posted class announcements that the course would be offered in a HyFlex delivery.

#### **Faculty Development**

Roddy et al. (2017) noted that assistance navigating technology, online-friendly academic supports, and a sense of belonging are among the pillars critical for supporting student success in the online environment. Further, the researchers noted that when instructors do not have adequate technological skills, they cannot resolve technology related problems during synchronous instruction, which impacts student learning.

To account for this, the faculty in the pilot participated in a four week training course that included an online component as well as in person class time to learn how to use classroom technology. The course was held twice a week and was facilitated by the Director of eLearning, with resources provided by the college's in house Center for Teaching, Learning and Leadership. Several course meeting dates were offered fully HyFlex to simulate the student learning experience for the faculty. Learning outcomes for the course included faculty being able to describe the components of the HyFlex model, use the appropriate hardware technology in each of the HyFlex classrooms, create and facilitate videoconferencing sessions, and use the learning management system to effectively lay out a HyFlex course design for their class(es). Instructional resources included course aids such as written information sheets on operating the classroom technology and navigating the videoconferencing software.

#### Technology

It was determined early on that the technology would need to be upgraded to deliver HyFlex instruction. Two classrooms were identified to be retrofitted with multiple hardware technologies. Hardware included an interactive SMART Board<sup>®</sup>, secondary extended monitors, cameras, speakers, and microphones. Microsoft Teams videoconferencing software was used to connect the students in the classroom to students who were joining synchronously. Laptops and hotspots were made available to students who needed resources for off campus use through the library learning commons.

All course materials were housed in the college's learning management system to ensure students had access to session meeting links and course resources. A standard modular course design template was used to provide students with a consistent layout of where they would access course content regardless of their participation method.

#### Formative Evaluation

Surveys were administered to both students and faculty during the summer semester as tools for formative assessment. The faculty survey was administered electronically during the second week of the eight week session. The instrument included 18 items that were a mixture of Likert scale and openended questions. Faculty were asked to provide feedback on the relevance of the training, recommendations for improvement, as well as their own initial confidence level. Respondents were given the option to provide their name or complete the survey anonymously. Table 1 provides a list of the items included in the survey administered to faculty.

#### Table 1

#### Faculty Survey Items

- 1 How confident did you feel on the first day of class? (Scale of 1-5)
- 2 How relevant and helpful do you think the in person training was prior to starting the class?
- 3 How relevant and helpful do you think the online training was prior to starting the class?
- 4 How relevant and helpful did you find the instructor aids for the first day of class?
- 5 How would you improve the online training?
- 6 How would you improve the in person training?
- 7 How would you improve the instructor aids?
- 8 How interested are you, today, in teaching via the HyFlex modality again? (Scale of 1-5)
- 9 What could we do to improve your experience in teaching via HyFlex?
- 10 Please describe what worked best for you with regards to the technology provided.
- 11 Please describe what additions/changes you would make to the technology provided to best serve you as the instructor for HyFlex.
- 12 Please describe what additions/changes you would make to the technology provided to best serve the students in the classroom for HyFlex.
- 13 Please describe what additions/changes you would make to the technology provided to best serve students learning synchronously from home for HyFlex.
- 14 Please share any feedback you have received from students regarding the HyFlex modality.
- 15 What percentage of your students are attending in person?
- 16 What percentage of your students are attending synchronously online?
- 17 What percentage of your students are attending only asynchronously?
- 18 Additional feedback on technology.

The Office of Institutional Research and Effectiveness administered a separate survey to students who had at least one HyFlex course. Students were sent a Qualtrics survey link to their school email address. The survey included a mixture of multiple choice, Likert scale, and open-ended questions. The survey instructions provided students with an overview of the purpose of the survey, the definition of HyFlex, and an invitation to complete the optional survey. Table 2 provides the list of survey items administered to students in HyFlex courses.

#### Table 2

#### Student Survey Items

- 1 Were you aware before you started this course that it would be *HyFlex*?
- 2 Did your instructor explain at the beginning of the course that it would be *HyFlex*?
- 3 Were you able to access the technology that was needed for the class?
- 4 Was the technology easy for you to access?
- 5 Did you need technology support beyond what your instructor provided?
- 6 What other supports or resources might have helped you?
- 7 Which learning environment did you most frequently use for this course?
- 8 Is this the only environment or method you used to complete the course?
- 9 If no, how frequently did you attend your class in each environment?
- 10 When you attended face-to-face on campus, how comfortable were you interacting with your classmates? Your instructor?
- 11 When you attended synchronous virtual (same time, virtual environment), how comfortable were you interacting with your classmates? Your instructor?
- 12 When you attended asynchronous (remote online without live interaction), how comfortable were you interacting with classmates? Your instructor?
- 13 What parts of the asynchronous class have you found useful? (You may have used these resources even if you attended the class in person or in the synchronous environment.)
  - Discussions
  - Prerecorded video lessons
  - Recorded class sessions
  - External videos (YouTube, Publisher videos, others)
  - N/A—Did not use any of these
- 14 If you have recommendations for improving elements of the course, please explain.
- 15 Would you take another HyFlex course?

- 16 Please explain your answer above.
- 17 Please describe what worked best for you in this HyFlex modality.
- 18 Please describe what could be improved for the HyFlex modality.
- 19 Is there any other feedback you would like to provide?

#### Results

Several themes emerged from the faculty survey. Respondents noted the ease in using the technology with the exception of a few situational challenges, such as the need to replace batteries in a wireless classroom keyboard and mouse. Overall, faculty reported comfort in using the video conferencing technology as well as the installed SMART Boards<sup>®</sup>. As one respondent noted, "I am enjoying using the SMART Boards® immensely. Also, the ability to have the Teams call on the second screen on the side wall is fabulous!" Similarly another faculty member responded positively to being able to use technology to connect with the students synchronously saying, "The camera technology was excellent. Really provided a nice opportunity for those who weren't in person."

Participants noted that while they did not necessarily need the instructional aids once they got familiar with the technology, they thought other faculty would benefit from having these one page instructional graphics posted in the classroom for quick reference.

Perhaps the most formative feedback were faculty responses recommending topics for future professional development. Several faculty requested a deeper level of training regarding course design, such as hands-on activities on developing HyFlex tailored assignments. As one faculty member noted, "I think for me (while I know this is not everyone), I felt confident with the concept of HyFlex teaching. Therefore, I would have liked a deeper dive into developing HyFlex assignments." Another faculty member expressed a similar interest in having more contextualized application of the technology for instruction "I was able to play with the SMART Board<sup>©</sup> and get comfortable using the technology. Of course, more training on different ideas or functions of the board would have been good."

Responding faculty all reported having students attend in each modality. In person attendance rates

ranged from 10%-60% between sections, with synchronous participation ranging from 20%-80% between course sections. Asynchronous seemed to be the lowest participation option with only 10%-20% of students choosing this option across sections. Faculty noted that students either had positive responses to the HyFlex course design or the students did not express any concerns.

Similar to the results recorded in the faculty survey, students echoed a positive experience with the HyFlex pilot. Common themes in the student survey were an appreciation for the accommodation of their life circumstances, a sense of control over their own learning, increased access, and acknowledgement of learning resources. As one student noted:

As a new single mother the HyFlex option truly saves my schooling. I don't have to worry about me or my child being sick or if I have a shift... and have to work. HyFlex truly can make going to college a much easier experience.

When asked to describe what works best about HyFlex, participants' responses reflected the principle of learner's choice (Beatty, 2019). Comments such as "being able to change and choose how I do school as my schedule changes" and "I enjoyed the ability to work at 2 a.m. or 5 p.m. and anywhere" signaled an appreciation for the flexible attendance design. These findings are consistent with previous research on adult learning (Abdelmalak, 2014).

Students noted that they were *comfortable* or *very comfortable* communicating with their faculty and peers in all three modalities. This finding supports the sense of engagement students felt in the course regardless of delivery methods.

#### Limitations

This article served to provide an overview of the implementation of a HyFlex pilot and the preliminary findings from the formative assessment process. A primary limitation was the small sample size of the pilot, resulting in a low survey response rate. An increased sample size provides an opportunity to validate the survey instruments or gather additional information using a previously validated instrument. These noted limitations, in conjunction with the survey results, were beneficial in helping to inform the next phase of the project design.

#### Discussion and Next Steps

The preliminary findings of the summer pilot showed great promise and have been instructive in institutional planning for scale up. The college offered sections of the previously redesigned courses again in the fall, while also scaffolding in new HyFlex courses. This approach resulted in 20 faculty teaching 31 additional HyFlex courses in the fall 2021 semester. Several of the faculty returned from the summer pilot. The combination of experienced and novice HyFlex faculty has led to increased collaboration in sharing of course design ideas and ongoing training sessions throughout the semester.

The college will continue to scale up HyFlex course offerings incrementally over the next several semesters, with 70 course sections in the spring 2022 term. In preparation for this scale up, Information Technology Services is implementing a phased rollout of upgrades to classroom technology to accommodate the increase in HyFlex courses.

The preliminary findings have also been instructive in determining future institutional research. As the college now has a growing pipeline of students taking HyFlex courses, there is now an opportunity to examine how community college students experience course performance outcomes as related to HyFlex instruction. Though Lakhal et al. (2014) found there was no significant difference between modalities on student satisfaction or academic performance on certain assessments, this research was completed within a university setting and not a community college. Continued research is necessary to provide a closer examination of the relationship between the identified needs of nontraditional students and the multitiered elements of HyFlex course design and delivery.

#### Conclusion

While the COVID-19 pandemic served as a catalyst to shift to multimodal instruction, the need to support learner choice is more evident than ever before. With technological advancements and the focus on increasing avenues to access, community colleges are well poised to be more adaptive in approaching instruction to meet rapidly changing student and institutional needs. This pilot presents an opportunity to re-envision teaching and learning through the lens of student success.

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#### **Opinion Piece**

Successful Self-Regulated Learners: Making Student Choice and Flexibility More Than Buzzwords in a HyFlex Course

Candice L. Freeman

#### Abstract

HyFlex courses are starting to become an available option for many community college students. Many community college educators may have questions about the HyFlex model's use and how to ensure students are successful in the course. This opinion piece discusses integration of self-regulated learning theory within the context of a HyFlex course and how that theory helps students, and instructors, make informed choices regarding attendance flexibility. By teaching students strategies surrounding planning, scheduling, goal setting, performance management, and reflection, instructors can provide an informed and supportive pathway to course goal mastery and success regardless of students' choice in class attendance.

*Keywords:* hybrid flexible courses (HyFlex), selfregulated learning, instructional design, community college

#### Successful Self-Regulated Learners: Making Student Choice and Flexibility More Than Buzzwords in a HyFlex Course

As an educator, it is critically important that I provide learners with choice and flexibility. Those two words, *choice* and *flexibility*, are used so often they can seem to become nothing more than buzzwords to college students. Buzzwords become ignored words and may ultimately fail to promote student success. I try very hard to ensure that my students know how their choice in course attendance flexibility can help them successfully meet the learning objectives and to give all course elements meaning and purpose.

According to Brian Beatty (2019), the authority



on hybrid flexible, or HyFlex, course design and development, "HyFlex courses are class sessions that allow students to choose whether to attend classes face-to-face or online, synchronously or asynchronously" (p. 1.1). HyFlex courses differ from blended, hybrid courses in that there is no dedicated online component or a dedicated face-to-face component, but students choose their mode of attendance and receive the same instruction regardless of choice. This choice and flexibility in course attendance allows students to attend and participate in basically any instructional mode that works best for their personal and educational needs. Often student choice to flex class attendance meets personal need but potentially not the educational one, which can impact student success (Bettinger et al., 2017).

#### **Teaching Students How to Learn**

I think about course experiences throughout my undergraduate and graduate education and can isolate a number of classes where the HyFlex option would have been helpful for my personal and professional schedules. However, I can also identify courses where it would not have benefited my learning experience. For this reason, I say the HyFlex course is literally for anyone but not everyone. Students enrolled in HyFlex courses need a supportive success framework designed to teach them how to self-regulate through and within the three instructional modalities. Self-regulated learning theory may be the answer to this problem.

Self-regulated learning theory posits that for learners to successfully master learning outcomes they need to be able to plan and organize the execution of learning activities, monitor their course

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performance, and reflect on areas of adjustment and refinement (Zimmerman, 1990). Because HyFlex courses allow students the choice to attend lectures in an asynchronous format, it is vital for these learners to acutely self-regulate their learning experiences with the indirect guidance of an instructor. Although they may think they are learning content, without the with regard to both performance and to attendance ability to critically plan, monitor, and refine their learning, they could be mastering much less content than anticipated. Although watching a recorded lecture may seem to be the easiest route of lecture attendance, that route may not work for every student. This is why not every student should enroll in a HyFlex course but use discretion within the context of their capability to work autonomously.

#### Plan Lesson One on Self-Regulated Learning

The HyFlex course can have a positive impact on student success if learners can self-direct their progression. Teaching every student how to selfregulate learning may be the way students learn how to progress without the face-to-face direction of the instructor. The first few HyFlex courses I taught were a disaster, because my students who watched recorded lectures struggled, needed my help much more than other students, fell quickly behind the class as a whole, and ultimately scored much lower on my graded assignments and assessments. This very much frustrated me, and I took a great deal of time to examine what happened. After an extensive needs assessment of the course, I found my asynchronous students spent less time in online content, submitted assignments late, and often allowed their work to pile up, which created a significant extraneous load on their performance. This led me to believe that their ability to self-regulate through the work was weak thus negatively impacted success in the course. Refinement in my course design and instruction delivery began to include initial lessons on self-regulating practices. Teaching students about self-regulated learning at the beginning of the course became as critical as reviewing the course syllabus, possibly more so. Extending that instruction throughout each chunk of the course continually reinforced initial knowledge and helped many students cultivate self-regulating strategies within the course.

Instruction on learner self-regulation should be conducted during the first class meeting and must be more than simply explaining the theory and provid-

ing a graphic students can follow. Students in a HyFlex course have the ability to flex their class attendance at any time throughout the semester, so teaching all students the process of analyzing their performance, finding gaps, and altering their approach to instruction helps create informed learners choice. Keep in mind, though, most students could care less about a theory; they need practical learning strategies that result in more efficient and effective learning. Ditch the technical jargon and focus on the practice. Design of general instruction on selfregulated learning should start with goal setting, specifically using an easily understood goal setting framework such as the SMART goal model. Emphasis should be placed on measuring goal achievement and mastery in alignment with course learning outcomes.

Subsequent to goal setting instruction, performance monitoring and management strategies should be shared. Present performance monitoring examples that align with set goals to demonstrate goal achievement and reveal performance improvement needs. Students will gather two forms of data: mastered goal and opportunities for refinement and improvement. Activities and resources such as reflective journaling, spreadsheets, KWL charts, graphic organizers, and task prioritizing applications and Web based resources can serve to engage students in productive strategies that will promote focus, organization, reflection, and refining iteration.

#### Conclusion

The whole intent of the HyFlex course is to provide learner flexibility through choice. Face-to-face or online, synchronous or asynchronous, students find opportunity to attend college in spite of personal and professional scheduling conflicts (Beatty, 2019). This opens doors to individual academic and career goals that might otherwise remain closed due to scheduling. However, sometimes that choice may not align learner academic needs, but through precourse instruction on self-regulation strategies, students can become equipped with resources that will help them be successful by customizing class attendance through planning, performance management, and purposeful reflection on performance. This equips the HyFlex course with student success strategies, promoting student retention and learner persistence to completion.

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#### **Research Paper**

Success Coach-Student Relationship Development at the Community College: A Communicative Approach Framed by Social Penetration Theory

Lisa C. Cooper

#### Abstract

This study examines the communication strategies employed by success coaches at community colleges to engage meaningfully with students to develop and maintain a positive interpersonal relationship. Although the success coach model has been developed and researched in the education discipline, exploration of the interpersonal communication strategies success coaches or advisors have employed to develop relationships with students has been virtually nonexistent within the communication field. Using the framework of the social penetration theory, 17 success coaches across four different community colleges in the southeastern United States shared their experiences and communication strategies employed to engage students and build relationships in order to improve student outcomes. Key findings indicated that self-disclosure by the success coach was an important first step in establishing rapport and trust. Empathetic listening coupled with positive and assuring talk helped to solidify relational bonds. Proximity to students was significant in encouraging interactions. The creation and pursuit of opportunities for interaction with students was a key factor in fostering the interpersonal relationship between success coach and student.

*Keywords:* success coach, social penetration theory, community college, interpersonal communication, relational maintenance

#### Success Coach-Student Relationship Development at the Community College: A Communicative Approach Framed by Social Penetration Theory



The transition to college is often met with a blend of fear and excitement. However, for the vast majority of students, completion of the degree goes unfulfilled. Access to college has increased over the last 50 years due in large part to the expansion of the community college system. However, access and attendance do not equate to an increase in graduation rates. According to the National Center for Education Statistics (2020), the completion rate within 150% of normal time for first time, full time students was 33% at two-year and 62% at four-year degree granting institutions. Under ever increasing pressure to improve retention and completion rates, colleges have reevaluated many practices, including the advising model. A relatively new approach is the creation of a success coach to support and challenge students throughout their entire program by connecting students to resources, providing support and follow up, and helping with time management, study skills, and goal setting.

With an open door policy, community colleges receive the vast majority of at risk, underprepared students, which exacerbates the need for intervention (Zeidenberg, 2008). Goldrick-Rab (2010) contended that improving student success at the community college involved intervention at key times, including initial transition; experience with remedial coursework; and persistence in credit bearing coursework. Chickering (2006) stated a critical component for persistence is timely, specific, and individualized feedback on strengths and weaknesses, accompanied by specific next steps or suggestions for improvement. Success coaches may be uniquely suited to fill this gap. However, motivating a student

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to reap benefits that are more intrinsic than extrinsic Literature Review can be a challenge. Exploration of the communication behaviors community college success coaches employ to develop and maintain meaningful interpersonal relationships with students will contribute valuable insight toward providing impactful interventions.

Although the success coach model has been developed and researched in the education discipline, there is very little literature within the communication field that involves the interpersonal communication strategies success coaches or advisors employ to develop relationships with students. The interpersonal dynamic covered most frequently in the communication field is the teacher-student relationship (Frymier & Houser, 2000; Goodboy & Bolkan, 2009; Sabee & Wilson, 2005; Titsworth, et al., 2015; Witt, et al., 2004) or the student-student relationship (Smith & Peterson, 2007; Thompson, 2008; Thompson & Mazer, 2009). The mentor-mentee relationship has been studied in the workplace (Phillips & Adams, 2018). It has also been studied in graduate programs, largely from the mentee's perspective, with faculty serving in the mentor capacity (Harris & tices. Lee, 2018; Kalbfleisch, 2002; Mansson & Myers, 2012; Waldeck, 2018). Academic support functions, such as advising, were limited and featured faculty advisors (Leach & Wang, 2015). No research appears to have been conducted in the communication field that considers student support service staff, such as professional academic advisors or success coaches, and their relationship with students. Further, the majority of the studies were conducted at four-year or graduate level institutions. A vast amount of research demonstrates that relationships between students and college representatives are a reliable predictor of student success (Habley et al., 2012; Pascarella & Terenzini, 2005).

The success coach-student relationship, particularly in the community college setting, is an important, yet under researched, area. The purpose of this study is to connect interpersonal communication theory with academic student support practices. Specifically, this study will extend the interpersonal communication framework of social penetration theory and social exchange to the relationship building practices of a success coach within the community college setting to advance the role of communication on student learning and success outcomes.

Relationships have been a hallmark of interpersonal communication studies since the 1960s. Although there is a wealth of literature regarding interpersonal communication and student development, the two fields have remained isolated. Student development literature has explored advisor/coachstudent relationships but this context has been overlooked within the communication literature. Goldman and Myers (2017) remarked on this disparity:

While informative and useful to many, these efforts frequently overlook an early foundation of the field-student development. Specifically, instructional communication scholars have arguably failed to recognize the importance of the developmental processes that students experience in their education, particularly during college. (p. 485)

As such, this review will provide a discussion of the communication framework to be applied to this study as well as a definition of success coaching supported through current student development prac-

#### Social Penetration Theory

The primary relational development theory identified to inform this study was the theory of social penetration (Altman & Taylor, 1973) which considers the breadth and depth of self-disclosure based on a cost-reward evaluation. Social penetration theory is an established explanation of how closeness develops in relationships through communication behavior and interaction (Griffin et al., 2015). It is based on the social exchange theory whereby people weigh the benefits and risks of social relationships. Social penetration theory is grounded in the system theory approach (Allensworth, 1996). In this light, relationships are small systems that are established, maintained, and changed through interaction. Selfdisclosure passes through four stages in the social penetration process, including orientation (first meeting conversations around hobbies, likes/ dislikes), exploratory affective exchange (layer peeled away for deeper sharing of personality), full affective exchange (deeper intimate exchange), and stable exchange (all layers peeled away characterized by continuous openness) (Altman & Taylor, 1973). Although not listed initially in the stages of social penetration, Altman and Taylor also proffer a chapter

discussing the withdrawal from sharing in the termination of a relationship as *depenetration*. However, they caution, "the social penetration process, no matter how many stages it contains, is probably never complete, nor does it necessarily always proceed in a smooth fashion" (Altman & Taylor, 1973, p.141). The three aspects of social penetration theory that guided the research are as follows: the depth and breadth of exchange in relationship development, the social exchange process of relationship maintenance, and the ecology of interpersonal interactions.

**Developing Relationships--Depth and** Breadth of Penetration. In social penetration theory, the depth of penetration is the degree of penetration from the superficial to the intimate. Altman and Taylor (1973) used the analogy of an onion wherein personality structure has layers, from the superficial outermost skin to deeper levels of more private beliefs and feelings about the self, others, and the world (p. 17). This is considered the depth dimension.

In addition to the depth dimension, Altman and Taylor (1973) described the breadth of penetration as the variety of topical areas, such as family, sex, religion, hobbies, and so forth (p. 29). Through interactions, the degree of disclosure (depth) and the research indicated openness through disclosure takes time, the success coach, unlike peers or instructors, has a greater challenge for exchange due to irregular interaction opportunities.

Maintaining Relationships--Social Exchange and Relational Maintenance. Social penetration theory further posited a framework to understand the role of communication in the maintenance of interpersonal relationships through social exchange. Altman and Taylor (1973) built social penetration theory on Thibaut and Kelley's (1959) theory of interdependence and cost-rewards. Social penetration theory defined *rewards* as pleasures and gratifications and costs as any factor that inhibits interaction or behaviors. Thus, social penetration was predicated on the assumption that participants evaluate relationships in a relatively rational manner and remain in a relationship as long as the rewards outweigh the costs. A more recent study found that trust was developed between partners in which actors independently provide benefit to each other without knowing what returns they will receive (Molm et al., 2000).

framework of social exchange was Stafford and Canary's (1991) research on the relational maintenance behaviors of romantic couples. They studied the communication behaviors that positively impacted liking, commitment, control mutuality, and satisfaction. They discovered the following five interpersonal actions that contributed to long term relational satisfaction: positivity-upbeat conversation, openness-self disclosure, assurance-encouraging talk, networking-spending time together with others, and sharing tasks-working together on tasks. Stafford and Canary focused their study on romantic couples due to the deep, intimate nature of the relationship. Exploration of those behaviors could be expanded to provide insight toward understanding how the success coach maintains their interpersonal relationship with a student.

The Ecology of Interpersonal Relationships. As a system theory, Altman and Taylor (1973) posited that social penetration occurred simultaneously at different levels of social interaction in what they termed the "ecology of interpersonal relationships" (p. 104). Drawing on the biological use of the term to describe interactions among organisms in their environment, this perspective considered three levels of interaction functioning as a system, includrange of disclosure (breadth) is altered. Although the ing verbal exchange, nonverbal exchange, and use of the physical environment. This study applied these three elements of the interpersonal communication ecology to the analyses of success coach communication behaviors.

> As Altman & Taylor (1973) discussed, verbal exchange refers to conversation, topics, and depth and breadth of self-disclosure. For example, talk is typified in the orientation stage as superficial, simple, and usually inconsequential. During the exploratory affective stage, individuals express personal attitudes about public topics. During the affective stage, talk is about more private and personal matters. The stable stage is typified by open sharing of personal core beliefs and an ability to predict the emotional reactions of the other person. Stafford and Canary (1991) further highlighted aspects of verbal exchange that help maintain relations, including positivity, openness, and assurance.

> Nonverbal exchange in the social penetration process includes use of the body to convey meaning and messages. Nonverbal behaviors provide affect or emotional displays, act as emblems or a substitute for words, act as illustrators or a complement for words, act as regulators which impact pace of the

Another study based on the developmental

interaction, and act as personal adapters or idiosyncratic coping behaviors (Ekman & Friesen, 1981). Nonverbal behaviors include use of body, such as posture and positions, gestures, head movements, and facial expressions like smiling, eye contact, and so forth. The frequency of nonverbal displays and efficiency of understanding should increase as the social penetration process develops (Altman & Taylor, 1973). Aspects of social distance and proximity Altman and Taylor addressed more completely in their description of the physical environment.

Altman and Taylor (1973) viewed the physical setting or environment from two perspectives—the pure physical factors, such as lighting or temperature, and the social impact of proximity and interaction. Werner et al. (1992) concluded the environment was an integral part of the relationship process. How the environment is used, modified, and the meanings associated with a place or object should be a consideration. There are also temporal qualities such duration, pace, and coordination of events that impact social relationships (Werner et al., 1992). This study endeavored to discover the unique aspect of the success coach-student relationship as applied to its novel setting.

The lasting impact of the social penetration theory was it focused scholars on relationship development as a communication process (Littlejohn et al., 2017). The theory has been extended to understand relationship development in a variety of contexts. A recent study of disclosure and relationship building was explored through the use of social media (Pennington, 2015). Another study looked at how the theory predicted relationship development by relationship type, such as for lesbian, gay, or bisexual people (Manning, 2019) or to explore the influence of self-disclosure in student-teacher relationships (Avila, 2019). This study endeavored to extend the theory into the context of disclosure and relational reward management from the perspective of a success coach where the reciprocity of exchange is constrained by time and interaction opportunities.

#### Success Coaching

Over the last 20 years, the academic success coach has emerged in higher education (Robinson, 2015). The positive effects of student coaching were chronicled in a study conducted by Bettinger and Baker (2014) where they found a 14% increase in persistence after 24 months. Exit interviews conducted with students at one university revealed a strong sentiment toward the interaction and support received from the success coach (Neuhauser & Weber, 2011). In response, many colleges have adopted various adaptations of a coaching model with varying degrees of purpose, design, and infrastructure (Robinson, 2015). A challenge to this unwieldy proliferation is distinguishing the role from other student development services which may confuse students or be seen as another gatekeeper for the student to navigate.

Robinson (2015) explored the concept of success coaching to add clarity to the field but found that due to the disparity of needs at differing institutions, coaching was difficult to define. A success coach may wear additional hats at his or her institution that differ from person to person and institution to institution. As such, Robinson distinguished coaching from other roles in more general terms of asking reflective questions, sharing effective strategies, co-creating a plan, and helping navigate resources to develop skills and improve performance. For most institutions, the mission of the success coach is to provide comprehensive help by connecting students to the appropriate resource (Farrell, 2007). For the purposes of this study, a success coach endeavors to accomplish this defined purpose but, as a participant put more succinctly, "a success coach is like having a personal cheerleader, coach, friend, advocate, and educational expert rolled all into one." Thus, in collaboration with faculty, staff, and community partners, a success coach provides mentoring, individualized support, and advocacy.

A unique paradox to relationship building for a success coach is that they have to build a meaningful interpersonal relationship with constraints on time and frequency of interaction. By contrast, instructors have repetitive interaction and exposure to their students. Success coaches need to hone their interpersonal skills to develop relationships that are meaningful but accomplished purposely in order to achieve successful student outcomes.

Accordingly, two overarching research questions drove the study. They are as follows:

RQ 1: What communication strategies do success coaches employ to develop meaningful interpersonal relationships with students in order to impact successful student outcomes? RQ 2: What are the inherent rewards and costs in maintaining the interpersonal relationship with the student?

#### Methodology

A qualitative research method was employed to discover the relationship building practices and experiences of a success coach. In depth interviews were used to focus on the perspective of the success coach toward developing a productive, interpersonal relationship with a student. The goal of in depth interviews is to gain knowledge based on substantive descriptions from the perspective of the selected individuals (Hesse-Biber & Leavy, 2006). This method provides a means to gather information and understanding from individuals on a focused topic from both the participants' perceptions and experience (Hesse-Biber & Leavy, 2006). Interviews examined the communication strategies each success coach employed to develop and maintain productive interpersonal relationships that positively impacted student outcomes.

#### **Participants**

Purposeful sampling was employed to select information rich cases based on group characteristics. The purposeful group characteristic sampling strategy employed was typical case sampling, in order to select cases that highlight frequently occurring experiences (Patton, 2015). Each participant served in a success coach capacity at a community college. Four community colleges in the southeastern United States were selected and equally distributed between rural and urban areas. Two male and 15 female success coaches were identified and selected to participate.

#### Data Collection and Analysis

After obtaining permission from the Institutional Review Board (IRB), in depth, in person, semi structured interviews were conducted utilizing an interview guide with 17 success coaches. This technique allowed for responsive interviewing and naturalistic inquiry while ensuring the same basic lines of inquiry were maintained (Patton, 2015). The central line of questioning revolved around communication strategies employed to build trust and develop a supportive relationship. In addition, each participant was observed in their working environment and five student interactions were witnessed.

Interview data were audio recorded, and the transcription totaled 337 pages. The interviews

ranged between 45 to 90 minutes. Each interview transcript was inductively analyzed using open coding to detect descriptive accounts and search for recurring themes and concepts (Benaquisto, 2008). After subsequent review of the transcriptions and observation field notes, patterns were synthesized as they applied to the theoretical framework. Theoretical coding helped make sense of participants' responses in terms of the larger conceptual categories relative to aspects of the social penetration theory of relationship development and maintenance.

#### Validity and Reflexivity

To verify accuracy of findings, data were collected to discover convergence of themes through the triangulation of interviews and observations (Creswell, 2014). The use of a peer debriefing was employed, as an associate dean from the Institutional Effectiveness department reviewed the study. Use of a peer debriefer to review and ask questions about the study adds validity to the account (Creswell, 2014).

#### Findings

The findings provided insight into the communication strategies employed by success coaches to develop and maintain student relationships framed by the social penetration theory. Key components of the communication practices for relationship building and maintenance overlapped among participants regardless of institution, level of experience, or other duties.

#### **Relationship Development**

For participants, the strategies described to develop meaningful relationships with students were anchored in the goal of establishing trust and rapport through openness, a welcoming environment, and seeking to understand students' lives through questions and empathetic listening. The patterns for relationship development were evidenced within the ecology of interpersonal communication described by Altman and Taylor (1973) including verbal elements, nonverbal elements, and the environment including the communication channel. Observed strategies for each element are recapped on Table 1.

#### Table 1

Communication Component	Observed Strategy
Verbal	Initiate contact Provide purposeful self-disclosure; encourage student self-disclosure Positivity and assuring talk Ask questions and empathetically listen
Nonverbal	<ul> <li>Be welcoming:</li> <li>warm smile</li> <li>eye contact</li> <li>soft, positive, upbeat tone</li> <li>Interpret and respond to student body language</li> </ul>
Physical Environment/Channel	<ul> <li>Reduce barriers:</li> <li>no computer between coach and student</li> <li>remove diplomas</li> <li>open door</li> <li>provide candy</li> <li>decorate with conversation starters</li> <li>Increase frequency of interaction</li> <li>Meet them where they are (classroom, event, lounge, café)</li> <li>Ideal channel:</li> <li>face-to-face preferred</li> <li>phone is second option</li> <li>email best suited for general information</li> </ul>

Patterns of Communication for Relationship Development

The patterns of behavior in each aspect of the interpersonal ecology aided in addressing the first research question: What communication strategies do success coaches employ to develop meaningful interpersonal relationships with students in order to impact successful student outcomes?

**Verbal.** In terms of the verbal component, common patterns to develop the student relationship emerged among all participants that included the following: initiate contact, provide purposeful disclosure and encourage student disclosure, use positivity and assuring talk, and seek understanding by asking questions and listening with empathy. A repeated mantra from participants was that the success coach needed to reach out to the student to initiate the relationship. Initiation frequently took the form of in person meetings predicated on the need to register for classes. As the relationship progressed, students would reciprocate and seek interaction, but the bulk of responsibility to engage rested with the success coach charged with monitoring student progress.

Participants expressed the importance and the challenge of success coaches quickly establishing the

supporting nature of a relationship in order to be most effective. Making the student feel comfortable so they could open up was expressed as vital to the process. The common strategy to achieve this goal was to offer relevant disclosure to the student. All participants indicated they disclosed personal information to the student to make a connection and gain trust quickly. Coach 4 summed up the need for disclosure by stating, "You have to be an open book as well with them. And so that for me, opening up to them has allowed me to gain trust." Coach 13 tells stories about her experiences to find a point of connection. Coach 1 indicated sharing his story allowed him to relate to the student's struggle and express understanding. In addition, the depth of the connection made was impacted through self-disclosure. Coach 1 commented, "There is a deeper connection when you lead off. So, a lot of times I let students know that I suffer from this severe dyslexia and that I couldn't read until I was like 13." For participants, the choice to disclose was purposeful in order to make a connection or put the student at ease. Thus the choice to disclose personal and private information was a measured process. For example, Coach 8 shared the challenge of being a child in the foster care system. She stated, "And with a lot of students I actually even went a step further and shared with them I was a foster kid ...whatever I can share that will make them understand that they can do this." Coach 4 shared the struggles of being a teenage mother:

I have a couple students who are teenage moms. So that has been a challenge, but I was a teenage mom.... people don't expect you to be successful. I encountered a lot of people who were not very positive as I journeyed. But I've made it my mission to be that for somebody else. So, when I realized who those students were, you know, I shared that with them.

Participants reported that students reciprocated with sharing and self-disclosure. The breadth and depth of topics students disclosed frequently moved readily from Altman and Taylor's (1973) orientation stage to the affective stage typified by private and personal matters. Success coaches reported that students shared many of their challenges and struggles such as financial issues, family dynamics, marital problems, and drug or alcohol dependency. Coach 5 encouraged the breadth of disclosure by stating, "I've had students like I said with mental health issues or depression, anxiety...I mean we're real open and honest about stuff." The depth of such disclosure was often a product of greater frequency of interaction. Coach 3 described such a conversation: "We just went deeper and deeper and deeper. So, when she started to be more honest, I went deeper, she went deeper... But I remember when she first came in, I couldn't have had that conversation with her." Notably, for the struggling student, a topic more difficult to address was that of his or her strengths. Coach 2 explained students are aware of their shortcomings but engaging in a conversation about their strengths poses a challenge. "But when I've talked with them about what their strengths are, what they're doing well. That is kind of almost hard."

The nature of the encounters, no matter the topic, reflected Stafford and Canary's (1991) relational maintenance strategies of positivity and assuring talk. All participants shared that even if they are reaching out to a student regarding a grade alert, they keep it positive by not scolding and instead focusing the conversation on how the student is doing and how they can help. As Coach 11 stated, "You have to be an upbeat kind of person willing to help and knowing that everybody has a chance." The success coaches maintained that even when following up with a student on poor academic performance, they kept the conversation positive and reinforced the idea that they are there to help and that the student can be successful. Coach 11 expressed the importance of keeping the talk positive by discussing strengths or options versus "concentrating on what they're not doing." Coach 12 similarly stressed the importance of being assuring and not just getting on them about grades. Coach 8 summed up this positive messaging by telling the student, "This is what I do. I'm your cheerleader. I'm your coach. I'm the person that has your back."

Participants indicated that the ability to ask questions and empathetically listen promoted a trusting bond and deeper understanding of student needs. Initially students might not say what they are really feeling, and the coach needs the ability to pick up on that and keep asking questions. If a student is more reserved, the coach will continue to ask questions. As Coach 10 stated, "You just keep picking to get them to open up." Coach 9 reinforced the importance of questions to find a point of connection by saying, "You kind of open with questions. Prying, prying, prying. And then you'll connect somewhere in there." The act of asking questions was supported with empathetic listening to understand a student's needs holistically. Coach 12 stated listening to the student was essential to learn about all the conditions the student was juggling and to consider these issues as a whole. Success coaches agreed empathetic listening helped to solidify relational bonds. Coach 7 stated:

I had a student that would come in once a week to let me know she's still here, because she is fighting the demon of drugs. And she would come in, and I'd give her water. We'd sit at my table. She would vent. And I would just let her vent because sometimes they just want someone to listen to them.

**Nonverbal.** Key findings in exploring the nonverbal strategies of a success coach focused primarily on creating a feeling of warmth and welcome and being responsive to students' nonverbal cues, especially body language. The elements of nonverbal communication that the success coaches most commonly expressed utilizing included facial expressions, eye contact, and paralanguage. The success coaches concurred that a warm smile and eye contact mattered.

As Coach 1 stated, "Make eye contact and you know, it's kind of like, 'Oh, I'll talk to a friend now." All the coaches expressed the importance of greeting the student with a smile. This welcoming behavior reinforced the positivity and invitation to share. Success coaches often have to share negative news or interact with a student who is upset. In terms of paralanguage or the vocal effects that accompany verbal communication, participants repeated the importance of a soft, upbeat tone. As Coach 11 explained, "They can hear how you care in your voice." Coach 2 expressed that, in addition to thinking about the wording of a message, she actively works on the tone of her voice. The ability to calmly and patiently express ideas was evidenced consistently in every participant interview. Participants used a tone that was soft and often low so you would feel comfortable and intimate. Participants expressed the importance of positive nonverbal messages to set the tone of the relationship and anchor its supportive nature. Affirming the importance of being approachable and welcoming, Coach 6 repeated the old adage "a smile is worth 1,000 words sometimes."

Coaches expressed not only the importance of practicing encouraging nonverbal behavior but also the ability to pick up on messages being sent by the student. As Coach 9 observed, "Picking up on the body language of other people... if you don't know how to interpret that, then I think that it can hinder the relationship." Often it came in the form of detecting if the student was holding back by reading body language and proximity signals. According to Coach 3, reserved students sat with legs or arms crossed. Coach 10 discussed how students avoided eve contact, especially in cases where another person such as a parent was present. According to the participants, it was not uncommon for parents to dominate the conversation, and the coach had to work to draw the student out. The coach would direct eye contact toward the student and lean in toward the student. Coach 3 relayed how a student gradually showed increased ease and trust with her as the coach. She stated, "He started sitting close to the mom. He shifted more in his chair, and he was sitting closer to me by the end of the conversation."

**Environment.** The importance of the environment where the interactions occur for developing and maintaining the relationship was consistently emphasized among all participants. According to Altman and Taylor (1973), elements of the environ-

ment included the physical surroundings, proximity, frequency of interaction, and the channel by which the interaction occurred. The feeling the environment evoked was set from the beginning, and although not all aspects of the environment were within success coaches' control, there were several aspects that participants purposely endeavored to influence. Three of the four colleges visited all had a policy of personally getting up and going to meet the student and then walking them to the office. Attempts to make the décor of the office inviting were employed with pictures and student art. Candy was also a popular device for nearly every coach. No computer stood between the success coach and the student. The goal was to reduce barriers both physically and mentally. Coach 8 commented:

You meet the student. You shake hands with the student. You don't expect them to come to you; you go to them. Make some small talk, you know. Get them comfortable. Help them to feel like this is an environment that they can be in and feel comfortable. So, things like having candy out and pictures on the walls, those kinds of things do a whole lot.

The power of décor to be an icebreaker and promote discussion was evidenced most artfully by Coach 1, whose office was covered with memorabilia from playing professional football to displays of the comic villain the Joker. When asked about the Jokers, the coach shared how he couldn't read when he was a teenager and his mother "kept words in front of [him]" with comics.

The goal of openness and welcome was reinforced through open door policies and a less rigid stance on appointments. An open door policy was particularly effective for several coaches when their office was positioned in a common area where students congregated and readily dropped in. For example, Coach 4, whose office was in the heart of the student center, capitalized on her proximity to students naturally congregating. She explained, "I'll leave my door open all the time. They'll bring in their breakfast and sit and eat, and we'll just chat." The participants who described the strongest bonds with students typically had greater opportunity for interaction. Coach 5 relayed the story of a student to whom she grew close. She stated, "I saw her for about a year and a half solid for at least 30 minutes a day in my office. She had a home life that was really not good."

Another common tactic in terms of the physical environment that success coaches employed to increase interaction was to seek opportunities outside the office. For example, Coach 3 made it common practice to go to locations where students would gather, including the workout room or having lunch in common areas. Coach 15 attended activities and events geared specifically to students. Coach 10 regularly visited students in the classroom instead of holding sit down office appointments. Other coaches made sure that they were around and willing to create opportunities to run into students. Coach 3 explained, "I have been known to just stand out in the hallway and wait for someone to get out of the class and pretend like I bumped into him on accident."

Channel. The communication channel refers to the mode of communication employed and preferred by the coach to effectively interact with a student. Common channels included face-to-face, mediated via phone, and written with either electronic or hard copy delivery. Unanimously, the richness of a face-to-face interaction was preferred, especially in the case of relationship maintenance. The second channel preferred by most was the phone. For some, wards and costs in the social exchange process of it was policy to attempt a phone call first before emailing the student. Most incorporated a strategy of using both. A common theme for the preference of face-to-face and phone was the opportunity for a give and take conversation to occur. As Coach 1 stated, "I'm a firm believer in keeping the interpersonal relationship going. So, I always want people to hear my voice first."

General knowledge and reminders were more efficiently managed via email. However, most coaches confided they did not believe students read their emails with any reliability. In order to address that concern, Coach 8 would send personal birthday wishes via email. Coach 4 utilized an educational social media platform students used. However, most coaches avoided social media as a means of interacting with students, relying instead upon institutionally supported mediums. Use of text messaging was rare even in the cases where a software program versus a personal account could be accessed. If used, it was for scheduling an opportunity to talk either in person or on the phone.

A compelling use of the written channel one community college employed to communicate the friendly, approachable, and caring personality of the success coach was the distribution of specialized business cards. They were larger than normal cards and laid out vertically instead of horizontally to resemble trading cards. On the front was a full color picture of the success coach with his or her name. On the back was contact information and fun facts such as the following:

"I like sneaking away to paint and draw."

- "I am a reality TV and cooking show junky."
- "I love tattoos that have meaning."

The cards supported the communication goal of removing barriers and promoting a welcoming environment. Students embraced the gesture. The coaches at the school reported students were eagerly trading the cards with each other much like Pokémon cards. There was a perceived value for students to collect a coach.

#### Relationship Maintenance and Social Exchange

Interviews were analyzed for expressions of rerelationship maintenance. Common themes for offered rewards to the student by the success coach included care and interest, social and academic support, and a feeling of connection. Common reward themes success coaches received in maintaining the relationship with the student included taking pride in student success, and, like students, developing a feeling of connection. Expressed costs to the student centered upon forms of pressure, including nagging or tension exacerbated by bad news or family pressure. The common cost for the success coach in maintaining the student relationship was frustration from either not being able to contact the student or not being able to provide in depth care due to a large caseload. The common themes are recapped on Table 2. These themes helped to address the second research question: What are the inherent rewards and costs in maintaining the interpersonal relationship with the student?
## Table 2

Offered Rewards	Expressed Rewards	Costs	Costs
(Student)	(Coach)	(Student)	(Coach)
Care and interest	Pride	Pressure	Frustration
Social and academic support	Feeling of connection	<ul> <li>nagging</li> </ul>	• to reach students
Feeling of connection		• tension	• to provide in depth care

Expressions of Rewards and Costs in Relationship Maintenance

Rewards. The reward that success coaches consistently expressed they offered students centered upon providing care and demonstrating a genuine interest in the student. For example, Coach 10 visited automotive students for them to show off the engine they were repairing and cosmetology students to get a haircut. Coach 9 frequented the art studio to discuss student projects. Coaches provided social and academic support by listening and connecting students to the necessary resources. For example, Coach 17 discussed closely monitoring students whom she recommended get support such as tutoring. Coach 5 regularly took students on road trips to visit other schools or attend conferences. Both the success coach and student enjoyed a mutual reward in achieving a positive bond and connection. The reward for the student from the success coach perspective was a reliable person they could count on for whatever they needed. According to Coach 13, the benefit for the student is, "knowing there is somebody there they can talk to." Coach 9 explained that students seek a support figure. Coach 7 shared that it is not uncommon for former students to reach out randomly to ask for help.

All success coaches were eager to express not just what they worked to give the student, but what they received in return. As students achieved success markers, participants expressed the reward of celebrating that with the student. Coach 3 expressed pride in serving in the role of celebratory partner, especially when the student may not have a support system at home. She stated, "It's just creating that rapport and being interested. Students are so proud of-So, I'm going to tear up... This stuff is very emotional-They're so proud of what they're doing. And sometimes at home they don't get that." Coach 10 swelled with pride when showing off a display of completed students' projects adorning her office. Having worked with a student who nearly dropped out over test anxiety, Coach 9 expressed pride in

celebrating a student's achievement by stating, "He's actually come back here and passed some tests and been so happy he walks in here, doesn't even want to shake my hand, wants to hug me. So that's pretty cool." Coach 2 expressed pride in student achievement because she loved to see students grow. Coach 6 focused on the ultimate shared celebration of graduation and said, "I want nothing more than to see [my students] walk across the stage...That's my favorite event every single year."

**Costs.** The relationship cost for the student that the success coaches discussed was a concern that the student would feel pressure. Pressure took the form of tension from conflicting news or feeling nagged. Students may be anxious or under pressure from home to complete the degree quickly against the better judgement of the coach. Coach 3 remarked on this tension by stating, "She thought I was holding her back. But I have to sleep at night... If I had put her in both of those classes, I would have tossed and turned all night long. Like I set her up for failure." Coach 8 shared stories of tension with prenursing students who failed gateway classes repeatedly but were reluctant to consider alternate majors. Coach 4 contended that if trust has been developed students may realize the coach is "just trying to do what's best" for them. Coaches expressed mixed views on the concern over pressuring or nagging students. Coach 14 indicated a sensitivity to frequent follow up if the student seemed irritated: "If they give me a hands off, I am not going to push myself on it." However, Coach 17 expressed no concern about nagging. In the end, participants consistently expressed that it was the intention of care behind the communication that was most important. As Coach 6 stated, "...if I genuinely am interested in helping a student, and that is my end goal in all of it, and the reason why I do what I do, I don't know how you perceive that as nagging." Coach 1 emphasized that in order to avoid being perceived as a nag, the initial

meeting had to establish the personal nature of the relationship saying, "If you're just going to be professional to professional, then that gap kind of widens in the personal aspect. So, when they run into an issue, there's still a part of them that doesn't feel comfortable talking to you." Every success coach discussed focusing on employing positive communication techniques to improve student reception because they really wanted to impart that they were there to support and to advocate, no matter what the nature of the news.

Participants expressed a cost to maintaining the student relationship was frustration in terms of making contact. Phone numbers were often wrong, disconnected, or without voice mail set up. Coach 10 expressed uncertainty when to quit trying to reach out to an unresponsive student, whereas Coach 6 expressed confidence in persistent attempts to reach students. He would keep trying until the student actually told him to stop. Coach 17 discussed that many students did not respond to emails until after they met her. Another source of frustration for some participants was managing their caseload. In those cases, coaches could not connect with all the students at the personal level they preferred. The participants interviewed had caseloads ranging from 150-300 students. The coaches with the larger caseloads exhibited the most frustration. Coach 3 expressed guilt at not being able to regularly reach out to everyone. Others identified strategies of prioritization based on risk assessment and early alert notifications. Coach 16, for example, addressed all alerts first. Other coaches expressed confidence and comfort at being able to keep up with their students. Coach 1 had formerly worked at a larger university with a caseload of over 1,000. He stated that, in his current position, "I get a little deeper here because I have more time with them."

#### Discussion

The exploration of the interpersonal communication strategies success coaches employed to develop and maintain positive relationships with students to impact student success outcomes extended the understanding and application of the social penetration theory and social exchange. Central contributions of this study included the discovery that success coaches engaged in self-disclosure and employed communication strategies in the full communication ecology spectrum including verbal, nonverbal, and environmental.

A key finding was the importance of selfdisclosure on the part of the success coach to initiate the relationship with the student. Such disclosure helped to build rapport and trust. Coaches regularly and intentionally disclosed to students to establish a connection and create a welcoming environment. In terms of the breadth and depth of disclosure, coaches were more purposeful, choosing to share personal matters to encourage the student to open up. Once the connection was made, students and coaches discussed very sensitive topics including mental health, drug dependency, financial struggles, and physical abuse. Of note, students struggled to express strengths about themselves rather than disclosing negative items of a personal nature. Further exploration of communication strategies to facilitate greater strengths based dialogue would prove valuable for the success coach charged with helping students navigate college.

This study supported the social penetration theory claim that deeper disclosure was fostered through frequent opportunities to interact. The most effective success coach-student relationships were built upon repeated opportunities to disclose. The challenge for the success coach is that the norm of interaction lacks the regularity of a teacher, classmate, or family member. As such, success coaches must proactively seek opportunities to increase the frequency of interactions. Proximity to students was key in encouraging interactions. Success coaches engaged in open door policies and more frequently left their offices to meet with students where they congregated. The creation and pursuit of opportunities for interaction with students was a key factor in fostering disclosure and maintaining the interpersonal relationship between success coach and student.

This study extended the context of Stafford and Canary's (1991) relational maintenance behaviors from romantic couples to the academic setting and found that assuring and positive talk was critical among coaches, especially when having to share unwanted news or discussing topics such as academic performance. Positivity and openness were also encouraged nonverbally through warm smiles, barrier free eye contact, and a pleasant tone in all contexts. Success coaches agreed empathetic listening coupled with positive and assuring talk helped to solidify relational bonds.

In terms of managing the rewards and costs of the relationship, this study highlighted the reward for a student from the success coach's perspective was the expression of care and a genuine interest in the student. Both the success coach and student could enjoy a mutual reward from the student's achievement and also the social bond and connection that it fostered. For the success coaches, an emphasis on care superseded any anxiety he or she might feel toward being a nag. The central cost for maintaining the student relationship centered on frustration to connect. Smaller, more manageable caseloads could afford the coach time to invest in going deeper with each student. Increased opportunities for coaches to share strategies for reaching students and coping with such frustrations could aid in restoring commitment.

#### Limitations and Implications

Although all were tasked as a success coach to proactively initiate relationships that offer support, participants varied in some aspects of their additional responsibilities, such as the level and depth of program advising they do, how long they advise for, or if they advise at all. This reflected the diverse manner in which institutions are adopting the success coach model. Future study could explore cases where the model is less blended. A limitation of the study was that the lens was focused on the perspective of the success coach. Participants were not in a position to answer questions about how students perceived them, but just how they wanted to be perceived and the steps they took in order to be perceived that way. Another aspect to successful coaching that was revealed, but was not the scope of this study, involved fostering relationships with other campus personnel, especially faculty who have the most interaction opportunity with the student. A future study exploring the relationship dynamics amongst team members charged with serving students could prove fruitful.

The decision to disclose is complex, and more recent theories, such as communication privacy management theory which addresses the tension between openness and privacy (Littlejohn et al., 2017), could be a framework applied to future studies on success coach interpersonal relationships. Further, this study did not consider the implications of the power distance inherent between the professional success coach and the student in the relationship development process. The dyadic power theory was developed to explain power and dominance communication patterns and hypothesized that people in a relationship who perceive their power differences as small or moderate have greater relational satisfaction (Littlejohn et al., 2017). Thus, an implication for future study is to provide an additional theoretical lens to the communication practices and support function of a success coach. The common theme, when asked amongst participants, was that communication was the most important skill for their role. As such, there should be more studies that specifically address the communication dynamic of success coaching and the student relationship.

The goal of this research was to develop a clearer understanding of the effective communication strategies employed by a success coach to engage meaningfully with students to develop and maintain a positive interpersonal relationship. Although the success coach model has been explored in the education discipline, this study served as an initial step in the study and application of interpersonal communication theory to inform the dynamics of the success coach-student relationship. This study extended the social penetration theory in terms of practical application for coaches in higher education charged with supporting student success. Specifically, this study provided insight toward serving the whole student at the community college level where at risk students are most prevalent. Achieving a meaningful success coach-student relationship equips the student with a sense of connection and the social and academic support to follow their plan, persist, and graduate.

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# **Opinion Piece**

# Watercooler Well-Being

Brittany Hochstaetter and Nathan Machart

### Watercooler Well-Being

According to a viral Twitter thread written by Professor Cate Denial in December 2021, "everyone in higher ed deserves better than they are getting right now." Republished in *EdSurge*, Denial captured the complex emotions of many educators, the cultural milieu of the times, and the need for institutions to reimagine education.

We need a metric ton of mental health interventions—many more counselors and therapy groups for students; better support than five EAPs [Employee Assistance Program sessions] for faculty and staff; group supports; dialogue circles; spaces to process what's happening and what it has cost (Denial, 2021).

Even before March of 2020, the research seemed to hint at a need for intervention. Findings from the Physiological Society claimed that the condition of mental health in academia has become an invisible crisis with significant rates of depression and incidents of professors taking their own lives making the news (Bira et al., 2019). Research from McKinsey & Company indicated that since April of 2021 more than 19 million U.S. workers have quit their jobs, and nearly one-third of educators reported they were "likely" to do so (De Smet et al., 2021). An earlier study, conducted by Course Hero, claimed the number of faculty ready to leave current positions because of the impact of COVID-19 could be as high as 40% (Flaherty, 2020). Especially for small academic departments, one or two resignations have a tremendous negative impact. McKinsey's research summarized, "If the past



18 months have taught us anything, it's that employees crave investment in the *human* aspects of work" (De Smet et al., 2021).

For all the mental health interventions now being considered, less attention has been paid to a significant source of faculty happiness and department stability-the relationship of colleagues. Educators function best when surrounded by other problem solving, stimulating compatriots who indulge foibles and validate "next great assignments." Outside relationships in the home, workplace relationships are the next greatest source of our sense of belonging, and according to research from the Center for Talent Innovation, people who feel they belong at work are more productive, engaged, and 3.5 times more likely to contribute their full potential (Twaronite, 2019). Research director for Future Workplace®, Dan Schwabel (2018), claims colleagueship is so critical to our longtime happiness that without it, we may not find fulfillment. Additionally, Michael S. Weisbach (2021), in a recent article for *Inside Higher Ed*, articulated how this cooperative attitude can create real tangible reward. He writes, "The value of these noncontractable services provided by colleagueship is sufficiently high that organizations reward individuals who provide them. In colleges and universities, if tenure cases are close, colleagueship can be the difference between an individual receiving or not receiving tenure" (Weisbach, 2021). It's all too clear; colleague isolation caused by the pandemic has created a barrier to one of our most significant sources of educator well-being and success.

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Language may be one reason the value of colleagueship is overlooked. Oversimplified terms such as *coworkers* cannot convey what it means to have a colleague who covers classes during a family emergency, takes up a collection when a spouse gets diagnosed with cancer, or generously mentors new instructors. This light that a good colleague adds during our darkest moments seems the truest embodiment of the meaning of the word *colleague*. "one sent or chosen to work with another" (Harper, n.d.). Over time educator collaboration may become one of the most meaningful and joyous aspects of our work. Simon Sinek's

best selling book, *Leaders Eat Last* (2017), explores the facets of workplace belonging and encourages readers to view hiring a teammate like they might the adoption of a child. It is *family* business. He argues, "...the strength and endurance of a company does not come from products or services but from how well their people pull together" (Sinek, 2017, p. 22). As our work continues to evolve, we must remember the importance of colleagueship and its pivotal, beneficial role in well-being.

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# **Opinion Piece**

# Exploring New Teaching Modalities: Pandemic Edition

Dr. Kerri Russo Mercer

#### Abstract

Panic set in as soon as I learned I was assigned to teach a synchronous online class. So many questions raced through my mind. What do I do as a two dimensional figure on the other side of the screen? How will I make sure that I am able to share the content I need to in the time allotted? Will it be the same experience (or close) to what I offer in a face-to-face class? How do I do this? Where do I start? This paper seeks to answer some of these pressing questions for anyone tasked with teaching a synchronous class.

*Keywords:* pandemic teaching, synchronous online class

# Exploring New Teaching Modalities: Pandemic Edition

"I have assigned you an online synchronous class next semester." Upon reading this sentence, I felt immediate panic. Over the past 18 months, there have been quick changes to modalities: from seated to online, from online back to seated, and sometimes both in the course of one semester. Some faculty had to teach classes they had not taught before. Others had to teach more classes than in previous semesters.

Prior to the pandemic, I taught both seated and online asynchronous classes. Teaching online in a synchronous environment, while on my radar to tackle at some time in the future, was not in the



forefront of my mind. It did appear, though, that there was a demand for real time instruction. Although a bit apprehensive, I was ready to take on the challenge of trying a new modality.

Teaching an online synchronous class, while more similar to teaching in the classroom than asynchronous, is a different experience. Allow me to share some of my *lessons learned* from teaching synchronously.

### Be You and Be Present.

After overthinking about teaching synchronously for an inordinate amount of time, I decided to reach out to three of my colleagues who had already taught in this modality. Mind you, they had not taught the class that I was slated to teach; nonetheless, they gave me a good feel for what to expect. One trusted colleague keenly observed that in this environment, students want *you* for the synchronous classes. They want a live, visible, speaking person to whom they can ask real time questions and get immediate answers.

I did find this observation to be highly accurate. I had students who logged on early to class, just to chat with me or ask me questions. There were some students who reported that communicating with me and their classmates during class was the only interaction they had outside of their home. Even when I used PowerPoint or showed a brief video, I still kept myself on camera (as

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also allowed them to get to know me, probably more complish only took one synchronous class! than I would have in a seated class.

# Technology

There are always technological concerns, regardless of modality. I did test out the software we were using well before class started, but it is not enough just to know how to work the technology from the faculty end. It is helpful to be able to troubleshoot any minor issues students have with accessing the class; otherwise, solving these issues eats up class time. I did send out a link to the online space we would be meeting in a few days before class started and encouraged students to go into the online space to test out audio, video and microphone use, and a few did. I provided students the contact info to IT if they had major problems. That way, any issues could be worked out ahead of time.

During class meeting time, it was helpful to use interactive technology tools. It was a simple and easy way to monitor engagement, and it served as a way to give a quick formative assessment on the content being presented or prepared for that day's class. Similar to the technology used for the meeting space, it is imperative that faculty members have some knowledge of the technology issues faced by students with some of these tools and be prepared to quickly help.

# Creativity

We have all had to change an approach to a topic or change content at the last minute. The same situation applies to synchronous classes. There will be students who are unprepared for class, and whatever was planned will not work without that preparation. Beyond that, any exercise or activity that has been done in the classroom may take slightly longer in the online environment, or not.

For example, I had a whole class exercise that I used in my seated classes that worked well. It was the best way I had found to teach this specific point. However, it could not be translated online in the same way, as I quickly learned. The workaround that I developed on the fly took far more time online than I would have liked. Conversely, I found that a major component of my class was far more efficient synchronously online than it was seated. Student

technology would allow) so students could see me. I presentations that would take three classes to ac-

# Engagement

In a seated class, it is somewhat easy to monitor engagement. It is a bit more challenging online. Although the attendance may appear better (at times) in a synchronous class than a seated class, there is more effort involved to keep students engaged. In a seated classroom, a faculty member can wander the room while speaking and make eye contact with students. In the online environment, not every student is comfortable with having their face showing on the screen. Also, depending on the meeting software, the number of students that can be seen from the faculty side may be limited. Generally, I tell students that if I see they are not participating I will send them a private chat message, and they are expected to respond. It becomes very obvious in these activities when someone just has the class on but is not participating.

Although I have been teaching for multiple years, I learned from this experience that I have more learning and more exploring to do. While the questions of how to start and what to do may always be present when faced with something new, sometimes it is best just to push forward into it and learn along the way. I look forward to teaching more synchronous classes in the future if students ask for them, especially now that I have had the opportunity to try one out. None of us knows what the future holds as far as how we will be teaching, but as we continue to add to what we know about how students learn, I think we can expect some exciting future modalities to explore together.

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# **Pedagogical Practice**

# The Magical World of Thermoregulation: An Educational Project for Practical Nursing Students

Michelle McGrath

#### Abstract

This project analyzes the application of an evidence based learning experience in collaboration with a Practical Nursing (PN) program on thermoregulation. The needs assessment ascertained that thermoregulation had been previously covered; however, it is a concept in which students continue to struggle. Therefore, the concept of variance in thermoregulation must be reviewed before graduation. The review activity that was developed featured an escape room simulation and online quiz. This learning experience integrated elements of constructivist and cognitive theories as well as a flipped classroom design. The post implementation evaluation indicated the design was effective in accomplishing objectives. Grasping this material enables skilled care of patients and the learning of future nursing students.

*Keywords*: cognitivism, constructivism, escape room, flipped classroom, practical nursing students, thermoregulation

# The Magical World of Thermoregulation: An Educational Project for Practical Nursing Students

An evidence based innovation education project was developed in collaboration with Practical Nursing (PN) faculty. This learning project was an in depth review of thermoregulation for PN students in their final semester. During the needs based assessment, current PN faculty stated that this is an area in which students struggle, thus essential for nursing students to understand prior to graduation.



Rapid nursing intervention in unstable thermoregulation situations is critical for optimal patient survival outcomes.

Accumulating climate changes are increasing the world's surface temperatures which heighten the severity of heatwaves. With this temperature intensification comes an inflated risk of heat related injury and mortality for the general population, although the elderly in particular are at higher risk. In addition, heat related illness is the leading cause of death among athletes (O'Conner & Casa, 2019). Swift recognition of signs and symptoms of an imbalance, combined with aggressive early mediation, is essential to lessen morbidity and mortality (Rublee et al., 2021). Hypothermia and hyperthermia related hospital health care costs covering one year were \$36 million and \$98 million, respectively (Schmeltz et al., 2016).

# **Description of Innovation**

Students had received a prior introductory lecture on thermoregulation in their first semester, but this project's recorded flipped classroom lecture leading up to a simulation was a more in depth review for them. Students watched the lecture with slides at home, via the learning management system, before arriving at the lab. The lab simulation activity was set up to strengthen their memory and retention of information. Cognitivism and constructivism were the driving learning theories for this project and linked new information to prior knowledge. The follow up online quiz evaluated knowledge of material learned.

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# **Description of Innovation**

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# **Education Theories**

For this project, students must review the more complex principles from the lecture and break that information down to maneuver through the lab simulation. Cognitivism is ideal for problem solving, where complex information must be broken into smaller parts. Instruction and memory are vital in cognitivism, and ideas presented should be meaningful to the learner (Clark, 2018). Constructivism requires the design of a learning environment that will allow students to feel supported and actively involved in their learning. In constructivism, the students work together while sharing knowledge and ideas to problem solve. Transfer of learning will occur if the learning process was meaningful and memorable (Schunk, 2020). Immediate feedback, such as the case with the escape room, promotes this type of simulation escape room. learning. This learning experience incorporates the

two theories with multiple pedagogies to facilitate the learning objectives.

# **Education Pedagogies**

# Flipped Classroom Lecture

Knowledge was disseminated via a flipped classroom prerecorded lecture with PowerPoint slides. This technology was used for efficacy and retention of information. Using lectures provides students with a common core of content and clarifies confusing or intricate points (Bradshaw & Hultquist, 2017). Since the target audience had previous exposure to thermoregulation material, this strategy also welcomes questions that may arise (Bradshaw & Hultquist, 2017). Before coming to class, students listened to the prerecorded lecture while watching a coinciding PowerPoint on thermoregulation. This lecture explained the concept of thermoregulation, the different types of heat transfer, signs and symptoms seen with varying thermoregulation diagnoses, labs, risk factors for unstable thermoregulation, special populations, and nursing interventions. At the end of the lecture, a quick response (QR) code linked students to Google Forms with a ticket to Disney as proof that they watched the video and answered questions, indicating the student was ready for simulation. If they did not have a QR scanner, the link to the ticket was provided on the last PowerPoint slide which they could print out to bring to class. The lecture prepared students with the knowledge they would need to be successful in the

Learning Objectives	Instructional Strategies	Assessment of Learning
<ul> <li>Describe major risk factors for unstable thermoregulation (Understanding)</li> <li>Recognize signs and symptoms of inade-quate thermoregulation (Remembering)</li> <li>Identify strategies to support thermoregulation (Analyzing)</li> <li>Interpret patient situation with appropriate interventions (Evaluating)</li> <li>Demonstrate effective teamwork and communication (Applying)</li> </ul>	<ul> <li>Flipped classroom: Lecture and PowerPoint prior to students' arri- val</li> <li>Small group simulation for a hands on demonstration of material learned</li> <li>Online quiz</li> </ul>	<ul> <li>Formative assessment: online escape room format, <i>escape</i> to pass</li> <li>Summative assessment online</li> </ul>

# Simulation

The students were divided into three equal groups. Groups were given 25 minutes to solve the clues and escape the room. Each group entered into the Disney World themed escape room in which a 60-year-old woman developed severe heatstroke while at the park with her family. During prebriefing, the room layout, instructions, and the patient scenario were given to students. Once in the room, students maneuvered through various escape room puzzles. This enabled them to recognize abnormal vital signs, identify signs and symptoms of heatstroke, answer questions regarding heat transfer, and identify interventions that would save the patient. Upon students synergistically solving all the clues, the patient would be saved and the team would escape Disney World.

Adopting simulation as a teaching strategy in this clinical learning experience enabled students to build their self-confidence, knowledge, and communication skills and improve their clinical judgment. These results were found to be consistent with those described in Bradshaw and Hultquist (2017). According to the literature, when simulations are used in nursing education, students are less likely to make errors in the clinical setting. As a result, graduates can demonstrate more vital critical decision making skills in their nursing practice (Eyikara & Baykara, 2017).

	Case Scenario for Simulation Hyperthermia Escape Room
Scenario Overview	Setting: PN lab aka Disney World Simulation: 30 minutes Debriefing: 10 minutes
Preparation for Sim- ulation	Explain how an escape room works Orient students to room set up Encourage students to get involved and think out loud in this safe and supportive learning environ- ment
Brief Case Summary	PN students have gone to Disney World over spring break. They notice an elderly woman who stumbles and is off balance. As good and helpful students, they rush in to help. By utilizing subjective and objective health evaluation with critical thinking, they discover lineal clues that must all be solved until an ultimate escape.
Example of Simula- tion Steps	The first clue found is a strip of paper taped to the thermometer on which is written <i>keys to success</i> . By using the hint <i>key</i> , students find the framed picture hanging on the wall of a Disney key. Behind this picture is a key that opens the first locked box. Students continue attempting to solve clues before the 25-minute timer is complete. The final clue is a puzzle that appears blank. Once the puzzle is assembled, students are to recall the UV flashlight found previously. Using it on the puzzle identifies an acid/base value. With correct interpretation, students choose the balloon with the matching acid/base state and pop it. If it is the correct balloon, inside is a sign in which it is written, "Congratulations, you've saved Grandma and escaped Disney."
Debriefing Ques- tions	<ul> <li>What was happening in this scenario?</li> <li>How did you feel about this simulation?</li> <li>What were the signs and symptoms that helped you identify the condition?</li> <li>From the health assessment, what were the risk factors?</li> <li>What is the best way to care for someone with hyperthermia? Would that care differ if the patient were an infant or child?</li> <li>How did you work together as a team?</li> <li>Do you think clear communication was an important aspect of working as a team? Why?</li> </ul>

#### Assessment and Evaluation

Assessment and evaluation are excellent tools to identify how well students are learning and retaining information, enabling instructors to revise their teaching methods to meet their students' learning needs (Billings & Halstead, 2020). Evaluation of learning was determined with multiple methods. The first group to go through the escape room was the PN faculty as the pilot group. Based on their feedback, no changes were made in the escape room prior to the simulation for students.

Upon arrival at the school with their ticket to Dis*ney*, three groups of students alternated through the escape room. The time it took students to answer each clue was recorded to pinpoint areas of difficulty or confusion. No group struggled an unusual amount of time in any area, although when comparing the performance of students versus faculty, faculty took the most time to escape overall. The PN faculty appeared to collaborate more on their decisions, wanting to be assured of the answer before continuing. Debriefing questions were based on Promoting Excellence and Reflective Learning in Simulation (PEARLS) Healthcare Debriefing Tool. This debriefing strategy is a structured framework for learners to self-assess and identify gaps in knowledge. Studies show that simulation with systematized debriefing is necessary for maintaining the learned material (McNutt et al., 2021).

This learning plan included a formative evaluation via an online multiple choice escape room quiz. Multiple choice items can measure learning on several levels of cognitive processes (Billings & Halstead, 2019). Included in this quiz were several NextGen National Council Licensure Examination (NCLEX) questions of *Select All That Apply*. Choices had to be selected correctly to *escape*, thus it was a pass or fail instead of a grade. The learner had the opportunity for unlimited attempts to *escape* for three days after completing the simulation. The participants had a summative assessment element to fill out for feedback regarding the learning experience, in addition to evaluating the instructor, learning pedagogies, resources, and learning environment.

#### **Data Analysis**

Each team solved the clues in less than the allotted time frame, which permitted them to *escape* and save the patient. Groups escaped in times ranging from 13 to 18 minutes, out of the 25 minutes allotted. Student reactions were gauged, with the majority stating they felt the escape room was effective in cultivating collaboration, communication, teamwork, and competency. Students stated they "loved the escape room" and that they "learned better with the escape room than with a regular simulation." They reported that it felt less stressful and more engaging than a regular simulation and improved their confidence.

Eighty-six percent of students escaped the online quiz in one attempt, while 14% attempted the quiz twice to escape. All comments regarding the learning project were positive. Students stated that it was fun, challenging and made them think. One participant mentioned working as a collaborative team while under pressure was the key to success. Further, one student remarked that they wanted to find each consecutive clue with the online escape room, which kept them motivated to continue and get the correct answer. The student verbalized it was a constructive way for her to remember the material while simultaneously working the problems. Faculty stated the innovation was an exciting and creative educational approach that they will incorporate more of in future lessons.

In the overall learning project, 91% of students felt the learning material provided them with a superior understanding of thermoregulation. Eighty-four percent felt they were better prepared to intervene for a patient with inadequate thermoregulation. The post learning project assessment denoted that 100% of students met the learning objectives. The subjective and objective data results indicated that this learning project was effective, with all participants demonstrating proficiency in the identified learning objectives.

#### Implications of the Innovation

Future implications of this innovation would necessitate either shortening the time allowance of the escape room or adding additional clues to solve. The simulation showed that all groups completed the clues well before the time ran out, indicating the clock was not a competitor. This learning module should continually be evaluated for validity prior to use for future educational sessions. Current evidence based research should be assimilated into this learning project as technology and information evolve. The practice of high stakes, high risk learning in safe a simulation escape room, ensured learners of varivenues such as an escape room builds critical thinking, communication, and cooperative problem solving skills. Novel avenues to learning may enhance memory and solidify knowledge.

## Summary

This learning experience fulfilled a missing component in the PN curriculum for an in depth review of thermoregulation. Through cognitivist and constructivist theory design, multiple teaching and learning pedagogies were integrated. Pedagogies, including a flipped classroom lecture with PowerPoint and

ous educational needs mastered this material. The evaluation methods, both formative and summative, provided instructors with the assurance that students mastered the material and met objectives. Attainment of the information in the learning unit allowed PN students to identify and correctly react to inadequate thermoregulation situations while utilizing teamwork, communication, knowledge, and skills.

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# **Research Paper**

# **Evolution Misconceptions in** Nonscience Majors: A Pretest and **Posttest Evaluation**

Lynn Swafford

#### Abstract

Most biology students have preconceived ideas about what evolution is and how it works, and understanding what these misconceptions are is integral to teaching evolution effectively. Nonscience majors in BIO 110 (Principles of Biology) at Wayne Community College were given a pretest with 12 True/False questions to determine what evolution misconceptions they initially had, if any. At the end of the semester, the same test was given again to figure out which of these misconceptions were dispelled and which ones remained. On the pretest, there were four questions that at least 75% of students got correct, while nine questions were correctly answered by more than 75% on the posttest. The misconceptions that individuals adapt and that individuals evolve showed the largest amount of improvement between the pretests and posttests. The two main misconceptions persisting at the end of the course related to the understanding of natural selection and how adaptation works and may, therefore, be the focus of future evaluations.

Keywords: evolution, misconceptions, biology, pretest, posttest

# **Evolution Misconceptions in Nonscience Ma**jors: A Pretest and Posttest Evaluation

Evolution is a commonly misunderstood and rejected concept, especially by Americans. Out of 34 countries surveyed, the United States ranked second to last in public acceptance of evolution (Miller et al., 2006). Numerous studies have investigated evolution each question was calculated. An unanswered quesmisconceptions held by students, and they demonstrated that misconceptions exist at all levels of edu-



cation from high schoolers up to graduate students (Yates & Marek, 2015). So, what can biology educators do to dispel these misconceptions? The first step is to determine which misconceptions are most prevalent among students. Wescott and Cunningham (2005) highly recommend that educators develop their own unique tool to assess the misconceptions specific to their students and their courses. In this evaluation, True/False pretests and posttests are used to determine what misconceptions nonscience majors at Wayne Community College initially have, which are corrected during the course, and which remain at the end of the semester.

### **Methods**

During the spring and fall semesters of 2018 and 2019, students in face-to-face sections of BIO 110: Principles of Biology (a nonscience major's course for Associate of Arts students) were given a pretest on evolution misconceptions. This test consisted of 12 True/False questions (Table 1) and was administered in class before beginning the unit on evolution. Students were given 10 minutes to take the test and told they would get a completion grade for trying their best. The pretest answers were not discussed in class, and students did not find out how they scored. After completing the evolution and ecology units, the same 12 True/False questions were given again as a posttest at the end of the semester. It was administered in class just as the pretest had been.

The percent of students who correctly answered tion was considered incorrect. Comparisons were made between the pretests and posttests by deter-

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mining how many questions were answered correctly calculated for each question. Students who did not by at least 75% of students. The difference in percent correct between the pretest and posttest was

take both the pretests and posttests were removed from this evaluation.

## Table 1

		Percent of Students Who Answered Correctly	
True/False Question	Answer	Pretest	Posttest
A. An individual cannot evolve.	True	45	94
B. Natural selection occurs when organisms get what they need as they try to adapt.	False	38*	72
C. An individual can adapt to its environment.	False	12	78
D. Evolution says that humans evolved from modern apes and monkeys.	False	45*	78
E. Evolution is a scientific theory.	True	93	83*
F. The human population has evolved recently and is continuing to evolve.	True	74*	87
G. Evolution explains the origin of life.	False	54	74
H. Humans share a common ancestor with apes and monkeys.	True	80	96
I. Evolution is only a theory, so it is not supported by facts.	False	72	91
J. Evolution can occur without natural selection.	True	45	71
K. Evolution always produces better and better organisms.	False	77	90
L. Evolution is defined as genetic change in a population over time.	True	88	97

Evolution Misconceptions Test Questions, Answers, and Responses

*Note.* An asterisk indicates that one student left the question unanswered.

# Results

Over the four semesters in 2018 and 2019, a total of 69 students completed both the evolution misconceptions pretests and posttests. For each question, the percent of students who correctly answered it is shown in Table 1.

# **Pretest Results**

There were four questions that greater than 75% of students got correct on the pretest. Question E, Evolution is a scientific theory, is True and was correctly answered by 93% of students. Question L, Evolution is genetic change in a population over time, was correctly

determined as True by 88% of students. Question H, Humans share a common ancestor with apes and monkeys, is True, and 80% of students determined this. Question K, Evolution always produces better and better organisms, is False, and 77% of students got this correct.

The most commonly missed question was C, An individual can adapt to its environment. This question is False, and only 12% of students correctly determined this. There were four additional questions that fewer than 50% of students answered correctly. Only 38% of students correctly determined that question B, Natural selection occurs when organisms get what they need as they try to adapt, is a False statement. Questions A, D, and J were each answered correctly

by 45% of students. Question A, *Individuals cannot* evolve, is True. Question D, *Evolution says that humans* evolved from modern apes and monkeys, is False. Question J, *Evolution can occur without natural selection*, is a True statement.

### **Posttest Results**

The posttest results showed that 9 of the 12 questions were correctly answered by at least 75% of students (see Table 1). Question G, *Evolution explains the origins of life*, is False and was correctly determined by 74% of students on the posttest. Questions B and J were correctly answered by 73% and 71% of students, respectively. All 12 questions were answered correctly by more than 70% of students.

Five questions were answered correctly by at least 90% of students on the posttest. Question K was correctly answered by 90% of students. Question I, *Evolution is only a theory so is not supported by facts*, is False and was correctly answered by 91% of stu-

#### Figure 1

dents. Question A was correctly answered by 94% of students and question H by 96%. Question L was answered correctly by 97%, which was the highest percentage correct out of all 12 questions.

The difference in percent correct between the pretests and posttests is shown in Figure 1. The largest increase was seen in question C, An individual can adapt to its environment. Initially 12% of students correctly determined that C was False, while on the posttest, 78% of students answered this question correctly. Questions A, B, and D also showed large increases in the percent of students who correctly answered them. The response to question A increased from 45% correct to 94% correct, B increased from 38% to 72%, and D increased from 45% to 78%. One question, E, had a decrease in the percent of correct answers from the pretest to the posttest. It was correctly answered by 93% of students on the pretest but only by 83% of students on the posttest.



Difference in Percent Correct between Pretests and Posttests

Difference in Percent Correct between Pre- and Post-tests

#### Discussion

### Common Misconceptions of BIO 110 Students

A third of adults in the United States do not accept the concept of evolution (Miller et al., 2006); therefore, it is not surprising many BIO 110 students have common misunderstandings about it. Four of the most common evolution misconceptions found during this evaluation were that individuals can adapt, individuals can evolve, natural selection involves trying, and evolution can only occur if natural selection does. These were each answered correctly by fewer than 50% of students. The first two misconceptions appear to be mostly corrected throughout the evolution unit, while the latter two misconceptions persisted at the end of the semester.

#### Easiest to Correct

The two misconceptions showing the largest improvement between the pre and posttests relate to the smallest unit capable of undergoing evolution. Contrary to popular thought, it is not the individual that can evolve or adapt, but the population.

Individuals Can Adapt. Before covering evolution, the most common misconception that BIO 110 students had was that individuals can adapt. Almost 90% of students incorrectly thought that individuals are capable of undergoing adaptation to their environment. This is a common misconception because everyday language regularly uses the term adapting in reference to an individual or person adjusting to new conditions; however, this is not what adaptation in the context of evolutionary biology means. Adaptation is an evolutionary process in which a population becomes better suited for surviv- Occur. The misconception that evolution cannot ing and reproducing in its environment over generations through natural selection. This is definitely not something an individual organism can do. By the end of the semester, the majority of students, almost 80%, knew this. This misconception, based on the discrepancy between the everyday use and scientific meaning of a word, is called a vernacular misconception (Keeley, 2012), and it exhibited the most improvement between pretests and posttests.

#### Difficult to Correct

Three questions were answered correctly less than 75% of the time on the posttest. One question relates to human evolution, which is not a topic covered in much detail in BIO 110. The other two relate to natural selection, a topic covered extensively during the evolution unit. BIO 110 students seem to continue to struggle with really understanding how natural selection and adaptation work. This is consistent with other studies that indicate the process of natural selection is not well understood by people of varying educational backgrounds (Gregory, 2009).

Natural Selection Involves Trying and Getting What Is Needed. A very common initial misconception of BIO 110 students was that natural selection occurs when organisms get what they need as they try to adapt. According to the pretest, over 60% of students believed this to be true. Since natural selection is a major process that leads to evolution, it is covered in three chapters and two lab activities. Therefore, one would expect a large improvement on understanding this topic. On the posttest, 72% of students answered question B correctly. This means, however, that almost 30% of students still thought that natural selection grants organisms what they need and involves trying. This shows that while students may be able to memorize the fact that individuals do not adapt, they may not really understand how the process of adaptation works. If they understood why individuals cannot adapt, they would know that there is no trying in natural selection. Individuals cannot simply get what they need because evolution does not create new traits just to help with survival.

Natural Selection Is Needed for Evolution to occur without natural selection may also be difficult for students to correct. Initially, 55% of students believed this misconception. This decreased to about 30% at the end of the semester. While this is definitely an improvement, it still seems low considering that an entire chapter is devoted to covering the many mechanisms of evolution. Therefore, students should know that in addition to natural selection, there are four other processes that lead to evolution: genetic drift, gene flow, mutation, and sexual selection.

A Decrease in Percent Correct on Question E. There was one question, E, that had a lower percentage of students answer it correctly on the posttest than on the pretest: evolution is a scientific theory. Initially, 93% of students knew this was a true statement, and this was the highest percentage correct out of all 12 pretest questions. However, only 83% indicated this statement was true on the posttest. Why did this question show a decrease in percent correct? One possibility is that students do not understand what a scientific theory is. This is a term shown time and time again to be commonly misunderstood by students and the general public (Yates & Marek, 2015). The meaning of a scientific theory is something discussed in the first chapter of BIO 110 because theory has a different meaning in vernacular language than it does in biology. The word *theory* is often used to describe a guess somebody has, but in science, a theory is a rigorously tested explanation that has an abundance of evidence supporting it. On the posttest, 91% of students knew that question I, Evolution is only a theory so it is not supported by facts, was False. This indicates that students know evolution is supported by facts. However, they may not recognize that something well supported by facts is a sci-

# entific theory. Perhaps there was a decrease in percentage on question E because initially students thought of evolution as something that is questioned, which fits the common use of the word theory. Then as students learned evolution was supported by evidence, perhaps they no longer thought of it as a guess. They may have incorrectly determined it was not a scientific theory because their vernacular misconception persisted throughout the semester. There may be other explanations for what happened with question E, so this may be worth investigating in future studies.

# **Can Evolution Misconceptions Be Corrected?**

By the end of the semester, all 12 questions were answered correctly by 70% of BIO 110 students. Therefore, it appears that misconceptions about evolution can be corrected. With the implementation of pre and posttests, an educator may be able to determine which misconceptions are persistent. This could help to improve future teaching practices to target certain problem areas, such as understanding adaptation and natural selection.

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#### Author's Note

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# **Graduate Research**

The Impact of the New CoDE Model of Developmental Mathematics on Student Retention and Graduation Rates Dr. Kenneth N. Buckey

#### Abstract

The community college is an institution where constant change is needed to keep up with technology, student needs, and industry standards. The evolution of developmental subjects, especially developmental math, is a needed change within the community college system. This research examined the impact of the new Corequisite and Developmental Education (CoDE) model (formerly Reinforced Instruction for Student Excellence (RISE)) of developmental mathematics on student retention and graduation rates. The study used a mixed methods approach that included course completion rates, grade distribution reports, and instructor surveys from three North Carolina community colleges to address four research questions related to the new CoDE model. Instructor surveys, with a combination of Likert scale and open-ended questions, were used to supplement the quantitative data. The four research areas involved in the CoDE program are 1) student success in terms of completing the MAT 003 course, 2) completion rates for minorities and by gender in developmental math, 3) the gap in services tion) for distant/remote students related to completion rates, and 4) comparison of the CoDE math program to previous Developmental Math (DMA) courses for entry into gateway math courses. The study revealed a significant difference in females' pass rate and a slight difference in the pass rate overall of the DMA mathematics. The positive difference between the three colleges' DMA and MAT 003 was not as significant as expected. The study did reveal a significant difference in the withdrawal rates of those students taking CoDE MAT 003 compared to the DMA mathematics.



*Keywords:* developmental math, community college, CoDE, RISE, gateway math

# The Impact of the New CoDE Model of Developmental Mathematics on Student Retention and Graduation Rates

Many Americans believe getting a job means going to college and receiving a degree in a specific field of study that aligns with the job field chosen (American Association of Community Colleges, 2012). Earning a degree or a credential is not as simple as signing up for and attending classes. Even though college is more accessible and tuition assistance is more readily available than in the past, the ability to pass the entrance tests and placement exams affects many students today and can get in the way of achieving their educational dream. This paper is a summary of a dissertation and provides the results of that research.

# CoDE (Corequisite and Developmental Education)

Corequisite and Developmental Education (CoDE) is a new program that was intended to replace the old placement system and developmental series of math and English instruction. CoDE was piloted (initially as Reinforced Instruction for Student Excellence, or RISE) at 16 community colleges in North Carolina and was initially scheduled for full implementation in all 58 community colleges by fall 2020. The full rollout was discontinued, largely due to complications related to the pandemic.

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At present, many, but not all, North Carolina community colleges have implemented CoDE or a modified version of CoDE. As noted by the North Carolina Community College System (2019), "The two primary factors considered in the ... RISE [CoDE] model are the proper placement of students in gateway math and English courses and academic support for students in the context of their math and English courses" (para 1).

The documents on the CoDE program are extensive. They give the educator a clear understanding of the program as a whole and show the pathways a student can take to meeting the requirements for English and math. According to Newsom (2019), "Community colleges will have redesigned English and math classes for students who have high school GPAs below 2.2 or who aren't yet ready for gateway classes. Students must complete these transitional classes before taking courses that award credit toward a degree or certificate" (para 6).

### The Research Problem

Developmental education has been paramount to higher education, with most of the remedial education left to the community colleges. Developmental math, more than English remediation, is seen as one of the key stumbling blocks to students' college success. "Every year, tens of thousands of young people fail to graduate because they can't earn enough math credits" (Gewertz, 2018, p. 1). Earlier, Provasnik and Planty (2008) voiced similar findings, noting that mathematics was the most common remedial course reported by beginning postsecondary students (15%) and by beginning community college students (22%).

#### **Developmental Mathematics Pre-CoDE**

The North Carolina Community College System (NCCCS) started redesigning developmental mathematics (DMA) courses in 2009. The transition from MAT to DMA was official in 2012, with a comprehensive state implementation beginning in 2013. Classroom instruction methods varied from teacher centered, student centered, and computer centered and were used in the redesigned North Carolina DMA courses (North Carolina Community College System, 2011).

The North Carolina Community College System oversaw and implemented the new developmental

mathematics sequence in 2012. Peeler (2016) stated that the program changed at this time

from a three-course, traditionally taught sequence into a sequence of eight modules and gave each college the ability to choose the structure and instructional methods used to teach these. The goal of this redesign was to support students in need of developmental mathematics to complete their sequence of developmental courses and pass their first college-level mathematics course (called the gateway course). (p. 3) The redesign was intended for a more consistent pathway into gateway mathematics courses and the

support of developmental learning; however, it added to the time students had to take developmental mathematics and some never made it into college level mathematics courses.

### Impact of CoDE on Colleges

When the community colleges in North Carolina started the CoDE program with pilot institutions, these institutions no longer offered the NC Diagnostic and Placement (DAP) testing. Therefore, students either placed into the tier level they needed or had to take the transition courses. See Figure 1.

# Figure 1

Transition Math Tier Levels and Exit Points to Gateway Math Courses (NCCCS, 2019).



Since there were no online transition courses offered at the time of the pilot program, students at some colleges were required to take placement tests or DMAs at other colleges and have them transferred back into their respective institutions. Having to take classes elsewhere placed undue hardship and caused extra classes, financial difficulties, and other issues for the pilot college students. Although the impact was limited into the fall 2019 academic year, a much larger effect was anticipated by the spring of 2020, when the colleges would have had at least two semesters of students taking placements or courses elsewhere (North Carolina Community College System, 2019). These impacts have been mitigated with the discontinuation of the full CoDE rollout and the pandemic related boost of online learning resources. In our post COVID world, online components are largely available for distant/remote students enrolled at community colleges with CoDE programs.

# **CoDE Tier System**

- The CoDE math test consists of three tiers. Students must achieve a score of at least 80 on each tier to progress to the next tier. Students who score less than 80 on the first tier are placed into a transition math course. Students who score an 80 or higher on the first tier may then choose to take the second tier test for placement into gateway math courses if needed. A corequisite course may be required depending on the gateway course. Students who score an 80 or higher on the second tier may then choose to take the third tier if needed for placement into a higher level gateway course.
- Tier 1 includes whole numbers, fractions and mixed numbers, decimals, ratios, rates, proportions, percentages, measurements, geometry, and real numbers.
- Tier 2 includes concepts in statistics, solving equations and inequalities, exponents and polynomials, and graphing.
- Tier 3 includes factoring, systems of equations and inequalities, rational expressions, radical expressions and quadratic equations, and functions.

# Statement of the Problem

Students today are leaving high school underprepared for college. Adult learners are entering college after years away from the academic setting without the basic skills necessary to navigate the rigors of higher education. The need to address this issue brought about the developmental series of instruction. The actual effectiveness of developmental math has been debated for some time, and a new system currently called CoDE was incorporated in 2019 to meet this challenge. The CoDE program is designed to assist all students in achieving their potential and complete their specific gateway math course more effectively and continue to graduation (North Carolina Community College System, 2019).

The following results are a compilation of the three community colleges involved in this study and depict the overall course counts for each developmental math course (DMA/MAT 003), as well as the gender and grade pass rate between the DMA and MAT 003 course of developmental instruction. See Tables 1 and 2.

# Table 1

Colleges A, B,	С-Сои	rse Name	and Gr	ade Cros.	stabula-
tion					

Grade	Course	F	Р	Total
Course Name	DMA	412	517	929
Frequency		44%	56%	100%
Total		412	517	929

Note: Table 1 shows the breakdown of DMA mathematics for all colleges and compares the grades of passing (P) and failing (F) along with the percentage of the DMA mathematics course. It is depicted that 517 students out of 929 or 56% passed DMA mathematics. A simple *t*-test was used to determine the significance of college A, B, and C's DMA course of instruction with the results listed below in Table 2.

# Table 2

Colleges A, B,	С–	Course	Name	and	Grade	Statistics
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Grade	Missing #	Value
Ν	Valid	929
	Missing	0
Mean		.56
Std Deviation		.497

*Note:* The results from the *t*-test (M = .56, SD = .497), *t* (34) =.016, p < .05. Course and grade statistics indicate a significant difference in passing rate.

The researcher examined the MAT 003 course and grades. The relation between these variables was significant; students taking the mathematics course MAT 003 had a high fail rate (45.8%). See Table 3.

## Table 3

Colleges A, B, C – Course Name and Grade Crosstabulation MAT 003

Grade	Course	F	Р	Total
Course name	MAT 003	384	325	709
%		54%	46%	100%
Total		384	325	709

*Note:* Table 3 shows the breakdown of the MAT 003 mathematics for all colleges and compares the grades of passing (P) and failing (F) along with the percentage of

## Table 4

the MAT 003 mathematics course. It is depicted that 323 students out of 709 or 46% passed MAT 003 mathematics.

#### DMA and MAT 003 Combined Analysis

A Chi-square test of independence was performed to examine the relationship between the DMA and the MAT 003 course for ethnicity and grades. The relation between these variables was significant:  $X^2$  (5) = 81.688, p = .000. African Americans had a significantly higher pass rate as well as a significantly higher failure rate than all other races. See Tables 4 and 5 and Figure 2.

	Race	Count	Grade		Total
			F	Р	
X Ethnicity	AN	Count	60	109	169
Race		Expected Count	91	78	169
		% within X Ethnicity Race	35.50%	64.50%	100.00%
	AS	Count	4	7	11
		Expected Count	5.9	5.1	11
		% within X Ethnicity Race	36.40%	63.60%	100.00%
	BL	Count	423	221	644
		Expected Count	346.7	297.3	644
		% within X Ethnicity Race	65.70%	34.30%	100.00%
HIS		Count	72	82	154
		Expected Count	82.9	71.1	154
		% within X Ethnicity Race	46.80%	53.20%	100.00%
	MULTI	Count	55	41	96
		Expected Count	51.7	44.3	96
		% within X Ethnicity Race	57.30%	42.70%	100.00%

Colleges A, B, C - Ethnicity Grade/Course Crosstabulation

	Race	Count	Grade		Total
			F	Р	
X Ethnicity	WH	Count	122	171	293
Race		Expected Count	157.8	135.2	293
		% within X Ethnicity Race	41.60%	58.40%	100.00%
Total		Count	736	631	1367
		Expected Count	736	631	1367
		% within X Ethnicity Race	53.80%	46.20%	100.00%

*Note:* Abbreviations for race/ethnicity: AS=Asian, AN=Native American, BL=Black, HIS= Hispanic, MUL-TI=Multiple races, WH=White.

### Table 5

Colleges A, B, C – Chi-square Tests Gender/Grades, Course

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-square	81.688ª	5	.000
Likelihood Ratio	82.543	5	.000
N of Valid Cases	1367		

*Note:* a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.08.

The Chi-square analysis in Table 3 indicates several associations. Course success was significantly associated with both females and African Americans. These two associations indicate that student demographic characteristics and gender have an effect on course success. However, both characteristics also appear to be associated with course failure rates as well.

# Figure 2

Colleges A, B, C – Chi-square Tests Bar Chart Ethnicity and Grades



A Chi-square test of independence was performed to examine the relationship between the DMA and the MAT 003 course and grades. The relation between these variables was significant,  $X^2$  (2) = 31.748, p < .05. DMA had a significantly higher pass rate than MAT 003; DMA also had a higher repeat rate overall. The withdrawal rate, however, was higher in MAT 003 compared to the DMA course. See Table 6.

#### Table 6

Grade	Course	F	Р	Total
Course name	DMA	452	553	1005
%		45%	55%	100%
	MAT 003	337	325	662
%		51%	49%	100%
Total		789	887	1667

Colleges A, B, C – DMA/MAT Crosstabulation

*Note:* Table 6 shows the breakdown of DMA and MAT 003 mathematics for all colleges and compares the grades of passing (P) and failing (F) along with the percentage of the DMA/MAT 003 mathematics courses. It is depicted that 553 students out of 1005 or 55% passed DMA mathematics. It is depicted that 325 students out of 662 or 49% passed MAT 003 mathematics.

The Chi-square analysis in Table 4 indicates several associations. Course success was significantly associated with the DMA series of developmental mathematics. These two associations indicate that pre CoDE and CoDE programs of instruction have an effect on course success. What is also noteworthy is that there is only a slight difference between the passing and failure rate of the MAT 003 course; the pass rate was 49% and the failure rate was 51%.

#### Summary

**Research Question 1 is the primary question** of this study: Are developmental math (CoDE) students achieving success in completing the MAT 003 course? Success is a broad term and depends on the student's needed gateway math course, and on how many levels they obtain in MAT 003. Students completing at least tier 1 of MAT 003 and proceeding into their gateway math with the corequisite course would mean success for a student only needing the gateway MAT 143.

Hypothesis 1 is: There is a significant difference in the success of pre CoDE and CoDE students in achieving success in completing the MAT 003 course. The review of the data revealed several important findings related to the developmental mathematics and CoDE program effectiveness. A Chisquare test was conducted for each of the research questions to determine any significant differences in the population demographics and gender and the pass rate. The relationship between the previous developmental mathematics (DMA) and the new CoDE MAT 003 course was also analyzed to determine which course had a higher passing rate.

Because the number of students varied at each participating college, a final combined tally of all institutions participating was conducted to develop a bigger picture of the state's new CoDE program and its effectiveness. Although there was no research question or hypothesis for students' withdrawal rate in either program, the results did determine a high withdrawal rate in MAT 003 compared to the pre CoDE program of instruction.

The study found a significant difference in pass rates between the pre CoDE mathematics compared to the CoDE program of instruction. This study did indicate that females had a significantly higher pass rate than males for both education programs. Furthermore, the study results showed a significant increase in withdrawals with the CoDE program compared to the pre CoDE DMAs. Results from the survey indicated that instructors were very confident that distant students had as much opportunity to succeed in an online or hybrid course as those taking the course face-to-face. The instructors further indicated that the success rate was just as high.

### Recommendations

This study was relatively small and only included three community colleges out of the 58 colleges in the North Carolina Community College System. A better understanding of the program effectiveness could come from expanding research to include all colleges in the system. A statewide survey of those mathematics instructors teaching CoDE could be sent from the system office to get a bigger picture across the 58 colleges in the state.

Additionally, the use of the application for developmental mathematics, EdReady<sup>TM</sup>, was an area of concern for some instructors. Instructors felt it aided the students in only passing through the application but not the course as a whole. The application allows a student to take the test multiple times without watching the instructional videos; this means a

student could master the test but not the material. There should be a system in place that ensures the students must take the instructional material before taking a practice test. This ensures the students are prepared for the finals and their gateway mathematics course.

# Conclusion

This study explored the differences and pass rates of the new CoDE model developmental mathematics and the pre CoDE model of DMA mathematics and the efficacy between the courses, method North Carolina Community College System. (2011). of delivery, and demographics of the students. The study further explored the differences of three different size colleges in the North Carolina Community College system.

The study revealed a significant difference in females' pass rate and a slight difference in the pass rate overall of the DMA mathematics. Still, the positive difference between the three colleges' DMA and MAT 003 was not as significant as expected. The study did reveal a significant difference in the withdrawal rates of those students taking CoDE MAT 003 compared to the DMA mathematics.

This study is beneficial to the research on developmental mathematics, specifically the CoDE model, since no research was found on the subject. The results are similar to previous studies on developmental mathematics and revealed that transitioning from one program to another produced similar results in student retention and pass rates. Although the findings presented in this dissertation research study were significant in relationship to student success in DMA versus MAT 003, this study raised the question of the high withdrawal and repeat rates of both programs of developmental mathematics. This research study's findings extend the academic conversation regarding student success in CoDE mathematics and inform policies at institutions and state system offices.

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### Author's Note

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# **Research Paper**

Borderlands in North Carolina Community Colleges: Cultural Capital, Community Cultural Wealth, and Gloria Anzaldúa's Borderlands/La Frontera Grant D. Jolliff

#### Abstract

The nonprofit myFutureNC established the lofty goal of 2,000,000 earned postsecondary credentials in the state by 2030. Considering this challenge with the increased number of Latinx students attending or wanting to attend NC community colleges underscores the need for a change in our approach to pedagogy. In this paper, I examine the tensions of structure and agency using the theories of Pierre Bourdieu and Tara J. Yosso. I identify Yosso's theories of community cultural wealth as being particularly useful to NC community colleges for its shift from a deficit oriented to an asset based approach to supporting Latinx students. Using this framework as a springboard, the paper offers Gloria Anzaldúa's borderlands theory as a unique touchstone for developing pedagogies that facilitate community cultural wealth in the classroom. Three areas for pedagogical development are offered based on borderlands theory: deconstructing Whiteness, linguistic affirmation, and inclusion of males from underrepresented groups. Specific practices aligning with each of these areas are offered.

*Keywords:* structure, agency, cultural capital, community cultural wealth, borderlands theory

# Borderlands in North Carolina: Cultural Capital, Community Cultural Wealth, and Gloria Anzaldúa's Borderlands/La Frontera

In one of the untitled vignettes in Tomás Rivera's And the Earth Did Not Devour Him (1971/1995), a book about Mexican workers in the United States, two unnamed children discuss going to school. "Why do y'all go to school so much?" in-



quires one child. The other explains, "My Dad says it's to prepare us. He says that if someday there's an opportunity, maybe they'll give it to us." The inquirer then explains:

Sure! If I were you I wouldn't worry about that. The poor can't get poorer. We can't get worst off than we already are. That's why I don't worry. The ones that have to be on their toes are the ones who are higher up. They've got something to lose. They can end up where we're at. But for us, what does it matter? (Rivera & Vigil-Piñón, 1995, p. 97)

The vignette reveals two different perspectives on schooling, but one overall impression of power and agency. One child sees school as only for those seeking to retain their hierarchical position ("the ones that are higher up") while the other goes to school in the hopes of opportunity ("if someday there's an opportunity, maybe they'll give it to us'') (Rivera & Vigil-Piñón, 1995, p. 97). These children know their minoritized status; moreover, they have come to know their position from the viewpoint of lack. One sees school as maintenance of the status quo, thereby acquiescing to social and economic inequalities; the other views school as a way to climb the social and economic ladder if only someone, somewhere, would give him the "opportunity" to do so. Both view school as a reflection of a society in which they do not inherently belong, where they either have to wait to be given an opportunity to prove their worth or where they can just sit back and fulfill a destiny of poverty and oppression.

Rivera was an author and educator—a teacher, professor, and the chancellor of University of California Riverside from 1979 until his untimely

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death in 1984. Although And the Earth Did Not Devour Him (1971/1995) was written from the perspective of a child, there is still insight to be gained regarding the broader educational experience of students from underrepresented groups. The vignette and the decades of conversations and social movements over race, class, and ethnicity-the Chicano movement being one-begets some questions about what is at stake between structure and agency in education. How does one go about examining the power structure, while also leaving room for agency to question and challenge the status quo? This paper attempts to describe the context of these questions, the conditions under which they arose, and how they can be applied to pedagogy in the community college setting.

I build my conceptual framework around Pierre Bourdieu's (1977/2000) theory of cultural capital and Tara J. Yosso's (2005) theory of community cultural wealth. The former describes social inequality foreordained by structure, and the latter emphasizes the cultural wealth of underrepresented groups. Taking the lead from Yosso, who also draws from Gloria Anzaldúa (1987/2012), I propose Anzaldúa's borderlands theory as a useful framework for developing pedagogical practices that elevate the cultural wealth of students from underrepresented groups. The deconstruction of Whiteness, linguistic affirmation, and inclusion of males from underrepresented groups are discussed as practices that, when paired with Anzaldúa's theories, offer rich pedagogical possibilities for those involved in education. I argue that these practices should be at the forefront of our pedagogical practices in North Carolina community colleges.

# Borderlands in North Carolina

Anzaldúa's Borderlands/La Frontera: The New Mestiza was first published in 1987 and has since become a staple in Chicana studies, American literature, LGBTQ studies, and many other disciplines. Drawing from the fields of history, anthropology, philosophy, linguistics, and literature, and written in Spanish, English, and Nahuatl, Anzaldúa discusses life on a physical and mental borderland. This discussion of the borderlands offers a way to think about the experiences of Latinx students served in NC community college classrooms. Anzaldúa (2012) explains, "Being tricultural, monolingual, bilingual, or multilingual, speaking a patois, and in a state of

perpetual transition, the mestiza faces the dilemma of the mixed breed: which collectivity does the daughter of a darkskinned mother listen to?" (p. 100). Moreover, the physical and mental borderlands of the mestiza attain a larger, psychic significance for all cultures, as "the struggle is inner: Chicano, indio, American Indian, mojado, mexicano, immigrant Latino, Anglo in power, working class Anglo, Black, Asian—our psyches resemble the bordertowns and are populated by the same people" (Anzaldúa, 2012, p. 109). I argue throughout the paper that our classrooms create bordertown experiences for many of our students. In her preface to the first edition, Anzaldúa writes "this book is our invitation to you, from the new mestizas." Anzaldúa invites all to consider their positionality within the borderlands, and I am inviting other educators to consider their positionality in the community college classroom.

A watershed moment for me, a White community college instructor in the state of North Carolina, arose with a Latinx student writing a paper about natural healing practices, or curanderismo. In the process of drafting the paper, Lulu asked, "Can I include words in Spanish in my paper, or should I take them out?" The answer was, of course, Lulu could include Spanish words in her paper. The paper was completely understandable to a non-Spanish speaking reader, but it did include certain terminology in Spanish. I felt uncomfortable being given the power to control a student's tongue. If I felt uncomfortable, how must Lulu have felt? This question goes deep into a schooling culture which excludes those who do not speak the language of power. In what ways do our course policies and assignments exclude those whose first language is not English? How can we affirm the linguistic identities of those students? How can we privilege the speaking of multiple languages rather than focusing on whether or not a student just speaks and writes in one? The answer to these questions would take an academic career to answer, thus is out of the purview of this paper. However, I remain convinced that as educators we need to commit to practicing teaching techniques that honor and affirm the cultural wealth of our students.

# Why North Carolina?

To help the state of North Carolina "close the educational attainment gap," the nonprofit my-FutureNC (2019) set the goal of "2 million by 2030," or 2,000,000 North Carolinians holding a postsecondary credential by the year 2030. To meet this goal, community college instruction must speak to the needs of its current and future students, of which Latinx students represent a large and growing portion. North Carolina's Latinx student population grew by 25% since 2010 and in 2020 represented 17.9% of students in North Carolina's public schools and 14% of "first time, full-time students in NC community college" (MacCracken, 2020). Andy MacCracken (2020) with EducationNC says it best:

Today, North Carolina is home to more Latinx people than ever before, and a greater share of students in the Latinx community want to go to college than ever before. Both facts reflect how important the state's Latinx population is to driving toward the myFutureNC statewide attainment goal.

Emblematic of this trend, Excelencia in Education, self-described as a Latina-led higher education nonprofit, identifies one North Carolina community college as a Hispanic Serving Institution and nine others as emerging Hispanic Serving Institutions as of 2021. However, Latinx students are not just numbers and recruitment targets to fill our seats. Latinx students are a diverse group that face myriad challenges in attaining their educational goals and possess myriad strengths that need to be recognized. Among those identifying as Latinx are native born and foreign born migrant workers, similar to those depicted in the vignette from And the Earth Did Not Devour Him (1971/1995). Moreover, as of 2021, 77% of Latinx populations in North Carolina speak a language other than English at home and come from a range of countries (Carolina Demography, 2021). Achieving a goal like that of myFutureNC is within our capabilities, but it calls for a theoretical reshaping of our teaching practices that more closely aligns to the needs of our changing demographics.

While it is important to keep demographic information in mind, we also must consider the larger diversity, equity, and inclusion goals of our system and how borderlands theory informs these goals. The zeitgeist of the late 2010s and early 2020s is one of polarization and acrimony. Phrases like critical race theory and Black Lives Matter draw either solidarity or ire and scorn from certain parts of the citizenry, no matter their transformative possibilities for our most marginalized populations. As a state, and largely as a country, we are in a moment where we can retreat from any potential advancements in diversity, equity, institutions," and Bourdieu wanted to unmask the

and inclusion, or we can provide an educational environment that builds on the work of our contemporaries and predecessors in these areas. With the latter option in mind, The North Carolina Community College System Equity and Inclusion Task Force released their final report on July 31, 2021. The report focuses on the State Board of Community Colleges Code, looking for "elements that may negatively impact students of color and limit opportunities for students, faculty, and staff" and providing relevant policy recommendations that seek to make North Carolina community colleges a national model for equity and diversity (NCCCS DEI Task Force, 2021). One focus area of this task force report, the "absence of equity language" in State Code policy, results in policy recommendations to routinely measure and reward "access and success of Black, Latinx, Indigenous, and historically underserved Asian and Pacific Island populations" at NC community colleges (NCCCS DEI Task Force, 2021). The "absence of equity language" section directly mentions culturally responsive teaching as an "evidence based practice proven to work for these populations" making the adoption of the pedagogy and curricular innovation in the classroom a matter of state sponsored policy (NCCCS DEI Task Force, 2021). Policy or not, though, we as educators face a moral imperative to honor and create space for the lived experiences, identities, and prior knowledge of our students. Whether in the polylithic Latinx population or the "Indio, American Indian, mojado, mexicano, immigrant Latino, Anglo in power, working class Anglo, Black, Asian" whose "psyches resemble the bordertowns and are populated by the same people" (Anzaldúa, 2012, p.109), the borderlands are here in North Carolina and in our classrooms. Borderlands theory offers an opportunity to continue building educational practices which honor the experiences of all of our underrepresented populations.

# Conceptual Framework: Structure, Agency, Cultural Capital

A cursory overview of Bourdieu's (1977/2000) theories will serve as an entry point to the discussion of structural power and cultural reproduction. For Bourdieu, the sociology of education was not a subset of sociology, but the main source for understanding how power is produced and reproduced in society. Schools were the "nexus of individuals and

reproduction of power located in this convergence by "examining the dynamic interaction between individuals and institutions" (McDounough & Nunez, 2007, p. 143). How did this understanding of structure and agency in the field of education come about, and what influence did it have on our understanding of the reproduction of power? After answering these questions, I then introduce Yosso's (2005) theory of community cultural wealth, which criticizes Bourdieu's theories as taking a deficit approach and reorients social capital within the wealth of experiences and cultures of marginalized populations.

# Bourdieu: Cultural Capital

Against a backdrop of theories in which human life was dominated by structure, Bourdieu sought to show how individual actors could exercise agency amidst structure. The dominant theoretical field of study in the mid-19th to mid-20th centuries was structuralism, which described underlying structures as that which dominated and gave meaning to human life and societal functions (Levinson, 2011, p. 116). For instance, Karl Marx believed materialist value dominated human life and societal functions, what Levinson (2011) describes as "overweening explanatory power to materialist forces (for example, Karl Marx's forces of production)" (p. 116). The competing theory of structuralism was voluntarism, which posited that individuals acted freely to shape their destiny. At the time of Bourdieu and Passerson's Reproduction in Education, Society, Culture (1977/2000), though, theorists were challenging structuralism and voluntarism, as reflected in their attempt to describe how individual actors are at once inequality foreordained by structure, the tension beaffected by materialist forces while also acting according to individual agency (Levinson, 2011, p. 117). In his own attempt to prove the "folly and futility of one of sociology's core propositions-that structure and agency are irreconcilale" (McDonough & Nunez, 2007, p.141), Bourdieu encouraged the renaming and reclassifying of the world as a means of contesting power. More specifically, Bourdieu and ference. later Giddens (1979), argue for practice as a theory which incorporates structural pressures and human performance. Structural pressures, such as the forces of production, force individuals into certain situations, but that memory informs future practice in the face of such forces, as well as allows for individuals to reshape the "rules and resources" of struc-

ture (Levinson, 2011, p. 117). The sociologist goes about observing the agency of the individual in a field analysis, explaining how "rational, thinking, and goal directed individuals pursue their interests yet manage to create and recreate social structure" (McDounough & Nunez, 2007, p. 150). Bourdieu's efforts to describe agency focused on individual accomplishment. Indeed, this is a departure from the structuralist perspective, but a closer examination of Bourdieu's ideas demonstrates that the discussion of structure versus agency is far from over.

Scholars struggled with the conflation of structural power and cultural reproduction, noting that although structural powers existed to reproduce inequality, individuals still demonstrate subjectivity. Pondering the structure of power in education became a theme in academic literature in the 1970s and 1980s, such as Paul Willis' (2017) study of British working class students Learning to Labor: How Working Class Kids Get Working Class Jobs; Bowles and Gintis' (2011) study of education as a tracking mechanism meant to train future workers for a predetermined position in the exploitative, capitalist economy; and Michael Apple's hidden curriculum (2019). A shift occurred, however, which changed the focus from the reproduction of structural inequalities to the methods through which individuals challenge dominance through agency. As Levinson (2011) describes, "Theorists now agreed that the social and cultural reproduction of inequality, if and where it occurred, could not be foreordained by structure; it had to pass through the dynamics of cultural production, that is, the consequential making of meanings" (p. 115). Lest we fall into the trap of what Kristin Ross (1991) terms the Bourdieu effect, social tween the notions of structure and agency must be kept taut for the sake of critical examination (p. xi). Keeping the tension between structure and agency is an important heuristic exercise, for it highlights the importance of recognizing structural power and the resulting inequalities, but also the importance of resisting power in ways that promote a culture of dif-

# Yosso: Community Cultural Wealth

At stake between structure and agency are the voices of many underrepresented people, whose cultures are rich but are denied access to the kinds of

theories of learning that can promote this wealth in academic contexts. This is what Yosso (2005) would call transformative resistance. Speaking against educators' assumptions that children from underrepresented groups lack social and cultural capital, Yasso channels the voice of seminal feminist theorist and writer Gloria Anzaldúa:

If we have been gagged and disempowered by theories, we can also be loosened and empowered by theories. Indeed, if some knowledges have been used to silence, marginalize and render People of Color invisible, then Outsider knowledges, mestiza knowledges and transgressive knowledges can value the presence and voices of People of Color, and can reinvision the margins as places empowered by transformative resistance. (as cited in Yosso, 2005, p. 70)

Yosso rejects building theories of education from lack, which result in the stifling and disempowerment of underrepresented populations. Instead, theories must affirm the knowledges and transgressive knowledges of people of color. Yosso sees the Black/White binary as stultifying to discourses on race. Instead, she builds on five tenets from critical race theory to foster a discourse that honors the varied and layered experiences of underrepresented populations. These tenets are 1) "The inter centricity of race and racism with other forms of subordination," 2) "The challenge to dominant ideology," 3) "The commitment to social justice," 4) "The centrality of experiential knowledge," and 5) "The trans disciplinary perspective." The resulting theory of community cultural wealth intends to bring different perspectives into the discourse on race and "transform the process of schooling" (Yosso, 2005, p.74).

While Yosso (2005) claims Bourdieu's (1977/2000) theory of cultural capital is a deficit approach, and that it incorrectly asserts one culture (middle class, White) above that of other cultures, she also claims to build the notion of community cultural wealth from cultural capital theory. Community cultural wealth is the accumulated capital of underrepresented populations through history. Rather than a deficit, it represents the wealth of knowledge, practices, habits, stories, etc., which inform their populations. In Yosso's words, "Centering the research lens on the experiences of people of color in critical historical context reveals accumulated assets and resources in the histories and lives of Communi- lies in its ability to shift away from a deficit lens and ties of Color" (2005, p. 77). Furthermore, Yosso ex-

pands on the notion of capital itself, asserting that in order for community cultural wealth to cover the varying discourses of people of color, it must view capital beyond Bourdieu's notion of economic, social, symbolic, and cultural capital. Aspirational capital refers to hopes and dreams for the future even in the face of adversity. Linguistic capital refers to the various languages and styles of speaking people of color come to know from their cultural environments. Familial capital is that which comes from close family, extended family, and community members who instill valuable lessons in children. These lessons are not just for personal survival and wellbeing, but for the sake of the community as a whole. Social capital allows for communities of color to share information about scholarships, legal services, business loans, etc. These knowledges are passed down from individual to individual. Navigational capital refers to negotiating bureaucratic structures. Lastly, resistant capital refers to the ethos necessary to interrogate and challenge racism (Yosso, 2005). The aforementioned types of community cultural wealth symbolize critical race theory's assertion that underrepresented groups possess multiple sources of capital. Furthermore, they represent Yosso's argument that theory needs to embrace these sources of capital in order to foster a broader dialogue on communities of color.

Through the theory of cultural capital, Bourdieu (1977/2000) posits that education reproduces social inequalities by granting certain students access to cultural capital-the ideas, mannerisms, and ethics of the dominant culture. However, the longstanding structures of power in western culture limit underrepresented individuals' agency. Yosso (2005) builds on cultural capital theory to create a theory that empowers the voices and experiences of people from underrepresented groups and views them as community cultural wealth. Bourdieu and Yosso show us what is at stake in structure and agency, and my discussion of their theories is intended to carve out space for borderlands theory as a transformative space in which community cultural wealth is emphasized and dominant narratives of culture are contested within the community college classroom.

### **Borderlands and Pedagogy**

The theory of community cultural wealth's value

that Gloria Anzaldúa's Borderlands/La Frontera (1987/2012) offers the educator and students alike the space to "value the presence and voices of People of Color and...reinvision the margins as places empowered by transformative resistance" (Yosso, 2005, p.70). The kneading of the notion of borderlands into a theory forms the crux of Anzaldua's work. The borderlands are a physical place "where the Third World grates against the first and bleeds. And before a scab forms it hemorrhages again, the lifeblood of two worlds merging to form a third country- a border culture" (Anzaldúa, 2012, p. 25). It is also a mental place, as "our psyches resemble the bordertowns and are populated by the same people" (Anzaldúa, 2012, p.109). Anzaldúa terms this mental borderland the new mestiza consciousness; the mestiza (mixture of indigenous and European blood) is "in a constant state of mental nepantilism, an Aztec word meaning torn between ways" and "a product of the transfer of the cultural and spiritual values of one group to another" (p. 100). For Anzaldúa, this state of nepantilism is where opposites converge, conflict, and transform. Thus borderlands theory offers opportunity for transformation for ourselves as instructors, for our practice, our curriculum, and our students.

A sizeable amount of research discusses borderlands theory, of which Anzaldúa (1987/2012) is an essential piece, and its relation to pedagogy (Elenes, 1997). Theorists of critical pedagogy draw the most direct line between the two (Elenes, 1997). In her article "Reclaiming the Borderlands: Chicana/o Identity, Difference, and Critical Pedagogy," C. Alejandra Elenes (1997) discusses the contributions of borderlands theory to two prominent theorists of critical pedagogy, Henry Giroux (1992/2005) and Peter McLaren (1995). In Elenes' reading, Giroux sees border pedagogy as a democratic act in which difference is used to "extend the quality of public life" (Giroux, 2005, p. 28). Antiracist in nature, border pedagogy decenters "dominant configurations of power and knowledge" (Giroux, 2005). For community college teachers, this means decentering their own power and encouraging students to draw from prior experience (Elenes, 1997). McLaren's contribution to border theory is the notion that we (educators and students) can use personal narratives against culturally dominant narratives-what Elenes calls "an invocation to incorporate critical narratives as educational practices" (p. 369). Finally, Elenes

to teach to students' wealth of knowledge. I contend that Gloria Anzaldúa's *Borderlands/La Frontera* (1987/2012) offers the educator and students alike the space to "value the presence and voices of People of Color and...reinvision the margins as places empowered by transformative resistance" (Yosso, 2005, p.70). The kneading of the notion of borderlands into a theory forms the crux of Anzaldua's work. The borderlands are a physical place "where the Third World grates against the first and bleeds. And before a scab forms it hemorrhages again, the lifeblood of two worlds merging to form a third country— a border culture" (Anzaldúa, 2012, p. 25).

> In the introduction to the fourth edition of Borderlands/La Frontera (2012), Norma Elia Cantú and Aída Hurtado recall its banning in the Tucson Unified School District's effort to dismantle the Mexican American Studies program, which is a sign of its continued importance to the struggle to value the presence and voices of marginalized communities. In Cati V. de los Ríos' (2013) study of a k12 ethnic studies program intended to "document what precisely these courses offer students, and thus what campaigns against ethnic studies... threaten to undermine and even eliminate," borderlands theory is the main framework (p. 59). As de los Ríos states, "Chicana/o educational scholars utilize a borderlands paradigm as a counter educational theory to examine educational discourses, structures, practices, and experiences that identify and acknowledge the depth and wealth of knowledge production by Chicanas/os, Latinas/os, and other people of color from their perspectives and lived experiences" (p. 61). Borderlands theory forms the backdrop of what de los Ríos (2013) calls equitable curricular innovation which "includes a reconceptualization of subject matter and the active recovery, (re)imagination, and (re)investment in indigenous paradigms" (p. 60). Moreover, equitable curricula must not introduce ethnic studies as an add on to an already existing whitestream curriculum, but as a curriculum that recovers and restores "counterhistorical narratives as well as epistemologies, perspectives, and cultures of those who have been historically marginalized and denied full participation within traditional discourses and institutions" (de los Ríos, 2013, p. 60). Despite the technical difference between curriculum, as de los Ríos discusses, and pedagogy, the borderlands paradigm applied consistently across practices exhorts educators to counter whitestream narratives of learning in favor of underrepresented and marginal

ized populations. Borderlands theory offers a challenging fix for those steeped in traditional pedagogies and subject matter, as well as all those who identify with the power and structures from which the pedagogy needs to be recovered and restored.

### **Recommendations for Practice**

The following recommendations for practice stem from a review of the literature on Anzaldúa's (1987/2012) borderlands theory, the recommendations of Giroux (1992/2005), McLaren (1995), and Elenes (1997), as well as from observations and interactions with faculty and students at NC community colleges. The nodes of deconstructing Whiteness, linguistic affirmation, and inclusion of males from underrepresented groups represent a confluence between elements of Anzaldúa's borderlands theory and diversity, equity, and inclusion work at NC community colleges. Elevating the voices and experiences of underrepresented students, I address how NC community college faculty can proactively respond to these voices and experiences through a pedagogy informed by Anzaldúa's borderlands theory.

### Deconstructing Whiteness

As I engage with this work, I must interrogate my own positionality. As a heteronormative, cisgender, White male, I am tasked with examining how educators positioned similarly (i.e., who do not identify with a group that has been historically marginalized) leverage Gloria Anzaldúa's (1987/2012) work in their own pedagogy. Elenes (1997) answers this question in a critique of Henry Giroux's (1992/2005) discussion of border crossing in which he identifies himself as a White, male ally of people of color and women. Elenes replies to Giroux, "As people of color are working to deconstruct essentialist construction of subaltern identities, it is necessary to disempower White male identities. That is, progressive educators who are in solidarity with people of color must recognize their own positions of privilege and mark them as such" (p. 371). To truly act as an ally, and to allow a borderlands approach to take root across the curriculum, those in positions of power must deconstruct their racial identity-Whiteness in Giroux's case, my own case, and the case of many other NC community college instructors.

Unlike "many women and men of color" who "do not want to have any dealings with white people," Anzaldúa (1987/2012) sees White people as potential allies and offers specific actions they can take to establish this relationship with people from underrepresented groups (p. 107). Anzaldúa writes directly to Whites describing the tasks necessary to deconstruct Whiteness:

Individually, but also as a racial entity, we need to voice our needs. We need to say to white society: We need you to accept the fact that Chicanos are different, to acknowledge your rejection and negation of us. We need you to own the fact that you looked upon us as less than human; that you stole our lands, our personhood, our selfrespect. We need you to make public restitution: to say that, to compensate for your own sense of defectiveness, you strive for power over us, you erase our history and our experience because it makes you feel guilty-you'd rather forget your brutish acts. To say you've split yourself from minority groups, that you disown us, that your dual consciousness splits off parts of yourself, transferring the "negative" parts onto us. (Where there is persecution of minorities, there is shadow projection. Where there is violence and war, there is repression of shadow.) To say that you are afraid of us, that to put distance between us, you wear the mask of contempt. Admit that Mexico is your double, that she exists in the shadow of this country, that we are irrevocably tied to her. Gringo, accept the doppelganger in your psyche. By taking back your collective shadow the intracultural split will heal. And finally, tell us what you need from us. (p. 107)

The *dual consciousness* refers directly to that seminal point of western philosophy ascribed to the Cartesian dualism—binary relationships, i.e. mind/body, subjectivity/objectivity, us/them, light/shadow, positive/negative. Anzaldúa's borderlands theory eschews Cartesian dualism as a perpetuator of oppression and violence against underrepresented groups, instead forwarding a "radical interconnectedness" (Dahms, 2012, p. 119). In the passage above, Anzaldúa exhorts Whites to deconstruct their racial identities as reinforcing these oppressive types of binary relationships, and acknowledge our participation in the rejection and negation of minority identities that are, in fact, a part of us. Only after this deconstruction can we approach people from underrepresented groups to discuss what we need from them—what we need to know and do to rejoin this community of radical interconnectedness.

There is no one practice that deconstructs Whiteness for teachers or for students. However, one possible entry point is centering activities and assignments on their own students' identities. For instance, as an instructor of English, I have the option of assigning various types of papers. The first paper I do in my class is a contemplative exercise inspired by Laura Rendon (n.d.) and based on the writings of Norma Elia Cantú's (2002) Canícula: Snapshots of a Girlhood en la Frontera. Cantú's recollections of her girlhood on the Texas-Mexican borderland are coupled with related photographs from her childhood. I provide students with these stories as mentor texts and give them enough time in class to interact with them and discuss them with each other. I then ask students to find a picture from home that is representative of their past and then write about it. The final product is to be the photo with a piece of writing that explains the photo's significance to their life, whether it is a story with some fictionalized elements, a personal narrative, a poem, or short story. Through this contemplative exercise the student's identity comes front and center. They are given the opportunity to write into their own story and share it with the class, which gives them an opportunity to claim space for their own personal history in the class. The photo story paper brings out stories from the margins, stories of families immigrating, making foods together, and struggling against poverty. This exercise creates a space for all students.

The first, and most important, part of deconstructing Whiteness, or any other position of power, is recognizing that it is there. Once the locus of power is identified in our identities, then we can begin to set it aside and make space for marginalized identities to "say themselves," or to "fill in the blanks" that would historically have been filled in for them (Elenes, 1997, p. 375). No matter what subject we teach, if we spend the time to identify power, both intrinsic and extrinsic, we can start the process of deconstructing Whiteness and allow marginalized populations to create and assert their narratives.

#### Linguistic Affirmation

Linguistic affirmation is the second way to merge pedagogy with borderlands theory. Scholars, educators, and administrators need to reassess the ways we, as those who hold power, build relation-

ships with those who are at odds with English, a privileged language of power throughout the community college setting. Unlike Anzaldúa's (2012) time, Chicana/o literature is included in many American literature textbooks and syllabi, and Chicana/o studies is a well-regarded topic across many graduate programs. However, the discontinuation of past racist and oppressive practices does not mean that racist and oppressive practices do not exist in the present. It is not the intention of this paper to offer concrete solutions to this issue, nor is there one answer to this. For example, Richard Rodriguez (1988), a Latinx voice contemporary to Anzaldúa's, argues in his memoir Hunger of Memory that bilingual classrooms run the risk of delaying or denying a proper education to non-English speakers. I do not seek to engage in this debate or answer these questions, but to encourage community college scholars, educators, and administrators to consider the ways in which their practices in regards to language might contribute to racism and oppression.

In the introduction of this piece, I discussed my experience with Lulu, the student writing on *curanderismo*, asking whether she could use Spanish in her paper. I want to underscore the importance of intentionally welcoming the incorporation of a student's home language in their writing. In the book *Teaching Gloria E. Anzaldúa: Pedagogy and Practice for Our Classrooms and Communities*, Margaret Cantú-Sánchez (2020) writes:

Not surprising in a country where many students speak a language other than English at home, it is a sensitive issue and one which many can identify. In these days of cyber bullying and social media communication, students can easily locate viral videos, articles, or hateful comments that target Spanish speakers as un-American, invaders, or criminals. Over three decades after the publication of *Borderlands*, "How to Tame a Wild Tongue" still hits home for many students who can relate to the hurt. (p. 31)

Students who speak Spanish at home, or a language other than English, feel isolated, and need their home languages to be honored in the texts they write and read. Our classroom environments need to be a space where they can share their experiences and knowledge. Doing so ensures equity and the opportunity for facilitating understanding and a sense of belonging between groups.

Anzaldúa (1987/2012) famously wrote: "So, if you really want to hurt me, talk badly about my language. Ethnic identity is twin skin to linguistic identity. Until I can take pride in my language, I cannot take pride in myself" (p. 81). Anzaldúa calls the long history of prejudicial acts against speakers of languages other than English "linguistic terrorism" (p. 80). While largely written in English, Borderlands/La Frontera also contains Castilian Spanish, Nahuatl, north Mexican dialect, and Tex-Mex. Words in these languages are not translated, thus making its reading challenging for anyone not skilled in these languages. This is the language of the new mestiza, "a patois, a forked tongue, a variation of two languages" that grows from the pain of being scolded by family and teachers for having an accent or speaking in one language or another (Anzaldúa, 2012, p. 77). Claiming the right to a new language is a means of recourse for those who live in the borderlands-recourse from "linguistic terrorism" (Anzaldúa, 2012, p. 80).

Dagoberto Eli Ramirez and José L. Saldivar's (2020) chapter titled "Untaming the Wild Tongue: Reconocimiento and a History of Linguistic Terrorism on the U.S.-Mexico Border" in Teaching Gloria E. Anzaldúa: Pedagogy and Practice for Our Classrooms and Communities discusses translanguaging efforts at the University of Texas Rio Grande Valley (UTRGV). Gloria Anzaldúa attended University of Texas Pan America, one of the two institutions that eventually came together to form UTRGV, and remembers, "At Pan American University, I and all Chicano students were required to take two speech classes. The purpose, to get rid of our accents" (Anzaldúa, 2012, p. 76). Ramirez and Saldivar describe translingualism as allowing "students to make full use of their language capabilities, often combining both the English and local varieties of Spanish in class discussions and torn between ways" and "a product of the transfer conversations, without fear of being told their English or Spanish is improper or not in keeping with some standard form of either" (Ramirez and Salazar, 2020, p. 201). At UTRGV the process of translanguaging spurred significant curricular changes, like the creation of a bilingual, first year transition course focused on student success and retention. The assignments of this course featured autoethnography and testimonio (testimonial narrative).

The UTRGV example is one of major curricular changes, but I contend that individual instructors in NC community colleges can introduce assignments with an eye towards translanguaging. We can encourage students to share their home language in writings that explore their personal identities and

histories. Such assignments can often be implemented across disciplines with adjustments to course content and objectives. For one example of an assignment that encourages this type of translanguaging, please see "The Anzaldúa-Connected Personal, Family, and Community Use of Language Survey" (Appendix A). The assignment asks students to read Anzaldúa's "How to Tame a Wild Tongue"; speak with friends, family members, and community members about their use of the languages presented in the text; observe instances in the community where the use of these languages is taking place; and reflect on their findings as well as their position in relationship to languages in their community. This assignment asks specifically about Chicano languages, but it could easily be tailored to ask about all home languages and dialects.

# Inclusion of Males from Underrepresented Groups

I argue that any of these pedagogical suggestions could improve the classroom not just for our Latinx population, but for all students. Do African American students not also have a patois used at home, or words or phrases passed down from ancestors? The intersectionality of borderlands theory and gender studies can help community college instructors build positive and equitable relationships with men of color broadly and help us mitigate the effects of toxic masculinity in schooling.

Anzaldúa's (1987/2012) work is at its core intersectional, as made clear in her definition of the new mestiza consciousness; the mestiza is "in a constant state of mental nepantilism, an Aztec word meaning of the cultural and spiritual values of one group to another" (p. 100). The new mestiza is antiracist and feminist. Anzaldúa notes, "It is imperative that mestizas support each other in changing the sexist elements in the Mexican-Indian culture. As long as woman is put down, the Indian and the Black in all of us is put down. The struggle of the mestiza is above all a feminist one" (p. 106). As books like Moraga and Anzaldúa's This Bridge Called My Back: Writings by Radical Women of Color (2015), Mohanty's Feminism Without Borders: Decolonizing Theory, Practicing Solidarity (2003), and Román-Odio and Sierra's Transnational Borderlands in Women's Global Networks: The Making of Cultural Resistance (2011) can attest, borderlands theory is a rich source for feminist theory and
criticism. The presence of feminist readings and feminist informed pedagogies are at once beneficial to all, for they offer a space to consider their relationship to gender and sexuality.

Anzaldúa (1987/2012) discusses positionality in terms of gender and sexuality as the framework for resolving gender conflict between Chicanas and Chicanos. She explains that, as a result of Anglo oppression, Chicanos live in a cycle of "excessive humility"—"self effacement" around gringos, language inadequacy around Latinos, and "racial amnesia" and guilt around native Americans—which results in "a false machismo which leads him to put down women and even to brutalize them" (Anzaldúa, 2012, p. 105). Just as Anzaldúa addresses what Anglos need to do to become allies with the new mestiza, she addresses Chicano males by writing:

Though we understand the root causes of male hatred and fear, and the subsequent wounding of women, we do not excuse, we do not condone, and we will no longer put up with it. From the men of our race, we demand the admission/ acknowledgment/disclosure/ testimony that they wound us, violate us, are afraid of us and our power. We need them to say they will eliminate their hurtful putdown ways. But more than the words, we demand acts. We say to them: We will develop equal power with you and those who have shamed us. (p. 106)

Anzaldúa later offsets these blunt comments to her Chicano brothers by saying that she has seen some gentle and vulnerable straight men, "the beginnings of a new breed, but they are confused, and entangled with sexist behaviors that they have not been able to eradicate" (p. 106). Chicanas and Chicanos share a common plight, but what separates them is a toxic "machismo... overlaying a deep sense of racial shame" which results in male oppression of women (Anzaldúa, 2012, p. 105). Community college instructors must be keenly aware of the potential for gendered internal conflicts generated through racism...and the possibility of revolving them.

Critical to Anzaldúa's (1987/2012) feminist project is the critique of what we now refer to as toxic masculinity. Equally critical is an opportunity for a "new breed" of gentle and vulnerable straight men to disentangle themselves from sexist behaviors. The effects of toxic masculinity are clearly described in *Borderlands/La Frontera* as a shackling of both Chicanas and Chicanos to gender norms—a shackling

which exists to this day and the effects of which are seen across the board in education. The particular problem this section seeks to address is how educators can support men from underrepresented groups in their educational endeavors while also helping to foster a "new breed" of men disentangled from sexist behaviors.

Toxic masculinity. Scholarship suggests toxic masculinity is a factor in the educational careers of men from underrepresented groups. J.M. O'Neil scribe the discrepancies and conflicts between individual male identities and the identities imposed upon them by culture. Harris and Harper (2008) discuss the consequences of male gender role conflict in terms of underrepresented male student achievement in community colleges through interviews with four radically different men whom they classified as the working White mechanic, the struggling Asian help seeker, the Latino homeboy, and the closeted Black gay achiever (pp. 30-32). Across all their differences, each experienced male gender role conflict in their time in community college, resulting in "increased anxiety, feelings of inadequacy, and frustration" (Harris & Harper, 2008, p. 33). Male students, particularly underrepresented male students, continue to face the challenges of toxic masculinity into adulthood and postsecondary education.

The threats of male gender role conflict to participation in the classroom creates a perfect storm. If we allow underrepresented males to flounder in the classroom due to the expectations of toxic masculinity, we risk their departure from learning situations that could begin the process of disentangling themselves from sexist behavior. Harris and Harper (2008) make a few promising suggestions for "how to understand and help resolve identity conflicts." These include the following:

- Encourage male students to reconsider their negative perceptions of help seeking that many have been socialized to assume
- Provide opportunities for critical reflection on masculinity through journaling, course readings, analyzing popular media, and other assignments
- Increase male students' participation in campus activity programs that facilitate healthy identity development and lead to productive outcomes

- facilitated discussion groups and other activities that are popular among male students
- Collect campus level data (interviews, focus • groups, and surveys for example) from male students to assess their gender specific needs
- Organize a committee of student affairs ad-• ministrators, counselors, faculty members, coaches, and student leaders to provide proactive campus wide leadership in addressing issue concerning male students. (Harris & Harper, 2008, p. 33-34)

Indeed, Harris and Harper's suggestions are geared towards helping male students writ large, but it is often the case that good practices that help individuals from underrepresented groups also help all students (Wood et al., 2015). As educators, we can offer men of color a schooling experience that welcomes their talents and gifts and that offers a safe place to learn through failure and success. However, we cannot offer this environment if we do not work intentionally to scaffold it within our institutions, and to reflect Harris and Harper's suggestions in our daily practice in and outside the classroom. By staving in school, men from underrepresented groups have the best chance of eroding elements of toxic masculinity can hold them back, such as negative perceptions of education and sexist behaviors. As teachers, our role is to shore up their sense of belonging and facilitate their learning and retention from one semester to the next.

#### Conclusion

As North Carolina's demographic populations change, and we continue to work toward lofty goals like myFutureNC's "2 million by 2030," North Carolina community colleges need to consider new pedagogical approaches to reaching our students. The first step in this process is to facilitate a conversation between structure and agency. My conceptual framework engages in the theoretical work necessary for these discussions. Bourdieu's (1977/2000) cultural capital theory relates social inequality to structure, whereas Yosso's (2005) builds off Bourdieu's work to identify cultural wealth in underrepresented communities. Considering these theories helps emphasize the importance of situation pedagogy within a mindset of community cultural wealth.

Springboarding from this conversation of structure and agency, I use Anzaldúa's (1987/2012) bor-

Provide opportunities for bonding by way of derlands theory as a way to counter whitestream narratives (de los Ríos, 2013) of learning in favor of underrepresented and marginalized populations. I propose deconstructing Whiteness, linguistic affirmation, and inclusion of males from underrepresented groups as potential pedagogical strategies particularly aligned with borderlands theory. No matter the strategy, though, the borderlands are here in North Carolina, and we as community college educators have a moral imperative to fully embrace this new dynamic. Perhaps with the inclusion of Anzaldúa in our work, we might have a chorus of students responding to the question, "Why do you go to school so much?" (Rivera & Vigil-Piñón, 1995, p.97) with one refrain, "Because I see myself there."

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# Appendix A

#### Language Inventory and Reflection Assessment

Read the excerpt from Gloria Anzaldúa's "How to Tame a Wild Tongue" chapter from her *Borderlands* book. Then address the following items over the weekend with family at home and in the community:

- 1. Briefly discuss with family and friends the background information on Anzaldúa's eight identified Chicano languages we, as a culture, speak. Interview them and document quantitatively the number of these different eight identified Chicano languages they personally speak.
- 2. Ask the people you interview when it is that they use a particular language from the list. (How do they know when to use which one? What happens when they switch from one to another? Are there any issues they have faced when they opt to *translanguage* or switch between languages midstream?)
- 3. Go to at least three different venues out in public (store, theater, place of worship, park, mall, etc.) and list four people *languaging*. Note which of Anzaldúa's eight identified Chicano languages we, as a culture, speak are being spoken. Document quantitatively the number of these different identified Chicano languages people out in public are using. Take note of where people are, who they are with, and when certain particular languages are spoken.
- 4. Reflect deeply about your data about the languages being spoken in our Mexican American community and at home. What did you learn about yourself, your family, and the community at large through this personal research you did?

"The Anzaldúa-Connected Personal, Family, and Community Use of Language Survey" (Cantú-Sánchez et al., 2020, p. 217-219)

# **Book Review**

Inspiring Incremental Innovations: A Review of Small Teaching by James M. Lang Elizabeth A. Watson

#### Abstract

A review of the second edition of *Small Teaching* by James M. Lang concludes that this title is highly recommended. The term *small teaching* refers to "an approach that seeks to spark positive change in higher education through small but powerful modifications to our course design and teaching practices" (Lang, 2021, p. 4). Educators of all types will find this book helpful and inspiring.

*Keywords:* small teaching, pedagogies, higher education

## Inspiring Incremental Innovations: A Review of *Small Teaching: Everyday Lessons from the Science of Learning, Second Edition* by James M. Lang

Do you want some simple, incremental strategies to make your class even better than it already is? Do you want to know how to use the first five minutes and the last ten minutes of class more effectively? Do you want to know what a *minute thesis* is and how to use it in class? Anyone who takes the time to read Small Teaching by James M. Lang will be a better teacher for having read it. Lang also makes his readers better learners. He does this using what he calls *small teaching*. What Lang (2021) means by small teaching is "an approach that seeks to spark positive change in higher education through small but powerful modifications to our course design and teaching practices" (p. 4). In other words, this book is not about large scale changes like completely rewriting the syllabus and overhauling your curriculum. Instead, Lang discusses strategies that are more like tweaks and



nudges over time. These small changes can make a huge difference for both professors and students. *Small Teaching: Everyday Lessons from the Science of Learning, Second Edition* by James M. Lang is a goldmine of teaching strategies and tips that are updated from the first edition, based on scientific evidence, and widely applicable in a variety of contexts.

The second edition of *Small Teaching* has some important changes from the first edition. Lang has included material about teaching online and commentary about teaching and learning during the pandemic. He has some handy tips on how to use course management software for maximum impact. The first edition's chapter titled Self-Explaining (the practice of learners talking to themselves about learning as it's happening) has been expanded and generalized to Explaining in the newer edition. The biggest change in the new edition is that Lang has added some valuable insights on how a sense of belonging can impact student learning. The chapter titled Growing in the first edition has been replaced by the chapter titled Belonging in the second edition.

Here is the outline of the second edition:

Chapter 1:	Chapter 4:	Chapter 7:
Predicting	Connecting	Belonging
Chapter 2:	Chapter 5:	Chapter 8:
Retrieving	Practicing	Motivating
Chapter 3:	Chapter 6:	Chapter 9:
Interleaving	Explaining	Learning

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Each chapter opens with an introduction and continues with a section called *In Theory*. Lang then discusses models, explores principles, and offers a collection of *Small Teaching Quick Tips* before a brief conclusion. The *Small Teaching Quick Tips* section of each chapter is especially worthy of attention and rereading, because that section contains the suggestions for classroom activities.

James Lang inspires confidence that his ideas will work in real classrooms because he grounds all of his small teaching strategies in scientific evidence and in the principles of learning theory. Lang tested these principles in his own classes and thoroughly reviewed the literature on how people learn. Interleaving is an example of one of these evidence based strategies. Interleaving means "(a) spacing out learning sessions out over time; and (b) mixing up your practice of the skills that you want to develop" (Lang, 2021, p. 65). The strategy of interleaving indicates that cramming for a test is not the best way to promote long term learning and retention of material. Some of the science and data that demonstrate why interleaving is important comes from Benedict Carey's book How We Learn: The Surprising Truth about Where, When, and Why It Happens (2014). Carey presents the studies proving the benefits of spreading out practice sessions over time. As he explains:

In one previous experiment, Bjork and T.K. Landauer had students try to memorize a list of fifty words. Some of the names were presented for study, then tested several times in succession; other names were presented once and tested, but the test came *after* the study session had been interrupted (the students were given other items to study during the interruption). (Carey, 2014, p. 157)

The students who did the interrupted study sessions performed better, so Bjork and Landauer's experiment demonstrated the benefits of interleaving. One of Lang's (2021) tips for encouraging interleaving is to include questions on quizzes and exams that require students to draw on material previously covered and pull that older content from their memory banks. Not only are these ideas grounded in science, but they are also exceptionally practical and relevant in a variety of situations.

The ideas in this book are powerful because they Lang are so easily applicable in a wide range of contexts. prov Teachers of all experience levels—from beginners to goal. old pros—can implement Lang's strategies. Although Lang writes primarily for an audience of col-

lege professors, many of these ideas could apply to high school teachers and some even to kindergarten teachers. These strategies do not require funding or waiting for the start of a new semester. Both in his book and in an essay he wrote for *The Chronicle of Higher Education*, Lang discusses how to use the first five minutes of class most effectively, which is one of his easily applicable strategies. Using the first five minutes for predicting is one of his suggestions. He also offers "4 quick ways to shift students' attention from life's distractions to your course content" (Lang, 2016, p. 1). Four things to do in the first few minutes of class are:

- 1. Open with a question or two.
- 2. Ask, "What did we learn last time?"
- 3. Reactivate what they learned in previous courses.
- 4. Write it down.

Furthermore, Mary Taylor Huber (2018) makes the case in her review of the first edition of *Small Teach-ing* that Lang's ideas would be applicable to science teachers participating in the Science Education Initiative (SEI). Huber (2018) writes:

*Small Teaching* is distinctive in a number of ways. First, there's the author's voice: engaging and personal, telling tales from his own teaching life and recommending only activities that he has tried out or observed himself. Second is Lang's deft handling of the research literature underlying these activities. Instead of simple generalizations, stories about important experiments introduce the theories that scholars have offered to explain the results, while exceptions and qualifications give readers a sense of the conversation among specialists in each domain. (p. 10)

In Huber's review, she concludes that this is a great book for educators.

*Small Teaching* offers a lot to educators and is mostly engaging, but it is not the latest fiction thriller or beach read. That means that it does have a few places where it is a little dry and boring. The sections discussing learning theories and scientific studies provide the evidence to back up Lang's practical suggestions, but some of those parts are dull and hard to follow. However, entertainment is not Lang's objective. Helping teachers grow and improve is his objective, and he certainly meets that goal. The second edition of *Small Teaching* is a treasure trove of tactics to raise teaching and learning to a higher level. This book is greatly recommended because it's improved from the first edition, evidence based, and easy to implement. Making college classes excellent does not have be a massive, dramatic un-

dertaking involving hours upon hours of committee meetings. Instead, minor tweaks and nudges can radically improve outcomes for students and professors. Lang comes across in *Small Teaching* as a wise mentor, and all types of instructors can benefit from his mentorship and suggestions.

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# NORTH CAROLINA COMMUNITY COLLEGE JOURNAL OF TEACHING INNOVATION

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