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FEATURED ARTICLES

SPECIAL PROMISING PRACTICE FEATURE ARTICLE

PROMISING PRACTICES

EXPLORATORY PIECE

JOURNAL OF COLLEGE ACADEMIC SUPPORT PROGRAMS

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The J-CASP is an academic journal for developmental education, learning assistance, and student success. The editorial staff will give preference to authors, institutions, and/or topics relevant to the context of developmental education and learning assistance in Texas. Please review our submission guidelines at journals.tdl.org/ jcasp/index.php/jcasp/about/submissions. Please address any questions, comments, concerns, and suggestions to JCASP_Editor@txstate.edu.

Announcing the first VIRTUAL College Academic Support Programs (CASP) 2020 Conference

For the past 38 years, the CASP board looks forward to hosting the annual gathering of esteemed colleagues, students, stakeholders, and supporters of college academic support programs (CASP). Our original plans were to host this conference in Houston. This year's theme is "Discovery & Opportunity," which matches well Houston's long history of both elements in this theme.

Considering our current travel and budgetary constraints, and in keeping with this theme, we are excited to announce the **2020 Virtual CASP Conference, October 19-21.** Stay tuned for more information on how to register and attend the conference virtually.

The CASP Board has been working hard and partnering with colleagues to develop a conference that will meet our membership's specific needs.

Texas College Reading and Learning (TxCRLA) and Texas Association of Developmental Education (TADE) will offer multiple sessions at the Virtual CASP 2020 Conference on October 19-21. The sessions will include the following topics:

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Thank you for understanding, and we look forward to working with you to ensure a fantastic **2020 Virtual CASP Conference!**

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CONTENT

FOREWORD

Welcome to the Spring/Summer 2020 issue (3.1) of the *Journal of College Academic Support Programs (J-CASP)*. On behalf of the editorial staff, I hope that you and yours are well and safe during these difficult and trying times. Since the last issue of the *J-CASP*, published in January of this year, higher education faculty, staff, students, and institutions across the country have experienced an unprecedented transition from face-to-face to online instruction—midway through the semester—in response to the rapidly spreading pandemic. Though this transition to online instruction was forced out of necessity, the conversation has prevailed for decades, as evidenced by two articles in this issue that pertain to online instruction and technology in higher education.

This is the most diverse of the *J-CASP's* five published issues—in terms of authors, content, and institutions represented. Other articles in this issue pertain to accelerated developmental mathematics, a writing center tutoring handbook and multilingual student writers, mock exam reviews, juvenile correction education, reading fluency, and benefits of graduate student organizations. The authors in this issue include both faculty and staff members in higher education as well as graduate students, representing the following institutions in Texas and beyond: Texas State University, Sam Houston State University, the University of Texas at Austin, Texas A&M University, Appalachian State University, Northern Illinois University, The Citadel, St. John's University, and Bellarmine University. We at the *J-CASP* are very proud of this fifth issue.

With growth and success, the *J-CASP* as well is in a state of transition. Editorial Advisor Dr. Emily Miller Payne retires at the end of this summer session, and Assistant Editor Cassandra Gonzales is diversifying with other exciting academic projects. And this is the fifth and final foreword I will write for the *J-CASP*, as graduation looms nearby. Serving as editor for this journal has been the most insightful, educational, and rewarding experience of my academic and professional career, and I thank Dr. Emily Miller Payne and Dr. Russ Hodges for trusting me with this opportunity and responsibility.

Thank you to everyone who has contributed to the *J-CASP* as an editorial assistant, reviewer, author, and/or reader.

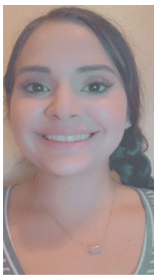
Michael C. McConnell, Editor
Journal of College Academic Support Programs

J-CASP Transitions

As we express our gratitude, we must never forget that the highest appreciation is not to utter words, but to live by them. –John F. Kennedy

The College Academic Support Programs (CASP) Board members (elected members from TxCRLA and TADE), *J-CASP* Editorial Review Board members and volunteer staff, and readers of *J-CASP* would like to express our deepest appreciation to three of our founding members that helped establish our Texas online journal. These talented educators, now moving to new phases of their lives, have set a high standard of excellence in promoting developmental education, literacy and learning support scholarship. We are grateful for their service to our profession.

Michael Constantine McConnell has served as J-CASP Editor since the journal premiered in spring 2018. Born and raised in Detroit, Michael earned his B.A. and M.A. degrees in English from University of North Texas. He is a proud member of the 1991-1992 conference championship football seasons at Tyler Junior College, and a Euless Trinity Trojan. Currently, Michael is a doctoral candidate in developmental education (literacy concentration) at Texas State University and plans to complete his dissertation this fall. Michael also served as editor/moderator for the *Texas Developmental Education Professional Community Online* (*TxDEPCO*) and editor of *Promising Practices in Developmental Education* (Monograph) published by The Education Institute at Texas State University. Over 100 of Michael's creative works (poems, short stories, and palindromes) have been published by numerous national and international venues. Michael was the recipient of the Dr. Carol Dochen Professional Development Award (TADE Scholarship) in 2018. Michael focuses on and works to strengthen critical thinking skills and student metacognition abilities as they relate to postsecondary student success.



Cassandra "Cassy" Gonzales has served as J-CASP Assistant Editor since fall 2018. Born and raised in South Texas, Cassy is a first-generation college student. She began her studies at her local community college and eventually earned her bachelor's in psychology and her master's in counseling psychology from Texas A&M University – Kingsville. Cassy is an alumna of the McNair Scholars Program (2014-2016) and during her master's program was recipient of the Byrd Cognitive Psychophysiology Laboratory Research Fellowship. Cassy is currently working on her doctorate in developmental education at Texas State University (learning support concentration) and will be beginning her dissertation this fall semester. She has received numerous academic scholarships including the Frank and Alice Christ Endowed Scholarship in 2019. Cassy is exceptionally dedicated to assisting students accomplish their personal, educational, and career goals.

Dr. Emily Miller Payne co-founded J-CASP, in partnership with Dr. Russ Hodges in 2018, and has served as J-CASP Editorial Advisor since that time. Emily will retire in August 2020 after 32 years at Texas State University. Emily has worked in developmental education since 1971, first with a TRIO Student Support Services program at Wayne Community College, with the New Mexico State University Drop In Lab, with Austin Community College as a reading and writing instructor, and for the last 31 years as an associate professor at Texas State University. Emily co-created the M.A., Ed.D., and Ph.D. programs in developmental education at Texas State University and teaches graduate courses in developmental and adult literacy, program development and management, policy and politics in developmental education, and grant development. She also coordinated the Texas State developmental reading program and supervised doctoral students who teach both co-requisite and traditional reading classes. Emily has also served as director of The Education Institute at Texas State University since 2001 with such grant-funded projects as The TEA adult education GREAT Center, the THECB transition from adult to developmental education project, the adult education credential project, and multiple iterations of the THECB DE professional development project. Emily is the recipient of the College Reading and Learning Association's Karen G. Smith Special Recognition Award for Outstanding Service in 2008, Texas Association for Literacy and Adult Education's Administrator of the Year Award in 2016, and College Academic Support Programs' Lifetime Achievement Award in 2019.

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FEATURE ARTICLE

Faculty Input on the Benefits of and Support for Teaching Accelerated Developmental Mathematics

D. Patrick Saxon, *Sam Houston State Univerrsity*

Nara Martirosyan, *Sam Houston State Univerrsity*

ABSTRACT

The redesign of the instructional delivery of developmental mathematics courses is currently commonplace. This study reports the results of a survey of faculty who teach various models of accelerated developmental mathematics (ADM) courses in 2- and 4-year colleges across the United States. Findings reported and described include the positive outcomes encountered by faculty in ADM courses, the training and support offered to instructors to prepare for and teach these courses, the support services believed to work best for students, and the technology applied in conjunction with these interventions. The goal was to address a research gap pertaining to faculty input regarding developmental education (DE) instructional redesign.

Introduction and Purpose of the Study

Reform in developmental education (DE) is widespread as several states and college system administrators seek improved outcomes in serving students who enter college academically underprepared. A primary objective of reform is to accelerate skills development so that students enroll in college gateway courses and experience college-level academic work as quickly as possible in their matriculation. In recent history, accelerating developmental mathematics has become a trend in the field. This trend was noted by Bishop et al. (2018) whereby mandated statewide reform coupled with well-designed instructional models reduced the time students spent in developmental mathematics courses. The authors described a modularized instructional model of mathematics applied in North Carolina colleges that reduced instructional delivery time by at least a third for many students. Several other states have followed suit; however, with varying models of acceleration, and likely with mixed outcomes. Cafarella (2016) explained that major changes to instructional models should be faculty driven and developed. He contended that faculty should be consulted for their professional opinions about reform and implementation decisions prior to moving forward with such changes. Saxon and Martirosyan (2017) emphasized the importance of faculty perspectives on redesigned mathematics courses and discussed challenges faced by practitioners when teaching ADM courses. The purpose of this study was to survey instructors for their thoughts and conclusions about student outcomes, training, academic support, and technology support for teaching ADM courses.

Review of the Literature

Research eliciting faculty input on teaching ADM courses is quite limited. Only two studies (Bickerstaff et al., 2016; Cafarella, 2016) were identified. Therefore, this literature review was expanded to cover the rationale for and conflict about ADM reform, ADM course efficacy, faculty opinions about the intervention, and student support and technology in ADM. These are important considerations that relate to ADM reform and its impact on faculty and students.

Rationale and Conflict About ADM Reform

Bailey et al. (2009) reported that in a select group of colleges, sequences of developmental courses were problematic. With these sequences, students would commonly withdraw from classes, succeed in one course but avoid moving to the next level, or fail to enroll in any developmental course to which they were prescribed. Though the program sample was not random nor the results generalizable, the authors advocated for accelerating the delivery of DE in order to reduce possible student exit points in meeting precollege requirements. Other advocacy groups latched on to this assertion (Collins, 2016; Complete College America, 2012), pushing broad scale reform away from traditional remedial courses and course sequences.

Fong et al. (2013) rendered an alternative analysis of the traditional prerequisite developmental mathematics sequence. They examined success rates at each point in the sequence based on a determination of whether students were actually attempting the particular class they were enrolled in. The authors' sample only included students who

enrolled in the course prescribed and remained in the course after the no-penalty drop date. It was noted that a broad consideration (which was not addressed by Bailey et al., 2009) was accounting for students who did not have an intermediate college algebra transfer requirement. The authors' analysis showed similar pass rates in intermediate algebra for students navigating the developmental course sequence from various points (72% at lowest level, *n*=15,106) as students not needing developmental mathematics (73%, *n*=10,344). From this, they asserted "Though only a small number of students make it through to the highest levels, this figure suggests a more nuanced view of the condition of developmental education" (Fong et al., 2013, p. 4).

Faculty at the "ground level" of working with students are likely well aware of conflicting opinions and results of DE reform. The Bailey et al. (2009) study has been used as evidence of the need for reforming traditional DE sequences. Though their results should not be generalized to the population of DE programs, the gravitas of such a study coming from Ivy League researchers has nonetheless made a major impact on the field. Conversely, the Fong et al. (2013) study shows that when a traditional sequence of remedial courses is navigated by students as intended, DE works as intended. Furthermore, studies by Attewell et al. (2006), Bahr (2008), and Calcagno and Long (2008) also showed the efficacy of traditional DE sequences. Indeed, it is hoped that reform will garner positive outcomes for under skilled students. However, there is conflict across what faculty see in the research versus what they know is working for students. Therefore, the call to totally transform how DE is done may be a source of consternation among the ranks of DE practitioners. This sentiment may be reflected in faculty commentary (perhaps in studies such as this) about DE reform.

> … faculty should be consulted for their professional opinions about reform and implementation decisions prior to moving forward with such changes.

ADM Efficacy

There is a modicum of research suggesting that for some students DE instruction can be accelerated, thereby advancing them to gateway courses a bit sooner. Bishop et al. (2018) studied subsequent gateway math course grades following student participation in an ADM model (eight 4-week modules) versus a traditional (three 16-week classes) delivery model of developmental math. The study involved students (*n*=8,102) from 12 institutions in the North Carolina Community College System. The accelerated, modularized model was designed to enable students to meet requirements and move forward more quickly by achieving an 80% mastery level in a four-week period. The model required an overhaul of the curriculum in order to reduce the redundancy of material, break content into discrete units of study, and align expectations and content with gateway math courses. A comparison of students in traditional developmental mathematics classes (*n*=4,616) and those in the ADM format (*n*=3,486) showed near equal gateway pass rates of 62.93% and 62.88% respectively. The authors described similar findings from other studies and concluded that accelerated courses should be considered to shorten the completion time for students in developmental mathematics. However, it appears that such a model cannot be pitched as a method to increase student success outcomes, but only to speed up skills attainment for students suited for such an intervention.

Bickerstaff et al. (2016) described the ADM redesign in Virginia and North Carolina that occurred during 2012 and 2013, respectively. Their models were described as mastery-based, eight or nine modules of one-credit hour each, and aligned for student diagnostic and placement purposes to a custom skills assessment exam. The authors offered detailed descriptions of content applied and the policies and procedures of administering the courses. They reported on outcomes from Virginia (*n*=20,572) and qualitative data from interviews with students, faculty, and administrators. The authors also reported that 67% of students who placed in level 1 of modularized math also placed out of at least one other module, thereby supporting acceleration.

Faculty Opinions of ADM

Though Bickerstaff et al.'s (2016) research showed that most students were able to place out of some ADM modules (thereby reducing the time spent in developmental math), the faculty expressed views that the modularized delivery characteristic of the model detracted from the holistic approach needed in learning math content. Furthermore, faculty noted the challenges involved in dividing content into "equal" one-hour credit modules. The researchers concluded that modularization did not appear to be a panacea, as many students participating in these courses still struggled to complete a gateway math course within a reasonable time frame.

Cafarella (2016) conducted one of the few studies eliciting faculty input regarding reform

involving ADM instruction. He conducted a qualitative study of six instructors teaching ADM classes at three community colleges. The goal was to identify what these faculty believed were the best scenarios for students to succeed in these courses. He made the case that faculty input regarding the transition to accelerated classes had been lacking. In this study, faculty stated concerns about administrative mandates to accelerate courses and how such policies may marginalize students possessing lower levels of math skills. There were mixed responses about whether redesign was mandated or faculty-driven; however, all participants believed that students must possess adequate computer skills in order to benefit from accelerated courses. Other important characteristics cited were student motivation and the ability to work independently (which may be a challenge for some students placed in DE). Participants generally agreed that accelerated courses were not a panacea for all underprepared students.

Student Support and Technology in ADM

Boylan (2002) described a well-documented record of effectiveness for Supplemental Instruction (SI). However, this applies only to the traditional DE model which is documented by Arendale (1998). Among the important characteristics of this model are student self-selection of the intervention, trained SI support personnel, and peer-level involvement of SI facilitators in the content classroom (Arendale, 1998).

In a single institution study addressing academic support for ADM, Altomare and Moreno-Gongora (2018) reported significant improvement in grades for students participating in what they referred to as a modified model of SI. This model was applied to some sections of corequisite accelerated mathematics skills courses. Student placement into classes with an SI component was random rather than elective as in the traditional SI model. Substantial increases in pass rates for students participating in the modified SI sections later led to an increase in support to expand the intervention to all ADM courses. However, there were other benefits likely provided by the accelerated course structure that may not be attributed to the modified SI component. Increased weekly class time, resulting in increased student-faculty student interaction, along with student satisfaction with faculty likely also contributed to successful outcomes.

The use of technology is likely considered as pervasive in developmental mathematics instruction, and that definitely applies to ADM courses. Many of these courses are based on models originating from The National Center for Academic Transformation (2012), which are heavily laden with instructional technology. These are interventions that modularize content, require progression through learning at mastery levels, engage and support students with a laboratory learning component, and/or deliver instruction online. The notion is to accelerate student learning, while reducing student attrition and instructional costs. However, it is faculty that must learn to use and teach effectively using technology tools.

In a statewide survey of technology integration in DE classrooms, the majority of participants reported the application of technology in their courses even though it was not mandated (Skidmore et al., 2012). Half of the participants reported that they had engaged in at least 1-4 hours of instructional technology training during the preceding year. Participants reported that the training was applicable and adequate to support their teaching, and instructors of online and hybrid-style courses seemed more satisfied with the training they were offered than those not teaching these types of courses. Faculty reported that students with low skill levels, limited access to technology resources, and an inclination to engage in off-task behaviors when using technology in the classroom created challenges with regard to effectively applying instructional technology. Though this study did not specifically address ADM, the findings may provide some guidance given that ADM courses are heavily laden with instructional technology. In particular, it seems there is a need for faculty to be trained with regard to technology and for (and likely benefits from) assessing and advising students regarding the challenges that come with the delivery of technology-based courses.

As noted, there is not an abundance of efficacy studies on ADM. What is available showed that ADM can work for some students, however, overall student success rates for developmental math were not improved by adopting ADM. In surveys of faculty opinion on ADM, it was generally agreed that ADM can be an effective solution for some students, but not all. The research also suggested that ADM is heavily dependent on the use of technology and students need the skills and support that align with this style of instructional delivery.

Method

Sample

Participants of this study were developmental mathematics faculty who either participated in the most recent National Association for Developmental Education (NADE) Math Summit, were members of the NADE Mathematics Network, or both. Since this study was conducted, the association was renamed the National Organization for Student Success. An online survey focused on identifying challenges and best practices in teaching ADM was emailed to a total of 523 potential participants. Participation in the survey was voluntary. Of the 523 individuals who received the survey, 137 responded, which indicated a 26.2% response rate. At the time of the survey, 42 of the 137 respondents stated that they

did not teach ADM courses and could not complete the survey. Of the remaining 92 responses received from faculty teaching ADM at the time of the survey, 77 were complete and 15 were incomplete. Only the completed responses were analyzed for this study.

Instrument

Data used for this study are a subset of survey data collected from faculty teaching ADM courses (Saxon & Martirosyan, 2017). The survey, which was administered online, was developed by a group of researchers who have expertise in DE. The instrument was pilot tested and minor edits were made. It consisted of 11 items that addressed various questions related to courses that had been redesigned to an ADM model. Demographics such as gender, teaching status, and institutional status were part of the survey as well.

Responses to four of the items included in the survey were analyzed within this study: (a) list up to three positive outcomes that you've encountered in your redesigned math courses, (b) list up to three training and support options offered by your institution to instructors assigned to teach redesigned math courses, (c) list up to three support services that you think works best for students in redesigned courses, and (d) list any technology/computer software (up to three items) used in your redesigned math courses. All four survey items were open-ended.

Data Analysis

Qualitative data were generated for all four items included in this study. Responses from the online survey platform were transferred to Microsoft Excel to conduct data analysis. A content analysis approach (Krippendorff, 2013) was then applied to code the data. From the 77 responses received, 200 data points were present for the *positive outcomes encountered in redesigned mathematics courses* item, 149 data points for *the training and support offered to faculty* item, 164 data points for the *support services for students* item, and 124 data points for the *technology/ software* item. One of the researchers acted as the primary coder while the other cross checked the coded data to ensure the accuracy of emerged themes and codes.

Results and Discussion

The majority of the respondents were full time faculty (92%). This is likely the case as full-time professionals are more likely to receive funding to attend a professional development event. Participants consisted of 17% males and 83% females. Of 77 participants, 61 were teaching at 2-year and 16 were teaching at 4-year institutions in the United States. Table 1 displays emergent themes for all four open-ended items included in this study. Data not fitting in any of the themes were identified as outliers, categorized as "other," and later reanalyzed to ascertain fit within emergent themes.

Table 1
Emergent Themes

Survey Item	Emergent Themes
Positive outcomes encountered in ADM courses	Student Success
	Saving Time
	Student Attitude
	Student Retention
	Frequency of Class Meetings
	Student Learning
	Student Engagement
	Pace
	Cost Efficient
	Student Motivation
	Accurate Placement
	Increased Enrollment
Training and support offered to instructors teaching ADM courses	Professional Development
	Sharing Materials
	Regular Meetings
	None
Support services that work best for students in ADM courses	Tutoring
	Access to labs/software
	Advising
	Study groups/Study skills course
	Coaching
Technology/Computer software used in ADM courses	Commercial software
	Smart technology
	Videos

Positive Outcomes Encountered in ADM Courses

Student success. Many participants expressed that student success and, in particular, outcomes were improved in ADM courses. Though many simply stated that "success," "outcomes," or "completion" had improved; most offered no relative comparison to other instructional interventions. Some of the participant comments offering a relative comparison were:

- "Our success rates for accelerated (mathematics) are better than normal semester classes."
- "Grades in the accelerated course are higher than in non-accelerated courses."
- "Success rates were higher (in ADM) than in the average 16-week course."

There were also 11 instances of participants expressing that students who participated in ADM were "more successful" in college algebra or "gateway" math. However, no data to affirm the commentary were sought or offered.

Students save time. Many participants expressed that ADM allowed students to develop their college-level skills in mathematics more quickly. Suggestions were that this occurred about two to four times more quickly, depending on the instructional model. It is assumed that the relative comparison is a traditional semester-length developmental mathematic course. Specific comments were:

- "Motivated students are able to complete multiple courses in one semester. It saves them money and time."
- "Students move through their developmental math content in one semester."
- "Students can finish their DE math sequence more quickly."
- "Students are able to complete two developmental math courses in one semester."
- "Students can complete the course in eight weeks when they might not have been able to complete it in 16."

Speeding up skills development is an obvious objective of ADM. Instructors perceived that this is indeed happening. Perhaps the extent to which this occurred was exaggerated among their perceptions, as their estimations on this did not align with the findings of Bishop et al. (2016).

Improved student attitude. Participants reported that ADM seemed to contribute to positive student attitudes about math courses. Comments from the participant responses follow:

- "Students have a feeling of success in being able to begin their college-level classes."
- "Students are thankful for the opportunity and feel as if they are making progress."
- "Student have increased confidence in math ability."
- "Students feel empowered and gain confidence."
- "Most students are more positive about developmental math."
- "Student participation/interaction is increased. They become more comfortable asking questions and do not feel as isolated."

Bonham and Boylan (2011) described the importance of student attitudes, motivation, and reduced anxiety in their success in developmental mathematics. The faculty here believed that ADM effectively addressed these issues.

Student retention. It seems reasonable that as exit points and time to completion for student math skills are reduced, then so would attrition rates. Instructors were of the belief that ADM contributed to retaining students. Participant comments were:

- "Students have a higher persistence rate."
- "Retention from course to course is higher."
- "Students who are motivated and have the time to devote are able to move through the material more quickly."
- "The retention rate for accelerated classes has surpassed our traditional 16-week classes."
- "More students are now reaching and completing transfer level courses."

A challenge of some remedial education course sequences is student attrition and failure to enroll in prescribed DE courses (Bailey et al., 2009). The faculty in this study believed that ADM has the potential to alleviate these challenges to some extent. However, no data to affirm these assertions were sought or provided.

Increased time on task. As reflected in the responses, accelerated learning interventions require more class meeting and study time on a weekly basis. The student is therefore more deeply engaged and immersed in the learning of content. The commentary from respondents expressed belief that increased class time was a positive characteristic of ADM:

- "We meet four days per week, so we build a strong cohort."
- "Having more time each day with students allows me to break through their fear of math more quickly."
- "Compressed courses immerse students in the content and force them to study more often."
- "Meeting four times a week is beneficial as students have less downtime where they may forget the math they've learned."
- "There's more contact time with students, both individually and in small groups."
- "More class time is available for almost the same learning outcomes."
- "Because the class is four days a week, students spend more time studying."

There is no substitute for time on task in the learning process (Chickering & Gamson, 1991). As noted by some respondents, time on task decreases the likelihood of math skills atrophy.

Mastery of content. Generally, in environments that allow for learning at an individual pace, achievement at a mastery level can be attained by all students. As noted from respondents, ADM models are based on principles of Bloom's (1968) Learning for Mastery:

- "Overall, students attained a higher level of mastery of the course concepts."
- "They learn to make sense of mathematics and start to care if it makes sense."
- "Because of the mastery component students are learning at a deeper level."

Instructional models designed to require mastery of content ensure that students learn in discrete units and demonstrate proficiency in a particular unit prior to moving forward to new content. As a benchmark, Boylan (2002) suggested a minimum mastery level of 85% for underprepared students.

Training and Support for Instructors of ADM Courses

Local professional development. Some instructors reported various means of localized training and support for ADM instruction. These were their descriptions:

- "The developmental math lead faculty provide training, mentoring, and support. We do not offer official training for this particular course."
- "Adjunct faculty assigned to these courses get a lot of support from full-time faculty members, but there is not a formal structure to this support."
- "There are scheduled conference calls with those teaching the accelerated courses and the chair."
- "We do train the first time a course is offered but never again, and anyone who has come in new after a course has been running isn't given any training."
- "My colleague and I meet with the prospective teacher and work with them as they teach it the first time. This is better than what we do with most. Usually our teaching chair just hands them a book and says good luck."
- "Two hours of observations in classes are required before being assigned to teach."
- "Our lead modular instructor has a session with each new faculty member before they teach the course."
- "An instructor's manual is available for all instructors of the course."
- "A workshop on teaching conceptually and contextually is offered."

Given these responses, it seems that peer-based training and development is important and, in some cases, the only means of supporting ADM instruction. The transition from traditional classroom instruction to ADM requires somewhat of a change in roles for the teacher (Stern, 2012). This, therefore, requires substantial thought and training as to how instruction changes and the teaching methods that are appropriate and effective to use in an ADM environment.

Sharing of instructional materials. Respondents noted the sharing of instructional materials as a primary means of support for teaching ADM courses. Their examples were:

- "The course coordinator prepares computer homework, proposed course schedule, and sample activities."
- "The schedule, outline, and materials are given to all instructors and are available in Blackboard."
- "A syllabus and course are made for the faculty member, including all exams and assignments."
- "New instructors are given a binder full of materials, including a list of instructors who have taught these classes before and can assist."
- "Phone conversations and course materials (are provided) from another instructor who is experienced in teaching the course."

Davis (2009) described the sharing of instructional materials as part of a mentoring relationship among veteran and new faculty. A teacher that is new to ADM may experience quite the disruption from traditional class planning and delivery. Given the nature of ADM models, the standardization and sharing of instructional materials may be necessary. This would aid in the consistency of delivery and pace of instruction required to achieve acceleration while maintaining gateway course alignment.

No training or support offered. Unfortunately, some respondents reported that there was no training or support offered for ADM. These descriptions were offered:

- "No additional training and support options have been developed for adjunct professors teaching the accelerated math classes beyond what the college requires of all adjunct professors."
- "No training is offered for new faculty."
- "My campus does not offer any training."

Boylan (2002) described a relationship among successful DE and the training and development of the faculty therein. As noted earlier, Skidmore et al. (2012) reported broad application of technology in developmental courses, though many reported minimal amounts of instructional technology training. Differences in the role of instructors and pace of course delivery required by ADM classes likely compound the need for faculty training and support.

Regular course redesign meetings. Some instructors reported communication and collaboration through the means of regular meetings of ADM faculty. These descriptions were:

- "We have bi-weekly meetings throughout the semester."
- "Regular meetings are held with colleagues at same college also currently teaching the course."
- "There are biweekly meetings of our local New Mathways Project Core Leadership Team."

Boylan (2002) noted the importance of tapping local campus expertise and using faculty meeting times to share instructional strategies and discuss how DE instruction may be improved.

Most Effective Support Services for ADM Students

Tutoring. Several respondents described tutoring as an important support for students in ADM classes. Their comments were:

- "Embedded tutors are in the class to help those who are most at risk of failing."
- "There is a math tutoring center."
- "Our Academic Coaching and Tutoring Center has been a great resource for our students. Students can get tutoring, help with homework, and coaching as needed."
- "Peer tutoring from tutors who have completed a similar course."
- "We are still trying to figure this out. We have drop-in tutoring available."

Integrated academic support through tutoring has shown success in DE (Vick et al., 2015). Tutoring can be an effective means of support especially if coordination occurs among faculty and tutors regarding the course and related assignments (Boylan, 2002; Casazza & Silverman, 1996).

Labs and software. Computer labs, software, and online programs were listed as support for ADM courses. These were the descriptions:

- "Supportive software in combination with instruction."
- "Software with a study plan."
- "Computerized lab practice outside of class."
- "We have a math lab."
- "Online software to practice."

Software and computer labs are integral to ADM courses as they enable more time on task and a focus on problem solving for students (Twigg, 2011). They assist with differences in student learning rates and in achieving mastery learning benchmarks (Kulik & Kulik, 1991). A list of specific software products that have been used by respondents in the delivery of their ADM courses is provided later in this work.

Advising. Advising was also described as a means of support for ADM courses. The following were comments from respondents:

- "There is mandatory advising."
- "A strong connection to Student Services for advisement and financial aid assistance."
- "Up-front advising about how this course is different."
- "A dedicated academic counselor is available."
- "An active (intrusive) advisor is offered."

Documented evidence exist that advising aids in student success and retention, especially with underprepared students (Boylan & Saxon, 2012). Regarding ADM courses, students should be advised as to the pace at which the course proceeds. Advisors can also assess the level of ability and desire of students to engage in learning through technology-based instruction.

Mandatory study groups or study skills courses. Study groups and success courses were listed as a requirement by some respondents. They were described as follows:

- "Student success courses require students to study in a group for three hours a week as part of their grade."
- "Assigned study groups meet in the math lab consistently once per week."

Cooperative learning has been cited as a top instructional consideration for ADM courses (Saxon & Martirosyan, 2017). This instructional pedagogy provides the opportunity for students to engage in active learning, to spend more time on task with the content, and to learn and apply test-taking and learning strategies from their peers.

- ***Coaching to assist with challenges and study skills.*** Coaching is another method of support that respondents noted for ADM students. Their descriptions were:
- "A success coach works one-on-one with students to assist them with overcoming challenges when possible."
- "A study skills/life skills coach is provided for time management and prioritization."
- "Coaching is provided by the instructor."

Academic coaching has emerged as a means of advising students regarding personal and professional goals in conjunction with the development of academic skills. The goal is to identify barriers that may inhibit student success and to assist in developing skills to overcome them. Examples of such skills are time management, test taking, note taking, goal setting, and strategic learning (Capstick et al., 2019). Intuitively, these types of skills are important in accelerated learning environments.

Technology/Computer Software Applied in ADM Courses

Computer software. Participants listed the following commercial products as those used in the delivery of ADM courses: MyMathLab®, ALEKS®, MyLabsPlus®, Hawkes math software, MyFoundationsLab®, MyOpenMath, MyStatLab®, Microsoft Excel, Powerpoint, and Blackboard®, and Desire2Learn Learning Management Systems. In a study of technology integration in DE, Martirosyan et al. (2017) reported that faculty generally had positive opinions on the use of specific software products in developmental mathematics classes. Tong et al. (2012) described the state of the research on technology-based instruction in mathematics, and reported that there were few experimental efficacy studies and that the results therein were characterized as mixed. Cost savings, however, were noted as a reason for the broader application of mathematics instructional software.

Smart technology. Respondents reported the use of smart technologies in conjunction with the instruction of ADM courses. A sample of their responses was:

- "A Smart Board is used."
- "I use a Smart Board and post notes online so students that miss class can see what we did."
- "A Smart Board that allows students and instructors to follow along in the workbook and show solutions."
- "Graphing calculators are used, TI83 or TI84."

Li et al. (2015) described a course model applying Smart technology, among multiple technology applications, in which students made substantial gains in critical thinking. Graphing calculators have a history of usage and effective application in developmental mathematics (Akst, 1995; Martin, 2008; Testone, 1998). However, no research was located that described their use in ADM courses.

Video content. Respondents noted the use of video content in ADM as well. Their descriptions were:

- "Study skills videos are embedded in course materials."
- "YouTube is used to watch videos on 'just in time' support material."
- "Instructor-created YouTube lecture videos are required."

- "Videos are provided, some open-source, and some through the book publisher."

Video content provides another means of student engagement with course content. Comprehensive software platforms for delivering developmental math courses typically offer video-based lectures. Some are commercially developed and provided, and faculty may also have the option of creating their own (Byrnes, 2015). These platforms can also measure the level of student engagement by showing the extent to which students watch the videos provided, and by assessing the level of learning that takes place as it relates to the video delivered content (Byrnes, 2015).

Limitations and Recommendations for Future Research

This study had several limitations. First, it relied on self-reported data. It is important to consider the bias of self-reported data and apply caution when making conclusions. Moreover, because the questions were open-ended and the qualitative data collected were limited to a certain group of faculty taking part in a professional development activity, the results cannot be generalized. Therefore, a quantitative study focusing on longitudinal data on ADM courses is recommended.

Second, the sample included in this study might not be fully representative to those teaching ADM courses. As noted, the majority of participants (92%) were full time faculty teaching primarily in 2-year institutions (79%). Traditionally, DE in community colleges has heavily relied on adjunct faculty (Boylan & Saxon, 2012). They are "an important resource for developmental education programs" (Datray et al., 2014). Therefore, conducting a similar study where adjunct faculty are well (perhaps equally) represented is recommended. Comparing the opinions of part- and full-time faculty would offer additional information on the type of support available for both groups teaching ADM courses.

Finally, although participants reported a number of benefits in relation to student success, they were not asked to provide data to support their assertions. Many participants simply stated that "success," "outcomes," or "completion" had improved. For future research, it is recommended to explore the long-term impact of ADM courses on student success, not only in ADM but also in gateway mathematics courses. Currently, there have been mixed results reported in the few studies available on redesigned developmental math courses. Therefore, more research is encouraged.

Increased weekly class time, resulting in increased student-faculty student interaction, along with student satisfaction with faculty likely also contributed to successful outcomes.

Conclusions

Compared with traditional math classroom instruction, ADM courses move at a more rapid pace, require more student time on task, and rely more heavily on the application of instructional technology. It appears that teachers in this study believed there are some benefits for ADM students, both cognitive and affective. But the ADM model is reliant on learning support. Regarding support services, several academic and peer methods were offered with advising support as the most consistent response. Advising seems very important to the success of an ADM model. The goals of advising in this regard are to inform students of the instructional pace of the class and to assess the fit of ADM courses for particular students. In other words, given that ADM (or no other model) is not a panacea for student success, it is important to try to ascertain for whom it will work. The faculty suggested that students need to be advised up front of the pace at which an ADM course proceeds. This suggestion from faculty also turned up as a recommendation for improving ADM courses in another part of this study (Saxon & Martirosyan, 2017). Respondents elaborated that ADM students also need advising with regard to class work schedules, the increased time on task that will be required, and in assessing "a realistic portrayal of the time and effort needed to succeed" (Saxon & Martirosyan, 2017, p. 26).

Participants listed various commercial products and a few means by which instruction may be varied (also using technology) from the typical computer lab setting. But with a reliance on instructional technology, mastery level benchmarks, and the varied pace at which learning will occur among students, it is apparent that ADM substantially changes the role of teachers. They become facilitators of learning. As Stern (2012) notes, "…the teacher sometimes stands back and lets students figure out the answer and sometimes intervenes and offers assistance. No longer is the teacher the focal point of learning as instruction relies heavily on technology" (p. 15). With these changes, teachers will need training and professional development. They need assistance in planning and developing course content and/or support in accessing and using technology-based learning applications. Perhaps they need training in learning support and coaching, as

they are no longer the central focus of the classroom. The good news is that several instructors reported various means of sharing materials and peer support for planning and teaching ADM courses. However, an area of concern is that several instructors reported that they receive no training or support whatsoever.

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FEATURE ARTICLE

Towards a Model for Cultivating Online Learning Communities

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ABSTRACT

With the growing number of online students, universities must provide support for students in developmental education to engage, collaborate, and co-construct their learning in socially dynamic ways. Online learning communities provide spaces for students to identify with others, communicate openly and candidly, and develop professional relationships. With social constructivism utilized as a frame to guide this formative experiment, researchers examined social interactions and engagement among students of a PhD cohort across online platforms and apps. Through collective responsibility and the consideration of multiple entry points, the B.E.S.T. (backchannels; engagement; social media; tutoring) framework was established by the researchers and continues to evolve according to students' needs. Discussion includes highlights and future opportunities to extend and enrich online communities of practice to benefit developmental education programs.

Online learning is becoming increasingly popular, with more than 350,000 new students enrolled in U.S.-based online programs in higher education during the 2016-2017 academic year (Lederman, 2018). As the number of online learners continues to grow, so too must the level of attention paid towards re-envisioning multimodal learning and improving upon how institutions provide multiple academic and professional support systems. More specifically, research is needed to understand "when and how online students become fully engaged in their academic pursuits" (Gordon, 2011, p. 72). These notions are underscored when considering online learners are as, if not more, diverse than their face-to-face counterparts (Chen et al., 2018).

An analysis of the demographics of online learners within higher education in the United States reveals 81% are non-traditional students with an average age of 34 years old, and 84% work full-time (Education Today, 2019). Incorporating strategies to foster and maintain high levels of engagement in online learning communities is central to optimizing student interaction in a program. Online collaborative spaces can lead to higher levels of student satisfaction (Rios et al., 2018) as well as improved academic self-efficacy (Yilmaz, 2016) and ultimately career success (Kent, 2018) as increasing communication channels, discourse and dialogue, and collective responsibility facilitates authentic teaching and learning experiences.

Online management systems like Blackboard, Canvas, Moodle, and Brightspace/D2L have a bevy of features to promote online learning outcomes, but universities must consider other social channels if they are to develop and maintain vibrant learning communities, especially important within developmental education (Hou, 2015; Visher et al., 2012). Schools and universities need to adopt "forward-thinking strategies to effectively engage and leverage online [learners], drawing from communication preferences and other data gathered while students [are] enrolled" (Clinefelter et al., 2019, p. 47).

Investigators of this study sought to enhance their own online learning community (Ph.D. in Literacy program at St. John's University) through a formative experiment examining their practices related to building community that continue to evolve today. What follows is an examination of its theoretical orientation and the methods of data collection and analysis that guide this study.

Grounding our Work

The examples we present here are situated in social constructivism (Gee, 2009) whereby students' sustained and meaningful social interactions and engagements influence not only thinking and learning but also the creation of new meanings (Bonk & Cunningham, 1998; Gresalfi et al., 2009). The process of meaning-making is negotiated through

fluid dialogue and rich conversation (Jonassen et al., 1999). As a result, learning opportunities can occur "by adding, distinguishing, re-contextualizing, or otherwise re-conceptualizing beliefs, knowledge, processes, or practices" (Stewart & Jordan, 2017, p. 139). Transformative dialogue, therefore, allows for a co-construction of knowledge through a coming-together of varying experience levels around common interests and goals.

A social constructivist framework is befitting of informal environments, as it posits that learning occurs through interactions with both people and common artifacts (Jonassen & Land, 2012; Stewart & Jordan, 2017), like those found in the courses of a Ph.D. program. Peers can come together frequently to discuss projects, readings, and outside engagements to facilitate meaningful discussions in informal contexts. Thus, with emphasis on sustained engagement and peer-to-peer dialogue, we assert that the iterative nature of online learning communities allows for social learning and knowledge creation as students interact informally.

Methods of Investigation

This formative experiment (Reinking & Bradley, 2007) sought to understand the implementation and evolution of an online learning community. We chose this design for (a) its recognition of the dynamic factors and variables related to teaching and learning environments; (b) its allowance of faculty researchers and participatory Ph.D. students to engage in collaborative reflection and change agentry within the online learning community; and (c) its focus on flexible and iterative processes that permit wide engagement to be studied across multiple digital spaces (see Howell et al., 2020).

Data came from the following sources: WhatsApp group text messages, Blackboard-based and offline conversations between program stakeholders, social media posts on a closed Facebook (FB) page (St. John's University Ph.D. in Literacy [SJUPHD]), and tutoring sessions observed by the director of the program. In the following sections, we examine the constructs of effective learning communities in general, followed by a framework resulting from our formative experiment that we use today to cultivate a learning community in the online space as part of our Ph.D. in Literacy program. Our ongoing successes and challenges continue to lead towards more sophisticated and increasingly effective ways to engage as an online community of scholars.

Fostering Effective Learning Communities

Learning communities have been discussed and studied since the 1920s (Zhao & Kuh, 2004). Many studies have found that learning communities, particularly those that encourage out-of-class connections, can increase student engagement, learning, and personal development as well as demonstrate educational effectiveness (Kuh, 1996, 2003; MacGregor, 1991). Furthermore, learning communities can promote diversity and social tolerance in addition to fostering personal and community development within the group (Johnson & Johnson, 1994; Slavin, 1983). Additionally, learning communities are typically structured to encourage two types of connections: to connect ideas across multiple disciplines and courses (Klein, 2000; MacGregor, 1991), and to build community through long-term social interactions. Because of these connections within the learning community, students can "further develop their identity and discover their voice as well as to integrate what they are learning into their worldview and other academic and social experiences" (Zhao & Kuh, 2004, p.117). Importantly, these connections must be implicitly or explicitly negotiated and fostered in online learning communities where all members are free to express themselves. By presenting oneself authentically to the group, the community is able to establish further connections with students taking on emergent roles: facilitators, readers, conversation starters, etc. (Kim, 2000; McMillan, 1996; Palloff & Pratt, 1999). Through collective responsibility and multiple entry points, authentic online learning communities can enhance the overall academic experience and meet the diverse needs of students today.

Incorporating strategies to foster and maintain high levels of engagement in online learning communities is central to optimizing student interaction in a program.

Collective Responsibility

Rather than rely on preset learning management systems, online learning communities--such as the one used in the SJUPHD that extends into social media and text-based platforms--continually co-construct individual and group roles and responsibilities, working together on common goals and purposes. Only one-third of these SJUPHD students live the in tri-state region (New York, New Jersey, and Connecticut), validating the necessity to create a collective social presence through online and digital means of interaction. Moreover, many of these students are non-traditional, live in countries outside the U.S., work full time, and have families. These professionals balance those responsibilities with the high demands of the program, achieved in part through collective responsibility.

Zembylas' (2008) study found that students prefer flexible, asynchronous programs that permit online learners to complete their assignments within their own timeframe; furthermore, they find joy and become increasingly enthusiastic from making connections with their like-minded peers in the program. Annalisa Perfetto, a recent graduate of the SJUPHD program, said:

> St. John's University gave me the flexibility of a fully online program in literacy at a trusted and well respected institution. I craved the flexibility of being able to study from wherever, and I trusted the university as well as many of my peers in class to support me along the way.

Distance learning brings with it unknowns, too (Hartnett et al., 2018), and with those unknowns come emotions and even anxieties. For example, it may be stressful for students who have a question but cannot always ask questions the same way students would in a traditional face-to-face classroom. Students may be fearful of the online learning management system and statistical software, and are fearful to learn new ways to access library resources and citation systems as well as to create videos (Preston, 2018). The learning curve involved in succeeding in an online program of study can be daunting. Thankfully, the trepidations and nervousness are accompanied by equal amounts of excitement, enthusiasm, and interest in the program as well as participation in their socially constructed online learning community.

Helping students overcome the sense of "alienation" and "the need for connectedness" that they often feel initially in an online course is of prime concern for those designing online curriculum (Zembylas, 2008, p. 80). These concerns are quickly resolved once students begin their coursework and chart their own pathway to success. For example, two students in the program commented that they "share a group chat relationship through Whatsapp since last semester (Fall 2019) ... and were very comfortable reaching out to one another to communicate digitally through video phone chats" (C. Biskup, personal communication, March 2, 2019). Their collaborations are offshoots from online learning communities that are socially constructed, permitting students to share ideas and perspectives, which enhances their understanding of program expectations and also their understanding of content knowledge. Instead of facing these challenges individually, engaging with peers towards a shared goal sparks a sense of collective responsibility within the learning community (Ortlieb et al., 2010).

Multiple Entry Points

Since it is difficult to engage all learners with a single method or strategy, programs must offer multiple entry points to enter into study. The individualistic and communalistic nature of student learners and learning preferences requires a multi-pronged design inclusive of learner-centered pathways. This varied approach stimulates student interest to access and utilize resources across multiple pathways (Flynn et al., 2015). Students become intrigued by content, interactions, and previous learnings when deciding upon what information to connect (Ryan & Deci, 2000). This reaction impacts the larger online learning community in an ebb and flow fashion as participants interact and engage in multimodal exchanges, sharing their emerging expertise and informed perspectives. Such interactions demonstrate the reciprocal nature of dialogue (Siemens, 2005) in the context of an online classroom in which students work through difficult content and concepts in an effort to construct knowledge while maintaining respect for diverse opinions within the community (Covey, 1989).

Within the parameters of an interactive social space, participants can engage with peers, mentors, and instructors with the ability to produce or consume words, videos, and multimedia content for the purpose of entertaining, educating, informing, and persuading. The diverse media objects across social media platforms are just one tap away from "share," causing other members to react, piquing their curiosity and leading others towards new learning opportunities. In that moment, the participant reads a newsfeed entry that either affirms previous understandings or becomes disrupted (Ortlieb, 2014). A process ignites to puzzle or make meaning of the perturbation (Jonassen, 2002), or it is supported--and with new ideas to construct knowledge. These individual and collective learnings occur in part due to the optional entry points framed through its networked design.

A Framework for Online Learning Communities

We designed the B.E.S.T. Framework based on evidence-based practices to build an online community of learners at St. John's University using backchannels, engagement, social media, and tutoring (B.E.S.T). Some of these components were partially preconceived while others evolved through this formative experiment; data collected to support these practices is provided within each section using an integrative approach to providing and situating results. The common thread through the core principles in the framework is their function—improved social interaction and engagement towards building an online community of learners.

Backchannels

The development of social presence, or the perceived interaction with others, is a cornerstone of online learning communities (Rourke et al., 2001). Interaction needs to go beyond a linear back-and-forth with content and instructors. Rather, students need to communicate with each other in order to cultivate an authentic and active learning community (Moore, 1989).

For online-learning programs, digital backchannels can be one such method for creating

student communities. Backchannel content is "a line of communication created by people in an audience to connect with others outside or inside the room, with or without the knowledge of the speaker at the front of the room" (Atkison, 2010, p. 17). In the past, backchannel content in classrooms included whispering or passing notes, which many teachers tried to stop (Carpenter, 2015). By contrast, teachers may choose to embrace backchannels as tools to leverage rather than eliminate instructional classroom communication (Chisholm, 2018). Digital backchannels help students share their impressions and engage in collaboration activities (Pohl et al., 2011). Online platforms can also aid professionals to engage with a wide variety of people (including peers, professors, and outside professionals).

The Fall 2018 cohort enrolled in SJUPHD created a backchannel discussion via the mobile app WhatsApp. With over 1.5 billion users in 180 countries, WhatsApp is the most popular messaging app in the world (Iqbal, 2019). Within this app, messages can be sent to individuals and to groups. WhatsApp was an ideal method for a cohort to communicate with each other away from teacher supervision due to its low cost, the immediacy of holding real-time conversations, having a sense of group belonging, and maintaining confidentiality (Church & de Oliveria, 2013).

The cohort's use of WhatsApp aligns with previous research that finds such backchannel methods facilitate class communication, collaboration, content sharing, and homework support (Mese & Aydin, 2019). For the Ph.D. in Literacy cohort, WhatsApp served as a backchannel and not simply another platform for communication, as it permitted students to collaborate, communicate, and gossip with one another outside the confines of an academic environment. While the cohort started small with approximately 10 students, eleven more students joined the group throughout the year resulting in (22/31) 71% total cohort participation. The group has become a close-knit community, sharing information on personal and family-member goals, struggles, inside jokes, and celebrations, too. In addition to our main group, we connected and built networks within a network, forming off-shoots or sub-groups for each course.

Based on this and other evidence, we argue that backchannel communication via WhatsApp positively impacted the performance of the cohort. For example, in a challenging statistics course, students shared learning notes, questions, and ideas to the group via WhatsApp. Due to the level of engagement and peer-to-peer supportilizing this app, the cohort recently received glowing feedback from the instructor on having a more sophisticated level of statistical knowledge and application than previous cohorts. Members (including authors Jennifer and Dona) believe the WhatsApp group communication played a large role in their growth, development, and eventual success.

Engagement Within/Beyond Learning Portals

Recent research from MIT and Harvard University indicated that while online students are diverse in background and purpose, educators were one of the most active groups of participants and had the strongest identity in their Massive Open Online Course (MOOC) offerings from 2012-2016 (Chuang & Ho, 2016). While MOOCs differ from our examples in that they are much larger and more self-directed, we see a parallel in the active and proactive nature of the educator learners. Furthermore, this information solidifies the understanding that many teachers want to continue their education both in informal and formal online educational contexts like the one we examine here.

Many argue that the role of the instructor is to structure learning, participation, and community building within a course (Palloff & Pratt, 1999). Within the SJUPHD program, faculty and staff provide multiple supports aimed at personal engagement (e.g., engaging Blackboard set up, frequent emails/ phone calls, surveys, virtual meetings, video assignments, listservs, on-campus events, etc.) as well as a data-driven understanding of student engagement (e.g., statistics tracking). These supports are designed to ensure that students are engaged within the courses and less likely to withdraw from the course or program, as is common in other types of online learning such as MOOCs (Chuang & Ho, 2016). Some considerations of engagement start long before students begin their study (e.g., course design) while others are continued throughout a student's course or program (e.g., statistics tracking, virtual meetings, frequent communication).

Furthermore, Brook and Oliver (2003) argue that instructors can create activities and structures to help foster students' interest to participate within online communities. Many of the personal and communal engagement strategies such as virtual meetings, video assignments and on-campus events (for those near campus) can help to make students feel more comfortable or humanized within their courses (Huerta, 2011). This comfort may lead to increased engagement and participation within the online learning communities (Zhao & Khu, 2004).

Social Media

Research shows conflicting results on Facebook's validity for pedagogical purposes (Stewart, 2015). In studies that have attempted to use FB as an integral part of content delivery, the results have been primarily negative as they have not resulted in better engagement or learning overall (Qi, 2019). As a result, SJUPHD has not utilized FB as an integral part of any class. Instead, the Program Director created and jointly leads the SJUPHD FB group, which serves a peripheral role for all students in the program. As supplemental class instruction, FB can effectively

provide acillary information to assist student learning (Abe & Jordan, 2013; Leaver, 2014). For example, professors share interesting research studies or events related to class. However, the content is not required as part of any class instruction.

Serving social and educational purposes (such as academic content sharing), the use of FB by academics has been shown to support overall student well-being resulting in increased academic performance (Henry, 2012). Therefore, the primary purpose of the SJUPHD FB group is to build community through engagment in authentic interactions between students, collaboration in intellectual conversations, and support for peers both personally and professionally (Di Capua, 2012; Niu, 2019). Finally, SJUPHD finds FB an effective channel to disseminate current events related to education and literacy.

To determine the ways in which FB elicited engagement over the last year, an analysis of all St. John's University Ph.D. in Literacy closed FB group (SJUPHD) interaction was conducted of data from July 17, 2018 to July 17, 2019. SJUPHD FB content (318 posted items) were analyzed for engagement as defined by comments (written responses) and/or reactions (likes, love, ha-ha, wow, sad, and angry), totaling 1,032 reactions. The posts were organized into 6 categories that include: (a) Events and Opportunities (live and online events related to literacy education, professional development opportunities, job postings, and invitations to collaborate on education-related activities including surveys); (b) Education News (information from professional or popular news sources on any education-related topic); (c) Pop Culture (informative content that is not directly related to education in any capacity; all forms of memes); (d) Personal Connections (personal information on members of the SJUPHD community; personal invitations to meet up); (e) SJUPHD Professional Success (announcement of professional accomplishments of current or past members of SJUPHD community; congratulatory statements on progress of current SJUPHD online cohort); and (f) SJUPHD Program Resources and Logistics (logistical information and questions related to access to various aspects of the program).

Posts for one calendar year were categorized and ranked by number of participant comments. The categories of *Personal Connections* and *Professional Successes* received the majority of the comments based on analysis of the top 50 postings. By nature, these types of announcements disclosed personal information ranging from conference proposal acceptance letters to family-based posts, such as the birth of a new baby. Enthusiastic- and encouragement-related postings are evidence of self-disclosure, adding a personal touch and identity of an online community (Chugh & Ruhi, 2018). Notable, however, were the three postings that generated the most comments in the category of *Program Resources and Logistics*. Combined, there were 149 comments pertaining to courses, class start dates and function of SJU's online learning platform--Blackboard--occurring on August 27, September 5, and September 9, 2018. From August 23, 2018, to September 19, 2018--a period of two weeks prior to the start of the semester to two weeks after--there were 312 comments (out of 1,032 for the full year) written on posts made during the time frame. The SJUPHD FB group provided a transitional space for students as they moved into a new academic environment for study (Blackboard). It was observed that students utilized the FB space to communicate as they learned how to navigate newer technologies required in the online program. Kent and Leaver (2014) have also noted that students use more familiar technology, such as FB, to navigate new technological environments.

Online learning communities permit engagement beyond the traditional confines of a classroom or an office space; they promote the sharing of opportunities and experiences . . .

Tutoring

Online education can unintentionally remove the vital connection between teacher and student (Hsu, 2011). This lack of interaction (Croft et al., 2015) can cause students to feel isolated in their struggles (Zembylas, 2008). Founded on notions of collective responsibility and multiple entry points, the SJUPHD program (as well as students enrolled) has created methods of *e-immediacy* (Song et al., 2016) to encourage prompt communication and assistance for students when these struggles occur.

While tutoring is traditionally viewed to be focused on academic content, tutoring can extend into assisting others with logistics (Moisey & Hughes, 2008), digital literacy skills (Pendell et al., 2013), and even time-management strategies (LaPadula, 2010). Authentic mentorship (faculty or peer) can provide "personal and professional support that extends beyond the traditional advising affiliation" (Holley & Caldwell, 2012, p. 244). Levels of support including collective, peer-to-peer, and individual can be found throughout the program, and students can seek these different forms of assistance when needed. Peer video chat was a commonly noted method that students used to engage in communicating and conferring about research papers. Our review

of tutoring data revealed that students engaging in these collaborative interactions have higher pass rates on comprehensive examinations than those who refrain, as supported by the extant literature (Girves et al., 2005).

Although the program is asynchronous, live interactive review/Q&A webinars have been offered for supplemental clarification when classes have faced particularly challenging material (e.g., advanced statistics) or in extenuating circumstances (Toven-Lindsay et al., 2015). Prior to these workshops, students have the opportunity to send questions to the professor through the use of a Google Form survey. The professor then collates the questions sent and creates a webinar to address student concerns where students can join a live session. For students who are unable to join the session, a recording is provided and archived for subsequent access.

Other ways in which tutoring is currently provided include allocating extra time to work with students via the online learning channels, such as on Blackboard. Professors who provide prompt communication to students via email, phone, or text message not only show their support for students by responding in a timely manner but also build a sense of trust between student and professor. One SJU professor of qualitative research methods stated that she aims "to provide the same opportunities that parallel what students would receive in a face-to-face class. Scaffolding them through complex assignments requires individualized approaches to tutor and stay connected" (L. Bajor, personal communication, July 31, 2019).

In addition, some professors provide online "check-ins" with students in the form of optional virtual meetings, personal emails, and telephone calls. These varied forms of communication allow students flexible options for tutoring assistance. Professiorial mentorships can also provide students with ongoing support even while they are taking other courses within the program. At times, these relationships can be vital for students who seek a lifeline. Professors can offer support and guidance as well as pass on any critical information to the department to find ways to support the students.

Future Support

Within the SJUPHD, backchannel communication provided an avenue for current students to support their cohorts and also as a way for students who have already completed the program to mentor those who are still working on their degree. With an official FB group dedicated to the SJUPHD program, former students have demonstrated a willingness to mentor new and existing students on previous courses taken, time management, and professor interactions and communications as well as tips for success. The department recognized the interaction between new and former students and is in the process of collecting information to evaluate the idea of former students acting as peer mentors for students in newly formed cohorts. This interaction may include adding support such as a teacher's assistant (TA) within the final stages of the program whose sole responsibility would be to support the students when questions arise about the material. The TA could offer advice and support virtually alongside the instructor to guide individual students when distance-learning communications become ambiguous or self-determination mandates a resolution. Having direction come from a former or more experienced student promotes relationships and strengthens community membership by providing a learning liaison and mentor who has already "been in the trenches."

The department is also aware that students want more interaction within their own cohorts. In response to this need, there are plans to develop annual seminars on campus to facilitate developing relationships within the groups to foster a sense of community for students who work remotely. Formative feedback has revealed that students crave communication and interaction, and the department has recognized the need for a more formal form of mentorship and is in the process of adding a cohort gathering in New York City to future program participants. Not only will this program allow students to meet face to face, but students can connect outside of the academic world (in the form of meet and greets, structured mixers, seminars) and forge friendships that will support them once their coursework ends and dissertation writing begins.

Conclusion

The growing body of research related to online learning communities provides evidence-based options to university leaders, program directors, instructors of record, and students alike in their consideration of how to support students and their ever-changing needs. Students seek social-contextual spaces that allows them to forge interconnections and communal engagement (Deci & Ryan, 2002). Traditional face-to-face programs in developmental education can be supplemented through online communities of practice (Snyder, 2009) to promote professional relationship building between individuals who share a united purpose for personal growth and affiliation (e.g., empowering others through literacy). "As peers socially negotiate their understandings of a joint situation, they activate, differentiate, and elaborate on their prior knowledge; through generating and explaining new ideas, they transform their understanding of concepts" (Kapur & Bielaczyc, 2012, p. 56).

Online learning communities permit engagement beyond the traditional confines of a

classroom or an office space; they promote the sharing of opportunities and experiences ranging from teacher-led tutoring to collectively forged pathways of discourse, interaction, and development. Official and unofficial channels of communication allow the rapid transmission of information in ways that speak to students today. Just as how we teach and learn online today is vastly different than how we did prior to the Internet, so too must institutions of higher education consider not just whether to have online learning communities but also how to frame, nurture, promote, maintain, and strengthen them over time. Collective efforts are needed to ensure these communities are a good fit, remain optimally suited for their constituents, and work in tandem with the preferred learning management system.

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SPECIAL PROMISING PRACTICE FEATURE ARTICLE

Technology Considerations and Opportunities in Higher Education

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Abstract

Technology has transformed teaching and learning by providing access to education that transcends the boundaries of race, gender inequity, costs, and physical constraints. The importance of providing professionals in higher education with a compilation of evidence-based findings, focused on the use of promising practices in technology and what is needed to create a learning environment that will meet the educational needs of students, is even more significant now in light of a worldwide Covid-19 pandemic. Based on the increased need for expanded knowledge on such practices, the authors have examined the importance of technology usage in developmental and transitional education courses; however, discussion is included on technology use in higher education courses, the transition from traditional seated courses to fully online delivery, the use of social media in the classroom, and the inclusion of cell phone technology in learning.

Isaac Asimov once proclaimed, "…I do not fear computers. I fear the lack of them" (as cited in "Age of Miracle Chips," 1978, p. 45). Years later, Castells (2010) posited that we are now living in a distinct information age. In our current age, computers are perceived as being ubiquitous, even in regards to education, but it was in the 1960s when Lipsitz predicted this phenomenon (Kinshuk et al., 2013). The term "educational technology" has been commonly used. From online courses, cell phones, computers, Learning Management Systems (LMS) such as Moodle, and Blackboard, and social media avenues such as Facebook and Twitter, this article will offer a comprehensive examination of the value of the various educational technologies and the implications that accompany them. In higher education today, no matter the course level, technology can be viewed as a great equalizer, as evidenced in its accessibility. For example, in terms of educational technology, students and staff can communicate across cities, states, and continents. Technology applications currently in education are nearly infinite. The recent Covid-19 crisis has required all in higher education to use it, including many luddites (Gardner, 2020).

Hadadian et al. (2014) asserted that technology is quickly becoming a global phenomenon, increasingly seen in higher education classrooms. For instance, prospective international students can participate in virtual tours of many campuses in the United States from the comfort of their homes. This technology usage is just one example of how technology has connected people across oceans and continents.

Without a doubt, technology has profoundly altered the education experience. It has greatly expanded access to education as vast amounts of information (books, audio, images, videos, and podcasts) are available at one's fingertips through the world wide web. According to the U.S. Department of Education's (2017) Office of Educational Technology, formal learning opportunities can be easily accessed with platforms such as Khan Academy, Massive Open Online Courses (MOOCS), podcasts, traditional online degree programs, and other learning resources. Technology has brought about the exposure to learning opportunities and digital connection in unprecedented possibilities. It is up to educators to adapt, if they have not already done so.

Attributes of College Students Enrolled in Higher Education

Enrollment in online courses rose at a faster pace between fall 2015 and 2016 when compared to the previous 3 years. Based on federal data from more than 4,700 colleges and universities, more than 6.3 million students in the U.S., most of whom were undergraduates, took at least one online course in fall 2016, a 5.6% increase from just a year before (Friedman, 2018). One societal benefit of online learning is increased access to higher education. Online education increases access to learning for anyone interested in attending college, particularly those students who have full-time work and/or family obligations who might not have otherwise entertained the notion of attaining a degree (Gannon, 2019).

Different generations are affected by different factors (Statnickė et al., 2019). Generation Z students have grown up with technology in all aspects of their lives. Generation Z students are considered the generation that was born between 1995 and 2012 (Persada et al., 2019). Many from this group are enrolled in high school and college education; this generation is dominated by Internet inclusion. Therefore, technology in education is expected as part of preparing today's students for the workforce. Amid the current global pandemic, elementary, middle, and high schools are providing instruction online in order to keep their students on task. These students, even though at home, get to see their friends and communicate with them like normal while working on classwork at the same time On the other hand, these students may miss out on the sense of community that they feel inside the traditional classroom, but this can be built inside an online learning community as well. Instructors are able to track the progress of their students by joining breakout groups via Zoom or Google docs, but it is important that they take the time to develop a classroom community, especially in an online environment.

There are certain factors that help Generation Z students succeed in a fully online learning environment for communication skills. Out of a diverse group of learners, the student's institutions significantly impacted their preference for instructional delivery modality. The factors which lead to student success and retention in online courses are dependent on the characteristics of the student (Yu, 2020). Though creating a sense of community and belonging within the classroom is vital to overall student success and retention, methods for doing so vary by course design, as well as other factors.

A majority of students work to pay some, if not all, of their tuition and living expenses which is a reality and would prefer an online learning environment over traditional. In addition, these students become more responsible and efficient learners due to working independently in an online course environment, they are able to get a lot done in a small period of time with technology. According to Conference on College Composition & Communication (2013), appropriate composition teaching/learning strategies should be developed for the unique features of the online instructional environment.

> Although Covid-19 has created considerable upheaval globally, it also has created a chance for higher education systems to connect with learners in ways that may otherwise be left unexplored.

Meeting Students Where They Are

In developmental education, math, integrated reading, and English courses, technology is a tool which can help bridge the gap among students who enter college immediately after high school and those who enroll after entering the workforce. Technological support for student learning in developmental math can improve student Lexile reading levels, grammar, and writing skills in integrated reading and/or English courses (standalone, transition, or integrated). According to Kim (2019), while only 14% of undergraduate students study exclusively online, 30.7% of graduate students participate in courses in this manner.

Campus support services can set students, who enter college, especially in developmental and/or transition-level courses, up for success by acknowledging student deficits across disciplines. If the skill level of the student is not considered, then instructional design teams are creating a potential barrier to these students who lack the skills needed to be successful in college-level courses. If these deficits are not considered, pass rates in courses will decline.

Regarding modifications and accommodations, one important tool is the laptop. Students, for example, may require use of a laptop instead of another mobile device that fits learning needs. This technology provides full access to most computer programs, rather than a version that is meant to be used on phone apps. Because of the legal and ethical issues surrounding these students, such as ADA compliance or software licensing, it remains important to provide various technological resources to students. Thereby, it is essential to recognize the ways that technology supports students of different modalities of learning. Technology can be an equalizer for many students in the classroom. Using supplemental software programs can provide spelling, grammatical,

calculating, and other resources to students who lack certain skill sets. While technology can be a positive addition to student learning in many cases, it can have negative connotations for some students. Hess (2019) presented studies which showed how powerful cell phones offered distraction to the most disciplined adults and student learners. Learners are also supported through embedded YouTube videos in the campus LMS while other learners can listen to lectures which are recorded in programs such as Jing. Other programs, like Camtasia, provide instructors opportunities to extend options to different modalities of learning.

Learning Management Systems

LMS can be utilized in various ways across higher education courses. Course shells can be used as simple "shells" that hold the basic course information, such as rosters and syllabi or they can also be used as repositories for course materials and be a resource for students who miss class or have mislaid important information. The LMS can help further enhance the face-to-face classroom with online activities or assignments or the LMS could create blended or hybrid courses that are a mixture of face-to-face and online. The ways each institution and each faculty member handles trends, such as integrated reading and English courses or co-requisite education, tend to vary; however, as Rhode et al. (2017) observed in their study, there tends to be usage patterns that can emerge. Still, to create a fully online course a LMS is a must have for a university or college.

There are many LMS available; Blackboard, Canvas, D2L, and Moodle are currently among the biggest names. While there are many determining factors as to what LMS is ideal for courses/universities to use (cost, support, ease of use, and more), it really all depends on the purpose and outcomes desired from using it in courses. Washington (2019) argued that while online courses are key to LMS selection, the needs of face-to-face courses should also be taken into consideration.

LMS is a critical technology platform for teaching and learning for nearly all institutions of higher education. Although a LMS is a driving force in online courses, it is not always used in traditional face-to-face environments. Adding information in the LMS offers students course access which is available 24-hours a day (Washington, 2019). In the early days of online coursework, classes were not as interactive as they are now and it was difficult to ensure student accountability. However, using newer software applications like Zoom, a video communications program that provides a platform for video and audio conferencing, chat, and webinars used within many institutions of higher education, allows students to interact with each other in breakout groups or as a whole class, as well as sharing and editing group assignments. Further, students who have families and/or work full time are more apt to apply to colleges that are flexible to their needs and preferences as they may want to multitask which is why it is important for Higher Education Institutions (HEIs) to wholly embrace virtual instruction. Synchronous and asynchronous online instruction both have merit. Alternative, self-paced, or experimental OWI models should be subject to the same principles of pedagogical soundness, teacher/designer preparation, and oversight that all courses are. This aids students in learning on their own schedule in an online learning environment (CCCC, 2013).

The problem is an underutilization of LMS in face-to-face higher education courses (Washington, 2019). Instructors, both adjunct and full-time, must be trained and encouraged to use the LMS as a part of all classes, both online and traditional (see Figure 3). Washington's study results identified the features and tools in the LMS used most frequently and how they were used in the LMS. Based on this study, it is possible to better understand the educational potential of the LMS to enhance traditional face-to-face courses.

Still, educational administrators and instructors recognize that there are benefits to working with LMS where student learning is concerned. LMS can both aid in integrating assessment measures as well as fostering self-directed learning (Hernandez-Garcia & Condi-Gonzales, 2016). These two features alone can be of value to institutions, but these attributes can certainly appeal to diverse learners and instructors who prefer more digital communication. Additionally, LMS helps make educational resources available to learners, and built in LMS functions can aid in obtaining social learning analytic data (Palahicky, 2015). In regard to differentiated learning, LMS can support various methods of instruction when it comes to meeting learner needs (Palahicky, 2015). In this way, LMS can further aid in meeting students where they are.

However, an online course must be built by faculty members and staff. The more diversified the teaching and learning approaches, the more potential there is for teacher-student objectives to be met via course delivery. Instructional designers using best practices can work alongside faculty members to create successful student experiences (Sugar & Luterbach, 2016). Best practices are many and varied, and all should be explored fully. One, for instance, is discussed by Mtebe (2015) who found that coupling LMS with social media can prove beneficial in higher education courses as social media is a familiar platform that students utilize for communication and connection.

Cell Phones

Another relevant piece of technology is the smartphone. Ortiz and Greene (2019) contended that the use of mobile technology, such as smartphones and tablets and other handheld devices, is deeply embedded in everyday college life by Generation Z (students born between 1995 and 2010). The frequency with which Generation Z students use these mobile devices is exhibited by the way they access numerous digital tools and next generation technology. Watson (2020) stated that in their 2018 State of Gen Z study that 95% of the Generation Z population had a smartphone and 25% had a smartphone before age 10. Being connected 24/7 is the norm for these individuals.

Frequency counts were employed to determine numbers of logins over 24 hours, logins over days of the weeks, and preferred operating systems. The study reported that there were 14, 234 unique visitors, that Monday had the most logins of the days of the week, and that the most frequent time of day for logins was 10 a.m. Interestingly, there were a robust number of logins between midnight and 6 a.m. (Ortiz & Greene, 2019).

This group uses technology in all aspects of their daily lives. From the data, we can argue that the lives of the majority of the current population depend on mobile devices and it is difficult to take away from them. Smartphones represent the evolution of the mobile telephone into a minicomputer that can be carried anywhere; this was different from merely incorporating technology into course curricula (McVay & Dyck, 2015). More faculty should embrace their technology use as learning tools. With the help of software applications like Microsoft Word, Adobe reader, iScanner, and DocuSign, students who cannot afford to purchase laptops tend to do their assignments, as well as complete and sign documents on the phone without any difficulty. The importance of mobile devices cannot be overlooked in this era and HEIs should consider this when making decisions concerning their students.

Barnwell (2016) posited that cell phones offer students from diverse backgrounds the same technological chance to be successful. The cell phone has changed and developed so rapidly during the past decade that it makes having one invaluable for various purposes (Ray, 2015). Cell phones today are much like minicomputers as some of them are the size of computer tablets. The convergence of all technology gadgets into one mobile device, like the cell phone, will continue to advance (Jones, 2020). Instructors take the technology lane by permitting students to access cell phones as teaching aids. Apps offered on cell phones can aid in student learning, such as Top Hat (Rimer, 2019).

Of course, there are concerns with cell phone use. Richmond and Troisi (2018) reported that when students have free reign to use their cells in class, they do not perform as well as they could have if they did not use their phones. Cell phones, therefore, could serve as a distraction. While this may be the case, it would behoove instructors to determine the intention behind cell phones. For instance, would it be for a certain assignment or purpose? It is indeed a challenge for educators to capitalize on the pervasive use of cell phones by younger students.

> Technology is a good way to help students bolster the necessary skill set to be successful in higher-level college courses while also preparing them for an ever-changing workforce that has incorporated numerous technological expansions.

Social Media

Many instructors have begun to embrace social media as part of their courses. According to The Derek Bok Center (2020) at Harvard University, since students are already using social media it could be beneficial for instructors to incorporate it into lectures and other course content. Blankenship (2011) contended that social media is implemented in the classroom in several ways. The Babson survey noted that 30% of online educators used social networks to communicate with their students (trading posts on blogs, for instance) while more than 52% used online videos, podcasts, blogs, and wikis during actual class meetings (Allen & Seaman, 2014). There are many options for integrating social media in formal learning environments. Examples ranged from using closed course groups on Facebook, adding YouTube videos in a lecture, to using Google slides.

There are facets of social media to consider before implementing it in course learning, such as literacy. Blankenship (2011) stated that five interconnected literacies exist in using social media in college courses. The first was attention as it is vital to know where and when to direct one's attention with social media inclusion. The second literacy entailed defining what it means for someone to be a good participant. Thirdly, online communities are built for collaboration. A fourth point is that one must be aware of the privacy settings and the perils of using social media as part of a course. Lastly, critical consumption, determining what is real as well as important and vice versa, describes the fifth literacy. Social media platforms can be used in many ways to support higher education. These trends must be considered cautiously in using this technology as part of a college-level course. Social networking platforms (SNS) are commonly used in higher education. Many

young adults used social networking sites (SNSs) to stay in touch with their friends as well as for entertainment (Islim & Sevim-Cirvak, 2019).

Faculty members and students are conscious about friend requests, as both groups are able to send and/or accept friend requests to/from each other without hesitation. Both positive and negative connotations can be applied to this aspect of social media. While allowing friend requests are not required to join closed groups, this allowed students a view into the personal postings of professors and vice-versa.

Faculty members preferred that students did not communicate with them via SNSs. Only one-third of the faculty members created groups on SNSs in order to communicate and share with their students (Islim & Sevim-Cirvak, 2019). Institutional SNS accounts and groups were seen as a requirement by both students and faculty members for announcements and sharing on an institutional level (see Figure 1).

Other SNS use involved course postings on Twitter in closed class groups for particular courses (see Figure 1). LinkedIn and Instagram are also used by some professors to support student learning. The use of closed courses on SNS sites is important as it embraces student technology interests while also allowing another outlet for students and instructors during the Covid-19 pandemic. There are other benefits of using a SNS as a part of college courses. This use will help with the issue of regular contact and communication between the instructor and student. Greene (2020) contended that the distinction between synchronous/asynchronous learning is more complicated than it looks.

Figure 1: *Social Media Tools*

Site	Positive	Negative
FaceBook	Private Messaging	Requires personal account
Twitter	Closed Groups	Requires personal account
LinkedIn	Private Messaging	No Closed Groups

Note. This `figure offers different tools available on social media sites.

`Implications to Online Learning

Darby (2019) expressed that online classes are here to stay. Therefore, determining how to run an online course is vital for instructors. Indisputably, online learning provides increased access to tertiary education (Gannon, 2019). According to the CCCC (2013), Principle 2 asserted that an online writing course should focus on writing and not on technology orientation or teaching students how to use learning and other technologies. This is an important point for campus Instructional Designers to consider. While instructors have been critical of computer-based writing instruction, the situation with Covid-19 will require revisiting how quality writing instruction measures can be included in online courses. Within all online instruction, referring students to online tutoring, campus-based tutoring, and other online writing resources should not be neglected.

While administrators are willing to offer online courses to varying degrees, conversely, formidable educators are not necessarily equipped or inclined to deal with all the technology available to them to further develop their discipline. Alternative, self-paced, or experimental online writing instruction (OWI) models should be subject to the same principles of pedagogical soundness, teacher/designer preparation, and oversight detailed in this document (CCCC, 2013). Only about 33% of prospective online students said they perceived the quality of online education to be equivalent to face-to-face instruction. Furthermore, 36% of prospective students surveyed, cited a concern regarding employer acceptance of online education (Kumar, 2010).

In terms of students, online learning courses can result in decrements across learner populations. One research study (Xu & Jaggars, 2014) reported that males, younger students, Black students, and students with low grade point averages struggled more. Most online courses are still taught in a "virtual classroom" format in which the instructor has a defined schedule for covering curricula and classes are conducted over a set number of weeks. This format may not reach all students as it may be difficult to attain a sense of connection and community among learners (Mendenhall, 2011).

Educator reluctance, lack of skill, time constraints, lack of tech support, and low pay may all be variables as to why educators may not produce more creative class formats. Online writing teachers should receive fair and equitable compensation for their work. However, it is critical to consider different ways to reach students, so they are successful as online learners. Perhaps, students can help facilitate the process through peer education, co-teaching, and assigning creative implementation online course strategies (CCCC, 2013). Richmond and Troisi (2018) advocated that, when possible, instructors should approach learning in a multimodal and multifaceted way.

The inclusion of technology in college courses can cause frustration for the learner and the instructor when it comes to connectivity at student residences, whereby learners may not have internet access for various reasons. This lack of consistency and access to technology can be an issue especially for students who live in rural areas (Koricich & Boylan, 2019). Students living in mountainous, rural, and non-mountainous areas can all be impacted by this problem. Not only does connectivity at home present a problem, but software cost and access can also be a concern.

In terms of software use, cost can be a prohibitive measure. If students have to pay for expensive software programs, then this can cause,

or add to, their financial burden. According to Boylan et al. (2017), 81% of African-American students graduating with associate degrees are in debt (14% more than white students) and 66% of African-American and Latino students that borrow money drop out of for-profit colleges with debt loads. On the instructor's part, distinguishing what type of software to include required careful thought regarding the student's financial situation, accessibility, and skill level, among other contributing factors. Instructors must also gauge student readiness to use and access a particular software program.

Creating Parallels Among School and the Workforce

Student technology use can run the gamut. Before entering college, students are expected to know how to write and edit essays using various forms of technology. Students also must be prepared to create course presentations. After enrolling in college, students are expected to adapt to instructor communication preferences-written, verbal and digital. Today's college students should be able to navigate the internet and find credible resources to support their ideas. Technology can certainly enhance the classroom experience (Richmond & Troisi, 2018) by way of building relationships and communicating ideas. Students can use Smartboards, PowerPoints, Google docs, Pecha Kucha, MOOCs, databases, software programs, video lessons, self-testing, and discussion forums to identify ways they can be successful learners (Richmond & Troisi, 2018). Learning the myriad ways of communication approaches are used in formal learning settings so they can apply this learning more readily in the workforce is vital for students. This knowledge can make the transition from college life to work life more seamless.

Digital Natives and Shifting the Paradigm

Millennials have been referred to as "digital natives" (Prensky, 2018). Though this idea has been debunked in many academic circles, this group is born into a technology-centric world and it is inherently natural for them to connect digitally for various purposes. Au-Yong-Oliveira et al. (2018) conducted a study of 111 millennial students where research participants were asked to complete surveys on the leader attitude and higher education approaches they desired. The study results indicated a high value placed on technology in classes, particularly in Padlet.com, Moodle, online news forums, as well as students being tasked with producing their own videos focused on course learning. Shifts in technology, student diversity, and ever-changing educational practices can all inform how technology is used for learning in higher education. Being intentional with how technology is implemented in higher education learning can pave the way for a paradigm shift.

"Ed tech" supports a nearly obsolete educational paradigm as he acknowledged the digital connection and interactivity youth crave. Prensky (2018) believed that purchasing dedicated educational software is not necessary, and urged educators and students to locate creative ways to use tools such as augmented reality, robotics, virtual reality, analysis tools, and other communication tools so that learners will be more empowered to make meaningful contributions to the world by exploring ways to improve it.

Possibly one avenue for online instructors to consider is to pursue simulation education (SE). In terms of benefits and value, authors Campos et al. (2020) make correlations between SE and student intrinsic motivation, and between SE and Science Technology Engineering and Math (STEM) programs of study like engineering and marine ecology. The team addressed the importance of "serious" game play (p. 3) in which gamers can improve decision making skills as they navigate realistic experiences playing games. Another platform that may be worthy of exploring in higher education is Artificial Intelligence (AI). Zawacki-Richter et al. (2019) reviewed how AI has been implemented in higher education and arrived at limited results, indicating that AI has mostly been used in computer science and STEM fields. However, these authors report AI is an emerging field and may enhance student learning outcomes.

Continuing further into options, and considering cultural factors that exist among students, is the notion of redeveloping a global MOOC to be more relevant locally. Chen and Oakley (2020) conducted a 3-year study that examined an English-Chinese MOOC "Learning How to Learn" (LHTL). The researchers determined that MOOCS could assist in sustainable course redevelopment in their research outcomes and suggested setting up comparable MOOCS, that are research embedded, can engage local partners, and allowed for MOOC instructor collaboration. This collaboration can produce a sustainable online model. Furthermore, Chen and Oakley (2020) indicated in their concluding remarks that, "Our work is a proof-of-concept, showing that creating a learning environment that enables domain-specific MOOC research is practicable" (p. 20).

Online Education and Creating Community

As evidenced in this article, there are several options for educators to explore in creating a quality online class. In times of crisis, like the Covid-19 pandemic, technology can not only save jobs but be instrumental in meeting student learning outcomes. An article in Forbes magazine by Star (2020) titled, "Online education becomes teacher's pet in Covid-19 Crisis" is just one source that points to the significant value technology presents in educational systems. While higher education instructors work diligently

to determine the right online technology for their courses, it would behoove them to consider platforms and strategies that foster community among learners, as community is vital in times of crisis.

People's lives have been uprooted, problems need to be solved, and people need support and care. Perhaps this crisis is an opportunity for higher education systems to not only build their resilience but is also a chance for them to integrate (perhaps more intentionally) community and relationship building into online courses. For instructors who are not familiar with online teaching, the current crisis could be stressful for them as they will need to spend hours figuring out how to make their virtual class "less boring." O'Malley (2017) suggested that being mentally present is important. This acuity includes actively engaging with students, posting bios, and encouraging students to do the same.

Studies and articles have addressed social justice and its place in educational systems. While social justice is a valid consideration given developmental classes, diverse learners, and varied teaching preferences of professors, systems can grapple with how to implement social justice tenets. Guthrie and McCracken (2010) shared an idea about constructing intentionally designed courses that interconnected service learning, technology, and social justice in their research. Although this article was published ten years ago, much of what was discussed remains relevant to current issues and complexities in terms of educational instruction. Another notion might be to organically involve students in the complexities of solving such real-life problems by experimenting with various technology platforms to determine what may or may not work sustainably for higher education culture. By involving students, professors and learners have an opportunity to create meaningful relationships and thus, meaningful learning outcomes.

While the pandemic has been accompanied by much hardship for people, it has also come with opportunity for institutions of higher education to rise to the occasion by showing grace, creativity, and resilience in their embracing of technology and maximizing its capabilities.

A Call to Action

Although Covid-19 has created considerable upheaval globally, it also has created a chance for higher education systems to connect with learners in ways that may otherwise be left unexplored. Technology has provided a tool, or bridge, to help develop relationships and community among students and faculty across higher education environments. In these times, it is evident that communities across the globe need to find as many ways as possible to connect in meaningful ways. Students desire social connection, digital connection, and a sense of community and belonging. Numerous higher education systems have accepted this call to action by encouraging educators to do things differently, with greater intention and purposeful inclusion, in the construction of their virtual classrooms.

Wingenbach, the President of Hampshire College, in Massachusetts, stated that "designing online instruction is a discipline backed by decades of learning science… [it is] a process that takes months, if not sometimes years, to do properly…" (as cited in Gardner, 2020, para 4). While many institutions have offered certain courses online over the past decade, others have been taught strictly in a traditional classroom setting. Instructors, both adjunct and full-time, need as much support as possible in working through this forced transition. Campus trainings and webinars can be paramount to student success and retention in this new environment.

Many colleges are proceeding with online instruction using their existing LMS and common conferencing software, like Zoom, for lectures and discussions. It is important to transition to this format with flexibility. Creating materials, such as pacing guides and course modules, are helpful in this transition (Gardner, 2020). With all instruction moving online at most colleges and universities following this year's extended spring break, an important point to keep in mind is that faculty should be allowed to use the technology that they are comfortable with during the transition (Gardner, 2020). A majority of college faculty are trained in basic use of the campus LMS; this training is a step in the right direction.

Helping Students Underprepared to Succeed with Technology

There are certainly positive and negative aspects to using technology in developmental education courses. Up-to-date pedagogy needs to be adjusted to computerized environments, and that tasks cannot simply be transferred from traditional study environments to computerized one. However, there are no clear guidelines as to how to do this effectively (see Cheung & Slavin, 2013).

There are three phases to increasing college completion. The first is to improve the quality of teaching and learning in community college classrooms; the second phase is to fully integrate courses and student support services; and the third is to expand the connections between community colleges, public schools, and community services (Boylan et al., 2016).

Professional development is at the center of meeting phase one of Boylan's et al. (2016) plan and required a substantial faculty development effort. Faculty and staff members cannot adequately assist students underprepared in the use of technology if these professionals are not efficiently prepared. Professional development should include both full-time and adjunct instructors, as well as professional and paraprofessional staff members.

Creating a common campus culture with open communication lines is necessary for meeting phase two. Boylan et al. (2016) asserted that, at present, the academic and the student affairs divisions of community colleges usually operate randomly and independently of each other. Technology programs can help bridge this gap. Through technology such as Form Stack and similar software programs, online forms can replace papers ones which allows multiple departments immediate access to documentation. The DMI Daily Digest (2020) maintained that by using predictive analytics, this method examines data patterns to determine if those patterns will likely occur again. Institutions can then provide students with support services before problems are encountered. The University of Nevada is already using analytics to pinpoint students who need earlier intervention. Using the insights yielded through predictive analytics, instructors' step in to provide timely interventions (DMI Digest, 2020).

In order to expand connections in phase three, Boylan et al. (2016) suggested that high schools and colleges collaborate more closely to ensure that the exit standards of secondary education are more consistent with the entry standards of postsecondary education. In addition, community colleges needed to establish better relationships with services available in the local community to address the varying non-academic needs of the least advantaged students. By embracing technology, these communication gaps can be met. For example, by using data gathered from their LMS, Georgia Southern was able to predict, measure and guide student performance for better graduation rates (DMI Digest, 2020). Through analyzing 53,000 data points the school gathered from 3,155 students, their system predicted a passing final grade with 82% accuracy at the course midpoint. Student progress was tracked to determine success or failure. As students continue to move through a course, the system's accuracy improves, with an 87% accuracy by the 16th week of a course. By leveraging this system, Georgia Southern aims to produce 250,000 more graduates in upcoming years. Through this extra attention to detail, universities are able to retain students and see them through to graduation (DMI Daily Digest, 2020).

Additionally, technology can serve as an integral part in meeting the current deficit of college graduates in the United States, as well as aiding students in completing college with less debt. Three factors—a shortage of college educated workers, the increased costs of a college education, and the increase in student debt—have captured the attention of policy makers in the past decade. These factors can be mitigated using educational technology to move more classes, at all college levels, online (Boylan et al., 2017).

Each of these phases can be accomplished through the use of educational technology. An authors of an article published in DMI Daily Digest (2020) stated that as the cost of higher education has continued to rise for the past three decades, by an average of 3% each year, the need for finding additional ways to fund higher education has become a priority. As such, the phases outlined by Boylan et al. (2016) should be taken into consideration when implementing technology in developmental education classrooms. Technology, especially in this chaotic time for higher education, can help to alleviate each of these trends.

Developmental educators have been caught up in the completion agenda and subsequent reform movement, frequently having to completely change what they do, often without having any input into the change (Boylan et al., 2017). Primary and secondary stakeholders on campus have not had considerable input with curricular mandates from the state community college systems or legislature in many states but buy-in from these stakeholders is pivotal to successful implementation of innovations, such as increased technology use. By 2020, LMS use will become more significant, such as connecting students with advisors, making tuition bill-pay easier, offering a convenient way to make appointments with counselors, checking and submitting for financial aid, offering more robust job boards, and connecting current students with alumni (DMI Daily Digest, 2020).

Much has changed across higher education. With many courses going online (some for the first time), it is vital for all campus units to come together to support student success, retention, and persistence. Clear communication between campus departments, support—both technical and otherwise—and experimentation with innovative ideas are three points that can help all of higher education to weather this pandemic and to come out the other side stronger and more ready to tackle the challenges facing twenty-first century students.

Since the Covid-19 pandemic has changed the higher education landscape so rapidly in such a short time period, instructors and staff members,

must adjust to this metamorphosis. The authors acknowledge that there are many different positive and negative aspects of implementing supplemental technology. Educators must become familiar with the emergent technological and hybrid course formats now being adopted in higher education (see Figure 2). The chart below offers some helpful hints for the inclusion of supplemental and other technology in courses. The chart also lists several pitfalls instructors should try to avoid in making this transition.

The chart (see Figure 3) below should serve as a starting point for the addition or subtraction of supplemental technology to courses which now must be taught online. The hints listed above are general and can be applied to any campus as the culture and procedures do vary from campus to campus. Higher education professionals must reinvent how students succeed using technology in today's new normal.

Figure 2: *Course Formats*

Course Types	Definition
Traditional	Course where no online technology used — content is delivered in writing or orally.
Web Facilitated	Course that uses web-based technology to facilitate what is essentially a face-to-face course. May use a course management system (CMS) or web pages to post the syllabus and assignments.
Blended/Hybrid	Course that blends online and face-to-face delivery. Substantial proportion of the content is delivered online, typically uses online discussions, and typically has a reduced number of face-to-face meetings.
Online	A course where most or all of the content is delivered online. Typically have no face-to-face meetings.
Synchronous/ Asynchronous	Synchronous learning is online education that happens in real time. Asynchronous learning occurs through online channels without real-time interactions. Many hybrid models include both.

Note. This chart offers definitions for different types of courses taught in Higher Education (Adapted from Allen & Seaman, 2014).

Figure 3: *Helpful Hints for Technology in Higher Education*

Start Small Change in departmental curriculum should be piloted on a small scale. Start small and then expand to the larger course offerings.	**Be Reasonable** Avoid burdening students with too much work in accelerated learning courses. Too much work can result in students dropping courses, as well as hindering student engagement, and decreasing motivation levels.
Be Flexible Initial plans for implementing innovations, especially technological ones, often have to be tweaked. Try different versions of assignment lists, pacing guides, and other supplemental materials.	**Don't Forget Training** Be sure to provide adequate training to faculty when using new technology. Training should be offered for both full-time and adjunct faculty.
Find Common Ground Use technology that all students can understand and benefit from. Amend assignment lists based on student performance on initial placement tests.	**Create Ease of Use** Be sure online material is easy to find and clearly listed on the main tool bar of the LMS. Order these appropriately as well.
Get Student Input Review how students feel about the inclusion of different forms of technology at the beginning, middle, and end of each course to help discern student engagement and whether the technology is beneficial to bolstering their skills.	**Get Approval** Do not use supplemental software programs that are not approved by your campus IT department. Doing so can cause issues with campus IT security protocols.
Find Other Avenues to Success Be open to creating micro-credentials and other offerings which can be gained strictly online. Some students might be interested in investing in a new degree or a new credential during the time they are quarantined at home.	**Know Your Limits** Do not go beyond the state, civic, or campus mandated requirements for implementing an innovation with technology at the current time. Stay within your campus' plan for making advances work.

Note. This chart outlines some helpful tips for technology application in developmental education (Adapted from Boylan, 2002).

Conclusion

Technology is a good way to help students bolster the necessary skill set to be successful in higher-level college courses while also preparing them for an ever-changing workforce that has incorporated numerous technological expansions. Embracing new ways to help students who are underprepared and underserved bridge the skill gap in entering college for the first time or those returning after an extended absence in the workforce is vital, especially considering the world-wide ramifications of the Covid-19 pandemic. Creating clear, concise documents and embedding them in the campus LMS online, sectioning the course into manageable units, and using properly leveled technology, will help both students and instructors make a more seamless transition while maintaining a meaningful online presence. Attempting to re-create in-person assessments

in online settings, does not always work. Recognize that a change of medium may require a change of design (Greene, 2020). In order to create a successful transition, this process requires faculty and students alike to show flexibility and a willingness to learn. Remaining flexible is essential as society moves through this transition. Accommodating students by extending deadlines and providing instructions and rubrics for their online assignments can help faculty build relationships with their students. Flexibility is especially important for students who are taking online courses for the first time.

The advent of the Covid-19 pandemic has made it clear that colleges must have a thorough, long-term digital strategy in place for course delivery and campus-wide operations. Only 42% of institutions have an information-technology business-continuity plan to facilitate remote operations in the event of a disruption like a pandemic. This data means that 58% of these institutions are reacting and scurrying. The expedited course creation process brings up new questions regarding the efficacy of this process (Grajek & Brooks, 2020).

The current pandemic event, which affects all parts of society, will have long-lasting effects on higher education and the way students are taught. Even if the experience does not drive more faculty members to teach online, many who have run their classrooms the same way for years may be exposed to more modern teaching methods and concepts as a result of this pandemic (Gardner, 2020). While the pandemic has been accompanied by much hardship for people, it has also come with opportunity for institutions of higher education to rise to the occasion by showing grace, creativity, and resilience in their embracing of technology and maximizing its capabilities.

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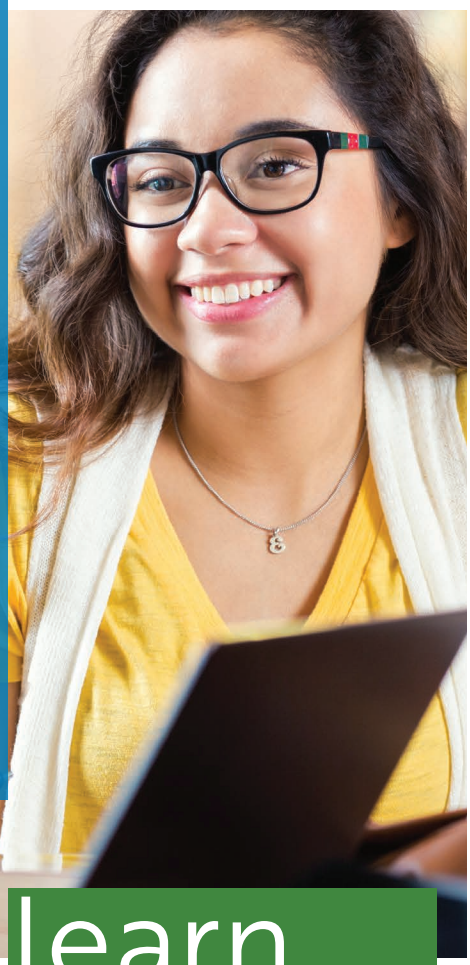

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PROMISING PRACTICE

Practical Autonomy-Supportive Tutoring Strategies for Multilingual Student-Writers and a Writing Center Tutor Handbook

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Writing centers are an important learning support resource that assist students to become successful writers with various academic backgrounds and abilities (Greenfield & Rowan, 2011). For decades, writing centers have been conceptualized as learning communities (Grimm, 1999) and "homey" environments (McKinney, 2013, p. 7). Although they are designed to support all students, there is a growing need for writing centers to support the academic development of multilingual students (Schneider, 2018), in part due to the rapidly increasing number of international students (Institute of International Education, 2018).

The mission of most writing centers is to cultivate effective and independent writers. However, in sessions with students from culturally and linguistically diverse backgrounds, tutors tend to make direct edits on their writing products despite writing center policies that discourage such practices and encourage process-oriented writing instruction (Cheatle, 2017; Kim, 2018). One cause for this problem might be the minimal tutor training of specific techniques to best support multilingual students' writing development. The focus of this article is a promising practice to support writing tutors called *autonomy-supportive* instructional strategies (Reeve & Jang, 2006), which are designed to nurture students' inner motivational resources. We integrated the model of autonomy-supportive instructional strategies with the existing literature on English language teaching and writing center practices. In addition, we incorporated reflections on our teaching experiences with adult multilingual writers. We conclude by presenting 11 hypothesized autonomy-supportive tutoring strategies to use among multilingual student-writers and a writing tutor handbook that encompasses our synthesis of the literature and our experiences.

Literature Review

Self-determination theory (Ryan & Deci, 2000) emphasizes that individuals' ideal functioning requires three psychological needs to be met: competence, relatedness, and autonomy. Grounded in this theory, numerous studies in various fields

It is critical for writing centers to establish an inclusive and motivating model of practice to better support multilingual student-writers.

suggest the importance of teacher autonomy-support—how instructors nurture student's inner motivational resources (i.e., interests, preferences, values) to boost student persistence and motivation for learning (Karimi & Abszedeh, 2017; Kusurkar et al., 2012; Reeve et al., 1999). In fact, Reeve (2006) argued that a central role for instructors is to facilitate students' autonomy. Reeve further concluded that instructors should structure learning environments to nurture and expand on students' learning experiences. Autonomy-supportive teaching strategies typically involve (a) allowing students to meaningfully choose learning activities, (b) using informational, non-controlling language, (c) communicating task value and providing rationales, (d) incorporating student perspectives to ensure students feel respected and motivated, and (e) acknowledging students' expressions of unpleasant emotion (Patall & Zambrano, 2019; Reeve & Jang, 2006).

In the context of English language teaching (ELT), multiple studies have highlighted the importance of instructors with regards to multilingual learners' motivation, confidence, and sense of autonomy. For example, Clément et al. (1994) found that instructors' rapport with students was associated with language learners' linguistic self-confidence and anxiety. Examining language learners' self-determination with language learning, Noels (2001) observed that language learners with more choices of their learning activities reported higher levels of intrinsic or internalized motivation. Autonomy-support is related to an ELT construct called learner autonomy (Borg & Al-Busaidi, 2012; Holec, 1981; Sinclair, 2000). One important aspect of learner autonomy is the role of scaffolding. Cotteral and Cohen (2003) proposed key elements of scaffolding that support autonomous learning with reading: modeling of expert strategies, providing cues to adopt new strategies, practicing and discussing the new strategies, and providing immediate feedback on their performance. These recommended strategies can be used to improve language learners' writing, speaking, and listening.

Product

Applying Reeve and Jang's (2006) conceptualization of autonomy-support and the ELT construct of learning autonomy, we developed a framework of autonomy-supportive tutor instructional strategies designed for serving multilingual students. This framework incorporates scaffolding (Cotteral & Cohen, 2003), learner autonomy in ELT (Borg & Al-Busaidi, 2012; Sinclair, 2000), and autonomy-supportive elements of instructors as facilitators (Patall & Zambrano, 2019; Reeve & Jang, 2006). In this framework, we curated 11 autonomy-supportive instructional strategies for writing tutors working with multilingual student-writers:

1. Plan the tutoring session time efficiently: Practitioners should ask students the specific deadline of the assignment and their availability for investing more time on the paper after the session. Negotiating the agenda at the beginning provides structure and guidance that builds on students' needs. It also promotes modeling of expert strategies and conscious awareness of the learning process, facilitating development of skills to actively plan the writing process with future assignments.

2. *Actively ask for the students' learning goals*: Students commonly request that tutors edit or proofread their writing assignment based on the misconceptions of the writing center services (Cheatle, 2017). Some students might not come with a clear goal either. It is, therefore, critical to ensure that their learning goals are achievable and aligned with the writing center policies. Students should be given choices to redirect their goals accordingly while also nurturing their interests. Start the session with questions like, "What would you like to achieve today?" to help formulate appropriate learning goals for the session.
3. *Offer opportunities for students to talk:* In some cultures, students are not accustomed to expressing their intentions or thoughts to an instructor (Blau, Hall, & Sparks, 2002). Taking a culturally specific perspective, offering students the time to organize and express their thoughts out loud, at their own pace, can help enhance their sense of autonomy and competency. It can also provide them the opportunity to process and reflect on their concerns regarding their writing. Tutors should encourage students to ask questions anytime during the session.
4. *Offer opportunities for students to process feedback in their own ways:* All cultures have different writing orientations and decision-making processes—e.g., contrastive rhetoric (Kaplan, 1966). Giving feedback can potentially conflict with their existing knowledge or past learning experiences. Try identifying feedback processing strategies that work best for students. If students struggle with following verbal feedback, visual tools such as concept maps can help them stay engaged and understand key points of the feedback.
5. *Provide specific rationales:* Rather than providing implicit directions (Nan, 2012), explaining specifically why certain changes need be made can help students understand and consciously reflect on their errors. Rationales can help them internalize writing mechanics as they develop as writers.
6. *Ask for students' intentions:* All students have cultural schemata that affect their writing processes and writing styles (Blau et al., 2002). Understanding students' perspectives and, thus,

their intentions behind their choices of words or organization can help inform tutor feedback and help students feel respected and motivated. For example, tutors may ask students, "Let's explore what is behind your idea here. Discuss with me your goal for this paper."

7. *Provide feedback by asking guiding questions:* Instead of providing directive local-level feedback (Myers, 2003), ask probing questions to get the students involved in the process of making the changes. For instance, "What kind of word might be appropriate here?" and "How about we restructure this statement together?" Such questions can increase students' meta-cognitive awareness throughout the editing process (Borg & Al-Busaidi, 2012).
8. *Offer meaningful encouragement with hints for improvement:* "You are almost there. Consider changing A, B, and C before you finalize the paper!" Such an encouragement, especially using words like "consider," "could," or "might" can boost students' confidence and guide them to evaluate further their writing process after the tutoring session (Patall & Zambrano, 2019).
9. *Praise students for their ideas and efforts:* Students often perceive their overall proficiency and skills lower than how tutors perceive them. Crediting their effort on building a well-thought-out writing piece can boost their confidence.
10. *Communicate perspective-taking statements:* When students express their struggles with the writing process, acknowledging and validating their challenges can help them feel less isolated within the English language writing culture (Lee & Schaller, 2008). Communicating perspective-taking statements such as "I would also struggle writing this paper! The topic is difficult" or "English grammar can be very confusing. I also get confused with the rules" can help students feel connected to the tutor's guidance as well as the English writing culture.
11. *Be responsive to all types of questions*: When students ask questions, the topics can vary from grammatical structure to cultural information. As a tutor, however, it is vital to be aware that some students may ask questions after long contemplation because of culturally and linguistically different teaching-learning practices. Thus, responses such as "That's a good question" or "I never thought of it that way" can promote the practice of asking questions for learning and value their effort to seeking help.

Based on the proposed model, we designed a writing tutor handbook (Chung, Chaney, & Fong, 2020) to assist writing centers and tutors in their support of multilingual student-writers. In the handbook, we included detailed descriptions of each strategy, example situations, and recommended practices.

Conclusion

The article presents the promising practice of autonomy-supportive tutoring strategies for multilingual students in writing centers. We synthesized different fields of teaching practices to provide motivationally supportive tutoring instruction for multilingual student-writers. Most importantly, we encourage writing centers to offer formal tutor trainings that address needs of student-writers with culturally and linguistically diverse backgrounds. With the proposed model of autonomy-supportive tutoring strategies, we invite scholars and practitioners to implement such practices in various contexts. It is critical for writing centers to establish an inclusive and motivating model of practice to better support multilingual student-writers.

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PROMISING PRACTICE

Implementing Collaborative Mock Exam Review

Nisha Abraham, *University of Texas at Austin*
Nina Kamath Telang, *University of Texas at Austin*

ABOUT THE AUTHORS

Nisha Abraham *coordinates the Supplemental Instruction Program at the Sanger Learning Center. She received her B.S. in cell and molecular biology from The University of Texas at Austin in 2007, her M.S. in biology from Texas A&M University in 2012 and her M.A. in STEM Education from The University of Texas at Austin in 2019. She was a teaching assistant for several undergraduate biology classes, developed graduate TA training for the Center for Teaching Excellence, and conducted research on improving student motivation and performance in science education. Nisha's area of interest is understanding the impacts of the SI program to student outcomes and retention.*

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Exam reviews are a common offering within and across courses, often supported by departments, learning centers, and success centers. However, the majority of typical exam review formats follow the lecture or direct-teach format, with instructor-centered re-teaching or problem-solving as the mode of review. In lieu of this traditional and more *passive* offering, Balch (1998) found that students of all academic ability benefitted from *active* practice exam reviews and outperformed those who participated in typical exam reviews. In these *active* practice exam reviews, students spend time in the review actively solving problems, developing solutions and answering exam-style questions rather than passively receiving answers or watching an expert solve questions. Cranney et al. (2009) also saw positive gains in student outcomes based on the testing effect of repeated quizzing and testing, as opposed to re-study.

Retrieval practice, which pertains to the act of recalling information without assistance (such as use of materials or other aids), has been extensively investigated in such seminal papers authored by Karpicke and Roediger (2008) and Karpicke and Grimaldi (2012). These researchers provided evidence for the positive impact of retrieval practice to learning gains as opposed to the common practice of repetitive study time. These researchers also demonstrate that the use of retrieval practice, on even high level and complex questions, can have the largest impact on overall learning. But without structure provided by the university, department, or faculty, this message may be lost; Felder and Brent (2016) encouraged faculty to provide opportunities for students in their courses to practice active retrieval, detailing that desirable difficulties will improve current course outcomes and also future success.

One faculty and one staff member from our university who collaborated on this study attended the University of Kansas session presentation at the American Society for Engineering Education (ASEE) Annual Conference in 2019. The session centered on the use of a new type of the active practice exam review—collaborative mock exam reviews offered for historically difficult introductory math and science courses (Shew et al., 2019). This type of innovative exam review combined the characteristics of an active practice exam review and retrieval practice described above. The structure of the collaborative mock (or practice) exams included three parts:

1. Students worked alone for 30 minutes on the mock exam, just as they would on the actual exam (time for retrieval practice as well as active problem-solving).
2. Students collaborated with their peers for the second 30 minutes of the mock exam (time for collaboration and active problem-solving).
3. Trained volunteer peer educators discussed the mock exam problems for the final 30 minutes of the mock exam session (time for review and instruction).

We saw positive student feedback on both the implementation and the structure of the collaborative exam review ...

As many of the required introductory courses for our electrical and computer engineering students also report high percentages of Ds, Fs, Qs (drops), and Ws (withdraws), we opted to pilot this type of intervention in our Introduction to Computing course. The course had less than 100 students registered and was taught by the aforementioned faculty collaborator who had attended the ASEE 2019 session, and the collaborative mock exam covered all the content that students needed to review before the actual upcoming exam. While the collaborative mock exam problems were different from the problems on the actual exam, the level of difficulty of the questions matched closely. The staff collaborator had access to the learning center's drop-in tutoring center, which fit the total number of enrolled students—more than the expected number of attendants. While Shew et al. (2019) used volunteer peer educators, we were able to leverage department-sanctioned engineering undergraduate and graduate teaching assistant (TA) support for the course to manage the collaborative mock exam review.

The collaborative mock exam reviews occurred each Sunday before the actual exam (which took place the following Thursday). Information on the collaborative exam review (date, time, location) and structure were conveyed to students via in-class faculty announcements, Canvas announcements and reminders from the TAs, and promotional slides. The collaborative exam reviews occurred in an active learning space where students sat at moveable table/chair combinations of eight facing each other and movable white boards around the room. Students arrived at the room and signed in then put away phones, calculators, and any study materials about 10 minutes prior to the collaborative mock exam review. Exams were distributed to students and after a short set of instructions, our collaborative mock exam session was divided into three parts as follows:

1. Students used the first 30 minutes to work alone on exam problems, just as they would an actual exam. To simulate retrieval practice, they were not allowed to use any resources, notes, textbooks, et cetera. The TAs provided no assistance at this time other than clarifications, and they circulated the room to simulate proctoring the exam just as in the actual testing environment.
2. In the second 30 minutes, students were given agency to work with other students at their tables and highly encouraged to collaborate and share their ideas, work, and any solutions generated. Again, TAs did not provide any assistance at this time and circulated the room to encourage collaboration and discussion.
3. In the third section, the TAs placed themselves around the room at stations—individual moveable white boards with 1-2 exam problem numbers listed—and spent 10-12 minutes solving the problems while providing in-depth explanations. Students rotated around 3 stations; each station had 1-2 problems detailed and explained. This period was usually a total of 45 minutes, but students were able to stay until all their questions were answered.

The mock exam was made available online to all students soon after the completion of the collaborative mock exam review. Students were asked to complete the mock exam and submit it as a homework assignment, but only for a completion grade. Those who did not attend the session did not receive the specific intervention of the collaborative mock exam review. In total there were three mock exam sessions, one each for the three midterm exams.

The staff member collected attendance records for each collaborative mock exam review, end of course grades, and GPA and SAT scores. A survey consisting of 15 questions was administered one week after the actual exam but before students received their actual exam scores. The survey collected such data as students' names and university identifier numbers, how they heard about the exam review, their feedback on each part of the collaborative mock exam review, and the students' determinations of how participating in the review possibly impacted their actual exam performance and/or changed their study habits.

As mentioned earlier, traditional exam reviews are prevalent but there is little research or evidence assessing any learning gains provided by this passive review method. We have outlined a potentially more promising form of the exam review—the collaborative mock exam review—which we believe positively impacts students in the following ways:

1. The implementation of the collaborative mock exam review 4 days prior to the actual exam allows a self-assessment for students on what they do and do not know as well as ample time for remediation of missing content or study/practice.
2. The structure of the collaborative mock exam review provides an opportunity for retrieval practice in an exam-like setting, which is an activity many students do not implement on their own study time yet has been shown to provide the largest learning gains when used.
3. The structure of the collaborative mock exam review requires students' active participation in solving problems and answering conceptual questions, which has also been shown to improve overall grade and course outcomes (Balch, 1998), (Cranney et al., 2009).
4. The structure of the collaborative mock exam review provides opportunity for collaboration between students, where they explain and instruct their fellow peers, which can benefit all parties.

We saw positive student feedback on both the implementation and the structure of the collaborative exam review, with about 60% of enrolled students participating in all three collaborative mock

exam reviews. Encouraged by the results, our future plans include quantitative and qualitative analysis to understand impacts of the collaborative mock exam reviews on students' grade outcomes, as well as students' motivations for and perceptions of participating in the collaborative mock exam reviews.

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PROMISING PRACTICE

GED Completion, Philosophy, and Learning Support: A Holistic Approach to Juvenile Correctional Education

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ABOUT THE AUTHORS

Jonathan Lollar *is a doctoral student in the Developmental Education Program, at Texas State University, where he currently teaches Learning Frameworks (EDP 1350). He also has a Master's in Applied Philosophy and Ethics from the Texas State University Department of Philosophy, where he taught Ethics and Society for four years.*

Cesar Bernal *is a staff member in the Office of Research Support and Compliance, at the University of Texas, Austin. He currently serves as an Institutional Review Board Analyst, charged with reviewing all Social Behavioral and Health science research conducted under the auspices of UT Austin.*

A university held an event that focused on local community activism. One dialogue covered assistance programs for juveniles who are incarcerated or paroled. A local juvenile detention center leader approached a philosophy graduate student at the university, and plans for a philosophy-focused learning support pilot for juveniles began. We, as members of the philosophy department and in conjunction with the juvenile detention center, developed and led the pilot with a goal of (a) reducing recidivism and (b) increasing program completion and college interest.

Rationale

Studies have found that educational credential attainment could reduce recidivism—committing a criminal offense after being released from incarceration—by a significant amount (Davis et al., 2013; Lee College, 2019; Northwestern, 2020). Therefore, we needed to create a program that would increase high-school-equivalency certification (GED, HiSet, etc.) attainment. The study of philosophy has shown high correlation with improved test scores and higher averages for writing and quantitative/verbal reasoning (Topping & Trickery, 2007; see also Education Testing Service, 2020, Table 4A).

Personal development, empowerment, and increased self-esteem have all shown importance for correctional education completion for both vocational and postsecondary degrees (Baranger et al., 2018; Roth et al., 2017). Literature also suggests that success with an academic task and continued interest in a subject might relate to confidence and value perception (Eccles et al., 1983; Wigfield & Eccles, 2002; Simpkins, Davis-Kean, & Eccles, 2006). Some interventions may even succeed at helping students reappraise values related to academic tasks and increase interest in a subject to accomplish future goals (Acee & Weinstein, 2010). Philosophical discussions on identity development (Brison, 1999; Locke, 1935), empowerment, self-esteem (Boxill, 1976), and the importance of education (hooks, 2003; Rich, 1977) might foster students' motivation to complete their correctional education programs. Practice with self-reflection, journaling, critical thinking, and reading were thought to increase student beliefs regarding correctional education success. Example scenarios for student to analyze, particularly involving ethics and identity, served as an intervention that might increase academic interest and value perception of education.

Program

The pilot program ran for two semesters. The Fall semester had 10 students, all required to take GED/HiSet classes as part of their parole. The Spring semester had six students who were required to take HiSet classes and were incarcerated and living on site. Classes took place at a secured location inside the facility with a guard present.

Development

We developed the program with input from facility administrators and to serve as support for the GED/HiSet classes in which juveniles were enrolled. Administrators asked the program team to help reduce recidivism by covering ethical theory-based

> Juvenile detention centers are under-resourced, particularly in smaller counties, and it is imperative that support programs of all kinds find their way into the juvenile justice system.

strategies for choice making, self-regulation, the importance of education, intellectual freedom, and interpersonal relationships. Administrators believed these topics could help students make academic and personal progress. Other academic targets pertained to students' interest in reading/writing, critical thinking, confidence about schooling, and interest in college or technical schooling.

We underwent background checks and took safety training before teaching juveniles alongside their GED/HiSet instructor. Training included de-escalation techniques, detention center procedures, banned classroom items, and what incidents might occur during the team's time at the facility.

Implementation

Class sessions occurred weekly with all program team members and the GED/HiSet instructor present. To promote engagement, administrators asked that all instructors be present during each class. We assigned readings on moral theories/ethics, dialogue exercises, reflection exercises, and identity cultivation, and we provided students with relatable case studies. Assignments emphasized reflection on the students' personal lives and problem-solving tools that could assist them.

Part of the GED/HiSet curriculum promoted reading comprehension and analysis, so we gave students passages to read aloud in class and asked them to reflect on the material together. We assigned homework weekly, and their GED/HiSet instructor supervised the workload to ensure it would be rigorous enough to promote growth while not shifting focus away from their GED/HiSet assignments. We prioritized significant feedback and encouragement with each returned assignment.

We ensured a holistic approach via dialogue, and nearly all the ethical case studies were accompanied by deeply personal group discussions that illuminated students' problems with education, confidence, or gang/criminal activity. Occasionally, we decided to cancel in-class assignments in order to follow a discussion more thoroughly and pursue personal growth.

The spring semester saw a shift away from multiple readings to a single paperback novel due to stapled handouts being disallowed inside the secured facilities. Administrators made special accommodations for book possession, and they had to approve the book's subject matter. The team chose *My Ishmael* by Quinn, because of its focus on dialogue, argumentation, self-reflection, and philosophical topics that related to course outcomes, such as intellectual freedom, choice making, self-regulation, and the importance of education. Students read aloud, discussed chapters in class, and analyzed case studies from the text.

Discussion and Observations

There were challenges in exercising the full potential of the program. Obstacles included the following: limited class hours due to juveniles' center-assigned chores, limited space, and facility lockdowns. Difficulties starting on time due to security and overlap between other programs were common, and guards would interrupt dialogue to scold students for slouching or other minor infractions. By class time, students had been awake and working for twelve hours, which meant they were sometimes too exhausted to engage rigorously. Finding meeting spaces was problematic because guards or rooms could not always be spared (we once utilized a hallway as a classroom).

The success of the pilot was difficult to assess. Issues arose mostly from students being released from parole or incarceration during the course. In one instance, a student was rearrested and removed from the program. Students who were released from the program early or entered the program late could not benefit from the full course. However, one silver lining was that peer-to-peer instruction allowed for more seasoned students to internalize course material more effectively by tutoring newcomers. Peer instruction also permitted us to see what strategies and material students thought had the most utility based on what they passed to newcomers most often.

Some students were fond of sharing class information with juveniles outside of the program. One student would use designated computer time to watch videos on moral theories and lecture other incarcerated juveniles—whether they were interested or not—on the academic and personal values of the theories. Students largely transitioned from poking fun at peers for having reading difficulties to helping them sound out words or define terms. The team observed a marked improvement in some students' reading abilities, most notably two students in the detained population who began to regularly volunteer to read and assist others.

Regarding interest in schooling, nearly all students were reluctant to participate in the program initially. However, students began to engage when the team asked students about their thoughts on topics and readings. Students informed the team that they were not interested in school or that they dropped out because they felt devalued by teachers. Students were refreshed by the team's interest in their thoughts.

The team members made it salient that most of the course material, including *My Ishmael,* were utilized in the college courses they taught. Some students were reluctant to attempt the work because they did not perform well in high school; however, many students embraced the challenge once they saw their peers performing well. One student had been incarcerated for six months and refused to take any examinations for the GED/HiSet despite having attended all necessary GED/HiSet classes. During the midpoint of the pilot program, the student informed

the team that he had taken, and passed, all of his examinations the prior week. Administrators informed the team that the student was more confident from completing college work in the pilot. In fact, all 16 students completed their GED/HiSet exams, some ahead of schedule. All spring semester students successfully acquired vocational skill certification. One student sent college applications during the Fall semester course, and two spring students mentioned looking into a community college or a university upon release.

Regarding recidivism, it is difficult to tell if any impact was made. There was no baseline to compare against because communication between parole officers, juveniles, and facility administrators break down once the juveniles are released. However, three of the sixteen students were rearrested within the next year. Nevertheless, guards and administrators would often comment on changes they noticed in the demeanor of pilot students, and students would occasionally come into class and mention the ethical theory strategies that they used to make better choices during the previous week as they learned to link strategies with self-improvement goals.

Conclusion

Juvenile detention centers are under-resourced, particularly in smaller counties, and it is imperative that support programs of all kinds find their way into the juvenile justice system. Research has already shown that correctional education programs reduce adult recidivism rates, but more research for juvenile programs is needed. The pilot program outlined here shows personal and academic growth amongst students, and it brought about interest in college education for some. Without baseline data, which is difficult to procure given the unique structure of the juvenile justice system, any positive results denoted are anecdotal. However, the program team hopes that personal testimony might be enough to inspire interest in developing research-based learning support programs and best practices for the juvenile justice system. With more research and program development, perhaps the juvenile correctional education system can ensure a stronger path toward postsecondary attainment credentials and further from recidivism.

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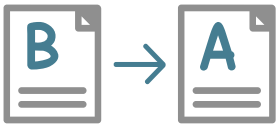

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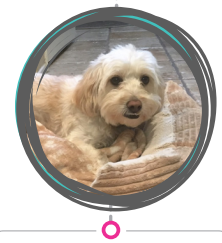

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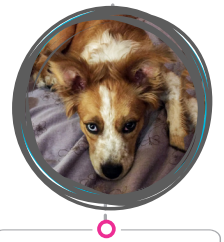

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PROMISING PRACTICE

Reading Fluency: A Source of Insight in a Test-Optional World

David D. Paige, *Northern Illinois University*
Elizabeth Cassady, *Bellarmine University*
William H. Rupley, *Texas A&M University*

ABOUT THE AUTHORS

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The task of college admissions officers is to identify applicants who are likely prepared to succeed at their institution. While student preparation is the domain of the continually changing K-12 educational landscape, it is left to college admission officers to evaluate the extent of that preparation on a student-by-student basis. Recently, a movement is taking place that has a rapidly increasing number of higher education institutions dropping the requirement for submission of standardized assessment scores for admission consideration (Furuta, 2017). Although authors have argued for and against their use, the task of winnowing qualified applicants from those who are not remains paramount to an institution's success (Buckley et al., 2018). Indeed, in today's world of institutional rankings, the success of every freshman class directly reflects the reported quality of the institution by publications such as U.S. News and World Report (Meyer et al., 2017; U.S. News & World Report, 2020). In the effort to identify qualified applicants, particularly for less selective institutions where the percent of those admitted exceeds the national average of 68% (Clinedinst, 2019), the ability to read and understand college-level texts is still an expectation of professors and has been identified as important to the applicant's success (ACT, 2006; MacPhail, 2019). In this paper, we offer a perspective on the essential role of reading and how institutions might consider it in a mix of indicators predicting student success.

Reading Preparation

Reading acquisition across the K-12 grades involves a complex mix of instruction that prepares students in the decoding strategies necessary to instantly read words, the fluency skills required for smooth reading, and the vocabulary knowledge and comprehension processes necessary to make meaning of text (Castles et al., 2018). To be adequately prepared for college-level reading, students must successfully engage with increasingly *complex* texts across the K-12 continuum. "Complex" means texts, particularly disciplinary texts, that reflect advanced vocabulary, a variety of syntactic structures reflected in diverse textual genres, nuanced meaning and perspectives, sentence structures that are less coherent and that leave the reader to fill in the gaps, and topics that require the reader to have diverse background knowledge (Fisher, Frey, & Lapp, 2012). For some

The rate at which a reader decodes text is analogous to the rate at which it is uploaded into working memory. If the reader's rate is slow and labored, text processing in working memory can become disjointed and inefficient and result in loss of meaning.

first-generation college students—many of those coming from populations that have long struggled with academic preparation—English-language learners, non-traditional students, and those coming from backgrounds where literacy is not central to daily life, acquiring proficient reading skills can be elusive.

Students often have been inadequately prepared and under-challenged across their K-12 education and have not engaged in the breadth and depth of reading instruction that prepares them for the textual demands found in higher education classes (Balu et al., 2015; Moats, 2017). Consistently, the National Assessment of Educational Progress (2019) finds nearly two-thirds of students across the country read at less than proficient levels. Many of these students will apply for higher education admittance at two- and four-year institutions, which are then challenged to determine if the applicants possess the necessary abilities to succeed. This process can be difficult and result in admittance of students unable to successfully engage in college-level courses. Despite the fact that students are reading fewer books, reading skills are still necessary as there has been an explosion in the number of e-books, digital journals, monographs, and online resources downloaded within university libraries (Cohen, 2019). A study by ACT (2006) found that what differentiated students was not their answers to factual and inferential questions but rather their skill at answering questions about complex texts. The authors found that at an ACT reading score of 21, students who were skilled at answering such questions were better prepared for college level reading. In the absence of such information, institutions are left to assess an applicant's reading ability in some other way, if at all. Because this skill is so critical, complex text instruction it is now routinely emphasized in classrooms across the country (Student Achievement Partners, 2020). For this reason, consideration of an applicant's reading ability may benefit from a more direct evaluation that can reveal what other sources of information may overlook. Such an assessment is reading fluency.

Reading Fluency

Reading fluency is the ability to read a text at something akin to a conversational rate, to correctly pronounce the words (accuracy), and to apply appropriate expression to the text (Samuels, 2007). Each of these three "indicators" is important to a fluent reader for different reasons. As a text is read, content is loaded into working memory, where it is processed for its explicit meaning and where it interacts with the reader's prior knowledge (Kintsch, 1988). However, working memory can fade quickly and is highly vulnerable to interruptions (Baddeley, 1992). The rate at which a reader decodes text is analogous to the rate at which it is uploaded into working memory. If the reader's rate is slow and labored, text processing in working memory can become disjointed and inefficient and result in loss of meaning. In their effort to pronounce the words, the reader directs their attention to just that, thus leaving less attention to focus on the meaning of the text (LaBerge & Samuels, 1974).

The ability of the reader to quickly and accurately decode words, what is called *word identification accuracy* or simply *accuracy*, reflects the reader's ability to accurately pronounce the words in the text. This occurs whether reading aloud or silently. It is important that a reader can decode nearly all words in a text for the same reason that reading rate is important as it facilitates working memory processing. When stuck on a word, much of the processing in working memory is now *on hold* until the word is released from the reader's attention via an accurate pronunciation. Further complicating the process is the fact that a correct pronunciation of the word immediately unlocks the reader's understanding of the word, assuming it exists in the reader's memory. If readers are unsuccessful at decoding the word, their understanding of the text may be undermined by loss of the word's meaning.

Expression refers to the reader's ability to apply the phrasing and expressive elements of the text that reflect normal conversation. When we speak to each, other we use prosody to hold the listener's attention and to add implicit and explicit meaning to our words. We chunk words into phrases, emphasize certain words to add importance, and add inflection or exclamation at the end of a sentence to add emphasis. Reading with expression, whether in conversation or in reading, assists the individual with understanding (Paige et al., 2014).

Fluent Reading and College Admissions

Researchers have found that fluent reading correlates with ACT reading scores. A study conducted by Rasinski et al. (2017) assessed 81 college freshmen attending a large state university in the Midwest who were enrolled in an introduction to education course. The researchers measured the reading rate (the number of words read in one minute) of the students when reading a college-level narrative text. Results showed that 27% of the differences in ACT reading scores were due to reading rate. On the measure of reading rate, students scoring at the 10th, 50th, and 90th percentiles had scores of 113, 147, and 175 words-correct-per-minute respectively. When ACT reading

scores were compared to reading rate scores, results in Table 1 showed that scores of 19, 20, 21, and 22 correlated respectively to reading rate scores of 101, 112, 123, and 134.

Table 1
Comparison of ACT Composite Score to Reading Rate

Reading Rate	101	112	123	134
ACT Composite Score	19	20	21	22

Another study conducted by Cassady (2018) assessed incoming freshmen at a small, private liberal arts university in the South. A total of 95 students read aloud for one minute from a college-level text on a computer and then answered questions about the text. The mean ACT composite score of the sampled students was 25 while the mean ACT reading score was 27. Both of these scores were not statistically different from the freshmen class of over 600. Using predictive statistics, the author sought to determine if a student's ACT score could be determined by their reading fluency score. Results showed that it was neither reading with expression nor the rate at which students read words that was important. Rather, it was how *accurately* students read words that predicted differences in both ACT reading and composite scores. Reading miscues—the number of times the student did not accurately read words—explained 19.2% of the difference in the ACT reading sub-scores and 24.0% (nearly one-fourth) of the difference in ACT composite scores. What is surprising is that on whole, the students in the sample were exceptionally good readers. For students whose ACT reading scores reflect the national average of 21 or below (Princeton Review, 2020), the number of reading miscues would account for one-fourth to nearly half of the difference between poor and good readers. These results suggest that correctly reading the words is important to all readers.

If readers are unsuccessful at decoding the word, their understanding of the text may be undermined by loss of the word's meaning.

Conclusion

First, reading ability is important to college success. Second, the implication of the findings in these studies suggests that ACT scores—and perhaps even high school GPA—may not tell the whole story about the reading skills of a student. Third, regarding institutions that have admission applications coming from students scoring at or below the national ACT mean of 21, reading fluency results would show that a much larger proportion of students may not possess the ability to engage in college-level reading, thus putting students' future success at risk. Reading fluency can be quickly evaluated by having students read a college-level narrative text in an online format. Such a text would have a Lexile score of about 1450L (MetaMetrics, 2020). The number of words read aloud by the student in one minute can be digitally recorded. Later, the number of miscues can be counted with the difference equal to the number of words-read-correctly-per minute (WCPM). This number can then be compared to a minimum cut-off score, such as WCPM = 115. Students scoring below the cut-off may not possess the minimum reading ability necessary for college success. Institutions that gather their own fluency data can develop a longitudinal database that reflects their applicant pool. From this data, admissions may then develop predictive models to better inform the applicant selection process.

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EXPLORATORY PIECE

Supporting Graduate Students Through the Use of Graduate Student Organizations

Stephanie M. Jarrett, *Texas State University*

ABOUT THE AUTHOR

Stephanie M. Jarrett *graduated with an M.A. in Developmental Education with a specialization in Literacy in 2018 and is expected to finish her continued Ph.D. in 2021. She was named Outstanding Graduate Student in 2018 for the Department of Education at Texas State University and has since been awarded a Doctoral Merit Fellowship, as well as a number of other scholarships internal and external to her university.*

In the United States, graduate education has become necessary to maintain a stable economy (Pascale, 2018). According to Torpey and Watson (2014), jobs requiring a master's degree or higher represent the fastest growing employment opportunities and are expected to increase by 18% by the year 2022. Similarly, research suggests as many as 10% of management-level or higher jobs will require graduate training. According to the National Center for Educational Statistics (2019), as many as three million graduate students attend degree-granting postsecondary institutions in the United States. Despite this growing need for universities to produce graduate students, as many as 50% of graduate students leave prior to earning their degree (Nettles & Millet, 2006).

So, if the growing need is so apparent, why do graduate students struggle to persist? Research focused on graduate students suggests that these students are typically older, have families, and are full-time or part-time employees with unique factors affecting their success and educational outcomes (Onorato-Hughes, 2019). According to Ontorato-Hughes, graduate students are also expected to become creators of knowledge and "shift between types of learning that may seem more in line with the role of a practitioner rather than a traditional student" (p. 37). Nevertheless, graduate students are often shown to be more responsible for their own career paths rather than being guided by the education system (Fischer & Zigmond, 1998). As the financial health and economic growth of the U.S. depends more and more on its work force attaining graduate degrees, so does support for graduate students and their diverse needs through enhancement of graduate experiences that promote engagement and degree completion (Onorato-Hughes, 2019).

One way in which graduate student success has been supported is through participation in graduate-led, program-specific, student organizations (Rosch & Collins, 2017). Although Gardner and Barnes (2007) suggest that while much has been done to examine influences of student involvement at the undergraduate level, little has been completed for graduate students (Onorato-Hughes, 2019). For example, student involvement in student organizations has been extensively researched as a factor contributing to academic and social success for undergraduate students (Astin, 1984; Gardner & Barnes, 2007; Nguyen, 2016; Pascarella & Terenzini, 1991; Tinto, 1993). Research suggests that up to 80% of undergraduate students participate in at least one student-led organization, which correspondingly relates to positive aspects of academic and social outcomes including retention, satisfaction, career and leadership aspirations, self-efficacy, work performance, and persistence (Dugan, 2011; Nguyen, 2016; Tinto, 1993). In this article, I suggest that the positive relationship found between academic success and undergraduate involvement in student organizations may be assumed for graduate students as well.

> With the implementation and research of GSOs, universities can seek to improve the likelihood of graduate student success and retention to prepare for our future economic needs.

Although similar to undergraduate student organizations, graduate student organizations (GSO) can serve several functions to meet graduate students' diverse needs, ranging from advocating on behalf of graduate students, identifying issues that are important to graduate students, and ensuring that concerns of graduate students are addressed (Coulter et al., 2004). One way that GSOs support graduate student concerns is by acting as a liaison between students and faculty, facilitating proper representation of students' concerns. For example, Coulter et al. (2004) assessed

graduate student's needs and recommended that organizations focus on professional development, orientation to graduate student life, and social activity. This research suggests that student organizations can be transformed into need-specific spaces that allow for the diverse needs of graduate students to be expressed and met. A similar study found that graduate student involvement and peer support can have a positive impact on school-work facilitation (Wyland et al., 2015). Specifically, Wyland et al. (2015) found that "classmate support, supervisor support, and co-worker support strengthened the relationship between psychological school involvement and school-work facilitation" (p. 181). This study suggests that a GSO can facilitate graduate students' development into work-ready professionals. Finally, Astin (1984) suggests that the more involved a student is, the greater amount of student learning and personal development will take place. With the implementation and research of GSOs, universities can seek to improve the likelihood of graduate student success and retention to prepare for our future economic needs.

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