

Regents' Momentum Year Award for Excellence in Teaching and Curricular Innovation

Nomination Packet for the Freshmen Math Program

University of West Georgia

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October 29, 2019

Regents' Teaching Excellence Awards Selection Committee
Board of Regents, University System of Georgia
270 Washington Street, SW
Atlanta, GA 30334-1450

Dear Members of the Selection Committee,

On behalf of the University of West Georgia, I am particularly pleased to nominate the Freshmen Mathematics Program for the 2020 Regents' Momentum Year Award for Excellence in Teaching and Curricular Innovation. This program is based in the College of Science and Mathematics at UWG and, as the following portfolio will demonstrate, has been making important and influential improvements to academic outcomes for students in their first year of college.

The Freshmen Math Program holds student success at the forefront of what is taught and *how* it is taught. Aware of the evidence correlating success in first-year math and future degree completion, the program faculty have worked consistently to ensure that student learning influences the curricular and instructional decisions made for every section of all courses in the program. These faculty have aligned their work with the goals of the University System of Georgia's Momentum Year, especially in regards to fostering a productive learning environment and promoting a positive growth mindset for students.

In conjunction with the implementation of corequisite learning support courses in math, Freshmen Math program faculty have also built successful support strategies, driven by data on student outcomes, that have yielded demonstrable increases in student achievement in their math courses. These strategies include a range of academic materials to supplement lessons, such as sequences of brief videos that students can access online anytime to better understand difficult concepts. Additionally, to support the Momentum Year focus on purposeful choices, program faculty have incorporated engaging, relevant content into the math course that relates to students' chosen major or academic focus area. These materials connect lessons, activities, and exercises to real-world examples.

Calling on the literature that supports a productive academic mindset, the Freshmen Math Program has revised not only course materials and content but also the supplemental activities that help to support such a mindset. For example, each of the program faculty talks with students—in-class and out—about reframing common assumptions about math that are often the result of experiences in high school math classes. In class, this focus on a growth mindset might take the form of inclusive discussions about attitudes and expectations, or it might appear in repeated encouragement to persist from faculty. Out of class, faculty meet with their students one-on-one to unpack their misperceptions of their own abilities and explore successful study strategies.

These approaches, among others, reflect a central focus within the Freshmen Math Program on the issues that influence student learning and student success. The faculty have actively investigated their assumptions about teaching, exploring pedagogies that advocate for reconsidering the range of experiences, backgrounds, and circumstances that students carry into their classes. For example, to reduce the financial burden of expensive textbooks, the Freshmen Math Program switched to free online books. The program also eliminated a subscription-only online homework platform by choosing a free version that students can readily access. Although requiring significant time upfront to investigate viable, high-quality replacement options, these shifts have removed a recognized barrier to student success.

The University of West Georgia is proud of the continuous efforts and solid results of the Freshmen Math Program. The following portfolio provides compelling evidence for how the program has approached the goals of the USG's Momentum Year—and was doing so before the system-wide initiative began in earnest. The program faculty have risen to the challenge of the Momentum Year, leading to rising indicators of student success. For these reasons and more, I offer my resounding support for the nomination of the Freshman Mathematics program for the 2020 Regents' Momentum Year Award for Excellence in Teaching and Curricular Innovation.

Sincerely,



David Jenks

Interim Provost and Vice President for Academic Affairs

INTRODUCTION

The Freshmen Mathematics Program at the University of West Georgia (UWG) is actively engaged in supporting the goals of the University System of Georgia's Momentum Year. The Freshmen Math Program consists primarily of the three large enrollment courses that most of our Freshmen students take in their first semester at the university (MATH 1001 – Quantitative Skills and Reasoning, MATH 1111 – College Algebra, and MATH 1113 – Precalculus) plus the new Learning Support classes that are attached to those courses (MATH 0997 – Support for Quantitative Skills and Reasoning and MATH 0999 – Support for College Algebra). In addition, starting in Fall 2020, the Freshmen Math program at UWG will be a part of the pilot of the Statistics Pathway in the University System of Georgia (USG) and will add MATH 0996 – Support for Elementary Statistics and MATH 1401 – Elementary Statistics to the Freshmen Math Program. The Freshmen Math Program consists of one tenure-track faculty member, who oversees the program as the Director of Freshmen Mathematics, plus 15 non-tenure track faculty members, who almost exclusively teach the Freshmen Math courses.

Across the USG, and in fact nationwide, many students struggle in their Freshmen Math courses, which can lead to low rates of retention, progression, and graduation. As faculty in the Freshman Mathematics Program at UWG, it is our goal to help all of our students succeed in the freshman math courses while we maintain high academic standards. To achieve this goal, we are involved in several initiatives that help students learn and retain the concepts taught in our courses, leading to higher success and retention rates and to lower DFW rates. These initiatives include the following:

- Introducing Co-requisite Learning Support courses, which not only include working on the students' mathematics skills but also improve students' academic mindsets;
- Offering Group Study sessions, which help students retain the content, build their academic skills, and see connections to other fields;
- Striving to cultivate positive student-faculty relationships to break down the barriers to student success;
- Engaging in professional development to examine issues related to student learning and effective teaching pedagogy; and
- Making several of the course "No Cost" to students by using Open Educational Resources in those courses.

ALIGNMENT WITH MOMENTUM YEAR GOALS

One of the main pillars of the USG's Momentum Year is that students should complete core mathematics and English courses during their first year, including any learning support

courses. Seeing as the Freshmen Math Program's goal is to increase student success in our courses, we directly tie into that main pillar.

We are currently teaching multiple sections of two co-remediation courses, MATH 0997 – Support for Quantitative Skills and Reasoning, and MATH 0999 – Support for College Algebra. In addition, we are also part of the USG pilot program seeking to create another co-remediation course MATH 0996 – Support for Elementary Statistics, which we will begin offering next fall. These courses are designed for students with low entrance scores who have traditionally struggled in their first math courses. These students are required to take a two-hour remediation course during the same semester they are taking their first math course. To help these students succeed, we have created academic materials to use in the courses that supplements what we are teaching in the main course. These materials assist students in overcoming difficulties and lets them fill in gaps in their mathematics knowledge. Examples of the materials we have developed include worksheets covering procedural steps and online videos which relate to class lecture. Additionally, we believe that with the proper amount of effort, most students can succeed in their first math course, we just have to convince the students that they can since many lack the confidence in their own abilities due to past struggles with math. Here is a comment from one of the students in our Learning Support course last year, which our students refer to as “lab courses”:

“As a student that struggled in math in High School, I went into college super nervous about taking a College Algebra class since I didn't do so well in high school. When I heard about the Math Lab class they offered to take while you took the lecture course. I was really excited about it. As the class started, there were times that I needed a little bit of help out of class which were the times I could ask in Lab. Honestly, I feel like you should have to take a Lab with your lecture because I believe students would benefit from this program. Lab consisted of problems that we had learned that day in lecture or have been working on for the week. Lab was treated like tutoring in my opinion and I would recommend this program to anyone.”

Another pillar of the System's Momentum Year is that every student should complete the freshmen mathematics course aligned with their chosen major or meta-major. Currently, the Freshmen Math Program offers 3 courses that students can choose from depending on their major; MATH 1001 – Quantitative Skills and Reasoning, MATH 1111 – College Algebra and MATH 1113 – Precalculus. Beginning in the Fall semester of 2020, we will also give students a fourth option by offering the new Statistics Pathway courses, beginning with MATH 1401 – Elementary Statistics. While much of the material that is covered in the courses is mandated at the system level by the ACMS, we try to emphasize the applications of those topics to the majors of the students that typically take those courses to help students see the relevance of the course to their chosen major. Keeping students engaged in the material by showing its

relevance to them and their chosen field of study is a key to making students more successful. For example, in our Precalculus course, we emphasize the applications to the sciences because most of the students in the class are science majors; while in our Elementary Statistics course we tend to focus on medical applications because, currently, a large number of the students are nursing majors. In addition, several of us have begun preliminary discussions with faculty in the College of Business to determine a proper Math Pathway for our business majors because many faculty in both areas feel that the current Pathway of MATH 1111 followed by Math 1413 – Survey of Calculus is not meeting the needs of the Business students. Although these discussions have produced some fruitful results, we have decided to wait until it is determined what the new General Education requirements will be before proceeding further.

PEDAGOGY AND INSTRUCTIONAL STRATEGIES THAT CREATE A PRODUCTIVE ACADEMIC MINDSET

Mathematics education research provides evidence which supports the theory that teachers who implement strategies for a growth mindset improve academic success (Degol et al., 2018; O' Sullivan & Riordain, 2017; Sun, 2018). As the Freshmen Math faculty worked to create the academic materials for the co-remediation classes, we also wanted to consider this research and emphasize promoting a positive academic mindset. While targeted remediation/review, time for group work, and other forms of academic support were always part of the goal, promoting a positive academic mindset became the thread that tied these together. Historically, when students are asked to describe themselves to math faculty, "I am not good at math" is the most frequent response. This tells us that we have a role to play in fostering a growth mindset to our students.

We decided to incorporate a variety of practices to help promote positive academic mindsets within our students, and here are a few examples that have been used.

- i) Each school year, various celebrities will post inspirational videos describing their life experiences for incoming college freshmen. These videos generally describe hardships faced and overcome and look to tell students that they can succeed, even when things get difficult. We like to show these videos to our students because they are promoting growth mindset, and these videos help to make the message stick, especially when it comes from someone they might look up to.
- ii) We often take time to have open discussions about attitudes toward math classes (both past and present). We like to hear what the students actually think and believe about themselves, and we work to direct those thoughts in a positive direction. Most of the time, if a student has a negative approach toward math classes, it seems to stem from bad experiences they had in prior classes. We then can work to dispel deep-seated, negative mindset beliefs by pointing toward success

in the current class. These discussions are often done in class, but several faculty also invite students in for one-on-one meetings during office hours so these elements can be discussed further.

- iii) Another practice that we engage in is discussion of study skills in math classes. The approach to studying in math classes is different than most other subjects. What we are finding to be increasingly true over time is that our students are not coming to us with strong study skills. This problem is exaggerated even further in math classes. It is difficult for students to believe in their abilities and succeed in a class when they do not know how to prepare for it. This is why we take time to have open discussions about study habits and skills. We open the floor up to the students, allowing them to discuss how they study/prepare for the class, and then offer helpful advice as needed. This is a forum for students to learn how to study. There are always a few students who have strong study habits, and their advice is well received by the other students since it is coming from a peer. These conversations are usually strategically timed to coincide with upcoming exams, and they often lead to study groups forming outside of the classroom.

In addition to these strategies, we have started implementing study journal assignments so we may reflect upon current student study data. We rely upon these study journals to address how our own pedagogy matches with student study skills.

DATA-DRIVEN PROCESS FOR REVIEWING AND RESHAPING CURRICULUM

We are constantly reviewing the data that we have available to reshape the curriculum. For example, in MATH 1111 – College Algebra, we administer a common final exam to collectively assess the comprehensive mathematical skills of our students. We analyze the scores to examine how students performed on the final for each topic and how that performance has changed over time. As a result of this data, some of us have re-designed the course into five units based on common themes in the curriculum, instead of merely following the order of the textbook. This redesign has allowed students to make better connections with the content, which has been fragmented for instruction.

In addition, we have been a part of the Gateways to Completion (G2C) project since it began at the University of West Georgia in 2016. While looking at our data for our G2C course, MATH 1113, we quickly realized that one of the factors in determining how our students performed was their Pell eligibility. Students who were Pell-eligible had higher DFW rates in that course than students who were not Pell-eligible. We then looked at our other large enrollment course MATH 1111 and noticed the same trend.

DFWI RATES BASED ON PELL ELIGIBILITY						
YEAR	MATH 1111			MATH 1113		
	Pell Eligible	Not Pell Eligible	DIFFERENCE	Pell Eligible	Not Pell Eligible	DIFFERENCE
2017-18	42.5%	37.9%	4.6%	40.8%	36.3%	4.5%
2016-17	36.2%	35.8%	0.4%	39.6%	31.9%	7.7%
2015-16	33.3%	28.9%	4.4%	33.2%	30.1%	3.1%
2014-15	30.6%	28.9%	1.7%	38.4%	34.0%	4.4%

Additionally, required materials in Math courses can be very costly. For instance, most math textbooks now cost at least \$200 and, most of the time, can only be used for one class/semester. Online homework systems that are now commonplace in freshmen math courses are also costly. A large number of our students were not purchasing the required materials for several weeks at the start of the semester and were falling behind. After examining the data, we realized our students may not have been purchasing the materials due to financial difficulties. Therefore, as a result of our G2C work, we began to use free open resources in Fall semester 2018. We are currently using a free textbook in three of our introductory courses, and we are continuously monitoring open resources in hopes of replacing more of our courses with free texts in the future.

Also, with a view to making our classes even more affordable for our students, last year several faculty developed courses on MyOpenMath, which is a free online homework program. In the past, we had used MyMathLab, which had the benefit to faculty of already have been developed, even though it cost students about \$150/semester. Currently, we have six courses set up in MyOpenMath for all faculty to use. Unlike MyMathLab, in which many students could not set up an account at the beginning of the semester due to cost and could not begin engaging in the content, MyOpenMath allows all students to register into the program immediately and not fall behind.

By using the free, downloadable books and MyOpenMath software, we have saved our students hundreds of dollars each semester. We are proud of our decision to ease the financial burden that required materials can present to students, especially those from marginalized communities. We have tried to keep material costs as low as possible for our introductory

courses and will continue to do so in order to give students the best education with the lowest cost possible.

EXAMINATION OF ISSUES RELATED TO STUDENT LEARNING

We have been actively involved in adding to the scholarship available in the field and disseminating the results we have had by giving numerous presentations about teaching pedagogy and student success. We have presented at the Mathematical Association of America Southeast Regional meeting, the USG Teaching and Learning Conference, the Georgia STEM Teaching and Learning Conference, and the UWG Innovations in Pedagogy Conference. Many of us also serve as co-PIs for the STEM IV grant “Targeted Interventions in Precalculus and Calculus I,” which has been funded by the Board of Regents, starting Fall semester 2019.

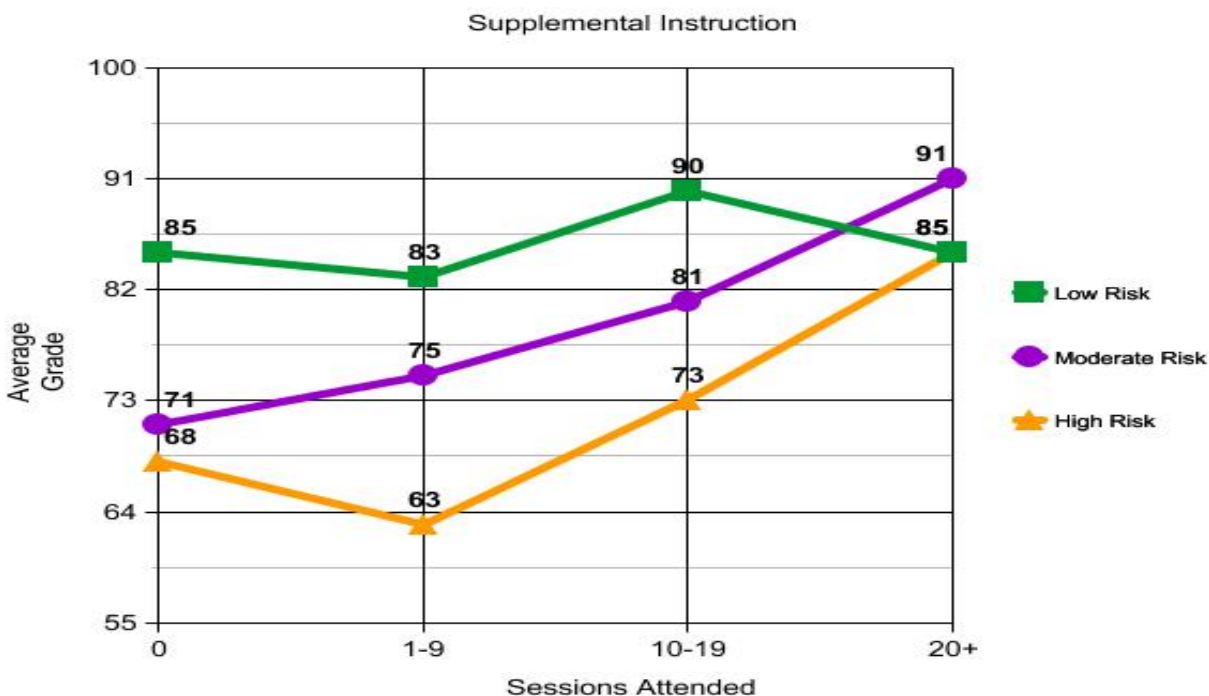
In addition, we started a Mathematics Teaching and Learning Reading group this semester to examine issues related to student learning. The first reading is John Dewey's *Experience and Education*, and the first meeting investigated epistemological concerns related to our students' mathematical inquiry, growth, and development of academic mindsets. Future readings will be chosen from the following seminal texts:

- *What Does Active Learning Mean for Mathematicians?* by Benjamin Braun, Priscilla Bremser, Art M. Duval, Elise Lockwood, and Diana White.
- *Pedagogy of the Oppressed* by Paulo Freire.
- *Social Constructivism as a Philosophy of Mathematics* by Paul Ernest.
- *Transparent Design in Higher Education Teaching and Leadership*, edited by Mary-Ann Winkelmes, Allison Boye, and Susan Tapp.
- *Learning, Creating, and Using Knowledge: Concept Maps as Facilitative Tools* by Joseph Novak.
- *Out of Our Minds: The Power of Being Creative* by Sir Ken Robinson.

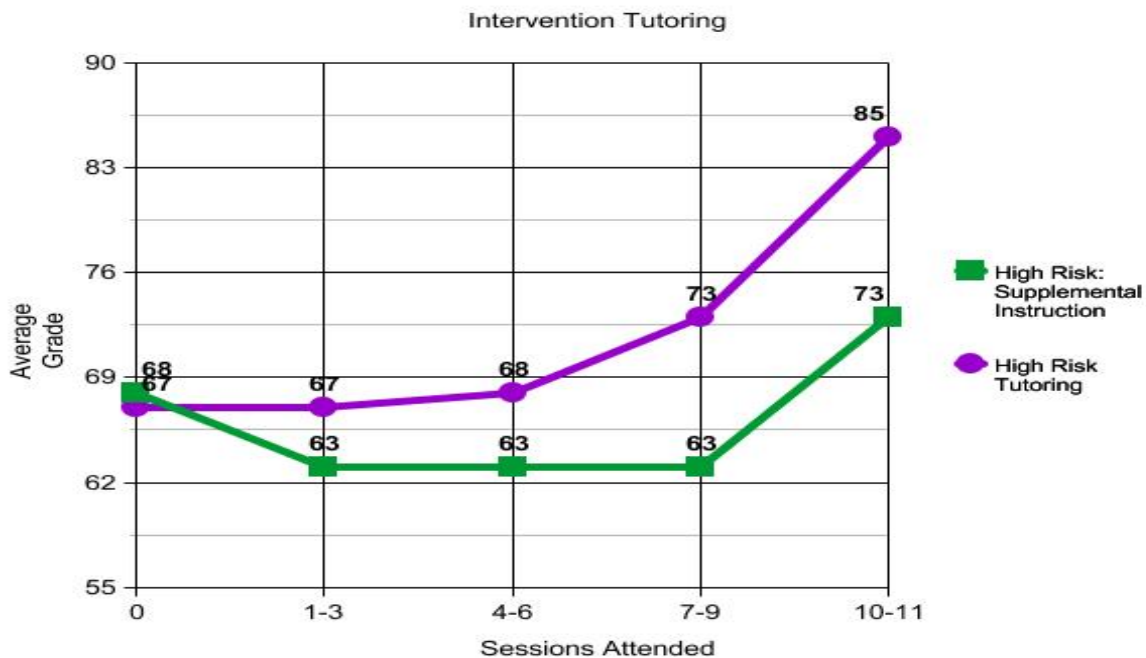
USE OF EVIDENCE-BASED STRATEGIES THAT SUPPORT AND FOSTER GROWTH MINDSET

One of the faculty members in the Freshmen Math Program has been conducting ongoing research targeting peer-led group study sessions, which are aimed at improving student success in MATH 1111 and MATH 1113. This research project began in 2013 and was initially designed to measure student success in MATH 1111 when students attend supplemental instruction (SI). For this project, students were given a diagnostic quiz and placed into risk categories based on their performance. Students were marked as having a low, moderate, or high risk of failing the course. The researcher then measured student success in each risk category by comparing student final course grades with number of SI sessions

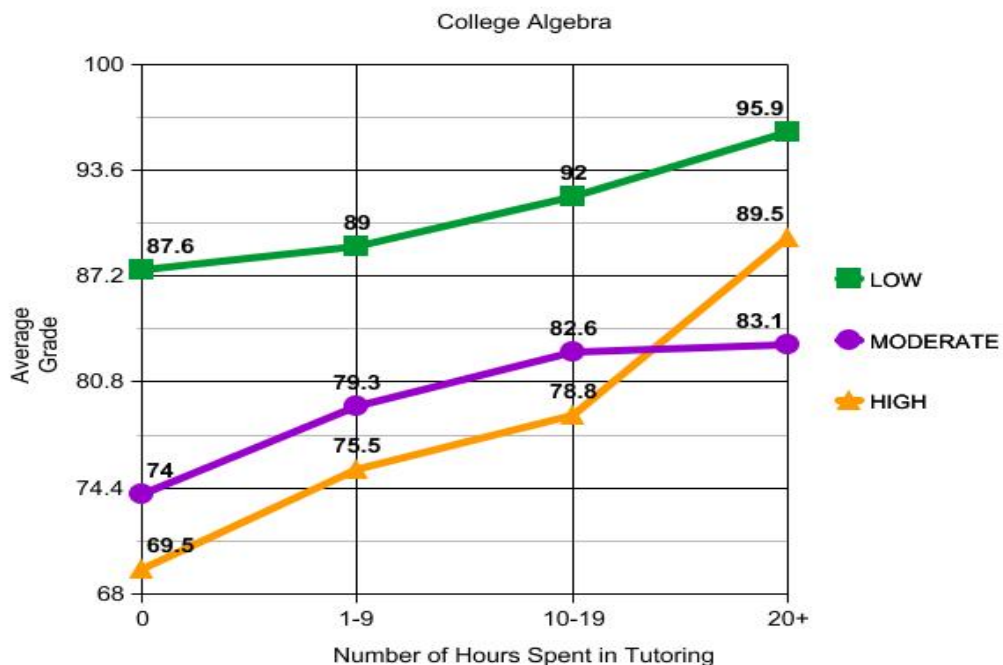
attended. The following graph illustrates the results from 2013 and 2014. Although SI appears to be an effective tool for improving some student grades, this research indicated that not all students benefit from this type of academic support, primarily, high risk students.



The Freshmen Math Program has analyzed the data each semester, and the same trend occurred: high-risk student grades dropped when students attended 1-9 sessions. This was alarming to us because these were students that were trying and they were attending help sessions. We speculated that perhaps these students, after trying and failing, gave up. Therefore, a new program was created for implementation alongside SI so that we could better meet the needs of these students. Intervention tutoring was the result and provided more structure and individualized attention to high-risk students. Sessions were capped at four students, and once signed up, students committed to attending every week for the duration of the semester. The following graph illustrates what happened to student grades after the program was implemented when compared to grades of students that attended only SI in previous semesters. As illustrated, Intervention Tutoring resulted in improved average final grades for students in MATH 1111. The program has continued, and we collected data each semester.



We also decided to open the tutoring program to all students. To promote the program, we began inviting students to our office for short student-teacher meetings. We invited high-risk students first and promoted the tutoring program, along with SI. Then we invited moderate-risk students, and last, low-risk students. Each student who came to our office had the chance to sign up for Intervention Tutoring. The following graph illustrates the results of average final grades compared to number of hours spent in tutoring (including SI).



The results were promising, so we decided to begin offering the tutoring program in MATH 1113. We continued to collect data and saw the same trends in MATH 1113. We renamed the program as Group Study Sessions, and currently, all sections of MATH 1113 are implementing the program in their classes. While the results vary among faculty, we are finding that those faculty who meet with their students, who focus on building a positive relationship with them, and who actively promote peer relationships among students are seeing the best results. Therefore, we are focusing on improving those techniques and pedagogies that do more than provide academic support to students. We are developing the program to provide a community of learning and to allow teachers to consider the social aspect of learning as an important tool for student success. Below we have described this in more detail.

Community of Learning

When students sign up for a Group Study session, they commit to attending that specific study session each week. As a result, students develop a small learning community that targets mathematical content. It is our belief that this type of community encourages creative thought and allows students to improve their mathematical abilities in an environment that is less intimidating than in a large class. This arrangement fits into our epistemological beliefs that knowledge is acquired, not transferred. While traditional mathematics classrooms consisted primarily of lecture, we have strived to provide opportunities for students to be active learners. However, time is limited in a lesson, and in the mathematics discipline, lecture may be necessary to provide procedural steps and explanations for students. Therefore, Group Study sessions create an additional resource for students to engage with the material so they may connect their new knowledge with their prior knowledge, and thus, make better connections with the content introduced during class time.

Social Aspect of Learning

There are plenty of studies in mathematics education that have supported the theory that professor-teacher relationships and learning outcomes are related. For example, when teachers provide motivational support to their students, student engagement improves (Ozkal, 2018; Martin & Collie, 2018; Kiefer, Alley, & Ellerbrock, 2015; Ruzek & Schenke, 2018). As a result, a core component of the Group Study sessions takes this research into consideration. Faculty who implement the Group Study sessions in their MATH 1113 courses are asked to meet with each of their students during office hours during the first few weeks of classes. During this meeting, faculty listen to their students' concerns, they begin a dialogue that supports a growth mindset, and they discuss the various academic support resources available to the student, including the Group Study sessions. We have discovered that during these meetings, barriers that prevented comfortable learning environments are broken, the students begin to see their teacher as an ally that wants to work with them and see them succeed, and a

positive professor-student relationship begins to form. These sessions also allow us to assess who our students are, what their backgrounds are, and what their beliefs are on their own mathematical abilities. Therefore, we do not have to rely on broad generalizations based on research studies that did not take place at our university. Rather, we have used this information to develop and modify a program that will best fit our students' needs.

Group Study sessions benefit not only struggling students but also students who do well in the course and enjoy mathematics. The following quotes are from former students who attended Group Study sessions in MATH 1111 and MATH 1113. They describe the program below:

"Mathematics is and has always been my favorite subject. I would say my passion for math is a gift. I want to be able to extend and hence share the gift with the world. Most students have come to believe that math will forever be a tiresome and challenging subject. Due to that, they have a mindset that, regardless of the numerous practices problems they do, they will never understand anything that is math related. Group study sessions motivate students to study. This is because many students derive energy from being around other people and look forward to learning and discussing material with classmates. Moreover, having no understanding of a concept and having no one around to help outside of class can be very frustrating. A major benefit of studying in a group is being asked by classmates if something doesn't make sense. Studying in groups helps to promote creativity and critical thinking. My experience studying in group improved my interpersonal and organization skills. Group study sessions also creates an interactive environment that not only helps to improve knowledge, but also reinforces learning. I had the opportunity to experience group study session and because of it, I have learned a lot and I have been able to extend my gift to other students by providing assistance to students in understanding math concepts and to be able to apply their understanding to any other problem, I have also built excellent communication skills, great valuable work experience, and effective study habits." – Joyce Armah

"I recommend the group tutoring program for a few reasons. First of all, it was a major help in allowing me to catch up on material I had not seen in years. I had just started college five years after I graduated high school, so there was a lot of basic algebra skills that needed to be refreshed in order for me to be able to do well in pre-calculus. The group tutoring provided that extra bit of help that I needed to fully catch up. Secondly, it provided an opportunity for me to meet with other classmates and get to know them. Because of this, I was able to form study groups on top of our tutoring sessions when it came closer to exam time, which helped tremendously. And the third reason being that

it was very convenient to have a group expressing what they were struggling with, because sometimes you think you know the material, but you may not fully understand it or you learn new methods of approaching the material. Even if you did understand the material, you would still be provided a review which helped with studying for future exams. The group also allowed everyone to help each other along with the tutor. Teaching and helping one another is a very successful way to teach yourself as well. It was also extremely convenient to be able to sign up during a time slot that benefited your schedule. Overall, the program was very helpful and I have no doubt that it enabled me to do well in the class.” – Sarah Moore

Because of the encouraging results in Group Study sessions, it is evolving into a more expanded form now called “Complementary Mathematics Instruction” (CMI), which is part of a grant funded through the BOR’s STEM IV Initiative. CMI will be utilized in all Spring 2020 Precalculus sections with the goal of expanding it into all Fall 2020 Calculus sections. In addition to the Group Study sessions, students may also sign up for a weekly one-hour workshop. These workshops will not be capped at four students. It is anticipated that as many as 10 to 16 students may sign up for a workshop. The small group tutoring sessions, as before, will focus more on content that the student brings in to discuss; therefore, the small Group Study sessions will tend to be more procedural. However, the goal for the workshops is to focus less on procedure and more on conceptual understanding, emphasizing the applications of the material in the sciences because most of the students in Precalculus and Calculus are science majors. In addition, the workshops will be led by a mathematics graduate student who will often provide the student with prepared content. Because Fall 2019 semester is the first semester in which the workshops were used, only three precalculus sections implemented the workshops (one per section) for a pilot. Our goal is to implement various teaching techniques and assignments in the pilot workshops to determine the best strategies for future workshops.

MOMENTUM-YEAR-DRIVEN TEACHING PHILOSOPHY

As faculty in the Freshman Mathematics Program, we have long been dedicated to cultivating student success by using methods aimed at improving student mindset, by providing academic resources to develop student understanding of content, by collaborating with each other to build our pedagogical skills, and by engaging in strategies aimed at building positive relationships with our students. We choose to apply these approaches intentionally because of our teaching philosophy and how we believe knowledge is acquired. We believe that students learn by connecting their prior knowledge to what is being taught, and that these connections are constructed through engagement of the material, which is best facilitated by social interaction. With these foundational beliefs, we are able to build a network of enthusiastic

faculty who have the same end goal: to better the lives of our students through facilitating their mathematical education. We understand that many students deal with stereotype vulnerability and poor academic mindsets that may impact their performance. We understand that students who come from low socioeconomic backgrounds may not have been given the same opportunities as their more privileged peers and thus may be entering the class less prepared. We also understand the new challenges our students face when entering college for the first time, such as poor time management skills, higher rates of anxiety, and added stress due to financial or familial concerns. By building caring relationships and developing our courses in ways that allow students to build their skills and improve upon their weaknesses, we work with our students and help them to overcome their challenges. We strive to teach our students not only the content but also how to be an academic scholar. We teach them that learning is a process which takes time and should be challenging. We set the bar high for our students because we believe they can reach it when they have the support to do so.

CONCLUSION

We are fortunate to belong to an institute that values student learning and recognizes the efforts of the many people who work tirelessly to aid students in obtaining their academic achievements. To be selected as UWG's candidate for the Regents' Momentum Year Award for Excellence in Teaching and Curricular Innovation is truly an honor. We believe that the Freshman Mathematics Program aligns well with the goals and standards of the University System of Georgia, and we hope our application provides sufficient evidence of our continued hard work and determination. We thank you for your consideration and wish you the best in selecting this year's award winner.

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Dear Regents' Award Committee,

My name is Johnathan Hurkmans, I am currently a non-traditional student sophomore at the University of West Georgia. I am attending college through the G.I Bill after a four year contract in the Navy. Being out of school for nearly 6 years and the product of the failed MATH 1-3 program, I failed my first semester of Pre-Calculus due to related difficulties. Because of this failure, I was placed in a College Algebra course with an accompanying lab, both led by [INSTRUCTOR].

I was delighted by a wonderful semester of well explained algebra, accompanied with explanatory videos and individualized assistance. I learned the material better than I even had before and I actually found myself interested in learning the algebraic formulas. If it were not for this program, I would not have had the ability to work out the small bits of information that I had forgotten or that never quite clicked.

With a public school system focused on standardized tests, students often focus on regurgitation rather than retention. In my case, this left many odd gaps of missed or forgotten information. I was wonderful to have a semester in which I could work the majority of those out with individualized help, and a plethora of helpful resources. The lab program as instituted and the University of West Georgia has done wonders for understanding of Algebra and needs to grow in resources and awareness so as to assist more students like me who need a little more help to figure everything out.

V/R,

Hurkmans, Johnathan

Dear Committee,

I participated in the group tutoring program in the Fall of 2018. Though I have never been particularly bad at math, I found myself needing some extra help since it had been a few years since I had taken a math class when I entered [INSTRUCTOR]'s Precalculus class that fall. I signed up to participate in the group tutoring as it was a scheduled very small class of about 4-5 of us and gave us extra individual instruction at a set time I could be prepared for each week. The tutor was excellent and offered academic support and new views on the material we were learning that helped not only myself, but the other students who were in the same group as myself. We were able to help each other better understand what was needed to accomplish the problems, and, as a result, made better grades on our exams in the course.

I would highly recommend the group tutoring to anyone who needs a little more individualized aid in a course. The weekly sessions allowed our tutor to get to know us much more personally and help us in ways tailored to how each of us learned best. Additionally, our tutor was excellent about helping relieve some of the stress of homework because we had an environment where we could work together to figure out more difficult problems or go over other examples to better understand.

Thank you for your time, and I hope you choose to continue offering group tutoring at the University of West Georgia. I would love to see the program expanded to include other courses and majors. I know I often find myself wishing I had a group tutor session to attend in my chemistry courses!



**OFFICE OF THE PROVOST
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October 18, 2019

Regents' Teaching Award Committee
University System of Georgia Board of Regents

Dear Committee Members,

I am writing to express my support of University of West Georgia's Freshman Mathematics Program for this year's Regent's Momentum Year Award for Excellence in Teaching and Curricular Innovation. I feel uniquely qualified to offer this support for two reasons: I was involved in UWG's mathematics curricular revisions when I served as Assistant Vice Provost for Academic Initiatives at West Georgia, and in my current role as Vice Provost for Academic Initiatives at the University of Idaho I facilitate our campus's Momentum Pathways project.

A core group of West Georgia's gateway math faculty have been involved in course redesign for the last 5 years. They are a dedicated bunch who truly care about student success and have advocated in their department for changing the way content is delivered, offering additional forms of support, and integrating methods for improving academic mindset. While they have been focused on measurables such as decreasing the DFW rate in course like MATH 1111 and 1113, they have also kept their sights on helping students approach their study of math in a different way. This involves changing students' belief about their ability to do math and improving their mathematical self-efficacy, and it also involves helping students understand the usefulness of math outside of the math classroom.

UWG's course redesign process has included working as a learning community to study best practices, visits to successful math centers such as Georgia State's MILE program, analysis of student success data, engaging in professional development on pedagogy, and pilot testing various support strategies such as supplemental instruction, intervention tutoring, and student conferencing. Their program now includes co-requisite support, integrated open education resources to lower textbook and materials cost, group study sessions, class discussions focused on increasing academic mindset and study skills, and complementary instruction that connects what students are learning in class to real world, discipline-specific problems. While this course redesign process was both connected to or supported by Georgia's Gateways to Completion project and Momentum Year, the work of West Georgia's core gateway math faculty began prior to these initiatives, and it was driven by dedicated colleagues who include tenured and non-tenured faculty, instructors, and lecturers. Their accomplishments have been nothing short of remarkable, and I give my strongest endorsement for UWG's Freshman Math Program to be awarded this year's Regent's Momentum Year Award for Excellence in Teaching and Curricular Innovation.

Sincerely,

Cher Hendricks, Ph.D.
Vice Provost for Academic Initiatives

October 29, 2019

Regents' Teaching Excellence Awards Selection Committee
Board of Regents, University System of Georgia
270 Washington Street, SW
Atlanta, GA 30334-1450

Dear Members of the Selection Committee,

I write in support of the Freshman Mathematics Program at the University of West Georgia for the Regents' Momentum Year Award for Excellence in Teaching and Curricular Innovation. For the past several years, I have served as West Georgia's institutional liaison for campus initiatives associated with two significant system-wide student success initiatives: Momentum Year (now, Momentum Approach) and Gateways to Completion (G2C). In light of those responsibilities, I have worked closely with faculty and department leaders in the Freshman Mathematics Program on many of the first-year success initiatives described in their application. What I have witnessed consistently over this time is a strategically driven, sustained effort to improve student success in first-year mathematics courses. This success is the result of collaboration at many levels: active faculty engagement in system-wide meetings and training associated with both Momentum and G2C; faculty collaboration on course and assignment design; and active partnerships with units across campus that support faculty development and student success (Center for Academic Success, Academic Advising, and Center for Teaching and Learning). Some of these initiatives emerged through developing alignments with the USG Momentum goals; others are the result of systematic analysis of key performance indicators (KPIs) as part of Gateways to Completion that began with work on MATH 1113 (Survey of Pre-Calculus) which was then extended to other math courses in the core. This commitment to student success, guided by the program's active engagement with these system-wide initiatives, is having an evidence-based impact on student learning and academic progression at West Georgia, especially among student populations that are academically at risk, such as first-generation and Pell-eligible students. For these reasons, I am very pleased to add my support to their institutional nomination.

While there are many facets to the Freshman Mathematics Program's impact on student success, I want to note several that are specifically associated with the USG Momentum Approach. The program has been intentionally engaged in the development of corequisite learning support courses aligned to MATH 1001 and MATH 1111 based on university system criteria for best practices. Faculty in the program learned a lot about successful course design in mathematics courses through their work on G2C, and it has been inspiring to witness how those lessons—both at the course- and assignment-level—have been applied to the alignment of core and corequisite learning support courses. Since West Georgia did not offer learning support courses in any format prior to Momentum, the challenges associated with implementation have been not just pedagogical but logistical as well. This process has been challenging, but faculty and program leadership have been completely committed to the successful implementation of the learning support courses and have actively partnered with other units across campus (Office of the Registrar, Academic Advising, and Student for Academic Success) to ensure that students who require or need these courses are getting the quality instruction and support they need.

The efforts around academic mindset that the program has implemented in all mathematics courses have been even more vital in learning support courses. Academic mindset was an unfamiliar concept to many mathematics faculty at the beginning of this work, certainly not something that had always been part of

their academic or professional training. However, the Freshman Mathematics faculty began seriously to consider and learn about mindset, initially through work on the KPIs associated with Gateways to Completion and later through the USG work on mindset in partnership with the Dana Institute and the Motivate Lab. In fact, mathematics faculty went so far as to work through a second round of KPIs that focused specifically on transparent and inclusive pedagogies in the second year of G2C implementation. These efforts have resulted not just in a deeper understanding of the connection between productive mindset and student success, but also in specific course and assignment redesigns that include strategies for purposefully aligning math content to a student's chosen major or academic focus area through active learning and real-world examples.

Another significant indicator of success aligned to the Momentum Approach has been the program's decision to adopt across multiple core courses free online textbooks and eliminate an expensive, subscription based online homework platform in favor of a free online version. This was a collaborative decision by faculty teaching freshman mathematics and supported by the rest of the mathematics faculty and department leadership. The change initially was prompted by the review of KPIs in the G2C process as faculty concluded that many students enrolled in core Math courses could not afford the textbooks, placing them at risk for successful completion. This work on identifying or, in certain courses, designing, online resources, has been time-intensive, especially when high-quality alternatives are not always available. However, these efforts have had a significant impact on student success in these courses. Faculty in the Freshman Mathematics Program are also partnering with the USG on the implementation of a Statistics Pathway in Core Area A, and the goal is to utilize free online materials in this new core course as well.

While departments and faculty are often resistant to change, the Freshman Mathematics faculty have been an exemplary program in embracing new approaches to course design, teaching, and collaboration to improve student learning. They have not only worked to implement the strategic imperatives linked to the Momentum Approach but also taken to heart its most essential goal: engaging faculty to support student learning. I have found their work inspirational, and we are seeing evidence on campus of other programs following the pathways they have set. I believe this will result in even greater improvement going forward. For these reasons, the Freshman Mathematics program has my strongest support for the 2020 Regents' Momentum Year Award for Excellence in Teaching and Curricular Innovation. If you have any additional questions regarding the program's qualifications for this award, please do not hesitate to let me know at either 678-839-6445 or dnewton@westga.edu.

Sincerely,

A handwritten signature in blue ink that reads "D. W. Newton".

David W. Newton, Ph.D.
Associate Vice President for Academic Affairs
Faculty Development and Academic Initiatives
University of West Georgia