EDITOR’S NOTE

This fall issue of Inquiry follows a special summer edition of the journal that featured the research findings of the 2017-18 Faculty and Administrators Leadership Academy and the 2018-19 Chancellor’s Leadership Academy. Thematically, this traditional issue and the special summer edition are linked, highlighting contributions with a focus on Virginia Community College System (VCCS) projects and historical findings that have implications for our practice or policies.

The first two essays investigate comprehensive changes in the VCCS to mathematics courses in an effort to improve student success and completion. Patricia Parker’s article details a two-year collaborative undertaking, the VCCS Mathematics Pathways Project, from the establishment of objectives and processes to successes in course development and meaningful communication with stakeholders and partners. Pansy Waycaster focuses on a specific redesign at Virginia Highlands Community College to a co-requisite model and the continued conversations regarding support courses for college-level mathematics.

In his essay, Richard Hodges takes a historical look at massive resistance laws in a time of social change in America as well as the origins of the open-door Virginia Technical College System, which became the VCCS in 1966, for the state’s working class. Christian Aguiar turns to pedagogy in a review of Class in the Composition Classroom, analyzing how the text’s contributors foster successful conditions for working class students in the writing classroom.

Several of the authors featured here engaged in extensive revisions with the feedback of our Editorial Board to tailor, strengthen, and polish their now published articles. We hope that their labor is recognized and that potential contributors to Inquiry embrace our review process. Our Editorial Board reviewers are excited to work with you to help shape your manuscripts for research-based studies, notes in brief, and/or books reviews into published articles that fit our Aims & Scope.

We are delighted that these essays can now reach a wider audience. Since Inquiry became a digital-only publication, it has over 20,000 total downloads. Accessible through both our VCCS Digital Commons as well as databases like Education Resources Information Center (ERIC), Inquiry shares the scholarship and research-based conversations of VCCS faculty, staff, and administrators with a worldwide audience.
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The Grass Grows Green in Virginia: A Grassroots Effort Leading to Comprehensive Change in Removing Mathematics Barriers for Students
Patricia Parker

The Virginia Community College System (VCCS) embarked on a comprehensive mathematics pathways project in October 2015 with a move from design to implementation in spring 2017. The VCCS Mathematics Pathway Project (VMPP) aimed not only to develop strategies to improve retention and completion, but also to address foundational barriers to students' success. This grassroots effort involved collaboration among all 23 community colleges, over 200 mathematics faculty, and staff from career and technical support departments. Collaboration extended to the K–12 and university sectors, professional organizations, publishers, and foundations. VMPP goals focused on creating structured mathematics pathway courses for all program levels, implementing co-requisite opportunities for students, collaborating with K–12 and four-year institutions regarding mathematics readiness, developing multiple measures of placement, and improving Virginia’s placement instruments. While the decisions made throughout this project were informed by research, how Virginia’s organization, processes, stakeholder collaboration, and communication laid the foundation to successfully implement this comprehensive project at scale is the focus of this discussion.

Implementing MTH 155: Statistical Reasoning Co-Requisite
Pansy Waycaster, Ph.D.

Virginia Highlands Community College (VHCC) implemented MTH 155 – Statistical Reasoning Co-Requisite in the spring of 2018. MTH 155 replaced MTH 146 at VHCC. Prerequisites for this course are the first five developmental MTE modules. The intended co-requisite audience for this new course consists of students having successfully completed at least three of the five MTE modules. These students co-enrolled in MCR 5 and received targeted assistance for the MTH 155 course. Successful completion of MTH 155 resulted in the prerequisite MTE modules 1-5 being satisfied. This paper presents the results of this study along with implications for future work with co-requisite mathematics courses.

Massive Resistance and the Origins of the Virginia Technical College System
Richard Hodges, Ed.D.

The 1954 rulings in the United States Supreme Court cases of Brown v Board of Education was a landmark event in civil rights history. As momentous as the rulings were, they were not embraced by many Southern politicians. This was especially true in Virginia where Harry F. Byrd, Sr., U. S. Senator from Virginia, embarked on a campaign to massively resist court ordered school desegregation. Over the course of the next several years, Virginia’s leaders would pass laws specifically designed to undermine the Brown rulings. These laws, known as massive resistance, would, among other things, grant the governor the power to close any school or school district attempting to comply with Brown. The results of implementation of these laws had catastrophic results socially, economically, educationally and on Virginia’s national reputation. By 1959, massive resistance laws were declared unconstitutional by both state and federal courts, allowing Virginia the chance to undo this self-inflicted damage. An unintended consequence of massive resistance was the erosion and stagnation of its manufacturing sector. To rebuild the state’s workforce, technical training on a large scale was necessary. To take on this herculean task the creation of a statewide system of technical colleges was needed. In 1964, the Virginia Technical College System (VTCS) was founded. This system exists today as the Virginia Community College System (VCCS). The creation of these colleges were a direct result of Virginia’s ill-conceived response to Brown. Funding had been available for many years to support technical training, but it took the contested environment created by massive resistance to make the creation of a statewide system of technical education a reality.

Book Review
Review of Genesee M. Carter and William H. Thelin’s Class in the Composition Classroom
Christian Aguiar

Though community colleges enroll the majority of working-class college students, research on how to best serve the interests of working-class students at our institutions is limited. In Class in the Composition Classroom: Pedagogy and the Working Class, the contributors tackle the issue of supporting working-class students in college composition classes from several angles, offering practical pedagogical advice, guidance on college-wide initiatives, and research into common challenges faced by working-class students. While the text will be most valuable for those who teach writing, its insights apply to anyone who serves at a community college.
THE GRASS GROWS GREEN IN VIRGINIA:
A GRASSROOTS EFFORT LEADING TO COMPREHENSIVE CHANGE IN REMOVING MATHEMATICS BARRIERS FOR STUDENTS

PATRICIA PARKER

INTRODUCTION

Institutions of higher learning across the country face a multitude of challenges in regards to student degree completion. One major barrier is students’ completion of the required mathematics for their program of study. A number of states have been addressing these issues through a combination of structured pathways, co-requisite models, early collaboration with high schools, and/or improved placement practices. The Commonwealth of Virginia aspired to address all of these areas in a statewide remodel of its mathematics program using a representative workgroup model with strong communication. The success of this work depended heavily upon a consistent infrastructure that included structural organization and processes, plans for stakeholder involvement, plans for strategic and broad communication, and an aggressive timeline for implementation. As with any major project, reflection on the project provided great insight into what was achieved and what lessons were learned.

The Virginia Community College System (VCCS) embarked on a comprehensive mathematics pathways project in October 2015 with a move from design to implementation in spring 2017. The VCCS Mathematics Pathways Project (VMPP) aimed not only to develop strategies to improve retention and completion, but also to address foundational barriers to students’ success. This grassroots effort involved collaboration among all 23 community
colleges, over 200 mathematics faculty, and staff from career and technical support departments. In sharing the activities, organization, and processes involved in designing and implementing a state-wide initiative, this chapter seeks to provide guidance to other faculty, institutions, and policymakers in creating their own agenda and strategies for change.

**A CASE FOR CHANGE: VIRGINIA’S COMPLETE 2021**

In Virginia, the 23 community colleges operate under one state system. Over the last 50 years, each community college has operated autonomously to meet their sister universities’ and nearby workforce’s needs, resulting in a repetitive and poorly defined master course file and inconsistency in transferability to the Commonwealth’s 15 public and 24 private universities. As a result, advising students became almost impossible for colleges, leaving students to flounder in course selection, particularly in mathematics. In 2015, the VCCS Chancellor challenged the community colleges to triple the number of credentials completed by students attending its colleges. The new strategic plan, Complete 2021, focused on degree completion and better course options and selection to increase economic mobility and individual prosperity across the Commonwealth.

Success in mathematics is one of the biggest barriers to students’ college completion (Complete College America, 2017). Virginia’s data do not stray far from the national data indicating the same trends. In the VCCS, 37.7% of first-time-in-college (FTIC) associate degree-seeking students are placed into the lowest level developmental mathematics modules. Of these, only 14% complete a college-level mathematics course within four semesters. Only 14.5% of students taking any developmental coursework complete a degree or certificate within three years (SCHEV, 2017). Success of the students in mathematics needed to become part of the solution to Complete 2021.
Mathematics faculty were called into action. Having identified student completion in mathematics as one of the biggest barriers to student success, the Chancellor challenged the mathematics faculty to be part of the solution. The charge was simply stated by the VCCS Assistant-Vice Chancellor: “We have a problem; help us fix this.” In the fall of 2015, the VCCS mathematics faculty joined forces and over the next two years defined, designed, and prepared for implementation of the VMPP. A true grassroots effort, the mission of VMPP was to improve student success in developmental mathematics through gateway mathematics courses by reducing the time to completion with increased success and greater levels of rigor. Faculty designed, system supported—here is our story.

**Laying the Groundwork: Getting Started**

The process began in October 2015 with an all-day meeting, convened by the project manager, and included the VCCS Vice-Chancellor, the Assistant-Vice Chancellor, and two mathematics faculty representatives from each community college. After reviewing data, identifying specific barriers, and hearing college input, the mathematics faculty elected to engage in a comprehensive approach for change. The five goals developed at this meeting later paved the way for multiple solutions: Mathematics Pathways, Co-requisite Models, Multiple Measure Placement, Placement Test Revisions, and Mathematics Readiness.
VCCS MATHEMATICS PATHWAYS PROJECT GOALS

Over the first two years of the project (2015–2017), more than 200 mathematics faculty worked at the state level; countless others worked at the college level; and over 300 external stakeholders collaborated in the creation of strategies to address the five overarching goals. The design and implementation of a multifaceted statewide project depended on the collaborative efforts of all stakeholders, a strong focus on common goals and outcomes, clear communication methods, and the commitment to project completion and its continuous improvement.

ORGANIZATION AND PROCESSES

Creating an infrastructure that established clear and well-defined parameters about how contributors were organized and the structure in which work would be done was critical to project success. Tools for communication and a timeline for work completion were the
foundational pieces to all the processes that followed. For the VMPP work, the use of electronic communication tools were used, instead of face-to-face meetings, so that faculty members could be involved and continue teaching their classes as scheduled. The use of an aggressive and realistic timeline optimized the motivation and appreciation of accomplishment of those involved. An ambitious timeline required thoughtful implementation as such a timeline causes hardships for colleges where the culture of change is slow or where size dictates the speed of change. With these agreements in place, the work of dedicated people began.

Applying a comprehensive yet simple organizing plan to Virginia’s work allowed for high levels of involvement and broad-based input from all math faculty. Organizers were also mindful of the need to accomplish tasks in a timely manner and to respect the fact that not all decisions would have full stakeholder consensus. The work of the VMPP was organized using multiple workgroups supported by a project manager. The project manager served as the organizing and convening chair of all major workgroups so that connections between the groups were facilitated since so much of Virginia’s work overlapped in purpose and design. Each college identified its own local project manager, called a College Contact, who served as the lead communicator between the department and the VMPP project manager. Work on each of the five major goals (Figure 1) was spearheaded by a VCCS workgroup consisting of 23 mathematics faculty, one from each community college, and the project manager. Workgroup members held the responsibility of engaging their faculty at the college level and representing their department throughout the process. New course design was completed through smaller work teams consisting of some workgroup members and additional faculty. The addition of a sixth workgroup, Developmental Mathematics Leads, resulted in over 130 different voices involved in
the initial conversation. To address areas outside of mathematics, such as necessary technical support, the application of focus groups provided opportunity for even greater collaboration.

Establishing a positive atmosphere for productivity served as the final piece of an infrastructure that supported work completion. Setting parameters for engaging in that conversation resulted in all decisions being focused on what was best for the student in terms of successful completion, transferability, or entry into the workforce.

**STAKEHOLDER INVOLVEMENT**

High involvement of stakeholders was key. The identification and inclusion of stakeholders proved critical to moving this project forward. Great value was added to this project that started with four stakeholders by expanding collaboration beyond the VCCS and state lines to learn from state and national work. The number of stakeholders quickly grew to 501.

**GROWING SUPPORT: STAKEHOLDERS AT THE TABLE**

Though initial stakeholders included just the mathematics faculty, it became immediately clear that diversifying and involving others in the project was critical to its success. As the project grew, the outreach grew. Stakeholders were expanded to include community college and
system level administrators, support staff, and faculty from other departments, state and national organizations working on support and policy around these initiatives, Virginia’s public and private university transfer offices and academic departments, and foundations and publishers that provide support materials. Key to all of this collaboration was to involve each support group immediately upon identifying that either the project would impact their jobs or their work was a key component to the success of the project.

Virginia experienced the most progress when a broad spectrum of faculty engaged with supporting departments and through the development and distribution of a second draft to the college contact or point person of each project component, giving opportunity for an additional level of feedback. Stakeholders responded favorably to early and frequent communication—evidence that their input was valued. As the project work developed, regular reflection on its future implementation and its potential impact on colleges, universities, workforce, and supporting companies helped to identify stakeholder groups that may have otherwise been overlooked.
Having a clear communication plan from the beginning and being diligent in carrying it through were also critical to the project’s success. With an underlying goal of keeping travel to a minimum, face-to-face meetings were reserved for the most important junctures of our project, leading to reliance on email, Google Docs, and web calls for most of the communication.

Virginia’s project applied these tools to achieve widespread and strategic email communication, seeking extensive feedback at both the college and individual faculty levels, or to ignite further action at the college level. Informational web calls reached all colleges to provide updates,
entertain questions, and receive feedback, while working web calls focused on developing drafts, responding to feedback, and planning for implementation for various workgroups. Face-to-face meetings were key opportunities to achieve a high level of productivity and fulfill the need for all stakeholders to be in one place for collaboration and development. Virginia’s two-year project utilized only five major face-to-face meetings and 14 university visits.

**CRITICAL POINTS – FACE-TO-FACE COMMUNICATION**

<table>
<thead>
<tr>
<th>Fall 2015</th>
<th>October 2015</th>
<th>Kick-Off Meeting</th>
<th>2 Math Faculty/College</th>
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</thead>
<tbody>
<tr>
<td>Fall 2017</td>
<td>May 2016</td>
<td>Math Summit</td>
<td>2-year &amp; 4-year Faculty and VDOE</td>
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<td></td>
<td>Summer 2016</td>
<td>Placement Test Rethink</td>
<td>VPT Workgroup w/ Test Vendor</td>
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<td></td>
<td>November 2016</td>
<td>Design to Implementation</td>
<td>College Implementation Team</td>
</tr>
<tr>
<td></td>
<td>March 2017</td>
<td>Mathematics Pathways Institute and Publisher Showcase</td>
<td>6 Math Faculty/College</td>
</tr>
</tbody>
</table>

Monthly meetings with VCCS Assistant Vice Chancellors and Coordinators overseeing state-level departments related to the project.

University visits initially involving a team of community college mathematics faculty and university mathematics faculty and evolving into expanded follow-up meetings including transfer directors and a variety of program heads.

Sharing final documents through a public folder enabled all colleges to locate the most current version of a document and collaborate with others. This folder was also shared with external stakeholders and interested parties.

In all communication efforts, it was critical to be respectful of time limitations, have an established agenda shared prior to the meeting prompting college discussions, start and end on time, and monitor all written and verbal conversations to keep them focused on the goal of the specific conversation and/or the ultimate goal of the meeting.

**SUCCESS AT THE HANDS OF MANY**

The significant effort of over 500 stakeholders resulted in specific strategies in the five project areas to improve successful student experiences in mathematics. Some components and
strategies were implemented statewide while others remained at the discretion of the college. All were aimed at increasing the number of students earning a credential and moving successfully into the workforce or university.

<table>
<thead>
<tr>
<th>VCCS MATHEMATICS PATHWAYS PROJECT STRATEGIES</th>
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<tbody>
<tr>
<td>Mathematics Pathways</td>
</tr>
<tr>
<td>• Streamline and update the VCCS Master Mathematics Course File creating consistency in course offerings across the VCCS.</td>
</tr>
<tr>
<td>• Create structured mathematics pathways.</td>
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<tr>
<td>• Align mathematics offerings, structured pathways, and degree requirements with university partners to improve transferability.</td>
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<tr>
<td>• Reevaluate mathematics requirements for community college programs.</td>
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<tr>
<td>• Communicate and discuss with K-12 the need for change at the community college level to better prepare students to meet the demands of universities and employers.</td>
</tr>
<tr>
<td>Co-Requisite Model</td>
</tr>
<tr>
<td>• Identify mathematics courses and applied programs that are conducive to co-enrollment opportunities.</td>
</tr>
<tr>
<td>• Develop a state model, related courses, and parameters, guidelines, and promising practice recommendations.</td>
</tr>
<tr>
<td>Placement Testing</td>
</tr>
<tr>
<td>• Restructure the current Virginia Placement Test to address the changing profile of students testing, modify test length, and diversify question types.</td>
</tr>
<tr>
<td>Multiple Measure Placement</td>
</tr>
<tr>
<td>• Design multiple measure placement and support its implementation at all 23 colleges.</td>
</tr>
<tr>
<td>Mathematics Readiness</td>
</tr>
<tr>
<td>• Develop an understanding of current K-12 efforts for preparing students for mathematics readiness.</td>
</tr>
<tr>
<td>• Develop state model for collaboration between community college mathematics departments and high school mathematics departments for increasing the number of students entering the community college on level.</td>
</tr>
<tr>
<td>• Develop a VCCS position on calculator use from placement to credit level courses, and make recommendations on technology use based on university and workforce recommendations.</td>
</tr>
<tr>
<td>• Develop conversation starts for dual-enrollment (DE) coordinators and faculty addressing challenges of DE programs.</td>
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</table>

WE’VE ONLY JUST BEGUN

The transition to implementation in late fall 2016 sent colleges into a frenzy of planning. All colleges were challenged to implement all project strategies by fall 2018 with about half of the
colleges engaging in some level of early implementation in fall 2017. The plan touched many areas of higher education from content design to pedagogy to counseling/advising to technical support. Few departments of a college were left unchanged. As Virginia headed into college-level implementation at each of the system’s 23 community colleges, there was clear need for continued system-level support and future faculty engagement to maintain the vitality of this project. The types of support needed by the colleges and to assure overall project success as a system include:

- Commitment to a continuous improvement model for all project strategies.
- Continued communication and collaboration between two-year and four-year institutions and amongst mathematics faculty.
- Implementation of assessment plans to track the impact of project components on student success.
- Development of a state level structure for discipline-specific faculty leadership – by faculty for faculty.
- Greater attention on developing strategies and support that specifically help students of color who perform significantly lower in mathematics than white students.

**Successes**

In addition to Virginia meeting the Chancellor’s charge by developing and implementing the strategies to increase student success, this project impacted Virginia more broadly than expected. Through the VMPP and the hard work of all its mathematics faculty and other stakeholders, Virginia has…
• Developed the VCCS Mathematics Pathways for Transfer that limits course choices while still meeting the requirements of students’ programs and provides mathematics content directly related to future academic and career plans.

• Decluttered the VCCS Master Course File by replacing 61 loosely defined courses with 26 well-defined courses developed through collaboration between two- and four-year institutions.

• Improved the communication between Virginia Department of Education (VDOE) K-12 and post-secondary institutions, resulting in models developed for increasing mathematics readiness and increasing the dual-enrollment conversation as well as purposeful conversation around the use of technology in the mathematics classroom.

• Engaged in the development of the VCCS Multiple Measures for Placement and a renewed placement testing structure.

• Developed, piloted, and implemented a Co-Requisite Model for all gateway courses, setting parameters and guidelines for colleges offering this option to students.

• Brought the national mathematics and completion conversations to Virginia for the first time by hosting a Math Summit that included mathematics faculty and representatives from Virginia Department of Education, Virginia Community College System, and Virginia public and private universities. This summit was co-sponsored by the State Council of Higher Education in Virginia (SCHEV) and the VCCS and highlighted Charles A. Dana Center’s Uri Treisman as the keynote.

• Opened internal and external doors for purposeful conversation amongst K-16 faculty and institutions.
• Included the system’s Developmental Mathematics College Leads in the conversation with the result of increased strategies available to colleges to best meet developmental student needs such as module-based instruction, core bundles, co-requisite courses, career and technical embedded courses, and high school mathematics readiness options.

• Experienced a faculty grown, system supported initiative.

CHALLENGES AND LESSONS LEARNED

The project and its future are not without challenges and lessons learned. Most of the challenges centered on communication and in working with multiple institutions. Listed below are four items that may benefit others seeking to embark on statewide initiatives:

• Beware of Silos of Communication: The communication with and within each organization touched by this project proved to be isolated and not broadly shared. The assumption that one conversation would lead to many conversations was a false one. Requests for follow-up from individuals or institutions may spur broader conversations within the organizations.

• Building Consensus: The initial success of this project depended on the consensus of many people from many different institutions. Perseverance and outreach by the project manager and other project champions often resulted in reaching a common ground.

• Navigating Systems: When working with many organizations and institutions, navigating each system was time-consuming and challenging. Few organizations shared similarities in structure, persons of contact, or level of involvement. Patience and time conquered the challenge.
• The Ostrich Effect – Communication needs to be early and often, but messages and decisions are not always heard or received causing implementation and change to be challenging. When stakeholders enter late into the conversation, most often after all decisions are made, implementation plans are in place, and the impact on the institution is established, it is important to acknowledge their concerns, remind them of the processes followed and the consensus reached, and to patiently support them. Continued faith in the process is necessary.

The Virginia Mathematics Pathways Project is not the final step, but rather the first step in the right direction for supporting our students to challenge themselves to reach their goals. The project strategies, when coupled with initiatives such as Guided Pathways, Success Coaching, and advising restructuring, offer students better options for mathematics course placement and selection and can help maximize college completion. When the Virginia Community College System achieves its completion goal in 2021, it will embrace a new strategic plan. The success of our students will be at the heart of its charge and its faculty will be ready to be a driving force to find a solution. Change driven by grassroots efforts is growing in Virginia. Other states have joined the national mathematics pathways movement. Virginia’s grassroots efforts serve as a model to states aspiring to join the movement and drive change that is faculty led, administratively supported, and policy enabled.

*Emerging Issues in Mathematics Pathways: Case Studies, Scans of the Field, and Recommendations*, copyright Charles A. Dana Center at The University of Texas at Austin, 2018. Reprinted with permission.
REFERENCES


Retrieved from [http://research.schev.edu/gradrates/subcohort_details.asp](http://research.schev.edu/gradrates/subcohort_details.asp)

RESOURCES

VCCS Mathematics Pathways Project: Collaborative Site. In addition to project documents, a research/resource folder contains many articles and data sources that provided a foundation for our conversations and influenced many of our decisions.
[www.tinyurl.com/VCCSMathPathways/](http://www.tinyurl.com/VCCSMathPathways/)
IMPLEMENTING MTH 155: STATISTICAL REASONING CO-REQUISITE

PANSY WAYCASTER

INTRODUCTION

In a recent report, The End of the Remedial Course, Mangan, (2019) has presented some disturbing facts about how mathematically unprepared students are for college. Nationally two-thirds of entering community college students are found to be not ready for college-level mathematics. A 2017 related report concluded that 96 percent of the two-year and four-year colleges surveyed enrolled students that were deemed unready for college-level work. Furthermore, Mangan (2019) sites a Community College Research Center (CCRC) report finding that, of students referred to three levels of remedial math, only 17 percent completed the sequence within three years. Consistent with these findings, May (2019) found that for the academic year 2016 cohort (new students) at Virginia Highlands Community College (VHCC), 36 percent took developmental mathematics courses and of these 14.4 percent successfully completed a college-level mathematics course by the end of the next fall. So what is being done to remedy this situation?

LITERATURE REVIEW

Several state institutions have responded to this low performance of the remedial students by cutting remedial mathematics courses entirely from their curriculum. Mangan (2019) summarizes these efforts.
• The California State University system has eliminated all free-standing remedial courses, and next year the state’s entire community-college system will do the same.

• In 2015 Tennessee became the first state to drop remedial classes in favor of a statewide shift to co-requisite remediation.

• In 2013 Florida made remedial classes optional.

• For San Jacinto College in Texas, the days of putting students in sequences of up to three remedial courses are over. Currently, the State of Texas requires that 25 percent of students needing developmental education be placed in co-requisite classes. Next year, this requirement jumps to 50 percent, and the following year to 75 percent.

In response to these migrations from development mathematics courses Mangan (2019) notes some concerns for this trend.

• Goosen, Associate Vice-Chancellor for college preparatory at San Jacinto College in Texas (p. 7): Despite the fervor for co-requisite courses, they may not work for those who are least prepared.

• Kurlaender, professor of education policy at the University of California at Davis (p. 12): We want to avoid a sink or swim situation.

• Tennessee (p. 16) eliminated student’s delay in entering credit-bearing college-level courses and found the problem is that once they got there, they were just as likely to fail the college-level mathematics classes.

• Co-Requisite remediation, which starts with a college-level class with support alongside, allows many more students to pass a credit-bearing course.
One of the most successful models of remedial reforms (p.19)—City University of New York’s Accelerated Study in Associate Programs—allows students who need them (developmental courses) to start there. The program, which has been replicated nationally, nearly doubled three-year graduation rates.

So before remedial coursework is removed from our mathematics programs, consideration needs to be given to those students who need more mathematical help than a co-requisite support course. Direct placement into college-level classes can result in failure for these students. We do not want to ignore students with weak mathematics backgrounds who arrive on our campuses to continue their education. A more practical approach is to do an in-depth study of a successful model for remedial education such as the one at City University of New York.

**OVERVIEW**

The concept of co-requisite mathematics courses emerged in Virginia from a Virginia Community College System (VCCS) Mathematics Pathways Project (Notes, 2016). One goal of the Mathematics Pathways Project was to clean up the master file of mathematics courses, as many of these courses were no longer being taught. By spring, 2016, thirty-two of the eighty-nine mathematics courses had already been cut out of the master file. To this end, MTH 155: *Statistical Reasoning*, was created to replace MTH 146 at all VCCS colleges. A second goal of the Mathematics Pathways Project was to get developmental students into credit courses sooner with equal or better success than those students entering without support. A new support course (Notes, 2017), Math Co-Requisite (MCR 5), was added for the MTH 155 course beginning fall, 2017. At this time the VCCS co-requisite workgroup composed of developmental leads from all
of the VCCS colleges developed a state model to implement pilots for several new courses—one of which was MTH 155. The projected timeline for full implementation for this course was fall, 2018; however, early adopters were encouraged to implement this course earlier.

Having received a Paul Lee Development grant on June 19, 2017, I proceeded to develop the MTH 155 course. The goal of this grant was to, not only develop the new MTH 155 course: *Statistical Reasoning*, but also to develop a co-requisite course which will enable qualified students to enter a credit-level math course sooner and to achieve equal or better success than those students meeting course prerequisite requirements. The prerequisites for the MTH 155 course will be completion of any three of the first five existing MTE developmental mathematics modules, already a vital part of the VCCS developmental mathematics program. Successful completion of MTH 155 will result in the prerequisite MTE modules 1-5 being satisfied.

**RESEARCH DESIGN**

This project involved many activities. First, I met with faculty, counselors, and advisors at VHCC to bring them up to date with all the details of the new MTH 155 and the MCR 5 courses for spring, 2018. Discussions were ongoing among the mathematics faculty in the Arts and Science Division. Faculty, counselors, and advisors worked hard to ensure that students were properly enrolled in the new MTH 155 and MCR 5 courses. Next, I gathered viable textbooks from publishers for possible use in the MTH 155 course and chose *Statistical Reasoning for Everyday Life*, 5th edition, by Bennett, Briggs, & Triola. Following the selection of a textbook, I then developed a syllabus, lecture notes, and chapter tests for all 10 chapters. The same syllabus was used for both seated and virtual sections, with the exception that lecture materials were included in the software and online homework and tests were incorporated into the virtual course. All tests for both seated and virtual classes were given and proctored in the
Testing Center on campus. I also worked closely with Jonna Sutherland, Adjunct, Physics and Mathematics, in designing the MCR 5 course. The plan was to use supplemental materials for remedial work, developed by Jonna. She also assisted these students with their homework and lecture material in the actual MTH 155 class.

During the spring, 2018 in-service, I presented descriptive details of the MTH 155 and MCR 5 courses to faculty and advisors and responded to questions to assist them in continued registration for MTH 155 students. The MTH 155 course was implemented in the spring semester, 2018. Also in the spring, I attended the state VMATYC (math peer group) to share details of this new project.

A timeline for the above activities follows.

- Meeting with college faculty, counselors, and advisors Fall 2017
- Registration for students in MTH 155 and MCR 5 for spring 2018 Fall 2017 - Jan. 2018
- Textbook selection Fall 2017
- Develop MTH 155 and MCR 5 courses Fall 2017
- Implementation of MTH 155 and MCR 5 courses January 2018
- Spring in-service January 2018
- VMATYC (math peer group) meeting Spring 2018
- Evaluation of data Summer 2018
- Dissemination of findings and results VMATYC Fall 2018
- Submission of article to Inquiry Fall 2018
DATA COLLECTION

This MTH 155 course was offered in a seated and virtual format for the first time in the spring, 2018 semester. Co-requisite students also enrolled in MCR 5, which is a structured support course for MTH 155. I taught both the seated and virtual MTH 155 course sections for 3-hours credit each, and Jonna Sutherland taught the MCR 5 co-requisite course for 2-hours credit.

At the highest peak of registration there were 30 students in each section of MTH 155, but during the drop/add period, a few students withdrew from each section. Since both of the MTH 155 sections were co-requisite, proper placement into the course was most important because students had to have completed at least three of the first five MTE modules to enroll in the class. Continuous coordination with Robert May--Director, Institutional Research & Effectiveness, Michael McBride--Academic Counselor, Enrollment Management & Student Services, and Jonna Sutherland was essential to enrolling students who were truly qualified to take the MTH 155 co-requisite course. Robert May managed the constant updates regarding student MTE module completions; Michael McBride made regular checks on course readiness via multiple measures; and Jonna Sutherland kept ongoing changes in records of students enrolled and active in her MCR 5 class. Only four students enrolled in the MCR 5 class—two virtual students and two seated students. All of the remaining students had successfully completed the first five MTE math modules. The main advantage of this co-requisite MTH 155 course is that students who have not completed all five of the first five MTE modules are given the opportunity to enroll in the college level course and if they successfully complete it, their MTE module requirements will have been satisfied.

The MCR 5 course assisted students who were weak in some basic math concepts. Jonna Sutherland provided just-in-time review of concepts for current homework and upcoming
lectures. This support allowed weak math students to progress along with those regular students who were better prepared to take the MTH 155 course. It also increased the number of students successful in the college-level math course required in their discipline.

**DATA ANALYSIS**

Final grades in this new course for both co-requisite and regular students were collected at the end of the spring semester, 2018, to determine the level of success of the project. One virtual section of MTH 155 was also taught in the first summer term, 2018; however, due to low enrollment, no MCR 5 co-requisite course was offered. All data from these spring and summer MTH 155 courses are included in the tables below.

<table>
<thead>
<tr>
<th>Grade</th>
<th>MTH 155 Seated</th>
<th>MTH 155 Virtual</th>
<th>Virtual</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1</td>
<td>8</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>B</td>
<td>7</td>
<td>7</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>C</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>D</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>F</td>
<td>5</td>
<td>2</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>W</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>23</td>
<td>12</td>
<td>57</td>
</tr>
</tbody>
</table>
Overall, 36 (63%) of the MTH 155 students passed the course with a grade of A, B, or C and 44 (77%) MTH 155 students passed the course with a D grade or better. Three of the four MCR 5 students passed the MTH 155 course. It should be noted that the one MCR student who failed the MTH 155 course only attended class a few times and never took any of the ten MTH 155 tests. So this student should have been withdrawn from both the MTH 155 and the MCR 5 classes early in the semester.

### IMPLICATIONS

Since both the seated and virtual sections of the MTH 155 course had good enrollments in the spring, 2018, semester, both of these sections will continue to be offered in future fall and spring semesters and a virtual section will be offered in summer semesters.

Although large enrollments in both the seated and virtual sections of the MTH 155 course were not expected, it is obvious that both sections need to be offered routinely in each semester. More co-requisite students were expected to enroll in the MTH 155 course, but actual enrollment of these students was low. Consequently efforts and changes are currently underway to better inform developmental mathematics students who have successfully completed three of the first five MTE math modules that they qualify for the co-enrolled MTH 155 course. These changes
involve the MTT course offerings and will be implemented for fall semester, 2018, in hopes that more developmental math students will take advantage of this opportunity.

CONCLUSION

The VCCS Mathematics Pathways Project has been working since 2016 to improve the quality of the developmental mathematics courses. Current proposals for revision are incorporating a support course (Mathematics Co-Requisite—MCR 5) along with the newly created college-level mathematics course, MTH 155. The focus of this paper has been the work done with this co-requisite course. Results of the study show promising results with 77% of the MTH 155 students, which includes three of the four MCR students, passing the course with a grade of D or better. The main weakness of this pilot effort was that only four students enrolled in the MCR course. Consequently, more work needs to be done to get qualified developmental mathematics students into with this support course.

Discussion at the spring, 2019 VMATYC Western Region meeting (Notes, 2019) revealed current efforts and concerns about the ongoing VCCS changes with the developmental mathematics and support courses for college-level mathematics courses. Direct enrollment into transfer mathematics courses was the main topic. Emails subsequent to the spring meeting revealed several issues about the pilot for direct placement to begin in fall, 2020. Currently nine of the twenty-three VCCS colleges are in the pilot. Two of these colleges, Southwest and Mountain Empire, are in our western region. Several issues were raised at the spring, 2019 meeting and through follow-up emails (2019).

- No current mathematics faculty were on the original direct enrollment steering committee. (personal communication, February 21, 2019)
Subcommittee for the pilot at Mountain Empire Community College (MECC) met in March, 2019 to discuss the new mathematics support courses. No mathematics faculty were at this meeting. This subcommittee proposed three new co-requisite courses that are three credits each: one for MTH 154, 155, and 161. (personal communication, April 1, 2019)

All placement will be done by multiple measures. (personal communication, April 1, 2019)

Should we at least wait and collect a few years’ data to see how the MCRs are working? (personal communication, April 2, 2019)

We haven’t had enough enrollment in the MCR course to gather any data. (personal communication, April 1, 2019)

We have not given pathways time to analyze our efforts. (personal communication, April 2, 2019)

Many of us see this as detrimental to the mission of community colleges which is opening the door to higher education for those who might otherwise not have the opportunity. (personal communication, April 2, 2019)

In closing, these email exchanges point out one unfortunate detail— that no mathematics faculty were involved in the design of a pilot project for direct placement into college-level mathematics courses. And no mathematics faculty were on at least one of the subcommittees to implement this mathematics pilot. Such oversite is unacceptable. It is also regrettable that sufficient time has not been given to analyze data for the MCR support courses. Mathematics faculty in the VCCS have spent much time and work with this Mathematics Pathways Project, which appears to have been ignored by the VCCS in its move toward direct placement into
college-level mathematics courses. It is hoped that the fall, 2020 implementation of the pilot will result in some constructive outcomes for the newly created mathematics and support courses. It is also hoped that the VCCS does not sacrifice its mission of open-enrollment for higher education.
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MASSIVE RESISTANCE AND THE ORIGINS OF THE VIRGINIA TECHNICAL COLLEGE SYSTEM

RICHARD A. HODGES

INTRODUCTION

In the summer of 1964, Dr. Dana B. Hamel, Director of the Roanoke Technical Institute in Roanoke, Virginia received a phone call that would change the course of Virginia higher education. The call was from Virginia Governor Albertis Harrison requesting Hamel serve as the Director of the soon to be established Department of Technical Education. The department, along with its governing board, would quickly establish a system of technical colleges located regionally throughout Virginia, with the first of those colleges opening their doors for classes in the fall of 1965. Governor Harrison’s call to Dr. Hamel did more than establish opportunities for training and education, it created an avenue out of the contested environment of massive resistance. During the years 1954 to 1959, Virginia established and enforced a set of laws known as massive resistance laws. The creation of these laws served as Virginia’s response to the Brown v Board of Education rulings handed down by the United States Supreme Court in 1954 and 1955. Brown made clear that segregation of students based on race did not ensure equal access to education and could no longer stand. Historically, since the 1896 U.S. Supreme Court ruling in Plessy v Ferguson, the concept of separate but equal had been the accepted practice throughout the United States. Brown completely overturned Plessy. The Brown rulings represented change on a large scale not only in Virginia, but for the entire nation. Brown required American’s reevaluate the way they viewed one another as citizens. The effects were especially felt in the
Southern states where acceptance of *Jim Crow* laws were deeply embedded in the social fabric. In Virginia, where tradition remained paramount, state leaders were willing to go to extremes to prevent desegregation from ever taking place, including altering the state’s Constitution and, if necessary, the closing of public schools. The intransigent behavior demonstrated by Virginia’s leadership in opposition to the *Brown* rulings helped construct a contested environment that encompassed the social, political, and economic lives of everyday Virginians.

In an effort to devise an appropriate response to *Brown*, Governor of Virginia, Thomas B. Stanley (1954-1958) appointed Senator Garland Gray to chair a commission whose task was simple, study the situation and devise a suitable response to the *Brown* rulings (Mays & Sweeney, 2008). The Gray Commission’s findings suggested each school district be given the ability to make a local choice as to whether schools would be desegregated. Stanley, at first in favor of the Gray Commission’s recommendations, was quickly overruled by Virginia’s political kingmaker, U.S. Senator Harry F. Byrd, Sr. Born in 1887, only a decade after the end of Civil War Reconstruction, Harry F. Byrd, Sr. ruled Virginia Democratic Party politics from the 1920s until his death in 1966. Byrd served as a state senator (1915-1925), governor (1926-1930) and United States Senator (1933-1965) (Heinemann, 2017). Byrd was a fiscal conservative and staunch advocate for state’s rights and segregation. Senator Byrd made it clear to Stanley that desegregation would not be permitted in Virginia, and Byrd expected unyielding loyalty from his followers.

Ultimately, in 1957, Lindsay Almond was elected Governor of Virginia. For the 1954 Governor’s race, Byrd chose Thomas Stanley over Almond as the Democratic candidate (Eskridge, 2014). Realizing he was never Byrd’s top choice as a gubernatorial candidate for the 1957 race, Almond began campaigning early, leaving nothing to chance. For Byrd, Almond was
independent, unpredictable and not easily controlled. Almond’s charismatic style made him popular among voters, making Byrd unable to deny Almond his chance at the governorship.

As Governor, Almond continued Byrd’s hardline stance against desegregation promoted by his predecessor, Thomas Stanley (1954-1958). Almond proved to be a staunch advocate for massive resistance and is remembered most for his closing of public schools in various areas of the Commonwealth. As Virginia’s Attorney General in 1954, Almond represented Virginia in the case of *Davis v. County School Board of Prince Edward County, Virginia* (Library of Virginia, 2015). The *Davis* case was one of the five cases that made up *Brown v. Board of Education* argued before the U.S. Supreme Court in 1954 (Library of Virginia, 2015). Because of this, it could be said, that Almond had a more intimate understanding of the *Brown* rulings and the argument over segregation than any other elected official in Virginia. Even so, Almond’s previous experience did not guarantee his appreciation of the magnitude of the *Brown* rulings.

Almond was beholden, as were many of Virginia’s elected officials, to the Byrd Machine. Harry F. Byrd had led the charge for massive resistance in Virginia and at the nation’s capital and expected his followers to take up the banner. As expected, Almond had supported massive resistance throughout his governorship, but in early 1959, this all changed. On January 19, 1959, in separate rulings, the U.S. District Court in Norfolk, and the Virginia Supreme Court ruled massive resistance laws unconstitutional (Library of Virginia, 2015). This ruling, coupled with the outcry by Virginia’s business community, placed Almond at a crossroads. Should he continue to preach the gospel of massive resistance, he could find himself in prison for defying the rulings of not only the federal courts, but also the Virginia Supreme Court. To go against massive resistance meant he would commit political suicide by opposing Virginia’s kingmaker, Harry F. Byrd, Sr. Almond chose to defy the kingmaker. As a lawyer and former Attorney
General, Almond knew the law, and knew that as Governor he was not above the law. In early February 1959, Almond stepped in front of the General Assembly of Virginia to speak. Absent was his familiar firebrand oratory as Almond logically and calmly presented his case for withdrawing support for massive resistance. As a result, Almond was politically vilified throughout Virginia as a traitor to the cause (Lechner, 1998).

In an oral history interview conducted by the John F. Kennedy Library in 1968, Almond discussed those days and how he came to his decision to break with Harry F. Byrd, Sr. Soon after the courts ruled in January of 1959, Almond met with Byrd to discuss the matter. Almond had come to the realization that Byrd’s massive resistance cause was unsustainable; Byrd would have none of it. According to Almond (as cited in Hackman, 1968):

I could not get him [Byrd] to reason. He just said, “We can’t do it. We’ve got to stand our ground no matter what comes and we cannot have any integration in Virginia.” And I finally said to him, “Well, Senator, I have gone to the end of the road. I have done everything I can with the exception of violating the federal law. I can’t do that as governor.” So from that conference our relations became more or less strained. (sec. 4)

From that point forward, Byrd politically opposed Almond in practically every way possible, even going so far as refusing to support the nomination of John F. Kennedy at the 1960 Democratic Convention in Los Angeles. Byrd had campaigned for Lyndon B. Johnson while Almond supported Kennedy (Hackman, 1968). In 1962, without the support of Senator Byrd, Lindsay Almond was appointed to the U.S. Court of Patents and Appeals where he remained until his death in April 1986 (Library of Virginia, 2015).
THE INFLUENCE OF BUSINESS

Massive resistance legislation had a profound effect on public education in Virginia. It is from this contested environment the Virginia Technical, and subsequent, Community College System was founded. Funding for technical education had been available federally since the passing of the 1917 Smith-Hughes Act. It was the damage to the state’s business community, brought on by massive resistance, that caused lawmakers to finally take steps toward improving access to post-secondary education.

Concerns of the business community in Virginia were highlighted in a report issued by the Commission to Study Industrial Development (1957), chaired by Charles Abbott of Charlottesville. The commission stressed the importance of education and the need for a healthy business climate: “Of all the normal functions of state and local governments that may affect and influence industrial development favorably, or unfavorably, none is more important than education at both the secondary school and college levels” (Commission to study industrial development in Virginia, 1957, p. 59). The report discussed how the uncertainty of a stable public school system would undermine industrial development in Virginia (Commission to study industrial development in Virginia, 1957).

With the closing of schools, and the threat of continued school closings, it was feared that industry would choose other states to locate (Commission to study industrial development in Virginia, 1957). The report specifically identified problems in Prince Edward County. Prince Edward County was the scene of a landmark civil rights case, Davis v County School Board, involving Moton High School. Davis was one of the cases that made up the 1954 Brown v Board of Education cases. In spite of its notoriety, in 1959, the Prince Edward County Board of Supervisors chose to close the county’s public schools rather than desegregate. Prince Edward
County schools would remain closed for five years. The enforcement of massive resistance laws had created one of the most serious problems facing Virginia (Commission to study industrial development in Virginia, 1957). The closing of schools was having a profound effect on preparing students for the workplace and signaled, for potential investors, that the business climate in Virginia did not encourage the development of an educated workforce (Commission to study industrial development in Virginia, 1957). Many in the business community throughout the South agreed that actions such as massive resistance were detrimental to the attraction of new industry and the development of existing industry (Miller, 1960). The environment had become so contested that in 1958 even the U.S. Navy voiced their concerns at the closure of schools in Norfolk (“What ‘massive resistance’ costs Norfolk and its businessmen,” 1958). The Navy did not state that it would leave Norfolk but was concerned Naval personnel may not be able to enroll their children in public schools (“What ‘massive resistance’ costs Norfolk and its businessmen,” 1958). Supporters of massive resistance had created an unmaintainable situation. From this polarized climate emerged an extraordinary group of Virginia businessmen.

**VIRGINIA INDUSTRIALIZATION GROUP**

In 1958, four of Virginia’s most influential business executives came together to form what would become the Virginia Industrialization Group. Four men – Stuart Saunders, President of the Norfolk and Western Railway in Roanoke, Harvie Wilkinson, President of the State Planters Bank of Commerce & Trusts in Richmond, Frank Batten, Publisher of the Norfolk-Portsmouth News, in Norfolk, and Richmond Attorney Lewis Powell, who in 1972 would become a U.S. Supreme Court Justice – were gravely concerned about the effects Massive Resistance was having on Virginia’s business community. The purpose of the Virginia Industrialization Group was to bring an end to Massive Resistance (Saunders, 1980). Originally,
according to Saunders (1980), *The Group* intended to “operate in the background” (p. 1). The Group’s inaugural meeting took place in December 1958 at the Rotunda Club of the Jefferson Hotel in Richmond. Exact attendance is unclear as the Group kept no minutes (Saunders, 1980). The guest of honor for the evening was Governor J. Lindsay Almond. Following the Governor’s speech, a discussion ensued between Almond and those present. The Group’s membership pointed out the negative effects massive resistance was having on Virginia business and the futility of continuing such draconian measures. The exchange between the membership and Governor Almond became contentious as Governor Almond would not yield and vowed to continue his support of massive resistance as a means of continuing the long-held tradition of segregated education.

On January 19, 1959, both state and federal courts declared massive resistance unconstitutional. Because of these rulings, Almond withdrew his support for a continuation of massive resistance (Massive Resistance, 2015). Regardless of his personal beliefs or political loyalties, as Governor, Almond could not ignore rulings. It was believed by Stuart Saunders (1980) that Almond’s December 1958 meeting with the Virginia Industrialization Group had an impact on the 1959 decision to abandon massive resistance (Saunders, 1980).

With massive resistance in retreat, the Virginia Industrialization Group set out to establish and carry out an agenda designed to promote their collective interests toward improving the business climate in Virginia. Letters written between 1959 and 1964, and held at the Powell Archive at Washington and Lee University, show the Group worked steadily to influence state policy pertaining to business and industry. In February 1959, Frank Batten wrote a report outlining areas the Group should direct its lobbying efforts (Batten, 1959). The report was produced by a Virginia Industrialization Group workgroup headed by Batten and State Senator
Eugene Sydnor (Batten, 1959). The areas outlined included development of the port of Hampton Roads, elimination of “unfavorable elements” in the state’s tax laws, strengthening of the Department of Conservation and Economic Development, and the strengthening of the state’s Chamber of Commerce (Batten, 1959, p. 3).

Richard Holmquist, a former General Electric executive, was chosen in September 1961 as an industrial development consultant to Governor Almond. Holmquist’s prior experience as consultant in government relations for the General Electric Corporation meant he was well suited for the position (“Holmquist Named Consultant to The Governor,” 1961). Holmquist served as consultant to both Governor Almond (1958-1962) and Governor Harrison (1962-1966). Holmquist’s $25,000 a year salary was paid in full by the Virginia Industrialization Group (Saunders, 1980). Holmquist’s salary continued to be paid by the Virginia Industrialization Group “for three years and four months” (Saunders, 1980, p. 9). In 1962, became Director of the Virginia Division of Industrial Development (Saunders, 1980). As Director, Holmquist recognized that for Virginia to be competitive, it would need a trained workforce (Robertson & Clarke, 2008). Training a large number of Virginians in a brief amount of time would require the establishment of a statewide system of technical education (“Farm Community of past Rapidly Disappearing,” 1962, para. 6).

**WAKING THE SLEEPING GIANT**

Richard Holmquist described the Virginia economy of the early 1960s as a “sleeping giant” (Robertson & Clarke, 2008, para. 1). Awakening this giant and putting Virginia business and its people back on the road to economic prosperity would require a coming together of business, industry, and government. The focal point of Holmquist’s work was to build up interest in the creation of new industry in the state. Making Holmquist’s job difficult was the
damage caused by massive resistance. To achieve his objective, Holmquist spoke to community
groups about the characteristics that would make their towns and cities attractive to industry
(“Industrial Growth Called Community Task,” 1962). Holmquist told listeners the qualities
necessary to attract businesses to Virginia included “good government, a progressive attitude,
and a well-trained labor force” (“Virginia Needs to Create 400,000 Jobs in Decade,” 1962, para.
7)). In November of 1962, Holmquist, speaking to an audience at the Kiwanis Club in
Winchester, Virginia said that he could see a day not too far in the future when a “statewide
system of technical education would exist” (“Farm Community of past Rapidly Disappearing,”
1962, para. 6). Just a few months later, in January of 1963, Holmquist told a meeting of the
Richmond Chapter of the Society of Professional Engineers the state needed excellent vocational
Holmquist promoted the idea that high quality vocational-technical education was for the
good of Virginia as a whole. He argued,

To bury our heads in the sands of selfish status quo on the educational front would
not only be terribly costly in the long run, but even more seriously, it would be a
blot on our responsibilities to our youngsters. ("Va. Technical Education System
Urged," 1963)

In June of 1962, a headline in the Danville Register told readers *Virginia needs to create 400,000
jobs in decade* ("Virginia Needs to Create 400,000 Jobs in Decade," 1962). According to
Holmquist, one of the key pieces to the puzzle to help fill these jobs was the need for a “properly
educated labor supply supporting services and good plant sites” (para. 6) because “education
continues to constitute a major problem for Virginia” ("Virginia Needs to Create 400,000 Jobs in
Decade," 1962, para. 7). Holmquist made this plea reportedly in Franklin, Virginia as he
continued to promote industrialization; he again emphasized the need for “a good and properly educated labor supply” (“Needs Cited,” *The Bee*, Nov. 1962, p.5, para. 3)

Throughout 1963, Holmquist continued to travel and speak of the need to bring industry to Virginia. His message was consistent and clear; Virginia needed to expand its industrial base, but could not do this without community support and an educated workforce. On February 20, 1964, Holmquist was joined at a presentation for members of the Appomattox Basin Industrial Development Corporation (ABIDC) by Dr. Dana B. Hamel, then Director of the Roanoke Technical Institute (“ABIDC Meets in Hopewell,” 1964).

This meeting was not the first time Holmquist was joined by members of industry and higher education. A few days earlier, on 13 February 13, 1964, Holmquist was joined by members of the ABIDC and Dr. Hamel at a speaking engagement in Hopewell ("Allied's Prossen Will Speak at Conference," 1964). These meetings gave Holmquist the opportunity to speak on industrialization. His guests who were experts in their respective fields, added weight to his message. During a telephone conversation, Dr. Hamel said he was there to explain the meaning of technical education (personal communication, March 15, 2016).

In June of 1962, Joseph Hamrick resigned his post as Executive Vice President of the South Carolina firm, Kahn-Southern, to head the Virginia Division of Industrial Development (“S.C. Man Heads VA Industrialization”, 1962). It did not take Hamrick long to find his footing. He began traveling the state telling audiences and newspaper reporters about the connections between good jobs and vocational-technical education. In an interview with the *Danville Register* newspaper, Hamrick said, “One of the state’s major liabilities is insufficient vocational and technical training” pointing out that new personnel hired for a Waynesboro General Electric plant had to be “imported from outside the state” (“Virginia’s Basic Industry Growth Slow Says
Both Holmquist and Hamrick were preaching the same message; vocational-technical education equated to more jobs in the state for residents and an improved economy over all.

For the next two years, even after the Department of Technical Education was established, Hamrick and Holmquist continued to travel talking about the critical need for Virginia to industrialize, and they were clear on the fact that the state could not do this without an educated workforce. According to Hamrick and Holmquist, obtaining an educated workforce was of the utmost urgency and a direct means to obtain this goal was through the establishment of a system of technical colleges throughout the Commonwealth.

THE WATCHMAKER’S SON

Dr. Dana B. Hamel arrived in Virginia in 1962 when he was hired by the Virginia Polytechnic Institute (today known as Virginia Tech) as Director of its newest branch campus in Roanoke, the Roanoke Technical Institute. Born in Maine in 1923, Hamel grew up as the son of a watchmaker in the heart of coal country in Johnstown, Pennsylvania. Prior to moving to Virginia, Hamel held a variety of academic positions in Ohio at the Ohio Mechanics Institute (Strother, 1964). Positions held ranged from Instructor to Acting President (Strother, 1964). As Director of the Roanoke Technical Institute, Dr. Hamel was in an excellent position to meet and get to know many in Virginia’s industrial arena. In a follow-up conversation to our original interviews, Dr. Hamel said he had met several of the area’s industrialists through his association with members of the Advisory Board for the Roanoke Technical Institute (personal communication, March 15, 2016).

As Holmquist, Hamrick, and Hamel traveled the state touting industry and technical education, legislation was making its way through the Virginia Assembly. The legislation, H.
205, had broad support, with its chief sponsor being Delegate French Slaughter (Commonwealth of Virginia, 1964). A stagnant industrial climate, coupled with the lack of access to post-secondary education for much of Virginia’s population led those who sponsored the legislation to include in the language of the bill “an emergency exists, and this act is in force from its passing” (Virginia House of Delegates, 1964, p. 3).

On April 7, 1964, a memorandum was sent from Joseph Hamrick to Governor Harrison stating, “Bill McFarlane and I have suggested the name of Dr. Dana B. Hamel for consideration as Director, State Board of Technical Education” (Hamrick, 1964, para. 1). William McFarlane was the head of the State Council of Higher Education in Virginia (SCHEV) at the time. In July, Governor Harrison placed a telephone call to Dana Hamel offering him the position of Director of the State’s newly formed Department of Technical Education.

In August 1964, shortly after the announcement of his hiring, the Richmond Times-Dispatch newspaper interviewed Dr. Hamel. Hamel spoke of his vision that someday the technical institutes would become a series of “comprehensive community colleges” (Strother, 1964, para. 13). Leaders in Virginia, including Governor Harrison, viewed the current series of branch colleges affiliated with the universities as a system of community colleges (Williams, 1976). Hamel felt having two systems of two-year colleges, one technical and the other for college transfer existing side by side, was wasteful and unnecessary (Strother, 1964). Hamel had a vision of Virginia creating a system of comprehensive community colleges that would offer students a chance to learn trade and industry skills, prepare to transfer to a four-year university, receive training in medical areas, and provide continuing education opportunities to adult learners (Strother, 1964). Providing access, especially to rural areas, was crucial to the realization of Hamel’s vision.
Virginia has always been a predominantly rural state with most of its inhabitants living in either the Northern Virginia area located just south of Washington, D.C., or the Virginia Peninsula area stretching from Richmond to Virginia Beach. In a 1944 report by the Virginia Education Commission, the need for increased access to vocational/technical education was addressed (Virginia Education Commission, 1944). The 1944 report stated:

At the present time, such facilities are available to only about 25 percent of our school population and a much smaller percent of our adult citizens. The committee feels that opportunities for this training should be placed within reach of all prospective students who may be benefited by it. (p. 109)

To allow for increased access to vocational education, the report recommended the creation of vocational schools throughout the state (Virginia Education Commission, 1944). Reflecting the social climate of the times, one recommendation of the 1944 report pointed out that any new facilities would be segregated by stipulating schools for “white students” and those for “Negro students” (Virginia Education Commission, 1944, p. 109).

The inaugural 1959 SCHEV report (Martorana, Hollis, Brunner, and Morrison, 1959) made recommendations that would be adopted by the Board for Technical Education. One had to do with the placement of the colleges. The SCHEV report displayed maps of Virginia outlining a multilayered approach for deciding two-year college locations. Additionally, the SCHEV report focused extensively on identifying graduation rates, actual and projected, of high schools located within proposed regions. Access was important, and the report suggested the colleges be within a 30-mile driving distance for students (Martorana et al., 1959). In 1964, the Board for Technical Education adopted two recommendations from the 1959 SCHEV report: 1)
Locate the college so they provide regional coverage for all parts of the state, and 2) the colleges should be within a reasonable commuting distance.

In designing the VTCS, the Board studied how junior and community colleges had been organized in other states. In California, each two-year college was established with a local board guided by the State Board of Education (State Board of Education & Regents of the University of California, 1960). Instead of serving a single county, California divided the state into regional service districts ("The California Community Colleges," 2015). The regional college model eventually adopted in 1964 by the State Board for Technical Education allowed for each college in Virginia to have a local advisory board overseen by the State Board for Technical Education.

In 1965, the Virginia Technical College System opened. Virginia Western Technical College, previously Roanoke Technical Institute, along with Northern Virginia Technical College were the first colleges to open in the fall of 1965 (Hamel, 1972). Northern Virginia Technical College began in a rented facility at Bailey’s Crossroads, just north of what is now the Alexandria campus (Northern Virginia Community College, 2014). These colleges were joined in the System by five area vocational-technical schools (Hamel, 1972). The vocational-technical schools were Danville Technical Institute, Peninsula Vocational-Technical Education Center (Hampton), New River Vocational-Technical School (Radford), Valley Vocational-Technical School (Waynesboro), and Washington County Vocational-Technical School at Abingdon (Hamel, 1972). The original design of the VTCS called for the creation of 23 Colleges regionally located throughout the State (State Board for Technical Education, 1965, p. 4) When the VTCS became the VCCS in 1966, this plan was continued and developed into the current 23-college system.
CONCLUSIONS AND IMPLICATIONS

Prior to this research, the role played by massive resistance on the creation of these colleges had never been explored. The opening of the technical colleges was a long time coming. The founding of the VTCS and subsequent VCCS revolutionized higher education in Virginia and continues to have an impact today. The contested environment of massive resistance set the stage for the founding of the VTCS. Federal funding to support the creation of the system was available through vocational-technical legislation and through the Higher Education Act of 1963 and the Higher Education Facilities Act of 1963. It took the oppressive climate of massive resistance to bring to light the urgent need for a two-year college system making post-secondary education available in every corner of Virginia.

These colleges were born in a time of great social change and upheaval. America was a segregated place, if not by race, then by class. The VTCS/VCCS opened its doors to everyone regardless of race or class and continues this tradition today. This open-door policy, while extremely democratic, creates a challenge for teachers and administrators. Not all students are ready for college level course work. This situation is not unique to the VCCS. Community colleges throughout the country face similar issues. College readiness continues to be an issue for both two-year and four-year colleges. Research on the effectiveness of diagnostic tools used to measure college readiness should be conducted, as should research on the effectiveness of developmental courses.

The VTCS began out of a need for a well-trained workforce. The VCCS continues this tradition today. State lawmakers look to the VCCS to prepare the workforce of tomorrow, shining new light on the value and significance of Virginia’s community colleges. The VCCS accounts for half Virginia’s total undergraduate enrollment (SCHEV, 2017). In 2015, VCCS Chancellor Glenn Dubois mandated the tripling of all credentials awarded, transfer and
workforce, by 2021. The tripling of credentials is a bold a challenge accepted by all 23 of Virginia’s community colleges. Just as in the 1960s, the VCCS will shape the future of Virginia’s workforce.
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**REVIEW OF GENESEA M. CARTER AND WILLIAM H. THELIN’S**

**CLASS IN THE COMPOSITION CLASSROOM**

**CHRISTIAN AGUIAR**

**ABSTRACT**

Though community colleges enroll the majority of working-class college students, research on how to best serve the interests of working-class students at our institutions is limited. In *Class in the Composition Classroom: Pedagogy and the Working Class*, the contributors tackle the issue of supporting working-class students in college composition classes from several angles, offering practical pedagogical advice, guidance on college-wide initiatives, and research into common challenges faced by working-class students. While the text will be most valuable for those who teach writing, its insights apply to anyone who serves at a community college.


**REVIEW**

It’s no secret to those working at a community college that social class plays a significant role in the lives of our students, from the programs of study they select to their level of preparation for class to their ability to graduate on time. Despite the enormous impact class has on our students, very little scholarship in the field of college-level teaching makes class its focus. Genesea M. Carter and William H. Thelin’s edited volume *Class in the Composition Classroom:*
Pedagogy and the Working Class steps into that void for composition pedagogy, offering a range of reflections on the role of class in college composition. While their focus is of course on the composition classroom, there are implications here that apply more broadly to any instructor teaching working-class and first-generation college students – in other words, to us all.

In their introduction, the authors make a case for the value of rethinking our teaching strategies in order to better account for the experiences of working-class students. While their focus is certainly on problems in English composition – the disconnect between academic writing and students’ experiences, goals, or expectations, for examples – the issues they raise are of concern to those who teach in all disciplines. For example, they raise the issue of deficit-based models, which are particularly damaging for working-class students who tend to be “perceived by what they lack” much more so than “their middle-class and upper-class counterparts” (7).

Building on a list of seven characteristics of working-class learners developed by Boiarksy, Hagemann, and Burdan, they present the core argument of the collection: that it is our responsibility as instructors to have a critical, honest look at both our individual biases and, more importantly, the systemic biases that pervade our institutions and our pedagogy, biases that contribute to the alarming failure rate of working-class and first-in-family college students (9).

In a particularly insightful chapter, Aaron Barlow and Patrick Corbett, two instructors at CUNY’s City Tech, a four-year technical college, discuss approaches to bridging the gap between institutions that operate on middle-class assumptions and their working-class college students. First, they note that working-class experience often functions as “hidden subjectivity,” meaning that the assumptions students have, and their expectations of how things work, are typically not explicitly stated (65). This fuels the disconnect between instructors, who may find their working-class students decisions and behaviors puzzling, and students, who may be equally
frustrated by all of the unstated expectations instructors bring to the classroom. While shying away from any sort of one-size-fits-all answer, the authors argue that instructors must find ways to productively “cede control” to students so that students are able to make it clear what they need (72). One approach to this might be allowing students to determine elements of the syllabus, set classroom policies, or influence course goals.

One of the consistent arguments made across the articles is that working-class students need more help than their middle- and upper-class peers in “settling in” to college. This is in part due to a tension between many (though not all) working-class communities and academia, which results in many students understanding the value of a college education primarily as “a means to an end” (283). The solutions offered are varied: Aubrey Shiavone and Anna V. Knutson encourage instructors to, among other things, more actively encourage working-class students to bring their own experiences into the classroom, perhaps by designing assignments that engage life beyond the college (21). Genesee Carter makes the case for having students write about their communities, tying working-class identity into an essay dealing with discourse communities (284). Rebecca Fraser invites students to write about their lives as workers (127). The common element here is that, to better serve and retain working-class students, academics must seek out ways to make the knowledge these students already have – whether that’s knowledge of work, of their own communities, of different languages – as valuable as we make the default set of middle-class skills, approaches, and behaviors that shape our institutions.

While most of the chapters focus on better accommodating students intellectually, socially, and emotionally, the essay “Rethinking Class: Poverty, Pedagogy, and Two-Year College Writing Programs” considers what the authors term “poverty effects”: the educational impacts of either episodic (short-term, counted in months) or chronic (long-term, counted in
years) poverty on student learning (231). The authors argue that students experiencing poverty often struggle to balance “the physical expectations for course attendance and the intellectual habits of learning alongside childcare, family responsibilities, inconsistent housing, and unreliable transportation” (235). Their research data, a dialogical analysis conducted through interviews with instructors at four community colleges ranging from high-poverty (39%) to low (11%), highlights several helpful trends. First, working-class students tend to deal with a common set of barriers: unreliable transportation, lack of childcare, unstable housing, and the long-term effects of childhood poverty. Second, instructors almost always struggle to disarticulate personal responsibility from poverty effects: the authors note that participants often vacillated between concerns about students’ poor time management skills to an acknowledgment of factors beyond their control, such as homelessness. They trace this issue in part due to the stigmatization of poverty. If instructors are, as the authors found, generally unwilling to use the word poverty, it may exacerbate a deeper problem: “instructors seemed to lack a shared vocabulary for discussing student poverty…and its effects on learning” (245). This is in keeping with a broader trend they identified: attempts to alleviate or accommodate poverty effects were almost always individual efforts by instructors rather than college-wide programs or policies. The authors thus conclude that the most effective path for faculty going forward is to demand institution-wide discussions of programs, policies and procedures that can help identify, address and alleviate poverty effects.

This volume takes important steps forward in helping us all – as faculty, staff, administrators and scholars – make our colleges more welcoming to working-class students. It is a helpful reminder that paying too much attention to what we think students don’t have – the old deficit/banking model – does little more than drive students away. However, it also provides a
helpful reminder that institutions serving primarily low-income communities themselves struggle from chronic underfunding and instability. The irony that runs through the collection is that the institutions created to serve the most vulnerable populations of our society are themselves the most vulnerable to funding cuts, drops in enrollment, and economic shifts. The change may begin in the classroom, but it certainly cannot end there.
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**Notes in Brief:** These thought-provoking and scholarly short-length manuscripts (1,000 – 2,000 words) should be submitted with the goal of initiating conversations or development of practice among educators and staff within community colleges. Notes in Brief essays may focus upon smaller research projects and their practical applications. Such manuscripts should include a description of the project, implications for practice and/or policy, and analysis of research. Alternatively, Notes in Brief essays may evaluate current issues, policy concerns, or trends relevant to community colleges and/or higher education. These essays should not be considered opinion editorials (op-eds); rather, these essays should strive to build arguments based on data, research, and sound analysis.

**Book Reviews:** Book reviews (750-1000 words) or review essays (1250 – 3000 words) of contemporary publications relevant to community colleges, higher education, or issues of teaching and learning should focus upon examining the major topics within the publication, and upon assessment and analysis of the publication’s focus, its strengths and weaknesses.

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