

# **BUILDING A CASE FOR MATHEMATICS SPECIALIST PROGRAMS**

---

D. BLOUNT and J. SINGLETON  
*Commonwealth Educational Policy Institute  
L. Douglas Wilder School of Government and Public Affairs  
College of Humanities and Sciences, Virginia Commonwealth University  
Richmond, VA 23284-2028*

## **Introduction**

In 2004, the “Mathematics Specialists in K-5 Schools: Research and Policy Pilot Study” garnered support from the Teacher Professional Continuum (TPC) of the National Science Foundation (NSF). The project’s focus was to determine the effectiveness of a school-based Mathematics Specialist program in grades K-5. Preparation, deployment, and support of twenty-four Mathematics Specialists in two cohorts of 12 was at the heart of the project, utilizing well-designed research to gauge the impact on teachers who are supported by Mathematics Specialists, and on the mathematics achievement by these teachers’ students.

Unique to this grant was the specific and significant attention to a policy component. An innovative approach of utilizing a team of policy analysts to examine policy, legislative, regulatory, and funding issues regarding the establishment of Mathematics Specialist programs was utilized from the beginning. Two policy associates with extensive government relations experience in public education at the state and local division level formed the team.

As the NSF-TPC grant ramped up in the fall of 2004, the policy team composed an initial report on policy and regulatory issues, and presented it to the grant team. This first work explained the role of state policymakers and state policymaking processes, including such issues as Virginia’s education governance and policymaking structures, legislative and regulatory processes, and Board of Education (BOE) authority. It also included some analysis of the Mathematics Specialist position itself.

Included with the report was a paper describing the then-current climates of support and lack of support for a K-5 Mathematics Specialist position and a chart of existing statutory and regulatory requirements highlighting expectations for mathematics achievement on the part of

Virginia public school students. These materials showcased the tremendous degree to which public education, in general, is grounded in policy and budgeting at the state level, and to which the case for Mathematics Specialists, in particular, could be advanced by interacting with the various policymaking processes that exist in Virginia.

The two policy associates participating in the work of this project drew on grant team members' strengths, expertise and past work, as well as relationships those members had built, to advise and help steer them through the various policymaking processes to effectuate important decisions about Mathematics Specialists, and mathematics teaching and learning. This was accomplished through team members being increasingly responsive and proactive in providing useful information to key policymakers at the appropriate time in their decision-making process.

This article describes those policy-related processes and how they work "in practice" in Virginia. It also details how involvement in and interaction with these processes, led by the policy team, was undertaken successfully by the members of this Mathematics Specialist project. In addition, separate sections address the importance of keeping policymakers and the public informed about the benefits of Mathematics Specialists and the great importance of understanding the state and local government responsibilities and processes for funding public education.

### **State Policymakers and State Policymaking Processes**

The framework for governance of public education in Virginia is set forth in Article VIII of the Virginia Constitution. Often called the "education article," the ultimate authority for the educational system to the General Assembly, it establishes a state board of education to provide general supervision of the public school system, and vests the supervision of schools in each school division with a local school board.

The General Assembly directs education policy by approving changes to the state Code and by enacting the state budget. As directed by the Constitution, it must provide for a system of free public elementary and secondary schools for all school-age children and seek to ensure that an educational program of high quality is established and continually maintained. The Board of Education (BOE) is directed to prescribe the Standards of Quality (SOQ), which define the Commonwealth's required educational program, and to recommend any changes in such to the legislature. However, the General Assembly may enact the Board's recommendations into law or revise the existing Standards, found in the *Code of Virginia* at §22.1-253.13:1-8, as it deems appropriate.

Virginia operates with a biennial budget. In even-numbered years, the General Assembly adopts a two-year revenue and spending plan, with appropriations made for programs in the first and/or second years. Almost all major budget actions are taken in the first year, though if revenue is uncertain, legislators sometimes defer appropriations until the second year for a program adopted in the first.

The budget process and consideration of legislative bills generally are on parallel tracks, as approved policy changes may necessitate the state paying all or part of the costs associated with new and revised statutes. Approved budget provisions, which may be actual appropriations or language directing an action, take precedent over statutes and thus often are the ultimate drivers of education policy. Moreover, the legislature, through the budgeting process, apportions the costs of providing the educational program meeting these standards between the state and local governments.

The BOE has the primary responsibility and authority for effectuating state educational policy, guiding public education through such functions as promulgating regulations for accrediting schools, establishing learning objectives, and setting licensure standards for teachers. The governor appoints the nine-member Board, the Superintendent of Public Instruction, and the Secretary of Education who is a member of the Cabinet. As is the Superintendent, Virginia's Secretary of Education is an advisor to the Governor on educational matters and promotes the Governor's educational policies. The Governor, however, has considerable influence over public education policy largely through his management of the state's budgeting process.

The Constitution and the *Code* provide that the supervision of schools in each school division shall be vested in a school board. Specific school board powers and duties are stipulated in the *Code* at §22.1-79. In particular, this section states that a school board shall, insofar as not inconsistent with state statutes and BOE regulations, operate and maintain the public schools in the school division. As mandated by the SOQ, school boards have great responsibility for meeting the educational needs of diverse student populations by implementing various instructional programs, providing support services, assessing student progress and achievement, and providing support, training, and professional development for school personnel.

State policy in many program service areas, including public education, also is shaped through a defined regulatory process. State regulations in large part direct the operation of Virginia's state agencies and the programs and entities affected by the actions of such agencies.

Such regulations must be authorized by law, and they carry the force of the law. The Virginia Administrative Process Act (APA) provides the basic framework for this regulatory rulemaking, setting out the stages of the regulatory process, including notice and opportunity for public comment. Typically, each regulatory action goes through a mandatory three-stage process constructed to ensure the public has ample opportunity to participate, and that all perspectives are considered in the development of a final regulation.

The formation of education policy in Virginia often is a very deliberative process, with significant changes sometimes taking years to be realized. It is common practice for the General Assembly to establish legislative or agency studies to examine new, ongoing, or divisive issues. That process rarely is rapid and recommendations are not necessarily considered in a timely manner. Therefore, the push for significant policy changes more often than not languishes until advocates muster significant legislative interest in the issue to try again.

### **Recent State Policy Actions**

Over the course of the TPC grant's five years (2004-2009), state policymakers approved a number of actions that are telling both in substance and in the expression of support and confidence these leaders place on the work and value of Mathematics Specialists. The most significant include the following actions:

- **Licensure Regulations**—The 2005 General Assembly approved SJR 428, which requested the BOE to include a Mathematics Specialist endorsement in its revisions to the *Virginia Licensure Regulations for School Personnel*. The BOE finalized the Mathematics Specialist for elementary and middle education add-on endorsement as part of the licensure regulations that took effect in 2007.
- **Public Commendation**—The General Assembly approved HJR 258 in 2006, which commended local school boards employing Mathematics Specialists.
- **Legislative Study**—HJR 25, also approved in 2006, established a joint subcommittee to study mathematics, science, and technology education in the Commonwealth.
- **Budget**—The 2007 General Assembly provided one-time funding of \$150,000 for salary support for certain grant-supported Mathematics Specialists so that an additional year of data could be obtained.
- **Standards of Quality for Public Education**—At the request of the BOE, the General Assembly amended the SOQ in 2007 to require school divisions to identify and assist students having difficulties in mathematics.

### **How Outreach, Awareness, and Advocacy Influenced Successful Outcomes**

For each of these successful actions, the grant management team, members of Virginia Mathematics and Science Coalition (VMSC), and partner school divisions, their school board members and staffs all deserve credit for effectuating the positive outcomes. Success was achieved through a series of communications and outreach, awareness-building and advocacy activities, many initiated by the grant team and others undertaken as proactive responses.

These activities essentially constituted a sustained campaign over several years. Indeed, it was critical that they be ongoing and focused, due to the previously noted lengthy processes in Virginia to effectuate change in policies. Over time, these efforts and the outcomes they produced met the intended goal to increase support for the key role that Mathematics Specialists play in improving student learning in mathematics, while building awareness of their growing use and benefit.

Throughout the course of the five-year period, grant team members acted on information and encouragement from the policy associates to do the following: 1) proactively participate in specific state policy-shaping activities, including the introduction of legislation and budget initiatives, and advocacy before the BOE; 2) seize upon opportunities to provide evidence of the benefits of implementing Mathematics Specialist programs in ways that were credible to mathematics educators and policymakers at all levels; and, 3) build awareness and support for Mathematics Specialists throughout the education community which in turn could inform and influence state policymakers. For each of these successful policy actions, let's take a closer look at various strategies and approaches that were instrumental in bringing about desired outcomes. These activities, while specific to Virginia in their details, may serve as models for other advocates to undertake when opportunities are afforded in their education policy environment.

**State Regulations: Licensure Regulations for School Personnel** — In 2005, the General Assembly approved SJR 428, which requested the BOE to include a Mathematics Specialist endorsement in its upcoming revisions to the Virginia Licensure Regulations for School Personnel. The BOE then created the Mathematics Specialist for elementary and middle school education add-on endorsement as part of the regulations that took effect in 2007.

**Background:** The Virginia Mathematics and Science Coalition (VMSC) was an early advocate for this licensure endorsement for educators. In 2002, amidst growing research and evidence

linking student outcomes with teacher quality, it convened a task force to research and report to the Virginia education community how a “Teacher Specialist” would improve student learning. Its charge was to examine job description, competencies, preparation, and licensure of such specialists. The Task Force observed that “Virginia teachers and administrators reported to the Task Force that ongoing, site-based assistance is necessary to adequately support teachers in the change process. One way to provide this sustained support is to develop and maintain a cadre of Mathematics Teacher Specialists who can offer meaningful and consistent site-based guidance to their colleagues.” The group focused its work and findings on the roles and responsibilities of a school-based Mathematics Specialist, the importance of state licensure, and the necessity of quality preparation programs [1].

In June 2003, the BOE’s Advisory Board on Teacher Education and Licensure (ABTEL) proposed revisions to the licensure regulations that included a proposal to establish a Mathematics Specialist endorsement for both elementary and middle school education. Responding to the VMSC work and ABTEL recommendation, the BOE approved the following resolution:

It is the intention of the Board to proceed forthwith on establishing criteria for the new licensure endorsement of Math Specialist. It is the Board’s further intention that upon the completion of the process of establishing the Math Specialist endorsement, the Board will recommend the inclusion in the SOQ of Math Specialists at an appropriate ratio to be determined by the Board.

The BOE was continuing to review and discuss the overhaul of the licensure regulations (following some delay due to ongoing implications with the then-recently implemented federal No Child Left Behind legislation) when the General Assembly adopted SJR 428 requesting the Board to include an endorsement for Mathematics Specialist in that regulatory revision. Revised regulations that took effect September 21, 2007, and that remain current, contain a Mathematics Specialist endorsement. The endorsement requires either graduation from an approved master’s degree-level Mathematics Specialist preparation program or completion of a master’s degree-level program in mathematics, mathematics education, or a related field including at least twenty-one content hours in undergraduate or graduate-level mathematics. Corresponding *Regulations Governing the Review and Approval of Education Programs* that similarly were approved, address the same coursework competencies as highlighted in the endorsement section (knowledge, skills, application, history, technology), and speak to the school-based Mathematics Specialist as a resource in professional development, instructing children who have learning

difficulties in mathematics, curriculum development and implementation, mentoring new teachers, and parent and community education.

***Policy Team and Management Team Activities:*** The grant management team continuously advocated, through communication with BOE members and Department of Education (DOE) officials, for the inclusion of a Mathematics Specialist endorsement in the licensure regulations. Members built relationships with BOE members and DOE staff during the early work of the Task Force, disseminated results of the Task Force report, and provided letters of support and testimony at BOE hearings.

In advancing the General Assembly resolution, members of the grant management team drafted the resolution, requested it be introduced by a legislator who at the time was the VMSC chairman, and solicited support for it in the education community. The policy team monitored and reported on its progress to passage by the General Assembly. The VMSC solicited support of SJR 428 via letter to local school divisions in late 2004, prior to the convening of the 2005 General Assembly. During the legislative session, talking points in support of the resolution and several letters of endorsement were distributed to legislators.

**Commending Legislative Resolution — The General Assembly approved HJR 258 which commended local school boards employing Mathematics Specialists.**

***Background:*** At the request of the VMSC, the Speaker of the Virginia House of Delegates introduced a resolution commending Virginia school boards that employ Mathematics Specialists in order to increase student mathematics achievement by increasing the quality of mathematics instruction. The resolution directed:

...[the preparation of] a copy of this resolution for presentation to the Virginia Mathematics and Science Coalition, requesting that it further distribute copies of this resolution to the respective school boards as an expression of the General Assembly's admiration and support for their commendable initiatives directed at improving both instruction and achievement in mathematics [2].

The resolution was approved on voice votes by both the House of Delegates and Senate in February 2006. Thus, the General Assembly provided a "thumbs up" to those school divisions

implementing Mathematics Specialist programs, while also signaling to others that they look at the implemented models for establishment in their own schools.

***Policy Team and Management Team Activities:*** The policy team suggested and drafted the resolution for the Speaker of the House that was submitted, and during the course of the legislative session, monitored and reported on its progress to passage by the General Assembly. Following approval of the resolution, the VMSC distributed copies, as requested, to local school boards, as well as to other K-12 education stakeholders. The grant team viewed this policy team recommendation as an effective way to draw legislators' attention to Mathematics Specialists, as well as to provide some recognition to local school divisions employing Mathematics Specialists, with the desire that some of their peers take notice and explore such programs themselves.

**Joint Legislative Study — The General Assembly approved HJR 25 which established a joint subcommittee to study mathematics, science, and technology education in the Commonwealth.**

***Background:*** In 2006, the legislature approved HJR 25, which established a two-year joint subcommittee to study mathematics, science, and technology education in the Commonwealth at the elementary, secondary, and undergraduate levels. The resolution, which was approved unanimously, noted the importance of ensuring “that the curricula of Virginia's public schools provide an adequate foundation for students to pursue and continue successful studies of science, math, and technology at institutions of higher education.” The fourteen-member panel was charged with, among other things, reviewing and recommending “innovative ways to interest students at all education levels in science, math, and technology” [2].

The HJR 25 subcommittee membership included two citizen members, one designated by the resolution to be “a professor of mathematics-, science-, or technology-related courses at a state institution of higher education.” Acting on the policy team's suggestion, the VMSC nominated one of its members to be part of the HJR 25 subcommittee, and the Senate Rules Committee appointed this nominee to the panel. The VMSC closely followed the work of the panel, providing oral and written information about the efficacy of Mathematics Specialists. At the conclusion of its two-year stint, the study committee was continued for an additional year.

***Policy Team and Management Team Activities:*** The policy team also monitored and reported on the progress of the HJR 25 study committee's work and legislative recommendations. The



first two legislative recommendations of the HJR 25 study (in 2007) directly supported teacher mathematics education and the employment of Mathematics Specialists. The first recommendation would qualify students agreeing to teach in a mathematics or science field for the Virginia Teaching Scholarship Loan Program; the second would create a pilot program to provide grants to six school divisions to hire an elementary Mathematics Specialist. These two recommendations were introduced during the 2008 General Assembly as HB 1165 and HB 984, respectively. Although these recommendations were not approved by the legislature, legislators were hearing Mathematics Specialists discussed more frequently.

***State Budget*** — In 2007, the General Assembly-approved budget provided one-time funding of \$150,000 for salaries of certain grant-supported Mathematics Specialists so that an additional year of data could be obtained. In 2009, the budget included flexibility in the use of state funds to hire Mathematics Specialists.

***Background:*** The chairman of the House Education Committee (who represents one of the project's partner school divisions), and a member of the Senate Finance Committee (who is a former VMSC chairman) each proposed a policy team-drafted amendment to the state budget. This amendment provided the five partner divisions a \$25,000 allocation for each of the Cohort I Mathematics Specialists that the divisions continued to employ in their then-current positions for the 2007-2008 school year. The \$25,000 NSF fund allocation to the partner divisions for the first twelve Mathematics Specialists was provided only for 2005-2006 and 2006-2007.

As part of the budgeting process previously explained, the House of Delegates and the Senate each prepare their own version of the budget, which then is negotiated by a team of senior legislators to reach a compromise spending plan for a given two-year period. In this particular case, the \$25,000 amendment was included in the House version of the budget, but not in the Senate plan. The compromise on this particular item was the approval of a \$12,500 one-time allocation for each Specialist, or half the amount requested. Still, the inclusion of any funding for the Mathematics Specialist cohort was deemed a major victory, as state budget writers were convinced that the research being conducted and the impact of Mathematics Specialists on student learning was of significant importance.

In a year of diminishing funding for public education at both the state and local levels, state policymakers in 2009 displayed their belief that Mathematics Specialists are effective, as the legislature and governor sought to provide authority for school divisions to flexibly use several

existing funding sources to hire Mathematics Specialists to provide intervention services. Two of these legislative efforts succeeded.

First, the governor's proposed budget for 2009-2010 contained language to allow school divisions to use state *Standards of Learning (SOL)* Algebra Readiness Initiative Funds to employ state-endorsed Mathematics Specialists to provide intervention services. The budget ultimately approved included this provision, which had been initiated by the BOE and endorsed by the State Superintendent of Public Instruction (the language also was included in the approved budget for FY11 and FY12). Second, HJR 652 (which was a 2008 recommendation of the HJR 25 study committee and which passed unanimously), requested school divisions "to consider using existing intervention, remediation, and at-risk funding to hire K-8 Mathematics Specialists as an effective means to improve the performance of low-achieving students."

It is worthy to note that a survey by the Department of Education (Summer 2009) found that 44% of the eighty-five school divisions responding (37 divisions) reported employing Mathematics Specialists in 2009-2010. Of those responding, 29% indicated they were employing Specialists with local funds, while 25% indicated use of federal funding. State funding from existing intervention, remediation, and at-risk funding was cited by 18%. In addition, 21% of those who responded indicated they utilized Algebra Readiness Initiative Funds.

***Policy Team and Management Team Activities:*** The policy team reached out to the two legislators to request submittal of the budget amendments, and outlined a plan for local school superintendents to lobby their legislators on this budget amendment. An initial letter was sent to superintendents and mathematics supervisors in the affected divisions prior to the start of the General Assembly to request that they contact state lawmakers to support the amendments. During the legislative session, they again were encouraged to phone and e-mail members of the budget committees that were considering the proposed amendments. Position papers explaining and supporting the amendments also were distributed to the committee members, staff, and budget negotiators throughout the budget development process. Following budget approval, thank-you letters were sent to the two legislative patrons. This amendment led to an unexpected third year of collection and analysis of PDA data from the Cohort I Specialists.

The policy team also monitored progress of the Speaker of the House's independently proposed budget item to provide state funding for elementary school Mathematics Specialists in a school division he represents. While the amendment itself was not approved, the proposal was a

testament to his belief in the value of Mathematics Specialists, having witnessed first-hand their potential in one of the grant's partner school divisions. It also helped set the stage for the successful grant-initiated budget amendment.

**Code of Virginia/Standards of Quality — The legislature amended the Standards of Quality to require school divisions to identify and assist students having difficulties in mathematics.**

**Background:** As previously noted, it is a duty of the BOE to prescribe the Standards of Quality (SOQ) for review and revision by the General Assembly. Beginning with the review required in 2003, the Board has utilized an open, public process to consider changes to the SOQ. It established a standing Committee on the Standards of Quality, which holds regular meetings to deliberate potential SOQ changes and where public involvement is invited and encouraged.

The BOE indicated in 2006 that it would prepare a package of recommended changes to the SOQ for submittal to the 2007 General Assembly session. The grant team submitted a letter to the BOE and State Superintendent, which noted:

Much is known about how students learn mathematics and, with appropriate learning strategies, many more students can be successful in mathematics than is currently the case. Accordingly, we encourage the Board to include mathematics as an area where it is crucial to identify student needs at the earliest time.

The VMSC had presented a similar case and recommendation to the Board in 2004. This time, the Board seized upon this recommendation and included in its package language to direct local school boards to identify and diagnose students having difficulties in mathematics and to implement appropriate strategies practices to assist them.

In addition, the Board had proposed a new required staffing standard requiring the employment of one Mathematics Specialist per 1,000 students in grades K-8. The Board held ten public hearings across the state to solicit input on its SOQ proposal. The language and staffing standard items were included in the proposal submitted to the General Assembly, and introduced by the chairmen of the respective education committees. The SB 795 was the legislative vehicle for the SOQ changes that advanced through the legislative process. While all new staffing standards, including the K-8 Mathematics Specialist, were removed from the bill, the language amendment on early identification and assistance was included in the final, approved version of

the bill (previously, the SOQ had required such interventions only for students having difficulty with reading).

***Policy Team and Management Team Activities:*** Concerning the SOQ changes, VMSC members on several occasions provided oral and written testimony advocating the following: 1) a requirement that local school divisions identify, diagnose, and assist students having difficulty with mathematics; and, 2) the concept of employing Mathematics Specialists in elementary schools. Remarks were made at a meeting of the Board's SOQ subcommittee (by invitation in July 2006) and submitted during the public hearing and comment period on the BOE's proposed revisions to the SOQ. The successful language amendment may be viewed as a "sleeper" amendment, as it establishes in the *Code* the importance of addressing underachievement in mathematics. In brighter fiscal days, it might be used to obtain state financial or other support for Mathematics Specialists.

Following inclusion of the one Mathematics Specialist per 1,000 students provision in the BOE recommendations, the VMSC sent a letter to the BOE President and the State Superintendent proposing establishment of a work group to examine issues surrounding implementation of such a requirement. Specifically, the letter proposed working with other stakeholders to address challenges to and develop scenarios for implementation of the staffing recommendations (the work group was not formed, as the one Specialist/1,000 was not approved).

### **Building the Case**

Over the course of the grant period, numerous other activities recommended by the policy team were undertaken by the grant team with the goal of raising awareness of and support for Mathematics Specialists. These upbeat efforts were viewed as prime opportunities to sensitize and invigorate targeted audiences to the influential work of Mathematics Specialists:

- 1) The VMSC wrote commending letters to the relevant local and state elected officials upon the Norfolk community's winning the 2005 Broad Prize for Urban Education, awarded annually to one outstanding urban school district for increased achievement. Norfolk Public Schools, which at the time employed a Mathematics Specialist in each of its thirty-five elementary schools, had made impressive gains in mathematics achievement in its elementary and middle schools over the previous four years.

- 2) The VMSC submitted a proposal to make a presentation regarding Mathematics Specialists during the round-table portion of the Virginia School Boards Association's educational conference in Richmond in July 2005. The VSBA accepted the VMSC proposal, and the presentation was made.
- 3) Publishable articles were prepared by the policy team and specifically tailored for use by the elementary and secondary school principal associations in Virginia, as well as the school superintendents association. All versions focused primarily on the findings of parallel utilization interviews conducted by the policy team with the principals of each elementary school where Cohort I Mathematics Specialists were placed.
- 4) The grant team developed a one-page information sheet about the state of Mathematics Specialists in Virginia (2006). The paper explained preparation efforts at six state institutions of higher education and highlighted employment practices around the state. It also included the text of the HJR 25 resolution that commended local school boards employing Mathematics Specialists. The one-pager was used in various outreach activities, including widespread distribution in the K-12 and higher education communities.
- 5) On several occasions, the VMSC advocated that the BOE amend its *Regulations Establishing Standards for Accrediting Public Schools (SOA)* in Virginia, both prior to and after approval of the SOQ requirement for identification, diagnosis, and assistance for students having difficulty with mathematics.
- 6) A second one-page information sheet was developed in the summer/fall of 2009 to highlight grant research findings that Mathematics Specialists, over time, are having a significant impact on student achievement, and that Virginia preparation programs for Mathematics Specialists are of high quality. This paper also was widely distributed in the K-12 and higher education communities, as well as to BOE members and key legislative members and their staffs.

### **Follow the Money**

As previously noted, the state budget often is the ultimate driver of education policy, as the legislature must provide state general fund dollars to support public education through the budgeting process and apportion the costs of providing an educational program between the state and local governments. It is helpful to examine these duties more closely to understand the challenges of paying for Mathematics Specialists.

While Article VIII, § 1 of the Virginia Constitution brands the General Assembly as the entity responsible for the establishment of public education in the state, Article VIII, § 2 speaks to fiscal authority. The 1971 revision to the Constitution added the following language stipulating that, while the General Assembly would apportion costs, responsibility for funding public schools would be shared with localities:

The General Assembly shall determine the manner in which funds are to be provided for the cost of maintaining an educational program meeting the prescribed standards of quality, and shall provide for the apportionment of the cost of such program between the Commonwealth and the local units of government comprising such school divisions. Each unit of local government shall provide its portion of such cost by local taxes or from other available funds [3].

State budget policy and process has significant, direct effects on local government. Local governing bodies, established by statute in Title 15.2 of the *Code*, have the “power of the purse,” as they control the funding of the state-required local portion of the SOQ and any additional items the local community deems necessary for a quality education. When the legislature adopts and funds new education initiatives, adopts and does *not* fund new initiatives, or reduces or eliminates state education funding, there are reverberations at the local level.

It is the legislature’s current practice that, overall, the state assume 55% of the statewide costs of funding the SOQ, leaving 45% of the funding to be provided collectively by the local governments. The state provides more funding to school divisions judged less capable to fund education locally than it does to those school divisions judged more able to provide local resources. These adjustments are provided through a complex and increasingly controversial formula that measures the local ability to pay—the local composite index (LCI). The LCI ranges from .2000 at the less affluent end to .8000 at the more affluent. A locality with an LCI of .2000 receives 80% of required SOQ expenditures from the state and is responsible for the remaining 20%; a local government with an index of .8000 receives 20% of its required expenditure from the state and must provide the other 80%. Thus, for example, an SOQ-mandated position estimated by the state to have an annual cost of \$36,000 requires those divisions with an index of .2000 to come up with \$7,200 in local dollars and those with an index of .8000 to find \$28,800 in local funds. For the 2010-2012 biennium, nearly 80% of the Commonwealth’s school divisions have an index below .5000.

Another funding controversy rages between the state and local governments over whether the state properly calculates the actual cost of providing the SOQ program. Local governments generally believe that the state understates the true costs of providing a public education, thus minimizing state costs at the expense of localities, chiefly through its approach to funding teacher salaries and school construction. The state recognizes salary and other operating costs in the SOQ based on “reasonable” costs, which usually are lower than a school division’s actual salary expenditures, and has played a minimal role over the years in providing dollars for local school facility needs.

In addition to providing direct aid for public education through funding the mandated SOQ, in the past the legislature provided incentive funding to offer optional money for certain educational programs it espouses. Under this incentive scenario, local school divisions received state funding for certain programs or initiatives if they matched the available state funding with required amounts of local dollars. In more recent years, as budget and revenue shortfall challenges have necessitated reductions in public education funding, the state has turned to consolidating funding streams and funding more programs with dollars allotted to education from state lottery revenues.

State dollars for education will be dwindling in the near future. While public education largely was sheltered from major funding reductions in 2008 and 2009, state funding for at least the next two years was sharply reduced. State general funds budgeted for public education fell from just under \$6.3 billion for FY10 to a projected \$5.5 billion for FY11, a three-quarters of a billion dollar decrease (*2010-2012 Appropriations Act*). General Assembly budget writers resigned themselves to the fact that reductions would have to occur, given that state dollars for schools make up over one-third of the entire state general fund budget. Moving forward over the next several years, the state will continue to face tough fiscal choices, and likely will be hard pressed to increase public education funding in the face of pressures to also adequately address other priorities and program service areas.

While state policymakers have demonstrated that they recognize the value of Mathematics Specialists, and local policymakers are convinced and confident about the value of the in-school coaching model that Mathematics Specialists bring to improving mathematics achievement, both acknowledge that the major obstacle to expanded hiring of Mathematics Specialists is insufficient state and local funding. Local policymakers do not want a mandate to employ Mathematics Specialists, as paying the required local share for these more expensive employees is costly to

localities, especially as budgets are being reduced, not enhanced. Further, any such mandate could possibly set required employment ratios at levels that do not match local needs across more than 130 local school divisions. Likewise, state policymakers are challenged by the numbers, as the estimated state cost (FY10) of one full-time Mathematics Specialist for each 1,000 students in grades K-8 was estimated at \$28.6 million (local costs were estimated to be slightly lower at \$22.8 million) [4].

### **Conclusion**

Providing credible, useful, and timely information to policymakers for decisions concerning implementation of Mathematics Specialist initiatives during the course of this project was rewarded by those policymakers taking actions to enforce and support the benefits of implementing Mathematics Specialist programs. The key to success was using information about policy issues for implementing Mathematics Specialist initiatives to engage policymakers, the education community, and the public in dialogue to create an awareness of and stronger support for not only Mathematics Specialists, but also public education in general.

The policy associates educated the project team members in education policymaking in Virginia, found opportunities for advancement, identified the pitfalls, and initiated strategy discussions for the purpose of engaging policymakers effectively. While the process “tools” may differ from state to state, a winning formula to effectuating policy goals should include effectively interacting with and utilizing the processes at hand. Patience is also a virtue.

### **Acknowledgment**

This article was developed with the support of the National Science Foundation DUE-0926537 and DRL-0918223. The statements and findings herein reflect the opinions of the authors and not necessarily those of the Foundation.



## References

- [1] Virginia Commonwealth University Department of Mathematics and Applied Mathematics, Internet: (<http://www.math.vcu.edu/g1/journal/Journal8/Part%20I/TFReport.html>).
- [2] Virginia General Assembly Legislative Information System website, Internet: (<http://leg1.state.va.us/cgi-bin/legp504.exe?scs=061&typ=bil&val=hj258>).
- [3] K.G. Harris, *Public School Finance: A Legislator's Guide to Public Education in Virginia*, Division of Legislative Services, Commonwealth of Virginia, 2002.
- [4] Virginia Department of Education Superintendent's Memos, 2008; Internet: ([http://www.doe.virginia.gov/administrators/supcrintendents\\_memos/2008/inf297a.pdf](http://www.doe.virginia.gov/administrators/supcrintendents_memos/2008/inf297a.pdf))