

**Rice University School Mathematics Project**  
**Audit of the Mathematics Program of the Beeville Independent School District**  
**January 17-20, 2017**

**Purpose**

Beeville ISD (BISD), in collaboration with the Joe Barnhart Foundation, asked the Rice University School Mathematics Project (RUSMP) to conduct an audit of the mathematics program for PreK through Grade 12. The purpose of the audit was to identify strengths and weaknesses in the Beeville ISD mathematics program and to make recommendations for possible improvement.

**Procedure**

Planning for the audit occurred through face-to-face meetings with Tracy Saucier, Executive Director of the Joe Barnhart Foundation, and through a teleconference with BISD Superintendent, Dr. Marc Puig and BISD Director of Curriculum and Instruction, Dr. Susana Garza. After plans were finalized RUSMP personnel (Executive Director, Richard Parr; Director of Secondary Programs, Susan Troutman; Director of Elementary Programs, Carolyn White; and Instructional Specialist, Laura LeRoy) traveled to Beeville to conduct the audit using a program evaluation procedure developed by RUSMP and used to evaluate schools and school districts around the state.

The first component of the audit was an initial conversation among RUSMP personnel and BISD administrators Dr. Puig, Dr. Garza, and Special Education and Special Services Director Rosario Zambrano on Tuesday January 17, 2017. After this initial conversation, meetings were held separately with the administrative teams and the mathematics faculties of the six BISD campuses. The next part of the process was the observation of mathematics instruction at each of the schools. To obtain a comprehensive view of instruction, efforts were made to observe every teacher responsible for teaching mathematics in the district. When possible, post-observation debriefings were held with teachers. Due to time constraints it was impossible to have these meetings with all teachers. Finally a summative meeting was held with Dr. Puig and Dr. Garza on Friday January 20 to discuss preliminary findings. A schedule of the week's activities is provided as an appendix to this report.

**Recommendations**

It was evident throughout the week that BISD has many caring and dedicated educators who are tirelessly working to help the students of Beeville learn mathematics. We also saw students who, for the most part, were engaged in the educational process and willing to learn. However, it was also obvious that several systemic issues in the district are hindering student achievement in mathematics. Following are recommendations for actions that can be taken at the district level to improve mathematics instruction.

**Recommendation #1 - Provide seamless transitions in mathematics instruction for students as they progress from PreK through Grade 12 in Beeville ISD.**

Unfortunately there was evidence of many students becoming lost in a system of multiple school transitions, lack of clearly articulated curricular expectations, inconsistent instructional strategies, and lack of effective use of the district's data management system. The result is students at all levels who are not performing to their fullest potential on mandatory statewide assessments and high school students who were lacking necessary pre-requisite skills for success in high school and beyond.

Students who attend BISD schools for their entire precollege academic careers make five school transitions. As students progress from one school to the next, they are confronted with differing classroom routines, differing amounts of time for mathematics instruction, and inconsistent use of instructional strategies and academic language appropriate for mathematics instruction.

The number of transitions for students also leaves teachers frustrated. In the interviews at Hall Elementary, Jefferson Intermediate School, Moreno Junior High School, and Jones High School, teachers consistently listed one of the weaknesses of their respective schools' mathematics programs as the need to deal with perceived gaps of mathematical understanding and skills of students arriving from the prior campus.

Part of the cause of these issues is the lack of a district-wide curriculum management system. Since the decommissioning of C-SCOPE, BISD has relied on the Texas Essential Knowledge and Skills (TEKS) Resource System to provide a framework for instruction, in particular using the system to provide a scope and sequence for mathematics instruction for each grade-level and course, as well as, instructional focus documents for instructional units. However, these documents are not enough. As stated by one principal in an interview, the TEKS Resource System is what is says to be, a "resource" not a fully operational curriculum.

Another issue caused by the number of transitions is the lack of cohesive vertical alignment across campuses. Teachers and administrators reported that it has been several years since mathematics teachers had the ability to meet with teachers at other campuses to discuss the progression of mathematics instruction across grades.

Teachers also reported some difficulty in obtaining data about students from the students' previous campuses. Although district and school administrators reported that through the Data Management for Assessment and Curriculum (DMAC) system, teachers had ready access to the longitudinal data of their students, it appears that some data was still only available when specific requests were made by teachers.

It is recommended that, if at all feasible, the number of school transitions made by students in the district be reduced. If this is not feasible, then it is recommended that the district invest in a curriculum management system that provides clearly defined, detailed and vertically-aligned curriculum, instruction, and assessment expectations across all grade levels. Since the district is already using the State Assessment component of DMAC and at least some campuses are using the TEKS Assessment Generator component, the district might consider using the DMAC's Curriculum, Instruction, and Assessment component.

It is also recommended that opportunities be provided to meet in vertical teams to discuss curricular issues such as instructional strategies and academic vocabulary. The purpose of these meetings must not be to determine “blame” for gaps in student understanding, but rather to help develop a vertically-aligned framework for instruction.

Finally, it is recommended that the necessary access to student data through the DMAC system be provided to teachers in a timely manner and that teachers understand the necessary procedures for requesting and obtaining student data.

**Recommendation #2 - Increase rigor of instruction in the mathematics classroom, maximize use of mathematics instructional time, and raise expectations for student achievement and behaviors.**

Classroom observations at all schools indicated that the vast majority of students were engaged in mathematics instructional activities in the classroom, and during most classes, mathematics activities occurred throughout the instructional period. However, the observations also indicated that the majority of lessons were direct-teacher instruction with teachers asking questions of only minimal rigor and with teachers not consistently monitoring students to check for mathematical understanding.

The implementation of BISD’s new coding initiative, Globaloria, also was a concern of some administrators and teachers at Hall ES, Jefferson IS, and Moreno JHS. At each of these campuses, time for Globaloria instruction negatively impacted mathematics instructional time. At Moreno JHS in particular, the principal noted that students lost 20% of their mathematics instructional time to Globaloria during the first semester of the year, primarily due to misestimating the amount of time the initial Globaloria instruction would take. The principal also noted that she would not be doing future Globaloria instruction during mathematics instructional time.

Observations at Jones HS also indicated that expectations for student attendance and punctuality to class need to be addressed. Unfortunately, the tardy bell at the high school seemed to be only a suggestion for the time to start class. In most classes, many students were tardy with no apparent consequences.

Absenteeism appeared to be another problem at Jones HS. One math teacher at Jones HS reported that six students were absent from her first period class the day of her observation. In fact, teachers and principals at the high school both reported problems with class sizes in the mathematics classes, but all but one of the eight classes observed had fewer than 20 students present. It should be noted that the new principal at Jones HS is very aware of the problems the school is having with attendance and tardies and is working on taking steps to address these.

Homework was rarely assigned. In the meetings with teachers, some teachers indicated that many students were apathetic and would not do assigned homework. This view was particularly prevalent among the teachers at Jones HS.

It is recommended that the district work to help teachers develop higher expectations for all students in the district. The district should work with teachers to develop their abilities to use formative assessments to determine the appropriate rigor for instruction and to help teachers

develop methods for asking the higher-level questions in the classroom necessary to foster a deeper understanding of the subject matter in students.

Additionally, the principal and administrative staff at the high school should continue their work of decreasing absenteeism and tardiness. Students must be expected to face consequences for missing instructional time.

It is also recommended that when possible, time for district initiatives such as Globaloria not supplant time for mathematics instruction. Following a model used in the high school, where time for Globaloria was taken from career and technology and elective courses, may be an appropriate model for other schools.

Finally, it is recommended that the district establish homework expectations for students beginning in the earliest grades. Students need time to practice and apply the mathematics that they have learned in the classroom. Setting expectations that students complete reasonable amounts of homework and holding students accountable for this work will develop study habits that are critical for student success in all subjects.

**Recommendation #3 - Conduct a districtwide audit of instructional materials and develop clearly articulated policies for how teachers can obtain needed instructional materials.**

During their interview, BISD district administrators stated their strong commitment to ensuring that all teachers have access to whatever instructional materials are needed for mathematics instruction.

However interviews with teachers indicated that many teachers, particularly those teachers at the lower grade levels, were spending much money out of pocket to support their teaching. Some teachers reported that they did not know who to ask to request materials, while other teachers indicated that they had submitted requests and that those requests were ignored. Teachers also reported that they were discouraged from seeking outside sources of funding such as “Donors Choose.”

In addition, many teachers were not aware of what materials were available in their buildings. Some materials also seemed to be left over from previous school configurations. In particular, one teacher at Moreno JHS mentioned that many manipulatives in her room that were not appropriate for 7<sup>th</sup>- and 8<sup>th</sup>-grade instruction but had been left over from when the school used to be configured to teach 6<sup>th</sup> graders.

It is recommended that BISD find a method for cataloging and inventorying instructional materials that have been purchased by the district. It is also suggested that the district develop clear systems, understood by all, for how teachers are to request and obtain materials. This system needs to include a feedback system so that if school or district administrators feel that a request is not appropriate, the reason for denying the request is communicated to the teacher.

**Recommendation #4 - Provide teachers with intensive and sustained professional development in mathematics content and pedagogy which includes the use of instructional materials.**

Educators need to be models of life-long learning for their students. To allow this to happen teachers have to be provided with opportunities for meaningful and relevant professional learning opportunities. Similarly just as students should not be expected to master material with minimal exposure to learning, teachers need to be provided with sustained professional development that allows them to implement their learning in the classroom, receive feedback when appropriate, and then refine their implementation as necessary.

Teachers and school and district administrators did speak to increasing professional development opportunities afforded through renewed partnership with the Region II Education Service Center and through South Texas Collaborative, however much of the professional development appears to occur as single workshops with little follow-up which results in little transfer to the classroom. Many teachers also reported that much professional development was not specifically focused on mathematics instruction.

For example, teachers at many campuses suggested that they needed professional development on the use of interactive white boards in their classroom. Many reported that they had attended one or two workshops on their use but still did not know how to utilize them. The result was classrooms with interactive white boards sitting unused in many classrooms across the district.

It is recommended that the district provide mechanisms for providing long-term, sustained and meaningful profession development for teachers. Professional learning for teachers should be a combination of required system-wide professional development that focuses on helping teachers meet key district instructional objectives and professional learning that is initiated by individual teachers to meet their professional learning needs.

**Recommendation #5 - Provide common planning times for teachers who teach the same grade or course.**

Throughout the district, it was evident that teachers, in general, are working very hard to develop meaningful and engaging lessons for children; however it was also evident that much duplication of effort was occurring due to lack of systems for common planning and lesson development. At many grade levels across schools, similar lessons were seen in many classes. However it was obvious that each teacher had created his/her own activity sheets for students to use during instruction and that each developed his/her own questions to ask during the lesson. Many lessons would have benefited by the incorporation of an idea or strategy used by another teacher teaching the same content. The difference in access to instructional resources was also evident, particularly at Hampton-Moreno-Dugat (HMD) Early Childhood Center and Fadden-McKeown-Chambliss (FMC) Elementary where teachers who had been teaching in the district longer than other teachers had access to more materials.

Teachers are also allotted time for Professional Learning Community meetings at each of the schools to analyze data and determine content focuses for instruction and remediation. However teachers at most of the campuses who attended these meetings noted that the meetings are more concentrated on administrative issues instead of instructional discussions.

Teachers and administrators reported that teachers had time each grading period to work together to develop their calendars for instruction, but that lesson planning was done individually with only quick discussions among teachers during breaks or passing periods.

It is recommended that when possible, teachers be provided with common planning times during the school day. At HMD Early Childhood Center, FMC ES, and Hall ES, this is problematic because of the large number of teachers teaching the same grade level at each campus. These large numbers have also resulted in only subsets of teachers being able to meet each grading cycle to plan the instructional calendar that is then shared with the other teachers of the same grade-level. Even though providing common planning time for all teachers at these schools is not feasible with the current school configuration, it would be possible to provide common planning periods for teams of 3-4 teachers.

At Jefferson IS, Moreno JHS, and Jones HS, it should be easier to schedule the time for common planning during the day. During the interview with the Jones HS administration, the Jones HS principal announced that it was her intention to build common planning time for teachers in mathematics and the other core disciplines into next year's master schedule.

**Recommendation #6 - Develop mechanisms to compress the intermediate and junior high mathematics curriculum so that PreAP students have been taught all mathematics TEKS for grades 5-8 before taking Algebra I in 8<sup>th</sup> grade.**

Classroom observations and interviews with administrators and teachers at Jefferson IS and Moreno JHS indicated that PreAP and regular students in grades 5, 6, and 7 were taught identical content, and that only the level of rigor was differentiated. Therefore, students entering the Algebra I class at Moreno JHS are not being taught any of the required 8<sup>th</sup>-grade curriculum. Especially in light of the revisions to the TEKS in 2012, it is critical for success in future courses such as Geometry that students be taught all of the middle school TEKS prior to beginning instruction in high school coursework.

It is recommended that Beeville ISD compress the curriculum so that academically advanced students learn all intermediate and junior high school TEKS. This can be accomplished in a variety of ways, the most feasible may be to identify students in the 5<sup>th</sup>-grade and then teach those students the 6<sup>th</sup>-, 7<sup>th</sup>-, and 8<sup>th</sup>-grade TEKS in grades 6 and 7. Occasionally some 8<sup>th</sup>-grade TEKS related to algebraic thinking can be taught during the 8<sup>th</sup>-grade Algebra I class if necessary. Students who are not identified in 5<sup>th</sup>-grade can be given opportunities through summer courses or additional instruction during the school day to accelerate and "catch up" with those students identified earlier.

## **Conclusion**

BISD is a good school system and a true asset to the community. Administrators and teachers across the district exhibited their commitment to helping educate and nurture the youth of the community. Students, for the most part, were engaged in instruction and willing to learn. However even the best school systems have room for improvement. The BISD administration's willingness to ask critical questions about what needs to be done to strengthen mathematics instruction indicates a commitment to this improvement. Hopefully the recommendations in this proposal can serve as a blueprint for change that will help the school system better meet the needs of the community.

The team from RUSMP enjoyed working with teachers and administrators from BISD throughout the evaluation process. We look forward to seeing the progress that the district makes in mathematics instruction and are ready to collaborate in the future to provide professional development and support as the district strengthens its mathematics program.

**Appendix**

**Schedule for Rice University School Mathematics Project's Mathematics Program Evaluation for Beeville ISD  
January 17-20, 2017**

	Richard Parr	Susan Troutman	Carolyn White	Laura LeRoy
Tuesday, January 17 (a.m.)	RUSMP Team meets with Beeville ISD Administration			
Tuesday January 17 (p.m.)	<ul style="list-style-type: none"> <li>• Meet with Moreno Jr. High School administrators</li> <li>• Meet with Moreno Jr. High School math teachers</li> </ul>	<ul style="list-style-type: none"> <li>• Meet with Hall Elementary administrators</li> <li>• Meet with Hall Elementary math teachers</li> </ul>	<ul style="list-style-type: none"> <li>• Meet with Fadden-McKeown-Chambliss Elementary administrators</li> <li>• Meet with Fadden-McKeown-Chambliss Elementary math teachers</li> </ul>	<ul style="list-style-type: none"> <li>• Meet with Hampton-Moreno-Dugat Early Childhood administrators</li> <li>• Meet with Hampton-Moreno-Dugat Early Childhood teachers</li> </ul>
Wednesday January 18 (a.m. and p.m.)	<ul style="list-style-type: none"> <li>• Observe and de-brief with Moreno Jr. High School Math Teachers</li> </ul>	<ul style="list-style-type: none"> <li>• Observe and de-brief with Hall Elementary Math Teachers</li> </ul>	<ul style="list-style-type: none"> <li>• Observe and de-brief with Fadden-McKeown-Chambliss Elementary Math Teachers</li> </ul>	<ul style="list-style-type: none"> <li>• Observe and de-brief with Hampton-Moreno-Dugat Early Childhood Teachers</li> </ul>
Wednesday 3:45 – 4:30	<ul style="list-style-type: none"> <li>• Meet with Jones High School math teachers</li> </ul>	<ul style="list-style-type: none"> <li>• Meet with Jefferson Intermediate math teachers</li> </ul>		
Thursday January 19 (a.m.)	<ul style="list-style-type: none"> <li>• Meet with Jones High School administrators</li> </ul>	<ul style="list-style-type: none"> <li>• Meet with Jefferson Intermediate administrators</li> </ul>	<ul style="list-style-type: none"> <li>• Observe and de-brief with Fadden-McKeown-Chambliss Elementary Math Teachers</li> </ul>	<ul style="list-style-type: none"> <li>• Observe and de-brief with Hampton-Moreno-Dugat Early Childhood Teachers</li> </ul>
Thursday January 19 (p.m.)	<ul style="list-style-type: none"> <li>• Observe and de-brief with Jones High School Math Teachers</li> </ul>	<ul style="list-style-type: none"> <li>• Observe and de-brief with Jefferson Intermediate math teachers</li> </ul>		
Friday January 20 (a.m.)	<ul style="list-style-type: none"> <li>• Observe and de-brief with Jones High School Math Teachers</li> </ul>	<ul style="list-style-type: none"> <li>• Observe and de-brief with Jefferson Intermediate math teachers</li> </ul>	<ul style="list-style-type: none"> <li>• Observe and de-brief with Fadden-McKeown-Chambliss Elementary Math Teachers</li> </ul>	<ul style="list-style-type: none"> <li>• Observe and de-brief with Hampton-Moreno-Dugat Early Childhood Teachers</li> </ul>
Friday January 20 ( 2 p.m.)	RUSMP Team meets with Beeville ISD Administration			