



Impacting the performance of students in Science - District-Wide.

**Joe D Gonzalez Superintendent
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When I took over as Superintendent for the District, I told the School Board that one of my main objectives would be to raise academic attainment in all our schools. As I researched the performance figures in the State Mandated testing areas of Math, English Language Arts and Science, it became obvious that the main area for concern was in the area of science.

As with many other districts in Texas we have a predominantly Hispanic population which was something that we had to consider in terms of addressing the teaching of science in our Elementary Grades. Our Assistant Superintendent, Mrs. Cantu, researched the science teaching aids market to try and find a teaching system that had both English and Spanish language support.

We discovered a system called Living with Science that is produced by LJ Technical Systems Inc. in Long Island New York. When we first viewed the program at a presentation in our district office it appeared to be a good solution that used technology to deliver hands-on experiments for the students. It had some Spanish Language support but the main delivery was in English.

When we raised this issue with LJ, they said that they would take a look at the feasibility of creating a completely dual-language version for us. We had heard this type of promise from companies before, and were not expecting much. But they kept their word and the next time we saw the system it had full dual language support; students could select to work through the lessons in English or Spanish or have English text with Spanish voice overs.

We were so impressed with this that we decided to make Living with Science the standard for delivering science education in all our elementary schools. This decision was made, based on the unique benefits of the dual English/Spanish language version and the system's use of computer-based teaching.



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Yvonne Caldwell, our Science Co-ordinator for the District, explains more: "One of the things we found, that was very unique to this programme is that it has three components; it has technology, it has hands-on and it has student worksheets. We have had very positive feedback from our principals, from our teachers, even from the parents, where the students have been constantly talking about the science programme. We hear the students speaking the language of science in the classroom, this is something very unique to this district and we're very excited to report that this program has also increased our scores. We have a lot of participation, there's a lot of involvement and enthusiasm by our staff, by the whole district.



It brings in all the components of Science – English, Math, Social Studies, it is all there. Math is being worked on with our students in the experiment when they chart graphs for example. When the students are reading the instructions, writing on their worksheets, they are practicing their language skills. They are working with computers, working as a team and solving problems so they learn social skills. I cannot say more about Living with Science, it is just a wonderful programme."

Based on the success of the Elementary program we were very interested to see if we could impact our Middle Schools in the same way. We contacted LJ again to see if they had a similar program for grades 6-8, they listened to what we needed, then they came and presented their new Exploring Science Middle School Program. This is another technology-based teaching system that makes use of multimedia learning materials and teacher resources including a mobile assessment and demonstration system that has some really neat technology built in to it.



We could see that once again LJ had recognized our needs and the new system had the same care and attention in terms of the design and presentation. Most importantly, it offered real hands-on experiments for our students, which we feel is essential for success.

We could see that the resources would give our science teachers the opportunity to use new teaching technologies in all of our Science rooms.

The system also includes an Internet-based component that will allow us to add to our district-wide science assessment and benchmark testing for the TAKS.

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All the performance information is collected in a single database which will allow school and district staff to have instant access to all the student data.

We are very excited by the way the new science teaching systems have impacted our elementary grades. In this years (2006) TAKS, we have seen gains in the elementary science scores in excess of 45%, which is really excellent. Following very positive feedback from our Middle School staff we have committed to install the new Middle School Program in all three grade levels of all our middle schools and we will look closely at continuing the program into our Ninth Grade Campus and High School.

Notes:

Donna Independent School District (DISD) ranks 82 in terms of student population among 1,221 public schools districts in the state of Texas. It is located in Hidalgo County, in the Rio Grande Valley. They have thirteen elementary schools (pre-kindergarten through grade 5), three middle schools (grades 6 through 8), one ninth grade campus, and one high school (grades 10 through 12).

The student ethnic composition is as follows: White 1.2%, Black 0.1%, American Indian/Alaskan 0.08%, Asian/Pacific Island 0.02% and Hispanic 98.6%. A large majority of the students are identified as economically disadvantaged: 90.0%. Spanish is the only other language spoken by their English language learners.