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From the Executive Director



Texas ASCD - Ready for ignite¹⁴!

Dear Members,

Texas ASCD's ignite¹⁴ Curriculum and Technology Conference is right around the corner. Have you and your team registered? This 3-day event is scheduled for June 16-18 in Frisco, Texas at the Embassy Suites Hotel and Conference Center. I hope you'll join us as we spend our time collaborating, sharing, networking and learning together.

Digital learning and technology transformation is here. Texas ASCD is ready to move beyond 21st century learning and navigate toward the 22nd century and its impact on educator and student. Come to ignite¹⁴ for inspiration and motivation, and leave with finished products, ready to implement at your school!

Come participate in hands-on innovative Breakthrough Learning, Innovative Highlights and Keynotes such as the transmedia presentation by Ewan McIntosh, alongside in-person presenters: Jimmy Casas, Iowa high school principal; Max Brooks, Discovery Education; Andrew Berning, Renaissance Institute; a keynote panel on "The Personalized Learning Framework" and more. This conference is an amazing professional learning opportunity.

I look forward to seeing you in Frisco!

Sincerely,

Yolanda M. Rey, Ph.D.
Texas ASCD Executive Director

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About Texas ASCD

Our Vision: Texas ASCD will be the premier influential force in learning, teaching and leadership for achievement in education.

Our Mission: Texas ASCD develops the professional and innovative capabilities of diverse educational leaders and influences policy in support of continuous achievement in education.

Our History: Founded in 1947, Texas Association for Supervision and Curriculum Development (Texas ASCD) is a non-profit organization committed to improving teaching and learning for the success of all learners. It has a diverse membership of approximately 2,000 superintendents, principals, teachers, curriculum directors, staff developers, students and professors. Texas ASCD is a state affiliate of International ASCD.

In the ever-changing world of education, Texas ASCD remains on the cutting edge of educator needs. What remains unchanged, and as vibrant today as it was in its infancy, is the commitment and dedication to lifelong learning for educators.

Portrait of a High School Principal:

Donna Houser, Anderson High School, Austin Independent School District
by Mark F. Goldberg

There are approximately 25,000 public high schools in the United States, several thousand more if you include private and religious schools. There is no way to make generalizations about public high schools, since they are so variegated and unpredictable: small and large, varying demographics and ever-changing and unique community features. However, there are several thousand high schools located in cities (population 500,000 or more) and sizeable suburbs (population 75,000 or more), that often have one thing in common: size. They tend to have at least 1000 students and a few have as many as 5,000 students in one high school. A large city might have 10 or more high schools, and a large suburb one or two.


These large high schools are a city in microcosm. There are, of course, the students—the reason the school exists—a principal and administrative support staff, department chair people, guidance counselors, office staff, a nurse, a social worker, occasionally a psychologist, custodians, aides, the community the school serves, security personnel and others. A large high school typically offers an array of course choices and includes rooms of different dimensions and features for different teaching purposes: art, science, dance, orchestra, library, English, and physical education as examples. Of course, there is the school's footprint which has athletic fields, a parking lot and other features that must be maintained.



Donna Houser, Principal

This article takes no position on what size or complexity of a school yields the best results for students. That is a topic for another day. However, since the nation has at least 4,000 high schools with 1000 students or more, the worthiness of discussing the work life of a principal in a large and complex high school is without question. This article is about one Austin, Texas principal, Donna Houser of Anderson High School. The Austin Independent School District (AISD) has eleven high schools, and each of those schools has 1000 or more students. Other larger Texas cities such as San Antonio, Dallas and Houston have even more large high schools, buttressing the importance of taking a good look at how the large-school principal gets the job done, particularly in instruction.

PRINCIPAL continues on page 5



A great deal goes on inside a high school. The curriculum and manner of instruction are the beating heart of this small city, and it is the personnel cited above who carry out their responsibilities to make the school work: classroom instruction, scheduling, contact with parents, college or work advisement, discipline issues, cleaning and general maintenance of the physical structure and grounds, security concerns and dozens of other responsibilities, all within the purview or overview of the principal.

The principal is the “mayor” of the school and delegates many responsibilities to staff, but the principal remains at the center of curriculum and instruction as well as any large issue, expected or unexpected, that occurs: damage in part of the building, a speech to parents, hiring personnel, meetings with various staff members that can range from bringing the guidance counselors together to discuss a new state law to meeting with the science department and its chairperson to discuss a new state test. There are tragedies from time-to-time such as a student death; there are also happy events such as the winning of a major award. The tone and culture of the high school flow from the principal’s office, and the longer the tenure of the principal the stronger her/his stamp is on the high school. The culture of the school rests on how the principal and staff react to all the responsibilities listed above.

There are 2,200 students in Anderson High School which in many ways reflects the demographics of Austin: 50% Caucasian, 32% Hispanic, 8% African-American, 4 % Asian, and 3% other. This shifts as students move in and out of the school each year as the district tries for a good balance in programs and demographics; hence the total does not add up to 100%. Many of Austin’s high schools have special programs that attract students not in the school’s formal catchment area. Under certain conditions, students may choose a school that best meets that student’s needs.

The most significant thing that happens at Anderson every day is obviously instruction, and the balance of this article will describe Houser’s role in the prime reason for the school’s being. If the instruction is mediocre, if the curriculum is out of balance, if students are dropping out at a high rate, if there are an unusual number of discipline problems, if test results are poor, if there are serious staff disagreements about the culture of the school, if there is high staff turnover, the person responsible for all of that is the principal, and either the school needs a better principal or some structural changes have to be made in how the school operates.

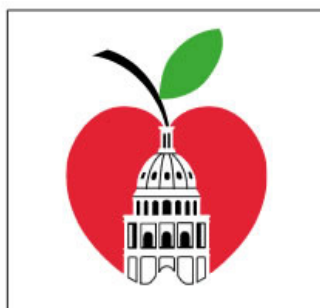
PRINCIPAL continues on page 6

Donna Houser is a hard-working, successful principal who has been at Anderson High School since 2007, and without question her vision for the school which includes high standards for teaching and learning, a welcoming culture for students and a smoothly functioning building permeates the Anderson community of staff, students and parents. She is by almost any measure an outstanding principal. In 2012 she was named principal of the year in the Austin Independent School District which educates 86,000 students in 124 schools. Anderson High School under her watch constantly wins awards such as inclusion in "Newsweek's" top high schools in the United States in 2009, 2010, 2011, 2012, and 2013; "US News and World Report" named Anderson as one of the nation's top school's in 2009, 2010, 2011, 2012, and 2013. I could go on and cite many more awards and distinctions, but the remainder of this article will be devoted to show through concrete examples how Dr. Houser maintains high standards in all aspects of her school and particularly her role in teaching and learning, both directly and indirectly.

Hiring new teachers is the best way to build a strong faculty over time. When a position is available, Donna Houser posts it, with appropriate criteria, on the AISD Website. Houser screens applications, sometimes with help from a staff member, and then sends the applications that look worthy on to the department chairperson. A small committee is formed which includes

the chair, a teacher in whose area the new teacher will work, occasionally the department's Instructional Coach, more about that position later, a member of the administrative team and Dr. Houser. Every means possible is used to winnow the number of candidates to between 6 and 8: reading resumes, a candidate's brief visit to the school, Skype, e-mail or other methods that allow the committee to develop some beginning feeling for the prospective Anderson teacher.

When the finalist candidates are interviewed in person and at some length, Houser leaves the content-specific questions to others,



Austin ISD

but she focuses on questions about classroom discipline and management, curriculum design, communication with parents, use of new technology or other classroom issues the new teacher will face. Most of the successful candidates come from Texas and many from the

UTeach program at The University of Texas at Austin; however, the committee does reach out to candidates from other areas of the country and occasionally is able to hire an excellent candidate from another country who is now living in the United States.

Recently, a candidate was hired who had trained at the University of Chicago, and there are currently three teachers who come from other countries. Dr. Houser wants her staff to be as sophisticated and varied as possible, but, in the end, the successful candidate must be the person the committee finds most qualified. The

committee ranks the promising candidates and goes after the top candidate first. Austin is a growing and enticing city, so most committees find themselves with an embarrassment of riches and therefore the ability to attract excellent candidates.

All new teachers are evaluated by Donna Houser the first year. Other people, often informally and including the department's Instructional Coach, may visit a class and try to help the new hire acclimate to the culture of the school or suggest best teaching practices the new person may not know. However, it is the principal who will visit the class the most. The final AISD summative seven-page evaluation which includes check-off items, a sentence or two on a page or several carefully-considered paragraphs will be unsurprising to the teacher as a result of visits to the classroom that vary in length, notes that Houser sends after each visit, conversations and e-mail exchanges. When Houser talks about her school, she often uses the phrase "incredible staff" as a prime descriptor. She works hard to be certain that every new teacher is up to the standard she has set for herself and the school.


Instructional Coaches (IC), mentioned above, are faculty members who receive a stipend to work on professional development and aid colleagues in using new teaching methods, best practices, new science-based practices, and other approaches to increase the efficacy of teaching

and learning. Houser was an early adopter of IC. She recognized that her chairpeople were completely taken up with their own demanding teaching and management requirements: getting grades turned in, sitting on hiring committees, playing a crucial role in scheduling and a dozen other responsibilities. Houser needed ICs who would pay careful attention to instruction, visiting classes and talking to colleagues about how they could improve their instruction without the pressure of worrying that the IC would write their evaluation.



Departments vary in size and need, but there are now ICs in almost every area from fine arts to mathematics. The ICs have as much flexibility as possible to do their jobs and make decisions about who and how to help. The departments pick the person they think can do the job best,

and while Houser has the final say in this, the departments have typically made wise choices that she can approve. Because of the respect and closeness Houser feels toward her teachers, it is not unusual for a teacher to come directly to her with an idea or request. It may be in person, but more often via e-mail, sometimes dozens in a day. Houser listens to the teacher or reads the e-mail and determines if the IC, department chairperson or appropriate member of her administrative team needs to be involved; more often than not, the issue can be resolved very quickly without involving anyone else.



One of the weaknesses in many American schools is writing. Dr. Houser, early in her tenure as Anderson's principal, saw this problem, even among some of the school's brightest students, and made writing a priority across the disciplines. She recognized that students needed to respond in writing to fiction and non-fiction and the latter was often not the case. Both the state and the school developed what poor, average and exemplary writing looked like. Rubrics were developed as a way of gauging student writing.

While the English department took the lead in this, all of the departments came to "understand the value of writing." For decades, students were used to writing about the importance of character or setting or themes in literature and that writing continues. But it is of equal value for a student to explain in writing "how the Pythagorean Theorem was developed and why the formula works for all right triangles." Many teachers see 150 students or more each day, so most of the writing assignments are short – a page, a paragraph and on a state exam just 26 lines. The twin goals are to cause students to be more reflective about what they are learning and to demonstrate that deep reflection in a carefully crafted piece of writing.

A few years ago, the acronym STEM (Science, Technology, Engineering, Math) worked its way into schools and each year became of increasing importance, especially when it became clear that many jobs were left unfilled because American students did not have the background to do what was required or the foundation to be trained fairly quickly for the specific job needs. This problem showed up not only in students who sought work after graduation, but also in inadequate preparation for first-year college students at both community and four-year colleges. Innovation is another strong arrow in Donna Houser's quiver, seen, for example, in her support of robotics where all of the elements in STEM come into play. She began noticing that the robotics club was becoming more and more popular and that some students remained in the building for 2 or more hours to continue the work of the club.

Houser, after talking with some teachers, did all that she could to encourage robotics, to help one teacher in particular to take university courses in engineering, to build more and more of the STEM aspects into regular classes, to create new courses in technology and to begin a conversation about creating a small building, perhaps 11,000 square feet, on the school grounds where robotics could really take off, using all of the characteristics captured in STEM.

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Of course, money is always a problem, and Anderson can't just magically put up a building. Dr. Houser has been in conversation with the local Boy Scouts of America to share some of the cost and use, she is thinking of possible donors who might help, and, of course, is speaking to the appropriate AISD senior administrators about this. Anderson, like so many schools, does not find it easy to raise funds for special projects, but then Houser does not give up on worthy programs very easily.

Learning the Chinese language is another area of innovation for this energetic and globally aware principal who is using her spring break to accompany the Latin students on a trip to Italy as I write this article. Houser understood how important Chinese language and culture were becoming on the world stage. She wanted to introduce Chinese into the Anderson curriculum, but could not put together enough sections of the course to justify hiring a teacher. She met with her counterpart at Murchison Middle School, not far from Anderson, and the two principals were able to interest enough students to create a full time position with Chinese 1 beginning in the middle school. Not yet satisfied, Houser played a helpful role in bringing Chinese to Doss Elementary School, also quite nearby. With help from the Asian Hanban Society and the backing of the Doss principal, there are now two classes at Doss that are taught half in English and half in Chinese. Because of Houser's and colleagues' effort in bringing Chinese to

Anderson High School, the school was named one of sixty Confucius Classroom Schools in the country by the Asian/Hanban Society. Houser shared the grant money her school received from the Society with five elementary schools and one middle school, most of whose students would eventually feed into Anderson High School.

There are End of Course (EOC) examinations required by the state for graduation. Houser was particularly concerned about the U.S. history exam and decided to work with staff on

preparing students. The new exam demands that students demonstrate high ability in reading, particularly in making inferences and showing a deep understanding of selected important topics. The students were divided into two categories – called green and red. The green students, she and her staff believed, would have no difficulty with the exam. The

red students, some of them English Language Learners, some special education students, and some native speakers not in special education, would have difficulty. By using a modest amount of substitute teacher money, Houser and her social studies team created a system where some of her best regular social studies teachers and a small number of substitutes who were trained in social studies would work with red students to move as many as possible into the green category for the EOC exam.

“When Houser talks about her school, she often uses the phrase “incredible staff” as a prime descriptor.”

When I conducted a pro bono workshop recently for Houser and her Administrative Team on leadership over a period of nearly three months, I was struck with the number of unexpected issues that came up while I was there. Every member of the team was committed to high-quality instruction as a priority even if that person's primary assignments were scheduling or graduation preparation in addition to supervising one or two content areas. When a discipline issue came up, a scheduling glitch developed, a parent showed up unexpectedly in the school office with a serious concern, or water was flooding some rooms, (All of these things actually happened.) the appropriate team member(s) needed to respond immediately and effectively to the exigent problem. Donna Houser and her team solve such problems as they present themselves, and yet Houser continues to keep herself and her administrative team focused on teaching and learning.

Houser knows why she is in the principal's seat and what her priorities are. There are inevitably good days and not-so-good days in a principal's work, but there are no days when effective instruction and learning are not uppermost in Donna Houser's portfolio.

About the Author:



Mark F. Goldberg, Ph.D.

Dr. Mark F. Goldberg had a 32-year career in public education as a teacher, professor and public school administrator. Since 1994, Dr. Goldberg has written five books, over 100 articles, and edited 51 books to publication, several with ASCD and Corwin Books. He lives in Austin.

Creating systemic change? There is no app for that.

By Scott Kinney - Reprinted from *eSchool News*

The rise of educational apps has impacted classrooms across the nation, but there's one major change that apps can't implement

Today, most schools realize the critical nature of technology in preparing our students for college, careers, and citizenship; however, only 10 years ago, when I served as technology director for an Intermediate Unit in upstate Pennsylvania, the conversation on educational technologies centered largely on the question of "Should we?" Now, I find that in my conversations with school leaders across the country, our conversations focus on "How?"

This shift, driven in part by a host of social, political, economic, and technical forces, has made it easier than ever to introduce technology into the classroom environment. The ease with which we can apply technology to academic challenges has created an unprecedented time in education that I call the "There is an App for That Era."

In this era, there seems to be an endless supply of apps. Want to improve your spelling? There is an app for that. Want to practice multiplication tables. There is an app for that. Want to create online flash cards? There is an app for that.

However, there is no app for creating a true learning initiative that systemically integrates technology into the classroom, improves instruction and increases academic success. No online flash cards will provide the answers. It simply is not that easy to create whole school change. Yet, there are district and school leaders who have strategically built a plan for this complex integration of technology and forged the will to follow it through.

In school systems like Mooresville Graded School System, Miami-Dade County Public Schools, and Forsyth County Schools, to name a few, school leaders did not in a piecemeal way apply hardware here and software there. Rather, they created true learning initiatives in which technology is a component of a larger cultural shift aimed at improving student outcomes.

While the challenges facing schools and the initiatives they implement to meet those challenges will differ, each successful technology-powered learning initiative I've seen was composed of a few key elements. Those elements are, in order:

A clear articulation of educational goals. In each instance of a thoughtful, technology powered learning initiative I've seen, district leadership has, in a unified voice, been able to succinctly describe what they are trying to accomplish and their vision for meeting their goal. In addition, this cohesive message has been conveyed to teachers, students, parents, administrators, community members and others, creating a sense of unity and purpose around district efforts.

SYSTEMIC CHANGE *continues on page 12*

A clear plan aligning professional development to goals. Preparing educators to change their classroom practice to incorporate new resources and meet new goals is a critical component of any learning initiative. A plan to provide customized, job-embedded professional development that aligns to district-wide efforts and implemented with fidelity empowers teachers to support new initiatives and more effectively incorporate new technologies into classroom instruction.

An updated content strategy. Digital content gives educators the media they need to create rich, authentic digital learning environments that engage today's students. A strategy to give teachers high-quality, standards-based digital content that is embedded in district pacing, scope and sequence documents, and can be accessed from all platforms, is essential.

An access strategy. All the stakeholders know and understand the plan. A strategy is in place to provide educators the professional development they need to make it happen. The district's instructional content has been updated with new digital content aligned to curriculum. Only now, with those plans in place, is it appropriate to create a strategy to get content into the hands of students.

At this point in the planning process, it is important to consider the entire spectrum of access issues. Is the wireless infrastructure adequate for what we want to accomplish? Is internet security adequate? What types of devices should we use? Should we go 1:1? Should we go BYOD? The educational goals of the learning initiative should dictate these types of technological decisions.

Evaluation/continuous improvement plan. With the key elements of the learning initiative in place, it is time to consider how success will be measured. A rigorous process that celebrates successes while addressing deficiencies should be designed and implemented to ensure continuous improvement. While we live in an age where there is an app for everything, when it comes to designing district-wide learning initiatives powered by educational technology, there is no app. Each school system is different, facing unique challenges that require distinct solutions.

To achieve lasting change that improves academic achievement, a multifaceted approach that engages stakeholders, builds human capacity, thoughtfully introduces technology, and leaves room for evaluation and course correction is the solution. Only when these elements are combined do the systemic changes our students need and deserve become possible.

Reprinted from eSchool News: <http://www.eschoolnews.com/2014/01/02/apps-systemic-change-329/>

6 Strategies for Telling Your District's Technology Story

Sometimes it can be a challenge for administrators to convey to a broad audience how a school district is transforming teaching

by Scott Kinney - Reprinted from *District Administration*

School district leaders must keep a diverse audience of teachers, principals, parents, local community leaders and other stakeholders informed of important district activities and learning initiatives.

Sometimes it can be a challenge for administrators to convey to a broad audience how a school district is transforming teaching and learning with [educational technologies](#) and digital content.

Spreading the word

While each school system's story is different and the avenues of communication will vary from district to district, here are six ways superintendents can spread the news about their efforts to create authentic digital learning environments:

1. Use local broadcast and print media. One way to inform your community about your work is to collaborate with your local broadcast and print media. Through either your personal outreach or through press releases and media alerts, share the who, what, when, where and why of your activities, and convey how those activities fit into your larger learning initiatives. Make sure press releases and media alerts are sent to other important stakeholders, such as elected officials, local community leaders, and the presidents and executive directors of local education associations. Also consider including local business partners, foundations, and nonprofits you regularly work with in your outreach.
2. Use your district's website. If you create a press release announcing an important component of your education-driven technology initiative, consider repurposing this press release for a story on your school district's website. For many stakeholders, your district website is the single most important source of information about your district, so this story can help drive broad interest in your school system's ed-tech efforts. Then, use social media, such as Facebook and Twitter, to promote that story. Also, make sure to include a link to this story in your school system's weekly email communications.
3. Blog it. In addition to a news story, a blog post directly from the superintendent can be a great communications tool. It can help convey both news and opinion in a short format and, like a story on your website, can be promoted via social media and included in your school district's e-communications.
4. Write an op-ed for your local newspaper. As the leader of your community's public school district, you have a unique and valuable perspective to share with your community. Your op-ed should focus on how digital learning environments are preparing students for college, careers and citizenship in both your local area and our increasingly global society. Once the article appears, use social media to promote it.
5. Present to your school board. School boards are critical stakeholders that need to be kept informed of your district's commitment to leveraging educational technologies to improve education. Create a presentation for your school board that demonstrates the ways education is being transformed

SIX STRATEGIES continues on page 14

in your district. Be sure to showcase the hardware and digital content students will be using, and if possible, provide your board an opportunity to get “hands on” with the technology. Also, include in your presentation administrators, teachers, students and parents who can personally speak to the importance of these new technologies in supporting the success of every student.

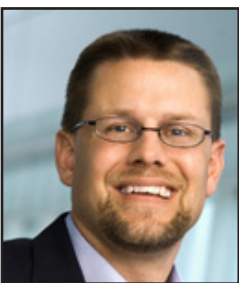
6. Add an educational technology component to your next community or parent/teacher night. Community or parent/teacher nights are crucial to engaging parents in various district initiatives. At your next event, add a presentation on the ed-tech components of your ongoing learning initiatives. Hands-on exercises led by your school district’s experts can illustrate the academic benefits of new tools, resources and strategies. You also should allow students to demonstrate to their parents the technologies they are using in the classroom. Finally, provide time where parents can interact with the technology, so that they can get a better understanding of their children’s classroom activities.

Across the country, school systems are undertaking exciting, innovative initiatives to better prepare students for their futures. Use these action items to begin to tell your district’s story today.

Scott Kinney, senior vice president of education partnerships at Discovery Education, has been a powerful voice supporting the use of educational technologies to power learning initiatives for more than 20 years.

Reprinted from District Administration: <http://www.districtadministration.com/article/6-strategies-telling-your-district%E2%80%99s-technology-story>

About the Author:



Scott Kinney is Senior Vice President for Discovery Education. An acknowledged thought leader and powerful voice in support of educational technology, Scott Kinney has more than 20 years of experience in the education industry. As senior vice president for Discovery Education, Kinney cultivates partnerships with school districts across the country, working with educators and administrators to develop customized solutions that support their strategic goals and empower them to make the transition from print to digital. Under his leadership, Discovery Education services are transforming teaching and learning in more than half of U.S. schools and 35 countries worldwide.

Collaborative and Reflective Student Teaching *for Profession-Ready Teachers*

by Zhu Gang



In this article, Mr. Gang discusses his own student teaching experience at a high school school in China. In his reflections, he identifies and provides examples of three components that are beneficial for student teachers to become profession-ready teachers: (1) Collaboration for Professional Learning Community; (2) Reflections through Lesson Study and Journaling; (3) Interactive Residency in the School. Gang provides fresh perspectives and hands-on practical knowledge in the area of pre-service teachers' preparation and professional development.

Student teaching is necessary and important for pre-service teachers' professional development. Its overarching aim is to cultivate profession-ready teachers (NEA, 2013) by bridging the educational theories they learned in university-based teacher education programs and classrooms specific practice (Zeichner, 2010). However, current teacher education programs are still similar to what Freire (2009) criticizes "prepackaged teacher education" to some extents. It still has the theory and practice division problem (Zeichner, 2010).

In order to bridge the gap between theory and practice, pre-service teachers can adopt "collaborative and reflective residency student teaching model," which is based on my own student teaching experience in China. First, it can create a professional learning community (Hargreaves & Fullan, 2012) for all the pre-service student teachers by connecting effective mentorship and peer supports. Secondly, it can facilitate reflection (Schön, 1983) through lesson study (Stiegler & Hiebert, 1999) and reflective journaling. Thirdly, student teachers can solve real classroom problems by long-term residency in field placement schools.

In this paper, I will narrative and reflect my student teaching experience with corresponding examples.

COLLABORATIVE continues on page 16

**Texas ASCD is now accepting submissions for *Leaders of Learners!*
See details at www.txascd.org. Topic suggestions include:**

Leadership
Student Engagement
Accountability
Diverse Learners
Digital Learning
Whole Child
STEM/STEAM

Assessment Literacy
Content Knowledge
Graduation Requirements
Endorsement Development
Innovative Course Development
Accelerated Instruction
Professional Graduation Plans

Community Engagement
College Preparation
Course Development

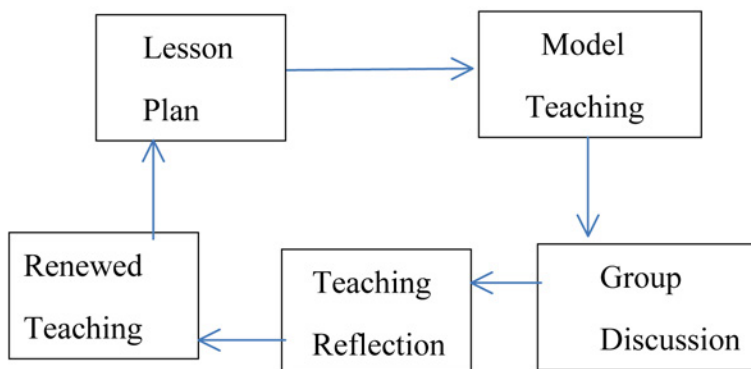
1. Collaboration for Professional Learning Community

From my point of view, student teaching is not an isolated activity which can be accomplished solely. It is collaboration between student teachers, students in the field placement schools, mentors and the student-teaching peers. During my practicum, there are five student teachers including myself teaching in one high school in China. All of us have different teaching styles and advantages. For example, Zhao Cailu is good at organizing classroom activities. Yuan Ang is good at managing classroom. Tian Zhenzhong and Hu Shuguang are adept at interacting with high-school students. I am knowledgeable and proficient in subject content knowledge. Therefore, we can create professional learning community by drawing upon each other's advantages. Actually, we often observed and discussed on each other's classroom teaching. During this process, I had learned more about my teaching problems and how to further improve it. Compared with traditional isolated students teaching, peer supports played an important role during our practicum.

During our student teaching period, I often got supports from my mentor and college faculty advisor. Normally, student teachers mainly learn from their mentors. But cooperating with my faculty advisor, I learned how to effectively connect the problem I encountered during my practicum with related educational theory. One telling example is that at the beginning of student teaching, I felt very nervous and did not know how to adjust my emotion in the classroom. After getting advice from my faculty advisor, I learned how to manage my emotion while teaching effectively. Consequently, I think it is beneficial to connect mentor and faculty advisor during practicum.

2. Reflections through Lesson Study and Journaling

Profession-ready teachers embody reflective practitioners (Schön, 1983). Accordingly, successful student teaching requires continuous reflections. For my specific situation, we mainly facilitated teaching reflection by lesson study (Stiegler & Hiebert, 1999). When I taught English to Grade 7 students, my lesson study process epitomizes below:



COLLABORATIVE *continues on page 17*

Specifically, we would design our lesson plans at first, after designing our lesson plans, we would teach at a classroom respectively. The mentors and the other peers would observe my teaching behaviors carefully. After finishing my teaching session, we would gather together to discuss each other's teaching from various perspectives. During our discussion, we could identify our merits and the disadvantages those need to improve. Meanwhile, we would propose solutions to overcome our respective teaching problems. After the meeting, we would systematically reflect our teaching sessions, improve and polish teaching plans and teaching strategies continuously. Finally, we would implement our new teaching strategies. This is a connected recycle which can be adopted flexibly.

Besides lesson study, I often used reflective journaling to improve my student teaching. Mary Beattie points out that "Teacher Education is a holistic enterprise grounded in relationships, involving the whole person, and based in the context of the individual's whole life." Correspondingly, I often shared my personal and professional experiences in the form of storytelling and retelling (Clandinin & Connelly, 1995) with my mentor and other student teachers. During this process, I specifically pay attention to critical events that influence my professional identity and professional development. Meanwhile, I have developed my personal practical knowledge (Clandinin, 1985) through reflective journaling.

3. Interactive Residency in the School

During our whole student teaching period, we five student teachers lived in the school. So we had ample time to observe other teachers' teaching, which means "the apprenticeship of observation." (Lortie, 1975). It also gives us many opportunities to interact with students in the school (The school is a boarding school). In this situation, we could organize some extra-curricular activities since learning does not only happen in classroom. Gradually, we created long-term friendship by learning more about the students' backgrounds.

When we were resident in the field-placed school, we were totally immersed in the school and classroom environments. So we could learn the daily routine of teachers and educational administrators in the school. For example, I learned how to manage and assist 30 students in one class as a principal teacher and how to communicate with parents timely and effectively.

From my internship experience, I deeply felt that students' accomplishments are influenced by many factors such as students' socio-cultural backgrounds, parent-involvements, etc. In other words, albeit these "out-of -classroom" factors are invisible. It cannot be denied that they are all inseparable with students' accomplishments and will influence classroom teaching.

COLLABORATIVE *continues on page 18*

Conclusion:

From my experience, I argue that student teaching is vital and necessary for authentic field-based experience. More importantly, student teaching is a wholistic enterprise, which means that student teaching is the intricate interplay of four commonplaces proposed by Schwab (1969): teachers, students, subject matter and the milieu. In this vein, we should not only emphasize students and subject matter but also teachers and the milieu. In this way, can we really prepare profession-ready teachers.

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About the Author:

A former research fellow at the Center for Teacher Education Research of Beijing Normal University in China, Zhu Gang has eight-year learning and research experiences in education in China, especially in curriculum, instruction and teacher education. Zhu Gang is currently an instructional assistant in the Department of Curriculum and Instruction at University of Houston. He has contributed to one book chapter and has published four research papers. His research area mainly focuses on curriculum theory, teacher knowledge, pre-service teacher professional development and cross-cultural learning.

SECONDARY MATHEMATICS TEACHERS' DISPOSITION TOWARD CHALLENGE AND ITS EFFECT ON TEACHING PRACTICE AND STUDENT PERFORMANCE

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This research focuses on mathematics teachers' disposition toward challenge and its correlation with teaching practice and student performance. Two teachers from southwestern U.S. urban high schools were selected for the study. Teachers were pre and post evaluated using problem solving interviews with regard to the level of challenge of the tasks used in their lesson planning. Student work of the selected teachers was analyzed to examine the relationship between teachers' acceptance/avoidance of challenge and student performance. The study employed a mixed methods methodology and focused on the following guiding research question: to what extent teachers' disposition towards challenge affects teaching practice and students' performance and what is the nature of that relationship?

Keywords: Acceptance/ avoidance of challenge, Disposition, High school mathematics, Student performance

Background and Significance

Avoidance of challenge is a response mechanism built up by individuals who lack motivation to face an obstacle because they do not excel (Fincham, Hokoda, & Sanders, 1989). The attribution theory has been studied extensively and has led to a valuable understanding of avoidance of challenge when faced with a mathematical problem (Bosh & Bowers, 1992). Attributions are defined as “the internal explanation individuals devise to explain their success or failure at a given task” (Grimes, 1981). This theory has been proven successful through several studies by establishing a direct influence between an individual's perception of a certain situation and the individual's consequent reaction. Understanding what attributions are made by the mathematics teacher with regards to his or her success or failure in a subject is an important step in identifying the disposition toward challenge.

Teachers who avoid challenge are characterized by, “their tendency to attribute failure to external factors rather than effort, tend to show decrements in performance following failure” (Fincham, Hokoda, & Sanders, 1989). Teachers who suffer from anxiety, self degenerate themselves instead of attributing failure to a lack of effort. The greater one's coping ability, the greater one's ability to adjust to situations where they are evaluated such as those encountered in schooling and teaching (Gersten, Chard, Jayanthi, Baker, Morphy, & Flojo, 2009). Research also shows that teaching anxiety, including anxiety caused by challenge, is related to low student performance (Montgomery & Rupp, 2005).

Methodology

Sample and Instrument

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The research sample included two high school mathematics teachers and their students. David and Arturo (names are changed for the purpose of anonymity) are experienced in-service high school teachers (more than 5 years of teaching experience) studying toward their Master's Degree as Instructional Specialist in Mathematics Education in one of the southwestern U.S. universities.

In order to investigate teachers' disposition toward mathematical challenge and their students' reaction, we developed a scale, which determined mathematics teachers' acceptance or avoidance of mathematical challenges. We administered two problem solving interviews (before the lesson and after the lesson) to both teacher participants. The following is a sample of the pre-interview, which consisted of the task and two supportive questions:

1. Rabbit and Turtle run a 80 meter "over and back" race from a starting point to a tree (40m), then back to the starting point again. Rabbit's speed over is 4 m/s and back is 8 m/s. Turtle's speed both ways is 6 m/s. Who will win the race and why?
2. How challenging was the Task-1 for you? Rate it on a scale from 1 to 5 (1 – lowest challenge, 5 – highest challenge). Explain why.
3. How likely you will use the Task-1 in your own classroom? Rate it on a scale from 1 to 5 (1 – less likely, 5 – most likely). Explain why.

The following is the sample of the post-interview with the same task, question 2, and modified question 3:

1. Rabbit and Turtle run a 80 meter "over and back" race from a starting point to a tree (40m), then back to the starting point again. Rabbit's speed over is 4 m/s and back is 8 m/s. Turtle's speed both ways is 6 m/s. Who will win the race and why?
2. How challenging was the Task-1 for you? Rate it on a scale from 1 to 5 (1 – lowest challenge, 5 – highest challenge). Explain why.
3. Have you used the Task-1 (or modification of the Task-1) in your teaching? If –yes, how challenging was the Task-1 for your students? Rate it on a scale from 1 to 5 (1 – lowest challenge, 5 – highest challenge). Explain why.

Each interview consisted of three tasks with increased level of challenge based on the concept of the weighted average as presented below:

Task 1. Rabbit and Turtle run a 80 meter "over and back" race from a starting point to a tree (40m), then back to the starting point again. Rabbit's speed over is 4 m/s and back is 8 m/s. Turtle's speed both ways is 6 m/s. Who will win the race and why?

Task 2. Rabbit and Turtle run a 80 meter "over and back" race from a starting point to a tree (40m), then back to the starting point again. Rabbit's speed over is r_1 m/s, back is r_2 m/s, and his average speed is 6m/s. Turtle's speed both ways is 6 m/s. Would Rabbit win the race? Why or why not?

Task 3. Rabbit and Turtle run d meter "over and back" race from a starting point to a tree ($d/2$), then back to the starting point again. Rabbit's speed over is r_1 m/s and back is r_2 m/s. Turtle's speed over is r_3 m/s and back r_4 m/s. Rabbit and Turtle have equal average speeds. Would Rabbit win the race? Specify conditions under which Rabbit could win.

Interviews were analyzed using qualitative methods, such as analysis by meaning coding and finding common themes through careful examination of the data via theoretical lens of

positioning theory and disposition descriptors. To analyze the information collected through the interviews, a coding sheet was created, where data was organized in related coding categories.

After teacher participants completed the interviews, they were asked to produce and deliver a lesson in their classroom where students would be taught the same content they were tested on. When analyzing the lesson plan the following was looked for: activities that provided students a strong understanding of the mathematical concept, clear student-oriented objectives, and assessment. Student work was collected to examine the effect of teacher disposition toward challenge on student performance.

Results and Discussion

Below we analyze the results of the study broken by three major categories: 1) Teacher interview; 2) Lesson plan; and 3) Student work.

Arturo's Interview

The following reports were obtained before the lesson was delivered. Arturo was asked to solve the task and answer the follow up questions rating each on a scale from 1 to 5 (1 – lowest challenge/likelihood, 5 – highest challenge/likelihood).

Table 1: Arturo's pre-interview responses on questions 2 and 3

Question	Task 1	Task 2	Task 3
How challenging was it for you?	3	5	4
How likely you will use it in your classroom?	5	5	4

The table below represents data obtained after the lesson was delivered. Arturo was asked to solve the task and answer the follow up questions rating each on a scale from 1 to 5 (1 – lowest challenge/likelihood, 5 – highest challenge/likelihood).

Table 2: Arturo's post-interview responses on questions 2 and 3

Question	Task 1	Task 2	Task 3
How challenging was it for you?	3	4	5
How challenging was it for your students?	4	4	Did not use it

Before the lesson, Arturo reported the task 2 as possessing highest level of challenge for him. While developing his lesson plan, Arturo decided to slightly modify the context for tasks 1 and 2: instead of Rabbit and Turtle race he decided to use teams of students' race as a context of the tasks. Analysis of student work revealed that as a result of the mathematical challenge perceived

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by the teacher, students did not attempt to solve the same task. On items where Arturo found the lesson of high mathematical difficulty, students also experienced this unpleasant emotional state of finding the task challenging and in turn, performed poorly. On another task – task 3, Arturo reported that the task was challenging for him and decided not to expose the students to the material.

This avoidance of mathematical challenge evidently affected students’ engagement towards the task. It was observed that the students work and efforts on the same task resembled that of their instructor. Arturo’s students were characterized by their lack of drive to continue facing an obstacle. We argue that such students’ discouragement may have been modeled by their teacher. As evidenced by Arturo’s students’ work, they suffered anxiety, became easily discouraged, the task became distorted; students experienced difficulty concentrating and sustaining motivation. In the same manner, students self-degenerated by comments like “el huevudo” as their name implying that they were not smart enough or good students instead of attributing failure to a lack of effort. The table below depicts the students’ products compared to those of their instructors.

Figure 1 below depicts Arturo’s solution on the task 1 and the work of one of his high performing students on the modified task 1.

<p>Arturo’s work on task-1</p>	<p>Task-1. Rabbit and Turtle run a 80 meter “over and back” race from a starting point to a tree (40m), then back to the starting point again. Rabbit’s speed over is 4 m/s, and back is 8 m/s. Turtle’s speed both ways is 6 m/s. Who will win the race and why?</p> <p> $\frac{R_1 + R_2}{2} = \frac{4 + 8 \text{ m/s}}{2} = \frac{12}{2} = 6 \text{ m/s}$ $\frac{40\text{m}}{4 \text{ m/s}} = 10 \text{ s}$ $\frac{40\text{m}}{8 \text{ m/s}} = 5 \text{ s}$ $10 \text{ s} + 5 \text{ s} = 15 \text{ s}$ </p> <p>Rabbit = 6 m/s</p> <p> $\frac{6 \text{ m/s}}{2} = 3 \text{ m/s}$ $\frac{40 \text{ m}}{6 \text{ m/s}} = 6.4 \text{ s}$ $6.4 \text{ s} + 6.4 \text{ s} = 12.8 \text{ s}$ </p> <p>Turtle</p>
<p>Highest performing student’s work from Arturo’s class</p>	<p>Question 1: What is your prediction on who will win the race? Explain.</p> <p>It will be first team because they both run 50mph.</p>

Figure 1: Arturo’s and his highest performing student’s work on the task 1

Arturo demonstrates that the task 1 represents a middle level challenge for him and he is capable to correctly solve the task. However, no explanations are provided as to why he believes that Turtle will win the race. Consequently, when Arturo takes the same task and presents it to the classroom, the result is that even the highest performing student (whose work is shown above) avoids the challenge by simply answering that the first team (e.g., Rabbit) will be the winner of the race and shows no calculations or reasoning behind his logic. The lack of guidance and elaboration of his teacher lead the student to feel confused and avoid attempts to completely solve the task. Interestingly, as the same student progresses through the lesson his explanations become even weaker and his motivation and interest in the lesson has dropping further.

David's Interview

The following reports were obtained before the lesson was delivered by David on a scale from 1 to 5 (1 – lowest challenge/likelihood, 5 – highest challenge/likelihood).

Table 3: David's pre-interview responses on questions 2 and 3

Question	Task 1	Task 2	Task 3
How challenging was it for you?	1	3	3
How likely you will use it in your classroom?	5	1	3

The table below represents David's scores on questions 2 and 3 after the lesson was delivered (1 is lowest and 5 is the highest challenge/likelihood).

Table 4: David's post-interview responses on questions 2 and 3

Question	Task 1	Task 2	Task 3
How challenging was it for you?	3	2	4
How challenging was it for your students?	5	4	5

Before the lesson, David reported one of the tasks – task 4 - as most challenging for him. In spite of the mathematical challenge perceived by the teacher, the lesson was delivered to the students. David decided to keep the same context for the tasks. In turn, students solved every task and demonstrated high competency level throughout the lesson. It was observed that the students work and efforts on the same task also resembled that of their teacher.

AVOIDANCE OF CHALLENGE *continues on page 24*

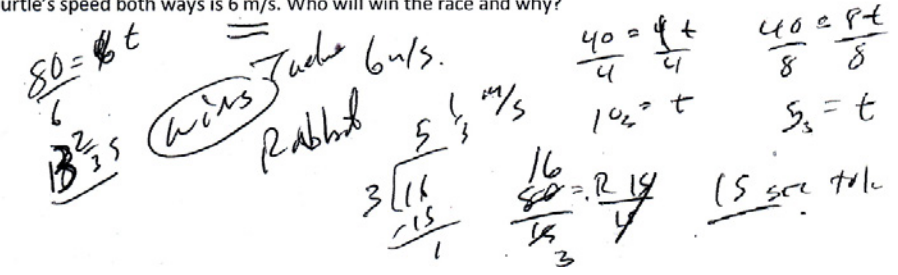
David's work on task-1	<p>Task-1. Rabbit and Turtle run a 80 meter "over and back" race from a starting point to a tree (40m), then back to the starting point again. Rabbit's speed over is 4 m/s and back is 8 m/s. Turtle's speed both ways is 6 m/s. Who will win the race and why?</p> 
Average performing student's work from David's class	<p>Question 1. Before doing any calculations, make a prediction: who do you think will win the race? Explain.</p> <p>The turtle because it is the same speed both ways and not different speeds</p>

Figure 2: David's and his average performing student's work on the task 1

After analyzing student work, it was concluded that students in David's class had significantly higher performance than those in Arturo's class mainly due to the acceptance of challenge demonstrated by David. Teacher 2 first calculates the velocity of both competitors in the race and demonstrates his degree of precision in his response. As compared to Arturo's response, David is not hesitant about his calculations and responses. David reports that the task was challenging for him as well. However, in spite of the challenge, he decides to take the challenge back into his classroom and present it to his students. Such confidence modeled by the teacher encouraged even average students (the work of one presented above in figure 2) outperform his highest performing counterpart from Arturo's class. Overall, the student response from David's class is correct and more sophisticated than the one presented by student in Arturo's class.

Students' Performance in Arturo's Class

Further analysis of student's work in Arturo's class showed that students had stopped answering questions and not attempting to resolve the problems presented as they progressed through the lesson. The student's work became gradually unorganized and overall messy. It was concluded that student had lost their interest in the task. Also, it was observed that students were confused and when faced with lack of appropriate guidance, became discouraged. The figure below depicts the students' disengagement in the mathematics activities as the lesson progressed.

Question 1: What is your prediction on who will win the race? Explain.

I think ~~it~~ is going to be a tie because they will finish at the same time

1) What was the total amount of time it took the first team to complete the race?

$$\frac{20}{60} = \frac{1}{3} \quad \frac{30}{60} = \frac{1}{2} (.5) \quad \frac{.83}{2} = \overset{\text{TIME}}{.415}$$

(.33) $\frac{.33 + .5}{2}$

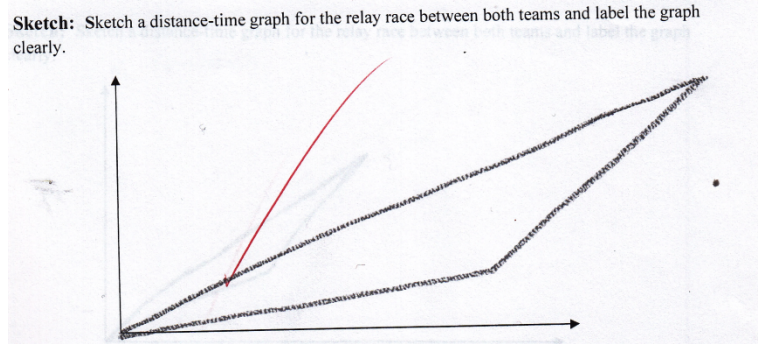


Figure 3: Samples of high performing student work from Arturo’s class

As mentioned above, the student whose work is shown above was selected as a highest performing student in Arturo’s class. Conversely, for David’s class, an average performing student was chosen. This was established with an aspiration of comparing students’ engagement and level of performance in both classes.

Students’ Performance in David’s Class

Analysis of average student work in David’s class showed that students had become engaged and elaborated their mathematical explanations and their reasoning as they progressed through the lesson. The figure below depicts the students’ engagement as the lesson progressed.

Question 2. How long did it take each animal to finish the race? Show your work.

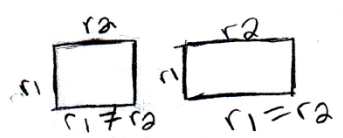
Rabbit: $1 \text{ hr} \times \frac{6}{60} = \frac{6}{60} = \frac{1}{10}$ $\frac{1}{10} \times 60 = 6 \text{ min}$

Turtle: $30 \text{ min} \times \frac{5}{60} = \frac{150}{60} = 2.5 \text{ min}$

5. Using the formula $d=rt$, what was rabbit’s rate (speed) for the entire race?

$$d = rt \quad 30 = r(8) \quad r = \frac{30}{8} = 3.75 \text{ m/s}$$

What geometric concept that you have studied in the past represents the concept of the product of two quantities? Draw a picture that would represent this concept.



Question 3. Create a **distance-time graph** for the situation. Sketch Rabbit and Turtle's race on the same coordinate system below. Label your graph clearly.

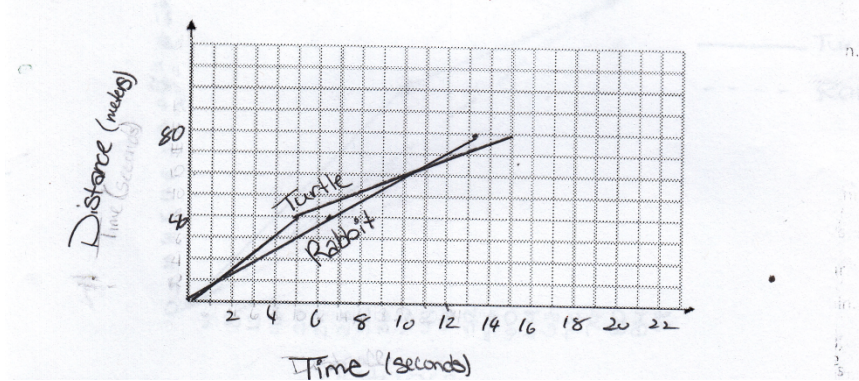


Figure 4: Samples of average student work from David's class

Throughout of the analysis, it became evident that students in David's class had been exposed to a lesson that provided them with confidence, good explanations and high quality of instruction. To obtain confidence and to strengthen the claims made, the lesson plans and delivery were also examined.

Arturo's Lesson Plan Design and Delivery

Arturo had planned that the content of the lesson would focus on connection between the concept of weighted average and algebra through the use of graphic and visual representations. However, no graphical or visual representations were provided in the lesson plan. Arturo also planned to connect the arithmetic, harmonic and geometric means within the lesson to foster students' in-depth understanding of algebra. Unfortunately, analysis of student work did not reveal understanding of the concept of mean. Instead, students withdrew the task and ceased their efforts to completely solve the tasks provided. Arturo had planned to conduct four activities. Only three activities took place in the classroom including pre and post assessment. Overall, the lesson plan was not fulfilled in the classroom. Graphs and visuals that were planned to be utilized during class to support students' understanding were not employed after all. The coordinate plane provided to students was not helpful for students and created confusion. The challenge that the lesson provided was not embraced by the instructor and as a result the students became disengaged.

David's Lesson Plan Design and Delivery

David had planned that the content would also be focused on connection between the concept of weighted average and algebra through graphic and visual representations. Graphics and visual representations were provided. David's lesson plan also aimed to connect the arithmetic, harmonic and geometric mean to improve students' understanding of the concept. Analysis of student work showed a persistent attempt to explore the concept of mean from multiple perspectives. David had planned to conduct four activities including pre and post assessment. All the activities were delivered to the class. The lesson plan was fulfilled in the classroom. Graphs and visuals that were planned to be utilized during class in order to support students' understanding were fully employed. The coordinate plane with the grid provided to students was

useful for students and facilitated the graphing process. The challenge that the lesson provided was embraced by the instructor and as a result the students became more engaged with mathematics.

Conclusions

A common obstacle that teachers face when teaching mathematics is the students' fear and anxiety towards the abstraction that characterizes the subject. This is commonly rooted in past failures in the subject matter. The purpose of this study is to determine whether their teachers' disposition towards challenge is another contributing factor. The main intent of study is to examine whether students' lack of willingness to face a mathematical challenge is modeled and transferred from their instructors and to determine whether teachers' disposition to confront challenge is related to students' performance.

Continuous failure leading to students' discouragement can be reduced through a concentrated effort from the teacher. Only when the teacher is able to reduce and cope with the anxiety towards mathematical abstractions can the problem of student discouragement towards challenging mathematical tasks be overcome. This study demonstrated that students of teachers who tend to avoid mathematical challenges and become easily discouraged, produce students who will experience the same problems. Such students also experience difficulty sustaining motivation or engagement with the task.

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<input type="checkbox"/> Alamo Area (Region 20)	\$10.00	\$ _____
<input type="checkbox"/> Capital Area (Region 13)	\$10.00	\$ _____
<input type="checkbox"/> Central Texas (Region 12)	\$10.00	\$ _____
<input type="checkbox"/> Coastal Bend (Region 2)	\$10.00	\$ _____
<input type="checkbox"/> Crossroads Area (Region 3)	\$10.00	\$ _____
<input type="checkbox"/> Houston Suburban (Region 4)	\$10.00	\$ _____
<input type="checkbox"/> North Central (Region 10)	\$10.00	\$ _____
<input type="checkbox"/> Panhandle (Region 16)	\$10.00	\$ _____
<input type="checkbox"/> Paso Del Norte (Region 19)	\$10.00	\$ _____
<input type="checkbox"/> Piney Woods (Region 7)	\$10.00	\$ _____
<input type="checkbox"/> Rio Grande Valley (Region 1)	\$10.00	\$ _____
<input type="checkbox"/> Sabine-Neches (Region 5)	\$10.00	\$ _____
<input type="checkbox"/> West Central Texas (Region 14)	\$20.00	\$ _____
<input type="checkbox"/> West Texas (Region 17)	\$10.00	\$ _____
<input type="checkbox"/> Les Evans (Region 11)	\$15.00	\$ _____

TOTAL \$ _____

Payment Options

Payroll Deduction (Complete authorization below and deliver to your employer.) Check Enclosed (Please make check payable to Texas ASCD)

Credit Card (complete information below) Purchase Order # _____

Amex Visa Master Card Discover

Credit Card #: _____

Expiration Date: _____

Signature: _____

Please Return Completed Application with Payment to: Texas ASCD. Please allow 2-3 weeks for processing.

1601 Rio Grande, Ste. #451, Austin, Texas 78701

(800) 717-2723 • (512) 477-8200 • Fax (512) 477-8215 • email: texasascd@txascd.org • www.txascd.org

Payroll Deduction Authorization

I, _____ authorize the _____ (employer) to deduct the total amount of \$ _____ in order to pay for Texas ASCD membership dues. I further authorize the Association to notify the employer of changes in the annual dues amounts and the number of pay periods over which deductions shall be made. Upon termination of my employment, I authorize any unpaid balance to be deducted from my final check. This authorization, for the deductions referenced above, will continue in effect until I give notice to the employer to revoke.

Employee Signature _____ Social Security # _____

Employer _____ Date _____

**** COMPLETE AND DELIVER THIS SECTION TO YOUR EMPLOYER'S PAYROLL OFFICE. ARRANGEMENTS FOR PAYROLL DEDUCTION ARE THE RESPONSIBILITY OF THE APPLICANT.**