



Introduction

U-STARS~PLUS: Using-Science, Talents, and Abilities to Recognize Students~Promoting Learning for Underrepresented Students

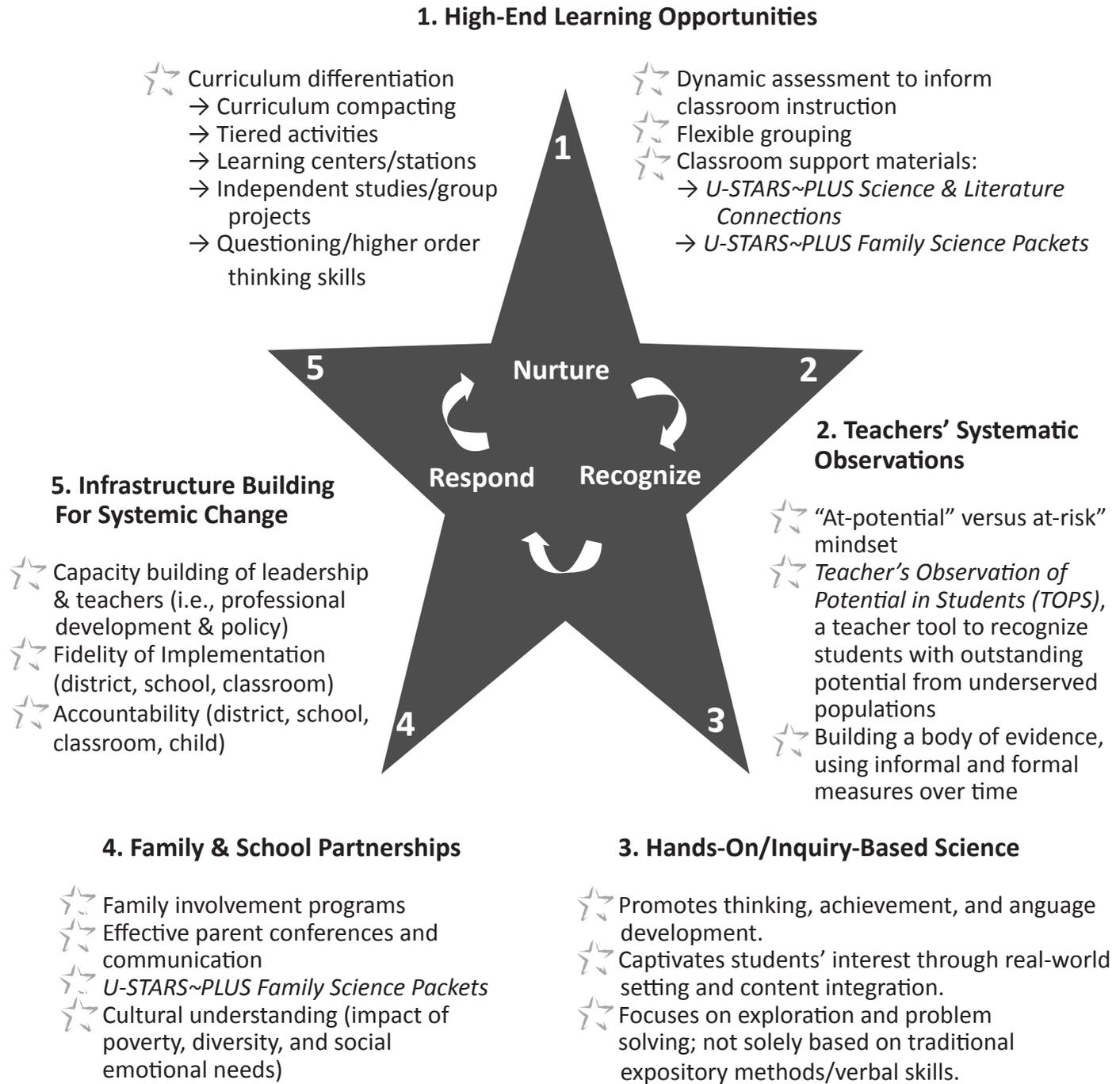
Passionate educators with issue expertise can make all the difference, enabling hands-on learning that truly engages students — including girls and underrepresented minorities — and preparing them to tackle the grand challenges of the 21st century such as increasing energy independence, improving people’s health, protecting the environment, and strengthening national security.

~President Barack Obama, January 6, 2010

The *U-STARS~PLUS (Using-Science, Talents, and Abilities to Recognize Students~Promoting Learning for Underrepresented Students) Science & Literature Connections* was developed to bring together two critical and exciting teaching areas: science and language arts. Although these classroom support materials were originally designed for teachers working with U-STARS~PLUS, they can be used in any elementary class where the teacher hopes to inspire learning through connecting reading with high-interest science topics. *Science & Literature Connections* is based on high-quality children’s books that feature science content (Bjork, 2005; Cherry, 2006). The science concepts, highlighted by each book, are based on the National Science Education Standards (1996) and will align with most states’ science standards. *Science & Literature Connections* was designed for Grades K to 3; however, many of the “connections” may be adapted for Grades 4 to 5.

Each of the 32 children’s books was included because it provides a wonderful platform for exploring scientific ideas within the context of excellent literature. Most of the selected books should be readily available in the school’s media center and many of the books have been translated into Spanish. The books and activities are intended to be used in conjunction with a larger science unit of study, although they may be used independently as well. *Science & Literature Connections* is organized around Bloom’s Taxonomy (Bloom, Krathwohl, & Masia, 1956) to support a range of thinking levels and to scaffold learning (Cheong, 2000). Thus, by using these materials, a teacher can create a higher-level thinking environment around literature connected with science.

Figure 1. The Big Star: An Overview of U-STARS~PLUS



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Table 2. U-STAR~PLUS FIDELITY OF IMPLEMENTATION: CLASSROOM RUBRIC

Critical Components	Not Evident	Emerging	Developing	Proficient	Optimal
<p>Teacher's Observation of Potential in Students (TOPS)</p> <ul style="list-style-type: none"> • Supports "at-potential" view of all students. • Recognizes students with outstanding potential, in particularly those from educationally vulnerable populations. • Informs teachers about student strengths and needs. • Informs classroom instruction and academic service options. • Provides information from a variety of settings, over time. • Supports conferencing with teachers, parents, and students. • Informs services and supports for students for the following year. • Informs a body-of-evidence. • Leads to referrals for Gifted and Talented program services. • Integrates with school policies and Gifted and Talented program practices. 	<p>TOPS is not being used.</p>	<ul style="list-style-type: none"> • Beginning evidence of understanding of theoretical background and practical application of TOPS. • Used for a few students, sporadically. • Completed in one sitting or in retrospect. 	<ul style="list-style-type: none"> • Use of TOPS on a regular basis, beginning with the whole-class observation which leads to some individual observations. • Experimenting with guiding instruction and sharing students' strengths and needs. 	<ul style="list-style-type: none"> • Consistent integration of TOPS for student observations. • Entire observation process followed; students with outstanding potential are recognized • Information from observations are used to plan appropriate response for students' strengths and needs. 	<ul style="list-style-type: none"> • Significant and intentional use in classroom to see high potential in students, including those from educationally vulnerable populations. • Seamless use to guide classroom instruction, share student strengths and needs with other teachers, and communicate with families. • Use as a base for creating a body of evidence to document the child's strengths and needs. • Helps to guide Gifted and Talented referrals, placement and services in and out of the general education classroom, and policy issues.
<p>Classroom Differentiation</p> <ul style="list-style-type: none"> • Responds to strengths and needs of students. • Relies on dynamic assessment to inform instruction, including progress monitoring and self-assessment. • Includes differentiation strategies: compacting, tiering, centers, independent studies/small group contracts, effective questioning. • Varies based on readiness, interest, strengths, and needs. • Uses student-centered, open-ended, product choice. • Uses a variety of materials and resources for student use. • Leads to flexible grouping. • Uses U-STAR~PLUS materials. 	<p>Classroom differentiation is not being used.</p>	<ul style="list-style-type: none"> • Beginning evidence of understanding of theoretical background and practical application of differentiation. • Few activities support appropriate challenge and interest for students at different levels. 	<ul style="list-style-type: none"> • Better understanding of the theoretical background. • Some application in the classroom on a regular basis. • Experimenting with ideas in a variety of ways and settings 	<ul style="list-style-type: none"> • Consistent integration of high-end learning opportunities in the classroom. • Evident in student work, curriculum planning, and classroom instruction. • Used to create an optimal learning environment, which nurtures and responds to potential. 	<ul style="list-style-type: none"> • Used to create an optimal learning environment, which nurtures and responds to potential. • Clearly evident in assessment, student work, planning, and instruction. • Challenging and meaningful work consistently facilitated for all students, seamlessly