TEAM ThinkUp!™

Supporting documentation
for the development of
Team ThinkUp!

Mentoring Minds

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Team ThinkUp!™

The necessity of teachers in knowing how to build and sustain thinking environments in classrooms is a genuine concern. Critical thinking skills are essential for students to succeed, not only in their school work but also in their life after graduation. For students to meet state content standards, they must be able to critically examine information. After graduation, the ability to think and adapt will stand them in good stead in college and in their careers. Albert Einstein stated that education "is not the learning of the facts, but the training of the mind to think" (as cited in Frank, 1947, p. 185). Similarly, Margaret Mead (n.d.) commented, "Children must be taught *how to think*, not what to think." Educators have an opportunity and a responsibility to equip students with the critical thinking skills and traits that can help them organize their thinking and transfer learning to new situations.

Critical thinking and problem-solving skills are identified as two key areas in preparing students for college and career readiness (MetLife, 2011; Achieve, 2015). Based on an examination of top-performing global educational systems, a key identifier of successful systems is rigor (Ripley, 2013). Schools have been criticized for not adequately preparing students for the level of rigor they will encounter in college (Achieve, 2006). In 2011, only 25% of high school graduates taking the ACT successfully passed all four of the ACT's College Readiness Benchmarks, and 28% of high school students did not pass any of them. ACT predictions have been confirmed: nearly one third of students entering post-secondary education take remedial courses in one or more subjects because they lack the skills to take standard credit-bearing courses (National Center for Education Statistics, 2011). Moreover, previous research into

the success rates of college students and high school seniors has shown that students' level of critical thinking is predictive of their grades or cumulative college grade point average (Facione, 1990a, 1990b; Sternberg, 2008).

In terms of employment, an overwhelming percentage of employers (93%) have indicated that job candidates' capacity to think critically, communicate clearly, and solve complex problems is more important than their college major (Association of American Colleges and Universities, 2013). When asked in 2015 how American public high schools could do a better job of preparing students for the expectations of college and the working world, college instructors and employers emphasized the need for critical thinking and problem-solving skills. This is especially true today, where new knowledge is rapidly accelerating, and information is instantly available. Students with critical thinking and problem-solving skills can interpret and evaluate what they read, see, and hear to effectively make the transition to college and career. Educators, parents, and community members also agree that critical thinking and problem-solving skills are important skills for students. The findings of the Project Tomorrow (2014), a survey of district administrators, teachers, parents, and community members, show critical thinking and problem-solving skills as essential skills needed by students for future success.

As indicated, there is a connection between critical thinking skills and success in life—not just in college and the workplace. Research has found that adults who scored higher on critical thinking assessments reported fewer negative life events. Possessing critical thinking skills helped

the participants make positive life choices (de Bruin, Parker & Fischoff, 2007). This is echoed by Nisbett (2016), who states, "Schools cannot claim to prepare students for life unless they help students learn to reason effectively and to make choices that will improve their lives and the lives of others" (p. 28).

Encouraging and fostering thinking is central to student learning. In education, a shift from a focus on content to an emphasis on thinking skills is apparent. Thinking must be integrated with content to make meaning and deepen learning. Costa and Kallick (2009, p. 5) state that the standards "suggest that successful instruction in skillful thinking should be done *while* teaching subject matter instead of *in addition* to teaching subject matter. Thinking and subject matter content are neither separate from nor in opposition to each other. The implication is that a student cannot demonstrate mastery of any of these required standards without performing one or more important thinking skills." Thus, a resource that emphasizes how to build a school-wide thinking culture is imperative. Think Up! Foundations™, a Mentoring Minds resource, supports school leaders in establishing a thinking climate throughout the school. If this type environment is created across the curriculum, then teachers can succeed in promoting deeper learning, encouraging students to share evidence or reasoning for solutions, rather than simply providing facts or a single answer.

Teachers must be specific in stating expectations for thinking classrooms if they want students to be productive thinkers and parents to support such an environment. Every teacher may not understand what thinking expectations entail, therefore information is provided about the critical thinking traits within the resources. Classrooms can be work cultures or thinking cultures. In work cultures, an emphasis is placed on students

completing assignments, often at a low cognitive level. Thinking cultures nurture students' thinking skills (Ritchhart, 2002). Stobaugh (2013a) notes that teachers can train brains in a "thought-full" classroom just as people visit a gym to train their bodies to be stronger and more agile. Classrooms should encourage student questions and inquiries that focus on higher-order thinking and deepen learning experiences.

Students must be taught the importance of thinking critically and how critical thinking skills impact their future success. It is recommended that students be taught that improvement in thinking skills is like improvement in any sport or hobby. The development of thinking takes commitment as well as practice, practice, practice. Students must also understand that learning how to think critically develops and improves over time. Teachers must ensure that students know the purpose or the reason behind every learning experience, so the focus remains on the learning itself and not the work. Stobaugh (2013b, p. 137) states, "By establishing a focus on thinking, teachers can transform classrooms from mass-production classrooms with students able to answer fact-based questions to classrooms that embody real learning through thinking as students analyze, critique, and create."

Expectations should be clear and communicated to teachers and to students, so they know that learning is more than the acquisition of information and skill, and that discussions are not merely superficial. Only then will individuals understand what a thinking classroom looks like. Classroom tasks, routines, and assessments will make it transparent that in-depth thinking is required for success. Higher-order questions (e.g., Why is __? What are you assuming when you say __? What evidence can you offer to support __? How might __?) and thoughtful responses are desired.

Students will readily observe that tasks, routines, and assessments are designed to elicit thinking and to transfer and make meaning. Translating thinking from content-area instruction into a wide variety of situations allows students to see relevance. Thinking expectations will enable individuals to effectively evaluate the quality of thinking of others and self-assess their own thinking, determining individual progress and the improvement needed. When expectations for thinking are made explicit, evidence can be gathered, and judgments can be formed (Paul & Elder, 2000). With the emphasis on learning and thinking at the core of instruction within a school, the focus of the classroom shifts from acquisition of content to making meaning. Establishing expectations up front is imperative for teachers to do with students if learning and thinking are to occur at high levels.

State standards pave the direction for classroom instruction. Evidence of critical thinking is woven throughout the standards and the concepts required for each content area. At every grade level, all students must be taught to think critically and display behaviors that show that growth is being made in this arena. The problem that so many educators face is the 'how'. *How* do we teach students to become critical thinkers? *How* do we integrate thinking into the curriculum we teach? *How* do we assess that thinking is occurring? *How* do we guide students to share the responsibility in thinking critically? These questions and more appear to be a reality for school leaders and teachers. So, where do educators begin and what precisely do they teach when it comes to critical thinking? Some educators indicate they are ill prepared and do not know where to turn. Time is of the essence in today's classrooms so quality resources that guide teachers and prepare

students are imperative. A solution is offered by Mentoring Minds Team ThinkUp!™

Beyond acquisition of skills and creation of a culture that promotes thinking, another consideration that impacts deeper thinking is for students to become aware of and learn to apply attributes or behaviors that strong thinkers exhibit. Research indicates there are specific behaviors that high-quality thinkers demonstrate. Effective thinkers and high-performing individuals do appear to portray certain characteristics (Goleman, 1995; Perkins, 1991). Costa and Kallick (2008, p.16) report there are certain characteristics that successful individuals "such as lawyers, mechanics, teachers, entrepreneurs, salespeople, physicians, athletes, entertainers, leaders, parents, scientists, artists, and mathematicians" tend to exhibit when faced with solving problems. They define these identifiable characteristics as "habits of mind."

As stated by Love (2017), in 2017 a team of educators from Mentoring Minds generated a list of traits they have observed throughout their education careers that were indicative of students who exhibited skillful thinking and deeper levels of thought. Based on their varied backgrounds of teaching and leadership experiences, elementary and secondary levels of curricula expertise, a range of 5–38 years working with children, observations of students, conversations with teachers, and 7 months of focused discussions, careful study, and deliberation, these educators collaboratively narrowed their lists to nine behaviors that students exhibited more times than not when thinking critically. Collectively, these nine behaviors were entitled *9 Traits of Critical Thinking™*. These nine traits, when explicitly taught, modeled, and practiced, can guide students in becoming more successful when engaging in cognitively demanding tasks and in social interactions at school and in life

beyond the classroom. The traits are intended to be emphasized in context with activities that align to each featured trait during instruction. To understand the trait, the development outcomes, prompts that teachers might use to inquire if students are exhibiting the traits, and strategies for explicitly teaching the traits are highlighted in Team ThinkUp! Teachers are provided information as to expectations for each trait as well as how to plan and deliver instruction that integrates the traits into content and social interactions with students. The traits help students become increasingly aware of thinking and more alert to mindful strategies that can be utilized in a variety of settings.

After analyzing numerous studies, researchers Fuchs and Fuchs (2002) reached an important conclusion. "When teachers use systematic progress monitoring to track their students' progress in reading, mathematics, or spelling, they are better able to identify students in need of additional or different forms of instruction, they design stronger instructional programs, and their students achieve better" (p. 1). Over the past thirty years, other research (Deno, 2003; Fuchs, Deno, & Mirkin, 1984; Good & Jefferson, 1998) has shown that as a result of progress monitoring used by teachers, there is an increase in student learning, in decision making by teachers improves, and in students being more attuned to their individual performance. Just as progress monitoring research advocate that progress monitoring is a reliable and valid predictor of future performance, it seems that monitoring students' growth of the nine traits by the teacher is essential to determine depth of understanding and instructional adjustment. It is essential that students assess their application of the critical thinking traits to develop understanding, improve appropriate usage. and acquire automaticity of trait application. In the Partnership for 21st Century Learning critical thinking series,

Dilley et.al (nd) recommended that critical thinking instruction is most effective when the teacher models dispositions and the appropriate use of thinking during the process rather than in isolation. The group concluded the assessment of the dispositions and thinking skills (when possible) is best measured through performance tasks and real-world scenarios.

With critical thinking traits being recognized as basic to all learning at all levels and in all subject areas, Mentoring Minds identified nine traits that foster high-quality thinkers. Team ThinkUp! is an ideal resource for teachers as they integrate critical thinking and 9 Critical Thinking Traits™ across the K–8 curriculum. Each trait (adapt, collaborate, communicate, create, examine, inquire, link, reflect, strive) contributes to the creation of a thoughtful environment and development of skillful thinking. The responsibility of the teacher is to offer opportunities to introduce, to explicitly teach, and to integrate the nine traits throughout the core curriculum. The traits help students become increasingly aware of thinking and alert to mindful strategies that can be utilized in a variety of settings. As students practice and skillfully apply each trait in the classroom and at home, their actions become more productive when they encounter unknown or challenging situations in the classroom and in the real world.

Distinguished researcher Barak Rosenshine (2012), who has spent the past forty years and beyond studying effective teaching, noted the importance of practice as one of ten research-based principles of instruction presented in an article *Principles of Instruction*. This researcher stated that successful teachers help students process new information or material to enable students to transfer into long-term memory. When teachers carve out time during instruction for guided practice (model with thinking aloud, ask questions, use prompts, provide

scaffolds, discuss, check for understanding, etc.), students appear to experience higher success rates and increased student engagement during individual work than other students without practice time. This indicates that teachers must provide guided practice and sufficient instruction of the thinking traits for students to rephrase, elaborate, summarize, internalize, and successfully apply the nine traits exhibiting independence.

A featured visual or an icon depicts each of the *9 Traits of Critical Thinking™* in Team ThinkUp! Icons offer visual supports for students and signal the trait to call upon. Visuals are effective because they give teachers concrete and tangible items to reference. Visual icons provide support to students on the autism spectrum (Rao and Gagie, 2006), as well as others with and without disabilities. Research found that when picture cues and words are infused into instruction, student participation in general education not only increased, but the visuals were found to be instructional strategies that benefit students with disabilities too (Jameson, McDonnell, Johnson, Riesen, & Polychronis, 2007). Cohen and Demchak (2018) reported several studies that show how visual supports benefit students with or without difficulties by providing information that helps students process tasks, expectations, or information.

The critical thinking traits can be integrated into instruction using any order or combination of traits. By developing the 9 traits in students and integrating the traits into the curriculum, teachers can impact student success in thinking and learning. The identified critical thinking traits are basic to all learning at all levels and in all subject areas. Each trait contributes to the creation of a thoughtful environment that supports the development of skillful thinking. The information surrounding each trait helps teachers as they model, support, and monitor the development of the traits. While a school leader or another staff member may interact and encourage the use of the traits, the responsibility lies with the teacher to plan opportunities to introduce and explicitly teach the nine traits. A goal of Team ThinkUp! is to nurture trait development across the curriculum with every student—in every classroom, at home, and in the community to help students and adults internalize and display all nine traits.

When students are guided to practice better thinking in school and in their daily lives, they will become more successful in cognitive-demanding tasks and learn to value thinking throughout their lives. Practice and skillful application of each trait can result in students' actions becoming more productive and automatic when they encounter unknown or challenging situations in the classroom and in the real world. Learning how to think equips students with the ability to navigate challenging life circumstances. Throughout Team ThinkUp! the teacher is provided ways to cultivate this powerful environment for grade levels K–8. With this resource, teachers can introduce *9 Traits of Critical Thinking™* alongside cross-curricular activities to build a school-wide productive critical thinking climate with students being aware of their growth to become better thinkers.

According to the Organization of Economic Co-operation and Development (2013), many adults in the U.S. lack the literacy skills needed to negotiate work and everyday life. Overall, the literacy rates of American adults are below the international average. Approximately 30 million American adults are unable to read and comprehend a newspaper article, while another 27 million cannot follow map directions due to a lack of literacy skills required to understand and use the documents (Kutner et al., 2007). These limited skills result in higher levels of unemployment and lower wages. The community is impacted by lost taxes, increased demand for

social services, and perhaps low participation at voting time (Jerald, 2009). However, it does appear that American students are skilled at reading literature. The National Center for Education Statistics (2012) report that American fourth-graders are outperformed by Finland's students by significant margins on international assessments of reading for "literary experience" based on the 2011 Progress in International Reading Literacy Study. It is important to note that the performance of fourth graders in the United States do dip behind four other countries due to informational reading. Reportedly teens in the United States appear to use the skills of reflect and evaluate when reading fiction and poetry with only five nations performing better; however, when acquiring and using information from written text, the 2009 PISA reports that the teens are behind 14 other countries. Team ThinkUp! supports using texts and a wider range of strategies for a variety of purposes. Teachers are encouraged to introduce varied forms of written content and additional reading across the curriculum.

America's schools are charged with equipping students with the literacy skills they need to succeed school and in life. Teaching informational texts along with literary texts provides students essential cross-curricular applications in acquiring critical comprehension strategies in subjects with real-world content. Team ThinkUp! is designed to offer teachers quality resources for increasing student performance and improving teacher instruction in building critical thinking skills and traits.

Marzano (2009) stressed the importance of a common language as it provides a framework or a way to talk about instruction at school. Just as educators use a shared language to discuss effective instruction in order to improve student learning, it stands to reason that to converse about critical thinking and its development, a language common to all should also exist. According to Walsh and Sattes, "A language of thinking promotes exactness and precision in expressing cognitive processing" (2011, p. 144). When a shared understanding is developed based on the common language of critical thinking, teachers can engage in deliberate conversations to make real-time adjustments in planning and engaging students in meaningful thinking experiences. By developing this knowledge base, teachers are given opportunities to improve their expertise in thinking and to better understand the kinds of practice opportunities needed to help students grow as independent thinkers. Thus, Team ThinkUp! advocates the development of a common thinking language throughout each unit. Valuing a common language can ripple among the school community, causing all stakeholders (students, teachers, school leaders, parents, and community leaders) to speak and understand the same thinking language.

Developing a seamless approach to integrating thinking traits and skills appears to guide a school to high levels of performance. Currently, Team ThinkUp! is available for K–8. While all resources have the same intent and offer student activity books and teacher instructional guides, the grade level bands (K, 1–6, 6–8) differ somewhat in the organization of the content, type of text, and layout.

Learning to think critically continues to be promoted as one of the most important skills that children need today as well as for the future. To build a foundation for critical thinking, there is agreement among educators and researchers that children need to do more than repeat a list of facts. Children need to experience thinking where they can make sense of information and generate thinking skills at deeper levels. For students to become strong critical thinkers, teachers must not only foster the behavior but model critical thinking themselves.

Epstein (2007, p.1) stated that effective educators engage in intentional teaching that is "planful, thoughtful, and purposeful" and that uses "their knowledge, judgment, and expertise to organize learning experiences." Research supports young children becoming thoughtful problem solvers if they are encouraged to plan and reflect on their actions (Epstein, 2003). Evidence purports that early childhood education recognizes the importance of planning and reflection in its curriculum recommendations (National Association for the Education of Young Children, 2005). Epstein (2008) To promote thinking in children, teachers must themselves be intentional in their practices and diligent about evaluating their effectiveness. Thus, researchers and educators appear to advocate for hands-on experiences that provide an integral foundation for later abstract thinking and the earlier start the better. By nurturing young learners to think, problem-solving skills and the decision-making process are experienced. Taking time to develop critical thinking skills in the early years seems to be a wise action on the part of teachers. Observations indicate students can learn to think from modeling and think-aloud strategies used by the teacher. Engaging children in active learning from conversations to interactive learning experiences that extend thinking is crucial for future success. The overall conclusion about when to begin teaching critical thinking is to include learning opportunities where young children begin to learn to make choices, explore possible solutions, verbalize options, and more. The Mentoring Minds Product Development Team believe that offering a school-wide approach (rather than wait on accidental discovery) and teaching students how to think beginning with the young and advancing to all grades provides a seamless solution for developing all students as critical thinkers.

The intent of the developers is a thinking resource especially created for kindergarten that aligns with resources for the preceding grades and upward. At this level, the nine traits in Team ThinkUp! are presented separately to the students. Throughout each unit, the featured thinking trait is introduced in the context of either a fairy tale, a folktale, or a fable that is expressed in poetic form. This poetic expression becomes a shared reading for early learners through a colorful flipbook. Oral language development is enhanced as students interact with each poem and engage in conversations in response to critical thinking questions. After all traits are introduced and explored, a closing poem is featured that touches upon all nine traits. The flipbook contains teacher directions and viewable pages for the students. The full-color Student Activity Book features a poem and interactive activities that contain literacy, mathematics, science, and home connections that complement each trait along with the closing poem.

In grades 1–6, Team ThinkUp! includes a full-color student activity book, containing one unit for each of the nine critical thinking traits. Texts are used to integrate the thinking traits through the lenses of English Language Arts, Mathematics, and Science. Within the texts, people, animals, events, or literary characters are used to introduce and model each trait. Expected product outcomes include an established context of critical thinking through authentic examples and cross-curricular activities, expansion of student experiences and understanding as they are immersed in critical thinking, student engagement through high-interest activities presented in formats, and the encouragement of students to assess colorful, appealing, and age-appropriate personal application of the critical thinking traits.

Team ThinkUp! (for grade levels 1-6) also includes an accompanying teacher guide that provides

valuable instructional strategies and resources that correspond to each unit in the Student Activity Book, offering a guide for lesson planning. Introductory activities are offered to build background knowledge before beginning the Student Activity Book. Cross-curricular applications (e.g., ELA, Math, Science, Social Studies, Fine Arts, Health/P.E., Technology) of critical thinking traits that move beyond the Student Activity Book are identified. A concluding activity is present for each unit that allows students time to reflect about the impact of the critical thinking traits on learning. Expected product outcomes for teachers include educator support as they establish a culture of critical thinking in the classroom and beyond, provision of teacher-friendly resources for critical thinking that can be implemented with limited preparation and time requirements, allowance for flexible delivery, assisting teachers as they interact with students, monitor student application, and teacher reflection opportunities on individual critical thinking practices, immediate integration of critical thinking traits with required content, and the offer of a seamless integration of the critical thinking traits through content-specific activities that support the core curriculum.

Student success hinges on teacher practice. Rice (2003) states that teacher quality weighs heavily on student achievement. Formative assessment will help teachers make more targeted adjustments and increase responsive adjustments and interventions based on student needs. One important function of formative assessment is to inform instruction. Suggestions are shared to guide teachers in what to look for when observing students as well as what the expectations are for students regarding acquisition of trait development. Offering formative feedback to students from teachers, from peers, and through self-assessment improves quality of thought. According to (Black

et al., 2013) formative assessment contributes to achievement of standards and intervention support. The incorporation of formative assessment is essential because it improves teaching and learning. Several researchers indicate the difference that can be made when formative assessment is embedded into instruction (Darling-Hammond, 2004; Marzano, 2003, 2006; Shepard, 2000; Heritage, 2007). Building and checking for trait development is emphasized throughout the activity guides in Team ThinkUp! Monitoring for growth in trait development is essential so students can keep a watchful eye on progress and make plans to improve trait understanding and application. The same holds true for academics.

Results based on the National Assessment of Educational Progress (NAEP) show that many students are not mastering the skills needed when interacting with texts. While there are reported reading gains, still one-third of tested fourth graders score below the basic level of reading as measured by NAEP. This means they have not achieved mastery of locating relevant information, making basic inferences, identifying details that support interpretations or conclusions (NCES, 2014; NCES, 2013b). Although eighth-graders perform better, one in five still scores below the basic level.

The most powerful way to raise student achievement is through professional learning. More than ever before, students need effective instruction to develop the deeper thinking skills needed for school and later in life. Research shows that teachers need on-the-job support to infuse ideas into daily instructional practices (Joyce and Showers, 2002). The need for professional development to focus on instruction is based on the assumption that the quality of instruction is the key determinant of variation in student achievement (Wenglinsky, 2000; Hattie, 2009). School leaders must understand the role thinking

plays and their responsibilities in making thinking a core element across the curriculum. The Teacher Guide in Team ThinkUp! provides the opportunity to engage teachers in conversations about the use of unit components in preparation and delivery of instruction. Questions about the unit's components, traits, or critical thinking can be used to engage in instructional conversations among teachers and within Professional Learning Communities are featured in the guide to stimulate thinking conversations.

Team ThinkUp! offers resources for grade levels 7 and 8 that presents a full-color student activity book, containing one unit for each of the nine critical thinking traits. Within the texts, people and events are used to introduce and model each trait. This secondary product can be implemented in core and/or elective classes, such as ELA, Science, Math, Social Studies, Fine Arts (Art, Dance, Music, Theatre), Health/P.E., and Technology Applications. Included are activity books for students and instructional guides for teachers. Expected product outcomes include an established context of critical thinking through authentic examples and activities, expansion of student experiences and understanding as they are immersed in critical thinking, student engagement through high-interest activities presented in formats, and the encouragement of students to assess colorful, appealing, and age-appropriate personal application of the critical thinking traits. Team ThinkUp! (for grade levels 7 and 8) also includes an accompanying teacher guide that provides valuable instructional strategies and resources that correspond to each unit in the Student Activity Book, offering a guide for lesson planning. Introductory activities are offered to build background knowledge before beginning the Student Activity Book. A concluding activity is present for each unit that allows students

time to reflect about the impact of the critical thinking traits on learning and develop goals for future development each trait. Expected product outcomes for teachers include educator support for establishing a culture of critical thinking in the classroom and beyond, provision of teacher-friendly resources for implementing critical thinking with limited preparation and time requirements, and allowance for flexible delivery. Still other outcomes pertain to assisting teachers as they interact with students, monitor student application, and reflect on individual critical thinking practices. The remaining product outcomes include immediate integration of critical thinking traits with required content and the presentation of a seamless integration of the critical thinking traits through content-specific activities that support the curriculum through which the nine traits are being implemented.

Research indicates that thinking skills instruction makes a positive difference in the achievement levels of students. Past studies that reflect achievement over time show that learning gains can be accelerated. In verbal learning, research reports that the depth with which students process information has a definite impact on retention (Craik, 1979; Haller, Child, and Walberg, 1988). These results indicate that the teaching of thinking skills can enhance the academic achievement of participating students (Bass and Perkins, 1984; Freseman, 1990; Matthews, 1989; Nickerson, 1984). Higher order thinking and deeper learning occurs when a significant shift towards what Ritchhart (2015) describes as cultures of thinking is established. Zohar and Dori (2003) found that when such a shift was placed on thinking and learning that all students, both high achievers and low achievers made considerable progress in higher order thinking when exposed to processes that were designed to nurture higher order thinking

skills. It appears that when higher order skills are used in the application of knowledge then diverse students grasp a better understanding of content. Observations indicate that teachers design cognitively challenging activities when in thinking-centered environments. According to Tharp et al., 2000, p. 30), cognitively challenging activities should reflect "productive tension" which means they are neither too easy nor difficult. Producing correct answers is not always the goal of such challenging activities, but rather the goal is to lead students to consider alternatives as they think, and problem solve. High expectations for learning are intended to be the result of cognitively challenging activities.

Based on accountability plans requested from the states, it appears that all states and schools will have challenging, yet well-defined standards of achievement and accountability plans, requiring all students to reach mastery of the standards for each content area. To achieve mastery, students must think critically. As students engage in deeper thinking, the type of environment of the school and all classrooms will impact the success levels of students. With skillfully designed teaching tools that offer quick-and-easy access to traits which define thoughtful thinkers as well as access to practical ideas, strategies, and tips, a path is charted to build thinking-centered schools that develop and strengthen thinkers.

The prevailing theme in this document shows critical thinking is undeniably an essential element for preparing all learners to succeed in school and throughout their lives. Students do not enter school and automatically transform into critical thinkers. A thinking environment must be a shared priority that is created throughout the school to facilitate students in learning how to think critically. Classroom teachers need resources that offer support in assisting students and parents in

embracing critical thinking, developing thinking traits, and purposefully cultivating a thinking environment. Understanding how to produce thinkers who take learning to a deeper level is a challenge yet essential to the success of students as productive citizens and future leaders. The Product Development Team at Mentoring Minds created Team ThinkUp! to promote high levels of student and teacher performance by nurturing the development and successful application of 9 Critical Thinking Traits™.

Achievement is ultimately determined and limited by the opportunities students have had to learn. "All students must learn to think no matter the subject area. The federal law Every Student Succeeds Act (ESSA) requires that academic assessments for "math and reading or language arts be administered annually in grades 3–8 and at least once in grades 9–12..." (Mandlawitz, 2016, p.1). The critical issue of accountability will continue with ESSA, with assessments being used to help improve schools and inform instruction. The law allows the state and local levels the opportunity to create systems for accountability, resources, interventions and teacher evaluation systems. The federal requirements of Every Student Succeeds Act mandate that all students participate in the state assessment program. Critical thinking is integrated into assessment items and performance tasks. If we don't explicitly build a thinking environment, how will our students learn to think, much less think at deeper levels?

Critical thinking traits and skills equip students with the abilities to navigate challenging life circumstances, economic changes, and complex political challenges. There are direct implications for educators in elementary and high schools. As educators design instruction, it is imperative to evaluate to determine if curricula and assessment that emphasize authentic real-world problems,

inquiry-based learning, and opportunities for students to apply what they know in meaningful ways are worked into the instructional design (Stobaugh, 2013a; 2013b). This strengthens the need for resources to help the school leader set the tone for establishing a thinking culture that supports the development of critical thinking, resources that teachers need to create thinking classrooms, and resources for students that develop and practice thinking.

Due to their belief (and the literature findings) that thinking is a necessary life skill, the product development team of writers at Mentoring Minds created Team ThinkUp! to introduce, develop, and infuse the traits across the curriculum. This resource emphasizes the traits in context with authentic activities that guide teachers in integrating the traits into content and social interactions with students. The Teacher Guide helps the teacher facilitate trait development and empower students to display critical thinking. The Student Activity book guides students to become increasingly aware of their thinking and the traits they exhibit, as well as more alert to strategies for becoming stronger thinkers. The intent is for

students to practice and skillfully apply each trait, leading to productive and automatic applications when they encounter unknown or challenging situations in the classroom and in the real world.

The need for critical thinking and problem-solving skills in our schools is undeniable by educators. Today, where new knowledge is rapidly accelerating, and information is instantly available, educators acknowledge the importance of students knowing how to exhibit critical thinking traits, how to think critically, and how to evaluate and reach reasonable solutions. Rather than Team ThinkUp! serving as a source for isolated new learnings, it promotes thoughtful engagement with students solving problems and applying knowledge in relevant ways. Rhoda Koenig (2010) supports the higher-level processing found in Team ThinkUp! Additionally, Marzano and Pickering (2011) report that such cognitively challenging tasks intrigue student interest and trigger meaning. Students who display critical thinking and problem-solving skills can interpret and evaluate what they read, see, and hear to effectively make the transition to college or to the workforce and face whatever challenges life might bring.

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