Missouri
DEPARTMENT OF ELEMENTARY & SECONDARY
EDUCATION

Missouri School Improvement Program
Resource and Process Advisory Committee
Expert Feedback Form

Meeting #3

Expert Group Activity #1

Marzano's premise: "If we follow the research, we can enter an era of unprecedented effectiveness for schools – one in which the vast majority of schools can be highly effective in promoting student achievement."

Given ***ALL*** the information that you have heard regarding items that may impact both the Resource and Process standards, what is the relevance of the research on leadership, teaching and learning as we consider the standards and expectations of the MSIP process?

#1: What does the research say regarding how your area of expertise will contribute to improved teaching, leading and learning? What are the implications of these research findings for the MSIP process and resource standards?

Parents/PTA

- "Student Success" (however that is defined) is the ultimate responsibility of the student. Research supports the student's home environment plays a critical role in preparing the student to come to school "ready to learn"
- Specific-Verbage to include in MSIP5:
    - Family Support – social workers & counselors – segregate duties
    - Effective school/community communication plan – incorporating "old" (Parent-Teacher Conf) to new social media/technology (Twitter, Facebook
    - Parent involvement plan (advisory committees – site, district, community) Early Childhood (Parents as Teachers) to Secondary Ed (College & Career counseling for families
    - Community Engagement Plan:
      Missouri Top 10 x 2020 & Vision Missouri both relate that community engagement (stakeholders, parents, PTA, patrons) is essential to a positive school community environment.

Counseling

- Dr. Bragg Stanley (DESE, College & Career Readiness Division) has submitted research showing impact of counseling services on achievement, attendance, & other measures of student performance. If not enough research/data please contact

either him or Dr. Lee Bunch Ex. Director MSCA or Dave Teeter (314) 630-0179 current MSCA President & we will supply any need documentation.
- Ratios of counselor/student in buildings as well as level of implantation of Comprehensive Guidance/Counseling Curriculum has significant impact on those student performance measures.

Teachers

- Time for collaboration protected individual time – comparison of planning time
- Protected plan time – issues PLC, content, vertical teams, Admin meeting
- Class size – strong language about maximums of class size. * see Ann J.
- Value & use teacher input on decisions
    - Teachers have say on p.d.
    - Stakeholders have input on allocation of all P.D. funds.
    - "learning forward.org"
- Working conditions. "New teacher center" Eric Hirsch

Librarians

- Certified school librarians impact student performance – MO – state study – Colorado state Study and others – evidence – Library Research Service – www.lrs.org
- School librarians who are leaders & collaborate with classroom teachers affect student achievement – evidence – research sited @ www.lrs.org
- Summer Reading Programs impact Reading achievement
- School librarian staffing is linked with Reading Performance – again various state studies found www.lrs.org
- There is a positive and statistically significant relationship between advanced reading levels & endorsed librarian staffing (Lance 2010 – research findings)
- Research shows – schools that either lost a librarian or never had one tended to have fewer students scoring advanced in 2011 & to have seen less gains – since 2005 than schools that maintained or gained a librarian

Central Office/Superintendent

- Leadership at the Central Office level is important to student achievement, just as building level administrators and teachers. (Marzano, Waters)
- All of the stakeholders who impact student achievement (administrators, teachers, etc.) need to be adequately supported through the MSIP process and resource standards. We need to look at the state, in the Top 10 in achievement and model the support they provide to teachers, administrators, and other education stakeholders.

Special Education

- Differentiated instruction – all children can learn when given appropriate instruction according to their needs
- Universal Design for Learning – learning & competencies can be demonstrated in many different ways in different modalities
- Co=Teaching – using this model combines the "experts" to provide effective instruction for all students regardless of ability (special ed or not)
- 2009 recom. Stand. #9 #12 #13, #17 maintained – want subindicators under #17 (EC)

- RtI (Response to Intervention) – provides more informed prescriptive instruction to increase student achievement.
- PBS (Positive Behavior Supports) – provides systemic direct instruction to create positive learning environments
- Early Childhood Programs including PAT – students are more Kindergarten ready, more likely to graduate, attend post secondary education, great earning potential, higher employment rate, etc…
- All staff have ownership of all students (all students are general ed students first) with high expectations.
- Implications: Anything we do to help a child with disabilities helps all students

Fine Arts

- The 2010 Missouri Alliance for Arts Education study, "Fine Arts Makes a Difference in Missouri Schools," explored the relationship between student participation in fine arts courses (music, visual art, theatre/drama, and dance) and attendance & graduation rates, disciplinary infractions, and statewide test in language arts and mathematics in the Missouri Assessment Program (MAP).
- Key findings: Attendance Rates – 1% higher attendance in districts with higher levels of students enrolled in fine arts classes compared to districts with lower levels of participation.
- Map Scores – the higher the number of students in grades 6-8 enrolled in fine arts classes, the higher the percentage of students in these grades who scored at the proficient and advanced levels on the Math MAP, the higher the average MATH Map scale score, & the higher the median Math Map score.
- The same held true for grades 6-8 students in Communication Arts and the higher the median score on the Terra Nova
- Graduation Rates: 3.3% difference in the graduation rates of districts with the lower levels of arts participation compared to those with the highest levels.

#2: Based on your discussion from question one, what specific measures (indicators) do you recommend for inclusion in the MSIP 5 Standards and Indicators?		
Recommendation	**Supporting Research**	**Additional Comments**
<u>Counseling</u> - Ratios -Not having non-counseling duties to pull from Full Implementation of CMGC by personnel (Comprehensive Model Guidance/Counseling Curriculum)	 -Already mentioned -Already mentioned	
<u>Teachers</u> -Protected time for instruction -Protected collaboration time -Protected plan time -Class size -Value & use teacher input on P.D. -Working conditions -Teacher involvement of curriculum develop.	 -learningforward.org - Stanford study for international comparison of P.D. "Professional Learning in the Learning Profession: A Status Report on Teacher Development in the U.S. & Abroad" -learningforward.org - Stanford study for international comparison of P.D. "Professional Learning in the Learning Profession: A Status Report on Teacher Development in the U.S. & Abroad" -see Ann Jarrett's email Tenn. STARR study -learningforward.org -New teacher center Eri Hirsh – Teaching & Learning Conditions Survey www.newteachercenter.org/tlcsurvey -Marzano what works in schools. Ch. 3	-PD should be curriculum specific

Recommendation	Supporting Research	Additional Comments
Librarians -Certified school librarian in every school is minimum staffing	-Most recent Research Jan 2012 Keith Curry Lance & Linda Hofschire	-supports-evidence shows impact reading achievement -trend is to reduce/eliminate school librarians and staff libraries part time or with non-certified personnel and this goes against all reported research = major concern – If student achievement matters – then schools need certified school librarians who understand how students learn, how teachers teach, and how resources are used to support students and teacher and impact learning
Central Office/Superintendents -6.7 Professional Development	-It takes a specific amount of learning and implementation time i.e. at least 15 hours before it makes an impact. Leading Forward Research	-PD initiatives need to be narrow in focus and sustained for an amount of time (3-5 years) that research would support in order to see results. This should be based on district/building needs. The PD initiative should be monitored for implementation, through evaluation, frequently both formative and summative.
-6.4 Instructional Resources	-Guaranteed & Viable Curriculum – Marzano, Lezotte	-A rigorous Pre K-12 curriculum should be available for all teachers and students. As well as opportunities for nationally and internationally recognized programs.

Recommendation	Supporting Research	Additional Comments
Special Education -#17 EC -certified/qualified staff -curriculum -age appropriate instructional practices -meets Early Learning Program standards -meeting Title I EC program requirements & standards -measurement of Kindergarten readiness at exit		
Fine Arts -minimum of 60 min. per week in Visual art in K-5 taught by certified art teacher. -minimum of 60 in per week of music instruction in K-5 taught by certified music teacher -Integrate theatre/drama & dance in Music and art classes as well as general classroom instruction. -middle school fine arts requirement of 3,000 minutes per year taught by certified arts specialist.	-MAAE Study, 2010 Studio Thinking, Hetland & Winner, 2009 -Foregeard, 2008; Hyde, 2009; Helmrich, 2010; Rauscher, 2000; Bert, et al 2006; Pallesen, et al 2010; Ho, et al 2003; US National Mathematics Advisory Panel, 2008; Bake, 2011; Catterall, 1998; Neville, 2008; Scott, 1992; SNAAP, 2011; Chesky, et al 1997	-music education prepares students to learn, facilitates student academic achievement and develops the creative capacities for lifelong success Provided Document Links: Music Matters Arts Education Really Does Make A Difference!

-6.7 Prof Dev for FA Teachers collaboration among FA teachers & non arts teachers -Follow 6.8 (LMC) & 6.9 (Gifted) 6.10 Visual and performing arts resources and services are an essential part of the instructional program. -6.10 District-wide FA program developed and is fully implement in every building -The K-12 FA Curriculum is in place and is systematically reviewed & revised. -Art -centered and arts-integration Professional development provided to all teachers, not just FA -Opportunity for collaboration between Fine Arts teacher/classroom (elem.) teacher/non-arts teachers (middle & high school)	-Dr Douglas Reeves: Teach like a band director re: immediate feedback, high expectations frequent assessment	
<u>Career Education</u> -Change above to the following: High quality, fully integrated career education is available to all secondary students. 1. The district has implemented programs of study for each program offered which sequences	- *Ready for Tomorrow: Six Proven Ideas to Graduate and Prepare More Students for College and 21st Century Careers*, SREB, Gene Bottoms, November 2009. **Six Proven Ideas Get More Students Ready for College and 21st Century Careers** • Provide students in every program of study with a rigorous academic core curriculum • Insist on high-quality	

academics and career education content, leading students to attain a postsecondary degree or industry-recognized certificate or credential, or into the workplace. 2. The career education program has a written curriculum for each sequential course with a balance among classroom/laboratory instruction, leadership, and personal development. 3. Written curriculum drives classroom instruction and assessment of technical skill attainment. **4.** The appropriate Career and Technical Student Organization (CTSO) is affiliated with the state and national organization and is an intra-curricular element of the program. 5. A system of data collection and evaluation provides the information necessary for program development and continuous improvement resulting in high student achievement.	career/technical course sequences that blend academic and technical content through challenging, authentic assignments. • Equip all students with 21st-century skills through high-quality career/technical programs. • Expect every student to strive to meet standards in academic and career/technical classrooms. • Guarantee students have the support needed to meet readiness standards for college, career training or both. Connect every student to an adult adviser or mentor who has the time and skills to provide guidance and support. **-** *Pathways to Prosperity,* Harvard Graduate School of Education, February 2011. We need to create a system of career-focused pathways that span the last years of high school and at least one year of post-secondary education or training and lead to an industry-recognized credential - *Reinventing the American High School for the 21st Century,* Association for Career and Technical Education, January 2006. Three recommendations for career and technical education: • Support students in the acquisition of rigorous core knowledge, skills, habits and attitudes needed for success in postsecondary education	

	and the high-skilled workplace; • Engage students in specific career-related learning experiences that equip them to make well-informed decisions about further education and training and employment opportunities; • Prepare student who may choose to enter the workforce directly after high school with levels of skill and knowledge in a particular career area that will be valued in the workplace. - *Looking Inside the Black Box: The Value Added by Career and Technical Student Organizations to Students' High School Experience,* National Research Center for Career and Technical Education, June 2007. Students who participate in CTSOs demonstrate higher levels of academic engagement and motivation, civic engagement, career self-efficacy, and employability skills than other students and the more students participate in CTSO activities, the better the results. - *The Contribution of Career and Technical Student Organizations to the Development and Assessment of Workplace Skills and Knowledge,* Zirkle and Conners, Workforce Education Forum 30, 2003. A study of sophomore CTSO members found that "participation in career and technical student organizations produced a positive	

	contribution to student achievement as measured by student grades in high school. - *FBLA Student Evaluation Study,* SchoolMatch, 2008. In a study of student performance measures, FBLA high school seniors significantly outperformed their non-FBLA counterparts on four performance measures: ACT scores; SAT scores; GPA; and graduation rate. - *Supporting High Quality Career and Technical Education through Federal Policy and State Policy*, American Youth Policy Forum, 2008. Research shows that certain student who take CTE courses perform as well or better than students not in CTE programs, have lower dropout rates, and earn more money in the labor market. - *Section 113, 2A,* 2006. Carl D. Perkins Career and Technical Education Act of 2006. - *Various Programs of Study Research Reports,* National Research Center for Career and Technical Education, 2009 – Ongoing. The National Research Center for Career and Technical Education is conducting several ongoing research studies around the development and implementation of programs of study. Because the research is ongoing, results are preliminary and rely on longitudinal data to measure true impact.	

Gifted:

Research for Standard 7.2
Dr. Robin Lady
Lenae Lazzelle
Gifted Association of Missouri

MSIP Standard 7.2 reads as follows:

7.2 The district identifies gifted/talented students at all grade levels and provides them differentiated instruction suitable for their levels of intellectual and social maturity.
1. Written procedures are in place to systematically identify and serve gifted/talented students in all grades.
2. Gifted education services are designed to provide identified students with instructional objectives and strategies that are appropriate to their identified needs and are provided on a continuing basis as these students progress through the grades.
3. A written curriculum for the state-assisted gifted education program has been designed and implemented. This curriculum is aligned to the Show-Me Standards, is intellectually and affectively engaging, and is taught in a meaningful context.

A streamlined version of the standard could look like:

7.2 Each district identifies and serves gifted and talented students at all grade levels.
1. Each district has written identification and service procedures and a written curriculum that follows the Program Procedures for Gifted Programs.
2. Gifted education services are designed to provide identified students with instructional objectives and strategies that are appropriate to their identified needs and are provided on a continuing basis as these students progress through the grades.

Rationale for keeping this standard:

Top 10 by 20

- One of the main goals, according to the Top 10 by 20 Proposal by the Missouri Department of Elementary and Secondary Education, is higher performance standards (raising the bar). MSIP Standard 7.2 provides the foundation for higher performance of our gifted students. Taking Standard 7.2 out of MSIP will not help Missouri's gifted students or Missouri reach the top 10 by 20.

Statistics

- According to the National Association for Gifted Children, 2009, "The U.S. is largely neglecting the estimated 3 million academically gifted and talented students who represent diverse experience, skills, ethnicity, and cultural and economic backgrounds. All of them require a responsive and challenging educational system if they are to achieve to their highest potential**."**
- According to the 2010-2011 State of the States in Gifted Education by CSDPG and NAGCD, 31 states have a mandate related to gifted and talented education for identification, services, or both. Missouri does not have a mandate and without standard 7.2, the state will have nothing related to educating an identifiable group of Missouri students. If our goal is to be in the top 10 by 20, we need to ensure that our brightest students, our gifted students, are being provided the education they need. 23 states have allocated funding for gifted education. Missouri had a categorical for gifted until 2005-2006. Now gifted funds are part of a district's general fund. Standard 7.2 will help ensure that districts use these funds which are still there for gifted education purposes.

Lack of federal support:

- According to the United States Department of Education, "For gifted learners, all program and service decisions are made at the state and local levels". As the federal government has avoided involvement in gifted education, there is wide variability between states, and in many cases, and even wider unevenness between districts in the same state (NAGC, 2008). Below you will see what 4 top achieving states are doing for gifted education.

A look at some neighboring high achieving states, Kansas, Iowa and Arkansas:

- Kansas has developed mandated and specific regulations to ensure gifted students receive the programs they need to excel, while maintaining exceptionally high yearly progress scores on the Kansas Statewide Assessments. According to the U.S. Department of Education, in 2008, 88% of the schools in Kansas met adequate yearly progress. This percentage is higher than the national average of 70%. The National Association for Educational Progress (NAEP) also reported higher than average test scores in math and reading for both the fourth and eighth grades. (US Department of Education, 2008). Again, we have no federal or state mandate in Missouri. Standard 7.2 is the only standard we have that ensures school districts will provide the education gifted students need in order to reach their potential and beyond.
- Iowa is another state that has been able to provide a mandated and funded gifted education program despite the pressure of NCLB and AYP. In fact, according to the US DOE Educational Progress Report, in 2008, 93.4% of Iowa schools made AYP, one of the highest percentages in the nation. Additionally, Iowa's fourth and eighth grade

students scored above the national average in reading and mathematics achievement. Like Kansas, Iowa has been able to develop and maintain a structured and mandated gifted education program while still meeting NCLB and AYP.

- Over the last decade, Arkansas has been a game changer in education. They have raised the bar for all programs, particularly gifted programs. Since the passing of the 1984 Standards for Accreditation of Arkansas Public Schools Act, Arkansas has mandated that all public school districts must provide a gifted education program (Arkansas Department of Education). In a recent education analysis published by Education Week, Arkansas ranked 5th overall, they tied for 1st with Maryland in the "Transitions and Alignment" category, and placed 2nd in the "Teaching Profession" category. Other categories scored were "School Finance", "K-12 Achievement", and "Chance for Success". They've placed in the top 10 overall in this analysis for the last four years

Why gifted students need gifted education programs: (summary of paralleling points made from both case study as well as larger data base studies, nagc.org)

- The needs of gifted students are generally not met in American classrooms where the focus is most often on struggling learners and where most classroom teachers have not had the training necessary to meet the needs of gifted and students (Archambault, et al, 1993; Moon, Tomlinson, & Callahan, 1995; Reis, et al, 2004; Reis & Purcell, 1993; Westberg, et al, 1993).
- Grouping gifted students together for instruction increases achievement for gifted students (Gentry & Owen, 1999; Kulik, 1992; Rogers, 1991; Tieso, 2002).
- The use of enrichment and curriculum enhancement results in higher achievement for gifted and talented learners as well as other students (Field, nd; Gavin, et al, 2007; Gentry & Owen, 1999; Kulik, 1992; Reis, et al, 2007; Gubbins, et al, 2007; Rogers, 1991; Tieso, 2002).
- Gifted education programs and strategies are effective at serving gifted and high-ability students in a variety of educational settings and from diverse ethnic and socioeconomic populations. Gifted education pedagogy can also reverse underachievement in these students (Baum, 1988; Baum, Hébert, & Renzulli, 1999; Colangelo, Assouline & Gross, 2004; Gavin, et al, 2007; Hébert, & Reis, 1999; Little, Feng, VanTassel-Baska, Rogers, Avery, 2007; Reis, & Diaz, 1999; Reis, et al, 2007).
- Gifted education programs and strategies benefit gifted and talented students longitudinally, helping students increase aspirations for college and careers, determine post-secondary and career plans, develop creativity and motivation that is applied to later work, and achieving more advanced degrees (Colangelo, Assouline & Gross, 2004; Delcourt, 1993; Hébert, 1993; Taylor, 1992; Lubinski, et al, 2001).

Research That Supports the Need for and Benefits of Gifted Education
The National Association for Gifted Children

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March 2, 2008

Separate studies conducted during the last few decades have demonstrated both the need for and the benefits of gifted education programs. Gifted program effectiveness has been documented in schools with widely differing socioeconomic levels and program organization patterns and the effectiveness of these programs has been documented longitudinally with both case study as well as larger data base studies. Of special interest are the documented benefits that occur for all children when gifted education strategies and programs are extended to other students, as well.

This research on gifted education and gifted education pedagogy supports the following:

1. **The needs of gifted students are generally not met in American classrooms where the focus is most often on struggling learners and where most classroom teachers have not had the training necessary to meet the needs of gifted and students** (Archambault, et al, 1993; Moon, Tomlinson, & Callahan, 1995; Reis, et al, 2004; Reis & Purcell, 1993; Westberg, et al, 1993).

2. **Grouping gifted students together for instruction increases achievement for gifted students, and in some cases, also for students who are achieving at average and below average levels** (Gentry & Owen, 1999; Kulik, 1992; Rogers, 1991; Tieso, 2002).

3. **The use of acceleration results in higher achievement for gifted and talented learners** (Kulik, 1992; Colangelo, Assouline & Gross, 2004; Rogers, 1991).

4. **The use of enrichment and curriculum enhancement results in higher achievement for gifted and talented learners as well as other students** (Field, nd; Gavin, et al, 2007; Gentry & Owen, 1999; Kulik, 1992; Reis, et al, 2007; Gubbins, et al, 2007; Rogers, 1991; Tieso, 2002),

5. **Classroom teachers can learn to differentiate curriculum and instruction in their regular classroom situations and to extend gifted education strategies and pedagogy to all content areas (**Baum, 1988; Colangelo, Assouline & Gross, 2004; Field, nd; Gavin, et al, 2007; Gentry & Owen, 1999; Little, Feng, VanTassel-Baska, Rogers, Avery, 2007; Reis, Gentry, & Maxfield, 1998; Reis, et al, 2007; Tieso, 2002; Reis, Westberg, Kulikowich, & Purcell, 1998).

6. **Gifted education programs and strategies are effective at serving gifted and high-ability students in a variety of educational settings and from diverse ethnic and socioeconomic populations. Gifted education pedagogy can also reverse underachievement in these students** (Baum, 1988; Baum, Hébert, & Renzulli, 1999; Colangelo, Assouline & Gross, 2004; Gavin, et al, 2007; Hébert, & Reis, 1999; Little, Feng, VanTassel-Baska, Rogers, Avery, 2007; Reis, & Diaz, 1999; Reis, et al, 2007).

7. **The curriculum and pedagogy of gifted programs can be extended to a variety of content areas resulting in higher achievement for both gifted, average, and some enrichment pedagogy can benefit struggling and special needs students when implemented in a wide variety of settings** (Baum, 1988; Kulik, 1992; Field, G.B., nd; Gentry, 1999; Gavin, et al, 2007; Reis, et al, 2003; Reis, et al, 2007; Little, Feng,, VanTassel-Baska, Rogers, Avery, 2007; VanTassel-Baska,, Zuo, Avery, & Little, 2002).

8. **Some gifted students with learning disabilities who are not identified experience emotional difficulties and seek counseling. High percentages of gifted students do underachieve, but this underachievement can be reversed. Some gifted students do drop out of high school.** (Baum, 1988; Baum, Hébert, & Renzulli, 1999; Hébert, & Reis, 1999; Reis, Neu, & McGuire, 1997; Renzulli & Park, 2000).

9. **Gifted education programs and strategies benefit gifted and talented students longitudinally,** helping students increase aspirations for college and careers, determine post-secondary and career plans, develop creativity and motivation that is applied to later work, and achieving more advanced degrees (Colangelo, Assouline & Gross, 2004; Delcourt, 1993; Hébert, 1993; Taylor, 1992; Lubinski, et al, 2001).

The research reviewed in this report supports that:

1. Gifted and talented students and those with high abilities need gifted education programs that will challenge them in regular classroom settings and enrichment and accelerated programs to enable them to make continuous progress in school.

2. The lack of teacher training and professional development in gifted education for classroom teachers will result in fewer challenges, less differentiation, and lower achievement for gifted and talented students.

3. Longitudinal research demonstrates the effectiveness of gifted education programs and curriculum in raising student achievement, as well as helping students to develop interests, creativity, and productivity, and career goals.

4. Gifted education curriculum, services, and programs often benefits other students in addition to identified gifted students, including those who are culturally diverse, poor, or with special needs.

5. Teachers can learn how to differentiate and compact curriculum to provide more challenge to all students, when they have the professional development, time, and support to learn how to effectively implement these skills and strategies.

6. Gifted students do underachieve and drop out of school, but those who do can reverse their underachievement and stay in school when provided with challenging enriched learning opportunities in areas of interest.

Research Studies

Author & Date	Title of Study	Sample	Major Results and Findings
The Needs of Gifted and Talented Students Are Generally Not Met in American Classrooms.			
Archambault, Westberg, Brown, Hallmark, Emmons, & Zhang (1993)	The Classroom Practices Survey	*N*=7300 randomly selected 3rd and 4th grade teachers	Sixty-one percent of approximately 7300 randomly selected third and fourth grade teachers in public and private schools in the United States reported that they had **never** had any training in teaching gifted students. **The major finding of this study is that classroom teachers make only minor modifications on a very irregular basis in the regular curriculum to meet the needs of gifted students**. This result was consistent for all types of schools sampled and for classrooms in various parts of the country and for various types of communities.
Westberg, Archambault, Dobyns, & Salvin (1993)	Classroom Practices Observational Study	*N*=46 teachers *N*=96 students E	Systematic observations conducted in 46 third or fourth grade classrooms with two students, one high ability student and one average ability student, found that little differentiation in the instructional and curricular practices, including grouping arrangements and verbal interactions, for gifted students in the regular classroom. In all content areas in 92 observation days, gifted students rarely received instruction in homogeneous groups (only 21% of the time), and targeted **gifted students experienced no instructional or curricular differentiation in 84% of the instructional activities in which they participated.**
Reis, & Purcell (1993) Reis, Westberg, Kulikowich & Purcell (1998)	An analysis of content elimination and strategies used by elementary classroom teachers in the curriculum compacting process.	*N*=46 3rd - 4th grade classroom teachers; *N*=150 students; random assignment E	The use of curriculum compacting was examined to modify the curriculum and eliminate previously mastered work for high ability/gifted students. **When classroom teachers eliminated between 40-50% of the previously mastered regular curriculum for high ability students, no differences were found between students whose work was compacted and students who did *all* the work in reading, math computation, social studies and spelling.** Almost all classroom teachers learned to use compacting, but needed coaching and help to substitute appropriately challenging options.
Reis, Gubbins, Briggs, Schreber, Richards, Jacobs, Eckert, & Renzulli (2004)	Reading instruction for talented readers: Case studies documenting few opportunities for continuous progress	*N*=12 teachers; *N*=350 students E, M	Research was conducted in 12 different third and seventh grade reading classrooms in both urban and suburban school districts over a 9-month period. **Results indicated that little purposeful or meaningful differentiated reading instruction was provided for talented readers** in any of the classrooms**.** Above-grade level books were seldom available for these students in their classrooms, and they were not often encouraged to select more challenging books from the school library. Talented readers seldom encountered challenging reading material during regular classroom instruction. Even less advanced content and instruction was made available for urban students than for suburban.

Moon, Tomlinson, & Callahan (1995)	Academic diversity in the middle school: Results of a national survey of middle school administrators and teachers	*N= 449 Teachers (61 % response rate); N= 500 Principals (25 % response rate)*	**Teachers and principals admitted that academically diverse populations receive very little, if any, targeted attention in their schools.** Teachers report the use of little differentiation for gifted middle school students. Both principals and teachers hold beliefs that may deny challenge to advanced middle school students, as the overwhelming majority believe that these students are more social than academic. Half of the principals and teachers believe that middle school learners are in a plateau learning period when little new learning takes place—a theory which supports the idea that basic skills instruction, low level thinking, and small assignments are appropriate.
Robinson (1991)	Cooperative learning and the academically talented students	*Research Synthesis*	**Cooperative learning opportunities do not usually challenge gifted and talented students** and should not be substituted for specialized programs and services for academically talented students. A lack of attention to the needs of gifted students may result when cooperative learning is used for this population, who often require more advanced content and faster pacing.
Hébert & Reis (1999) Reis & Diaz (1999)	Case Studies of Talented Students Who Achieve and Underachieve in an Urban High School	*N=35 high school students* *S*	**Half of the 35 students who participated in this longitudinal study conducted in an urban high school were underachieving in school**. Some of the high achieving students also experienced periods of underachievement in school. Talented students who achieve in school acknowledged the importance of being grouped together in honors and advanced classes for academically talented students. Underachievement for the other students began in elementary school when they were not provided with appropriate levels of challenge and never learned to work.
Renzulli & Park (2000)	Gifted Dropouts: The Who and the Why	*N=12, 625 high school students* *S* *National Education Longitudinal Study (NELS: 1988)*	**Approximately 5 % of a large, national sample of gifted students dropped out of high school.** Gifted students left school because they were failing school, didn't like school, got a job, or were pregnant, although there are many other related reasons. Many gifted students who dropped out of school participated less in extracurricular activities. Many gifted students who dropped out of school were from low SES families and racial minority groups, and had parents with low levels of education.
Benefits of Gifted Programs for Gifted Students with LD and Special Needs			
Baum (1988)	An enrichment program for gifted learning disabled students	*N*=7 E	Gifted program participants who were both gifted and learning disabled and had the opportunity to participate in advanced projects **improved gifted/learning disabled students' behavior, self-regulation and self-esteem.**
Baum, Hébert, & Renzulli (1999)	Students who underachieve	*N*=17 E, M	When given gifted programming options (self-selected independent study with a mentor), **82% of gifted underachieving students reversed their underachievement** when they had the opportunities for strength-based gifted programming.
Reis, Schader, Milne, & Stephens (2003)	Music & minds: Using a talent development approach for young adults with Williams syndrome	*N*=16 S	**The use of participants' interests and the opportunity to participate in advanced training in music was found to significantly increase achievement in math,** enhance all participants' understanding of mathematics and to provide opportunities for the further development of their interests and abilities, especially their potential in music.

Longitudinal Benefits Of Gifted Programs			
Hébert (1993)	Reflections at graduation: The long-term impact of elementary school experiences in creative productivity	*N*=9 S	**Gifted programs had a positive effect on subsequent interests of students affect post-secondary plans;** early advanced project work serves as important training for later productivity; non-intellectual characteristics with students remain consistent over time.
Lubinski, Webb, Morelock, & Benbow (2001)	Top 1 in 10,000: A 10-Year Follow-up of the Profoundly Gifted	*N*=320 students PS	**Follow-up studies found that 320 gifted students identified as adolescents pursued doctoral degrees at over 50X the base rate expectations**. The base rate expectation for the general population is 1%--1 in 100.
Westberg (1999)	A longitudinal study of students who participated in a program based on the Enrichment Triad Model in 1981-1984	*N*=15 E, S	**Students maintained interests and were still involved in both interests and creative productive work after they finished college and graduate school.**
Delcourt (1993)	Creative productivity among secondary school students: Combining energy, interest, and imagination.	*N*=18 S	Benefits of gifted programs indicate that students maintained interests over time and were still involved in creative productive work. **Students who had participated in gifted programs, maintained interests and career aspirations in college.** Students' gifts and talents could be predicted by their elementary school creative/productive behaviors.
Taylor (1992)	The effects of the Secondary Enrichment Triad Model on the career development of vocational-technical school students	*N*=60 S	Students' involvement in gifted programs in high school enabled them to explore potential career interests and allow students to see themselves in the role of practicing professionals and visualize a different sense of self. **Students had increased post-secondary education plans (from attending 2.6 years to attending 4.0 years).**
Moon, Feldhusen, & Dillon (1994)	Long-Term Effects of an Enrichment Program Based on the Purdue Three-Stage Model	*N*=23 students *N*=22 parents E	This retrospective study investigated the effects of an elementary pull-out program gifted program based on the Purdue Three-Stage Model. **Students and their families indicated the program had a long-term positive impact on the cognitive, affective, and social development of most participating students.**
Lubinski, Benbow,Webb, & Bleske-Rechek (2006)	Tracking Exceptional Human Capital Over Two Decades	Participants: 286 males, 94 females	Talent-search participants scoring in the top .01% on cognitive-ability measures were identified before age 13 and tracked over 20 years. Their creative, occupational, and life accomplishments are compared with those of graduate students (299 males, 287 females) enrolled in top-ranked U.S. mathematics, engineering, and physical science programs in 1992 and tracked over 10 years. By **their mid-30s, the two groups achieved comparable and exceptional success (e.g., securing top tenure-track positions) and reported high and commensurate career and life satisfaction.**
Park, Lubinski, & Benbow (2007)	Contrasting Intellectual Patterns Predict Creativity in the Arts and Sciences: Tracking Intellectually Precocious Youth Over 25 Years	*N*=2409 PS	A sample of 2,409 intellectually talented adolescents (top 1%) who were assessed on the SAT by age 13 was tracked longitudinally for more than 25 years. **Their creative accomplishments, with particular emphasis on literary achievement and scientific-technical innovation, were examined and results showed that distinct ability patterns identified by age 13** portend contrasting forms of creative expression by middle age.

Student Achievement Increases/Gains Using Gifted Education Curriculum and/or Grouping Strategies			
Reis, Westberg, Kulikowich, & Purcell (1998)	Curriculum compacting and achievement test scores: What does the research say?	*N*=336 E, M	**Teachers using curriculum compacting for gifted students could eliminate 40%-50% of regular curriculum for gifted students and produced achievement scores** that were either the same as a control group or higher math and science, regardless of what they did instead (independent study in a different content area).
Reis et al. (2007)	The Schoolwide Enrichment Model in Reading	*N*=1,500 E, M	All students, including gifted students, were randomly assigned to the SEM-R intervention or to continue with the regular reading program as control students. **Those who participated in the enriched and accelerated SEM-R program had significantly higher scores in reading fluency and attitudes toward reading than students in the control group, who did not participate.** Students in the SEM-R treatment group scored statistically significantly higher than those in the control group in both oral reading fluency and comprehension, as well as attitudes toward reading.
Gentry & Owen (1999)	Promoting Student Achievement and Exemplary Classroom Practices Through Cluster Grouping: A Research-Based Alternative to Heterogeneous Elementary Classrooms	*N*=226 E	**Students at all achievement levels (high, medium and low) benefited from cluster grouping and other forms of instructional grouping accompanied by differentiated instruction and content.** Students who were in cluster groups scored significantly higher than students who did More students were identified as high achieving during the three years that cluster grouping was used in the school.
Kulik (1992)	An analysis of the research on ability grouping: Historical and contemporary perspectives	Research Synthesis	Achievement is increased when gifted and talented students are grouped together for enriched or accelerated learning. Ability grouping without curricular acceleration or enrichment produces little or no differences in student achievement. **Bright, average, and struggling students all benefit from being grouped with others in their ability/instructional groups when the curriculum is adjusted to the aptitude levels of the group**. When gifted students are grouped together and receive advanced enrichment or acceleration, they benefit the most because they outperform control group students who are not grouped and do not receive enrichment or acceleration by five months to a full year on achievement tests.
Rogers (1991)	The Relationship of Grouping Practices to the Education of the Gifted and Talented Learner	Research Syntheses	**Grouping gifted and talented students for instruction improves their achievement**. Full-time ability/instructional grouping produces substantial academic gains in these students. Pullout enrichment grouping options produce substantial academic gains in general achievement, critical thinking, and creativity. Within-class grouping and regrouping for specific instruction options produce substantial academic gains provided the instruction is differentiated. Cross-grade grouping produces substantial academic gains. Several forms of acceleration also produced substantial academic effects. Cluster grouping produces substantial academic effects

Field (2007)	An experimental study using Renzulli Learning to investigate reading fluency and comprehension as well as social studies achievement	N=383 E, M	**After 16 weeks, students who participated in enrichment and differentiated programs using Renzulli Learning for 2-3 hours each week demonstrated significantly higher growth in reading comprehension than control group students who did not participate in the program.** Students who participated in Renzulli Learning demonstrated significantly higher growth in oral reading fluency and in social studies achievement than those students who did not participate.
Colangelo, Assouline, & Gross (2004)	Benefits of various forms of acceleration	Research Syntheses	**The use of many different types of acceleration practices results in higher achievement for gifted and talented learners.** Students who are accelerated tend to be more ambitious, and they earn graduate degrees at higher rates than other students. Interviewed years later, an overwhelming majority of accelerated students say that acceleration was an excellent experience for them. Accelerated students feel academically challenged and socially accepted, and they do not fall prey to the boredom, as do so many highly capable students who are forced to follow the curriculum for their age-peers.
Gubbins, Housand, Oliver, Schader, & De Wet (2007)	Unclogging the mathematics pipeline through access to algebraic understanding	N=5 teachers N=73 students M	Elementary grade students identified for an after-school program in algebra using grade 8, norm-referenced achievement and algebra aptitude tests; **the 30 hour intervention yielded significant pre/post achievement results in problem solving and data interpretation (17-point gain), and algebra tests.**
Gavin et al. (2007) Gavin et al (in preparation)	Math achievement was investigated using Project M3: Mentoring Mathematical Minds curriculum units for mathematically talented students	N=41 teachers N=800 students E	**Challenging math curriculum resulted in significant gains in achievement in math concepts, computation, and problem solving each year over a 3-year period for talented math students in grades 3, 4, and 5.** Students using the curriculum outperformed a comparison group of students of like ability from the same schools. Significant gains were found on challenging open-ended problems adapted from international and national assessments in favor of students using the project m3 curriculum over the comparison group. Students receiving the advanced math achieved significant gains in all mathematical concepts across grade levels.
Tieso (2002)	The Effects of Grouping and Curricular Practices on Intermediate Students' Math Achievement	N= 31 teachers N=645 students E, M	**Results indicated significant differences on math achievement for treatment group students (who were grouped for an enriched math lesson and exposed to an enhanced unit) when compared to the comparison groups.** Further, results indicated significant differences favoring the group that received a modified and differentiated curriculum in a grouped class.
Reis et al. (1997)	Talents in Two Places: Case Studies of High Ability Students	N=12 currently enrolled college or university students PS	Gifted students with learning disabilities in this study encountered many negative experiences in school, often failed to be identified as either gifted or learning disabled, and **half had psychological problems that required professional help and support in subsequent years.**
Little, Feng,VanTassel-Baska, Rogers, & Avery (2007)	A Study of Curriculum Effectiveness in Social Studies	N=1,200 (Treatment - 941 Comparison – 251)	A quasi-experimental study examined the effects on student performance of a Javits-funded curriculum designed to respond to the needs of high-ability students in elementary and middle school social studies. **Results demonstrate significant differences between treatment and comparison groups in the area of content learning, favoring the treatment group**; but no significant differences are found for the small sub-sample of gifted students.

VanTassel-Baska, Bass, Ries, Poland, & Avery (1998)	A National Pilot Study of Science Curriculum Effectiveness for High Ability Students.	N=1,471 E	**Results indicate small but significant gains for students using a unit on the dimension of integrated science process skills when compared to equally able students not using the units.**
VanTassel-Baska, Zuo, Avery, & Little (2002)	Gifted Students' Learning Using the Integrated Curriculum Model (Icm): Impacts and Perceptions of the William and Mary Language Arts and Science Curriculum	N=2,189 E	**Findings suggest that gifted student learning at grades 3 to 5 was enhanced at significant and important levels in language arts critical reading and persuasive writing and scientific research design skills**, through the use of the curriculum across individual academic years.
Vaughn, Feldhusen, & Asher (1991)	Meta-Analyses and Review of Research on Pull-Out Programs in Gifted Education	Research synthesis	The purpose of this research was to evaluate the effectiveness of pull-out programs in gifted education. Nine experimental studies were located that dealt with pull-out programs for gifted students. The variables of self-concept, achievement, critical thinking, and creativity were quantified via meta-analysis. **The results indicate that pull-out models in gifted education have significant positive effects for the variables of achievement, critical thinking, and creativity**

*P=Primary grades, K-2; E=Elementary grades, 3-5; M=Middle grades, 6-8; S, H=Secondary or High School grades, 9-12. PS = Post secondary grades.

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PE/Health:

5 CSR 50-345.105
Missouri School Improvement Program - 5

Resource Standards Crosswalk – 4th Cycle MSIP to MSIP 5

(Draft 1/9/2012)

4th Cycle MSIP	Proposed Resource Standards 2009	Notes/Supporting Research/Successful Implementation/Recommendations MSIP 5
Resource Standards		Please utilize this column to provide recommendations for additions, deletions or changes to the standard. Proposed changes ***must*** be supported by research and where appropriate by identifying schools or school districts successfully implementing the proposed changes.
Programs of Studies		
Standard 1.1 **Elementary (typically self-contained) - Each elementary student receives regular instruction in reading, language arts, mathematics, science, social studies, comprehensive health, art, music, and physical education. In K-8 elementary schools, students will have access to a total of four exploratory classes.** 1. Each elementary student will receive regular instruction in reading, language arts, mathematics, science, social studies, comprehensive health (Including tobacco, alcohol and other drug prevention; medically accurate HIV/AIDS and STI prevention education; nutrition; physical activity; injury prevention and safety; anti-bullying; and violence prevention), and career awareness education. Instruction in each of the core areas will reflect the Show-Me Standards.	~~**Standard 1.1**~~**(28) Elementary (typically self-contained) - Each elementary student receives regular instruction in reading, language arts, mathematics, science, social studies, comprehensive health, art, music, and physical education. In K-8 elementary schools, students will have access to a total of four exploratory classes. (Laura)** 1. Each elementary student will receive regular instruction in reading, language arts, mathematics, science, social studies, comprehensive health (Including tobacco, alcohol and other drug prevention; medically accurate HIV/AIDS and STI prevention education; nutrition; physical activity; injury prevention and safety; anti-bullying; and violence prevention), and career awareness education. Instruction in each of the core areas will reflect the Show-Me Standards. 2. Each elementary student will receive instruction in art, music, and physical education for a minimum of 50	28.1-Each elementary student will receive regular planned, sequential instruction in comprehensive school health education (Including ALL 10 components of Comprehensive School Health Education: personal health family health, consumer health, community health, environmental health, mental and emotional health, safety, nutrition, substance abuse prevention, disease prevention) designed to motivate and assist students to maintain and improve their health, prevent disease, and reduce health-related risk behaviors. Instruction will reflect the National Health Education Standards and the Show-Me Standards. {Support/Evidence file 28.1} 28.2. Each elementary student will receive instruction in comprehensive school health education at a minimum: Pre-K to grade 2 = 40 hrs/yr; grades 3-12 = 80 hrs/yr .as a Core Academic subject. These classes shall be taught by a teache certified in Health and Physical Education. {Support/Evidence file 28.2}

4th Cycle MSIP	Proposed Resource Standards 2009	Notes/Supporting Research/Successful Implementation/Recommendations MSIP 5
2. Each elementary student will receive instruction in art, music, and physical education for a minimum of 50 minutes in each area each week (25 minutes in each area for half-day kindergarten classes). These classes shall be taught by teachers certificated in these fields. 3. If the district is a K-7 or K-8 elementary district, the following must also be addressed: a. Beginning no later than seventh grade, regular instruction in the United States and Missouri Constitutions, and American History and Institutions will be provided (as required by Section 170.011, RSMo). b. Students in grades 7-8 will have access to a total of four exploratory classes (e.g., speech, agriculture, family and consumer sciences, industrial technology, foreign language, computer literacy, developmental reading). Each class is taught for a minimum of 1,200 minutes each year.	minutes in each area each week (25 minutes in each area for half-day kindergarten classes). These classes shall be taught by teachers certificated in these fields. 3. If the district is a K-7 or K-8 elementary district, the following must also be addressed: a. Beginning no later than seventh grade, regular instruction in the United States and Missouri Constitutions, and American History and Institutions will be provided (as required by Section 170.011, RSMo). b. Students in grades 7-8 will have access to a total of four exploratory classes (e.g., speech, agriculture, family and consumer sciences, industrial technology, foreign language, computer literacy, developmental reading). Each class is taught for a minimum of 1,200 minutes each year.	Support Evidence: National Health Standards Alliance for Healthier Generation, Healthy Schools 28.2. Each elementary student will receive ideally the recommended 150 minutes/week of physical education instruction for quality programming and what the minimal acceptable would be to be able to instill the knowledge, skills, and dispositions to attain the goals of the program. These classes shall be taught by a teacher certified in Physical Education and Health. Support /Evidence: **National Association for Sport and Physical Education recommendations 150 minutes /week** **Alliance for a Healthier Generation, Healthy Schools Program Framework:** **Gold Level – 150 minutes/week** **Silver Level – 90 minutes/week** **Bronze Level – 60 minutes/week** Healthier US School Challenge – Endorsed by DESE Gold Award of Distinction – A minimum average of 150 minutes of Physical Education per week **Gold – A minimum average of 90 minutes of Physical Education /week**
Standard 1.2 **Junior High/Middle School (typically departmentalized) - Each junior high/middle school student will receive regular instruction in language arts, mathematics, science, social studies, career education, health, and physical education and will have access to art and music plus four exploratory classes. Students in grades 7-8 will have regular instruction in United States and Missouri Constitutions and American History and Institutions.**	~~Standard 1.2~~**(29)Junior High/Middle School (typically departmentalized) - Each junior high/middle school student will receive regular instruction in language arts, mathematics, science, social studies, career education, health, and physical education and will have access to art and music plus four exploratory classes. Students in grades 7-8 will have regular instruction in United States and Missouri Constitutions and American History and Institutions.** 1. Language arts, mathematics, science, and social studies	29.2Each junior high/middle school student will receive regular planned, sequential instruction in comprehensive school health education (Including ALL 10 components of Comprehensive School Health Education: personal health , family health, consumer health, community health, environmental health, mental health, safety, nutrition, substance abuse prevention, disease prevention) designed to motivate and assist students to maintain and improve their health, prevent disease, and reduce health-related risk behaviors. Instruction will reflect the National Health Education Standards and the Show-Me Standards as a Core Academic subject. These classes shall be taught by a teacher certified in Health and Physical

4th Cycle MSIP	Proposed Resource Standards 2009	Notes/Supporting Research/Successful Implementation/Recommendations MSIP 5
1. Language arts, mathematics, science, and social studies are scheduled and taught to all students for at least 900 minutes each week in the aggregate (or 1,800 minutes every two weeks). 2. Physical education is scheduled and taught to all students for a minimum of 3,000 minutes each year and health (including tobacco, alcohol and other drug prevention; medically accurate HIV/AIDS and STI prevention education; nutrition; physical activity; injury prevention and safety; bullying and violence prevention) and safety education is scheduled and taught to all students for a minimum of 1,500 minutes each year. 3. Art and music are scheduled and taught so that all students have access to each for a minimum of 1,500 minutes each year. 4. Students in grades 7-8 will have access to a total of four exploratory classes (e.g., speech, agriculture, family and consumer sciences, industrial technology, foreign language, computer literacy, developmental reading). Each class is taught for a minimum of 1,500 minutes each year. 5. Beginning no later than seventh grade, regular instruction in the United States and Missouri Constitutions, and American History and Institutions will be provided (as required by Section 170.011, RSMo). 6. Beginning no later than eighth grade, instruction in algebraic concepts and logic will be available to all students.	are scheduled and taught to all students for at least 900 minutes each week in the aggregate (or 1,800 minutes every two weeks). 2. Physical education is scheduled and taught to all students for a minimum of 3,000 minutes each year and health (including tobacco, alcohol and other drug prevention; medically accurate HIV/AIDS and STI prevention education; nutrition; physical activity; injury prevention and safety; bullying and violence prevention) and safety education is scheduled and taught to all students for a minimum of 1,500 minutes each year. 3. Art and music are scheduled and taught so that all students have access to each for a minimum of 1,500 minutes each year. 4. Students in grades 7-8 will have access to a total of four exploratory classes (e.g., speech, agriculture, family and consumer sciences, industrial technology, foreign language, computer literacy, developmental reading) Each class is taught for a minimum of 1,500 minutes each year. 5. Beginning no later than seventh grade, regular instruction in the United States and Missouri Constitutions, and American History and Institutions will be provided (as required by Section 170.011, RSMo). 6. Beginning no later than eighth grade, instruction in algebraic concepts and logic will be available to all students.	Education. Students will receive instruction in comprehensive school health education at a minimum: grades 3-12 = 80 hrs/yr. {Support/Evidence file 29.2} **References:** **National Health Education Standards: Achieving Excellence a minimum of 80 hours each year = 4800 minutes each year.** **Alliance for a Healthier Generation, Healthy Schools Program Framework:** **Gold Level- 2250 minutes each yr. in at least 2 grades** **Silver Level- 2250 minutes each yr. in at least two grades** **Bronze Level- 2250 (9 weeks x 50 minutes) minutes in at least one grade;** 29.2 Each junior high/middle school student will receive a minimum of 225 minutes of Physical Education per week. Instruction will reflect the National Physical Education Standards and the Show-Me Standards as a Core Academic subject. These classes shall be taught by a teacher certified in Health and Physical Education. Support/Evidence: **National Association for Sport and Physical Education recommendations**
Standard 1.3 **<u>High School</u> - Each high school has a current minimum**	**~~Standard 1.3~~(30) <u>High School</u> - Each high school has a current minimum offering of at least 42.0 units of credit,**	Changes between 4th Cycle and MSIP 5 standards reflect new graduation requirements for the class of 2010.

4th Cycle MSIP	Proposed Resource Standards 2009	Notes/Supporting Research/Successful Implementation/Recommendations MSIP 5
offering of at least 40.5 units of credit, with sufficient sections in each course to meet the needs of all students in grades 9-12 and the state high school graduation requirements. These courses are distributed as follows: *MINIMUM STANDARD* / *DESIRABLE STANDARD* English/Language Arts/Communication 6.0 10.0 Foreign Language 2.0 4.0 (Must include two units of one language.) Social Studies 5.0 6.0 (Minimum must include one unit each of American History and World History, 1/2 unit or equivalent of American Government. Regular instruction in U.S. and Missouri Constitutions, as well as American History and Institutions, must be provided, as required by Section 170.011, RSMo. Desirable must also include 1/2 unit of Geography.) Mathematics 4.0 6.0 (Minimum must include Algebra I and two units from Algebra II, Geometry, Trigonometry, Calculus, and Math Analysis. Desirable must include Algebra I and three units from the above list.) Science 4.0 6.0 (Must include one unit each of Biology, Chemistry, and Physics.) Fine Arts 2.0 6.0 (Must include both Art and Music.) Career Education 12.0 20.0 (Must include a broad range of DESE-approved offerings that support or lead to employment or related post-secondary education based on students' needs and interests in Agricultural Education, Marketing Education, Family and Consumer Sciences Education, Business Education, Industrial and Engineering Technology, and Health Sciences. Four career education program areas must be represented each year or the district must demonstrate a pattern of student participation in four or more career education program areas over the past two years.)	**with sufficient sections in each course to meet the needs of all students in grades 9-12 and the state high school graduation requirements. These courses are distributed as follows:** *MINIMUM STANDARD* / *DESIRABLE STANDARD* English/Language Arts/Communication 6.0 10.0 Foreign Language 2.0 4.0 (Must include two units of one language.) Social Studies 5.0 6.0 (Minimum must include one unit each of American History and World History, 1/2 unit or equivalent of American Government. Regular instruction in U.S. and Missouri Constitutions, as well as American History and Institutions, must be provided, as required by Section 170.011, RSMo. Desirable must also include 1/2 unit of Geography.) Mathematics ~~4.0~~ 5.0 6.0 (Minimum must include Algebra I and two units from Algebra II, Geometry, Trigonometry, Calculus, and Math Analysis. Desirable must include Algebra I and three units from the above list.) Science 4.0 6.0 (Must include one unit each of Biology, Chemistry, and Physics.) Fine Arts 2.0 6.0 (Must include both Art and Music.) Career Education 12.0 20.0 (Must include a broad range of DESE-approved offerings that support or lead to employment or related post-secondary education based on students' needs and interests in Agricultural Education, Marketing Education, Family and Consumer Sciences Education, Business Education, Industrial and Engineering Technology, and Health Sciences. Four career education program areas must be represented each year or the district must demonstrate a pattern of student participation in four or more career education program areas over the past two years.) Physical Education 1.0 2.0	30. Each high school student will receive regular planned, sequential instruction in comprehensive school health education (Including ALL 10 components of Comprehensive School Health Education: personal health , family health, consumer health, community health, environmental health, mental health, safety, nutrition, substance abuse prevention, disease prevention) designed to motivate and assist students to maintain and improve their health, prevent disease, and reduce health-related risk behaviors. Instruction will reflect the National Health Education Standards and the Show-Me Standards as a Core Academic subject. These classes shall be taught by a teacher certified in Health and Physical Education. Students will receive instruction in comprehensive school health education at a minimum: grades 3-12 = 80 hrs/yr. {Support/Evidence file 30} **National Health Education Standards: Achieving Excellence a minimum of 80 hours each year = 4800 minutes each year.** **Alliance for a Healthier Generation, Healthy Schools Program Framework:** **Gold Level- 2250 minutes each yr. in at least 2 grades** Each high school student will receive a minimum two grade levels of Physical Education. Instruction will reflect the National Physical Education Standards and the Show-Me Standards as a Core Academic subject. These classes shall be taught by a teacher certified in Health and Physical Education.

4th Cycle MSIP			Proposed Resource Standards 2009			Notes/Supporting Research/Successful Implementation/Recommendations MSIP 5
Physical Education	1.0	2.0				
Health (e.g. tobacco, alcohol and other drug prevention; HIV/AIDS and STI prevention education; nutrition; physical activity; injury prevention and safety; bullying and violence prevention)	0.5	1.0	Health (e.g. tobacco, alcohol and other drug prevention; HIV/AIDS and STI prevention education; nutrition; physical activity; injury prevention and safety; bullying and violence prevention)	0.5	1.0	Support/Evidence: **National Association for Sport and Physical Education recommendations** Healthier US School Challenge Offers Physical Education in 2 grade levels
Practical Arts (Includes noncareer education courses which provide practical experiences for students (e.g., Driver Education, Computer Education, Computer Literacy) and career education credits exceeding the minimum standard of 12.)	4.0	8.0	Practical Arts (Includes noncareer education courses which provide practical experiences for students (e.g., Driver Education, Computer Education, Computer Literacy) and career education credits exceeding the minimum standard of 12.)	4.0	8.0	
Personal Finance	0.5		Personal Finance	0.5		
TOTAL	**40.5**	**69.0**	**TOTAL**	~~40.5~~ **42.0**	**69.0**	
Options: 1. Districts may meet any course requirement by providing opportunities for all students to attend a high school and/or area career center school in a neighboring district or by participating in other approved delivery systems (i.e., correspondence courses, satellite classes, virtual courses). 2. In three-year high schools (grades 10-12), additional curriculum offerings at grade nine may be added to meet curriculum requirements. 3. Two advanced courses in any subject area may be offered on an alternating-year basis to meet content/subject area requirements. Alternating-year course credits are counted to meet individual subject area credit requirements, but are not counted toward meeting the overall total of 40.5 credits. 4. For purposes of counting credit under this standard, repetitive classes such as Band, Chorus, Glee Club, and Physical Education (unless clearly differentiated) will count as one (1) unit.			**Options:** 1. Districts may meet any course requirement by providing opportunities for all students to attend a high school and/or area career center school in a neighboring district or by participating in other approved delivery systems (i.e., correspondence courses, satellite classes, virtual courses). 2. In three-year high schools (grades 10-12), additional curriculum offerings at grade nine may be added to meet curriculum requirements. 3. Two advanced courses in any subject area may be offered on an alternating-year basis to meet content/subject area requirements. Alternating-year course credits are counted to meet individual subject area credit requirements, but are not counted toward meeting the overall total of 42 credits. 4. For purposes of counting credit under this standard, repetitive classes such as Band, Chorus, Glee Club, and Physical Education (unless clearly differentiated) will count as one (1) unit.			

4th Cycle MSIP	Proposed Resource Standards 2009	Notes/Supporting Research/Successful Implementation/Recommendations MSIP 5
Class Size/Assigned Enrollments		
Standard 2.1 **Class Size and Assigned Enrollments - Enrollments will be consistent with both class-size standards and total enrollment requirements.** (Class sizes in all categorically funded programs must meet the class-size standards for that program.) 1. Student enrollment in individual classes will be consistent with the following guidelines:	~~**Standard 2.1**~~ **(31) Class Size and Assigned Enrollments - Enrollments will be consistent with both class-size standards and total enrollment requirements.** (Class sizes in all categorically funded programs must meet the class-size standards for that program.) 1. Student enrollment in individual classes will be consistent with the following guidelines:	31.1 **Recommend that specialists serve the same size of classes as core classes.**
GRADES / *MINIMUM STANDARD* / *DESIRABLE STANDARD* K-2 / 25 / 20 3-4 / 27 / 22 5-6 / 30 / 25 7-12 / 33 / 28	*GRADES* / *MINIMUM STANDARD* / *DESIRABLE STANDARD* K-2 / 25 / 20 3-4 / 27 / 22 5-6 / 30 / 25 7-12 / 33 / 28	
2. Full-time elementary art, music, physical education, and computer teaching specialists shall serve no more than 750 students per week.	2. Full-time elementary art, music, physical education, and computer teaching specialists shall serve no more than 750 students per week.	31.2
Options: 1. Student enrollment in a classroom may increase by as many as ten (10) students for any period that a teacher assistant assists the classroom teacher full time. A teacher with a half-time teacher assistant may be assigned as many as five (5) additional students. (Aides provided with Title I and special education funds are provided on a needs-specific basis and cannot be used to increase class enrollment.) Teacher assistants used to increase class size must have a minimum of sixty (60) semester hours of college credit from an accredited institution of higher education and a general understanding of the objectives of public education OR must have served as a teacher assistant in a public school for at least two (2) years, with the most recent year being the 1998-1999 school year,	**Options:** 1. Student enrollment in a classroom may increase by as many as ten (10) students for any period that a teacher assistant assists the classroom teacher full time. A teacher with a half-time teacher assistant may be assigned as many as five (5) additional students. (Aides provided with Title I and special education funds are provided on a needs-specific basis and cannot be used to increase class enrollment.) Teacher assistants used to increase class size must have a minimum of sixty (60) semester hours of college credit from an accredited institution of higher education and a general understanding of the objectives of public education OR must have served as a teacher assistant in a public school for at least two (2) years, with the most recent year being the 1998-1999 school year, and annually attend at	

4th Cycle MSIP	Proposed Resource Standards 2009	Notes/Supporting Research/Successful Implementation/Recommendations MSIP 5
and annually attend at least fifteen (15) clock hours of professional development. Teacher assistants without a baccalaureate degree and appropriate certification may assist in activities assigned by and under the direct control of the classroom teacher. Teacher assistants with a baccalaureate degree and an appropriate teaching certificate may initiate instruction and work independently. Teacher aides not used to increase class size must have a minimum of a high school diploma (or GED certificate) and competency in the duties to be performed. (See the Federal Programs Manual for guidelines on the use of aides and clerks for Title I.) School districts are encouraged to provide additional professional development for their teacher assistants and teacher aides to optimize the acquisition and application of skills. Professional development activities should be in addition to general orientation workshops provided by the district for support staff. 2. Elementary school classes may enroll students from two (2) consecutive grade levels (example: grades one and two, grades two and three). Total enrollment in such classes shall not exceed the class-size standards listed above for the lowest grade included in the combination. 3. High school beginning and advanced levels of a subject in the same class may be combined (example: Spanish I and Spanish II). Total combined enrollment in each class shall not exceed fifteen (15) students. 4. High school advanced levels of a subject in the same class may also be combined (example Spanish III and Spanish IV). Total combined enrollment in such classes shall not exceed twenty (20) students. 5. Enrollment in performing-arts classes may exceed regular class-size limits if adequate supervision and facilities are provided. 6. High school physical education classes may enroll up to forty-five (45) students.	least fifteen (15) clock hours of professional development. Teacher assistants without a baccalaureate degree and appropriate certification may assist in activities assigned by and under the direct control of the classroom teacher. Teacher assistants with a baccalaureate degree and an appropriate teaching certificate may initiate instruction and work independently. Teacher aides not used to increase class size must have a minimum of a high school diploma (or GED certificate) and competency in the duties to be performed. (See the Federal Programs Manual for guidelines on the use of aides and clerks for Title I.) School districts are encouraged to provide additional professional development for their teacher assistants and teacher aides to optimize the acquisition and application of skills. Professional development activities should be in addition to general orientation workshops provided by the district for support staff. 2. Elementary school classes may enroll students from two (2) consecutive grade levels (example: grades one and two, grades two and three). Total enrollment in such classes shall not exceed the class-size standards listed above for the lowest grade included in the combination. 3. High school beginning and advanced levels of a subject in the same class may be combined (example: Spanish I and Spanish II). Total combined enrollment in each class shall not exceed fifteen (15) students. 4. High school advanced levels of a subject in the same class may also be combined (example Spanish III and Spanish IV). Total combined enrollment in such classes shall not exceed twenty (20) students. 5. Enrollment in performing-arts classes may exceed regular class-size limits if adequate supervision and facilities are provided. 6. High school physical education classes may enroll up to forty-five (45) students.	31.2 options High school physical education classes may enroll up to a maximum of 35 students.
Instructional Support Staff		

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<th>4th Cycle MSIP</th>
<th>Proposed Resource Standards 2009</th>
<th>Notes/Supporting Research/Successful Implementation/Recommendations MSIP 5</th>
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Standard 3.1
<u>Library Media Staff</u> - Certificated librarians and/or library media specialists are assigned consistent with the following ratios, based on the student enrollment at each building:
<table>
<tr><th></th><th>MINIMUM STANDARD</th><th></th><th>DESIRABLE STANDARD</th></tr>
<tr><th><u>Students</u></th><th><u>FTE</u></th><th><u>Students</u></th><th><u>FTE</u></th></tr>
<tr><td>1-200</td><td>.20</td><td>1-150</td><td>.20</td></tr>
<tr><td>201-400</td><td>.40</td><td>151-300</td><td>.40</td></tr>
<tr><td>401-600</td><td>.60</td><td>301-450</td><td>.60</td></tr>
<tr><td>601-800</td><td>.80</td><td>451-600</td><td>.80</td></tr>
<tr><td>801-1000</td><td>1.00</td><td>601-750</td><td>1.00</td></tr>
<tr><td>1001-1200</td><td>1.20</td><td>751-900</td><td>1.20</td></tr>
<tr><td>1201-1400</td><td>1.40</td><td>901-1050</td><td>1.40</td></tr>
<tr><td>1401-1600</td><td>1.60</td><td>1051-1200</td><td>1.60</td></tr>
<tr><td>1601-1800</td><td>1.80</td><td>1201-1350</td><td>1.80</td></tr>
<tr><td>1801-2000</td><td>2.00, etc.</td><td>1351-1500</td><td>2.00, etc.</td></tr>
</table>
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<td>
<s>Standard 3.1</s>(32) <u>Library Media Staff</u> - Certificated librarians and/or library media specialists are assigned consistent with the following ratios, based on the student enrollment at each building:
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<tr><th><u>Students</u></th><th><u>FTE</u></th><th><u>Students</u></th><th><u>FTE</u></th></tr>
<tr><td>1-200</td><td>.20</td><td>1-150</td><td>.20</td></tr>
<tr><td>201-400</td><td>.40</td><td>151-300</td><td>.40</td></tr>
<tr><td>401-600</td><td>.60</td><td>301-450</td><td>.60</td></tr>
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Standard 3.2
<u>Guidance and Counseling Staff</u> - Certificated counselors are assigned consistent with the following ratios, based on the student enrollment at each building:
<table>
<tr><th></th><th>MINIMUM STANDARD</th><th></th><th>DESIRABLE STANDARD</th></tr>
<tr><th><u>Students</u></th><th><u>FTE</u></th><th><u>Students</u></th><th><u>FTE</u></th></tr>
<tr><td>1-100</td><td>.20</td><td>1-75</td><td>.20</td></tr>
<tr><td>101-200</td><td>.40</td><td>76-150</td><td>.40</td></tr>
<tr><td>201-300</td><td>.60</td><td>151-225</td><td>.60</td></tr>
<tr><td>301-400</td><td>.80</td><td>226-300</td><td>.80</td></tr>
<tr><td>401-500</td><td>1.00</td><td>301-375</td><td>1.00</td></tr>
<tr><td>501-600</td><td>1.20</td><td>376-450</td><td>1.20</td></tr>
<tr><td>601-700</td><td>1.40</td><td>451-525</td><td>1.40</td></tr>
<tr><td>701-800</td><td>1.60</td><td>526-600</td><td>1.60</td></tr>
<tr><td>801-900</td><td>1.80</td><td>601-675</td><td>1.80</td></tr>
<tr><td>901-1000</td><td>2.00, etc.</td><td>676-750</td><td>2.00, etc.</td></tr>
</table>
</td>
<td>
<s>Standard 3.2</s>(33) <u>Guidance and Counseling Staff</u> - Certificated counselors are assigned consistent with the following ratios, based on the student enrollment at each building:
<table>
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<tr><th><u>Students</u></th><th><u>FTE</u></th><th><u>Students</u></th><th><u>FTE</u></th></tr>
<tr><td>1-100</td><td>.20</td><td>1-75</td><td>.20</td></tr>
<tr><td>101-200</td><td>.40</td><td>76-150</td><td>.40</td></tr>
<tr><td>201-300</td><td>.60</td><td>151-225</td><td>.60</td></tr>
<tr><td>301-400</td><td>.80</td><td>226-300</td><td>.80</td></tr>
<tr><td>401-500</td><td>1.00</td><td>301-375</td><td>1.00</td></tr>
<tr><td>501-600</td><td>1.20</td><td>376-450</td><td>1.20</td></tr>
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<tr><td>701-800</td><td>1.60</td><td>526-600</td><td>1.60</td></tr>
<tr><td>801-900</td><td>1.80</td><td>601-675</td><td>1.80</td></tr>
<tr><td>901-1000</td><td>2.00, etc.</td><td>676-750</td><td>2.00, etc.</td></tr>
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4th Cycle MSIP	Proposed Resource Standards 2009	Notes/Supporting Research/Successful Implementation/Recommendations MSIP 5
Administrative Staff		
Standard 4.1 **Superintendent -A certificated superintendent is assigned to serve full-time as the district's chief administrative officer.** **Options:** 1. For a period of one (1) year, any two (2) adjacent districts, that are classified "accredited," may upon prior approval from DESE share a superintendent who possesses a valid Missouri superintendent's certificate. Any two (2) such districts which wish to share a superintendent for more than one (1) year, shall obtain prior approval from the State Board of Education. 2. A superintendent of schools in a district which employs twenty-five (25) FTE or fewer certificated staff members and who holds a valid Missouri superintendent's certificate may serve as the secondary principal, the elementary principal, or both, regardless of certification as a principal, in addition to serving as the chief administrative officer of the district. 3. Elementary districts (K-8) with over twenty-five (25) FTE certificated staff members must employ a certificated superintendent as chief administrative officer. Elementary districts with twenty-five (25) FTE or fewer certificated staff members may employ either a certificated superintendent or certificated elementary principal as chief administrative officer.	~~Standard 4.1~~(34) Superintendent -A certificated superintendent is assigned to serve full-time as the district's chief administrative officer. **Options:** 1. For a period of one (1) year, any two (2) adjacent districts, that are classified "accredited," may upon prior approval from DESE share a superintendent who possesses a valid Missouri superintendent's certificate. Any two (2) such districts which wish to share a superintendent for more than one (1) year, shall obtain prior approval from the State Board of Education. 2. A superintendent of schools in a district which employs twenty-five (25) FTE or fewer certificated staff members and who holds a valid Missouri superintendent's certificate may serve as the secondary principal, the elementary principal, or both, regardless of certification as a principal, in addition to serving as the chief administrative officer of the district. 3. Elementary districts (K-8) with over twenty-five (25) FTE certificated staff members must employ a certificated superintendent as chief administrative officer. Elementary districts with twenty-five (25) FTE or fewer certificated staff members may employ either a certificated superintendent or certificated elementary principal as chief administrative officer.	
Standard 4.2 **Associates/Assistants to the Superintendent - Associates/assistants to the superintendent in the areas of curriculum and instruction must have, as a minimum, a master's degree and a valid Missouri teaching certificate. All other associates/assistants to the superintendent should have appropriate training in their field.** *MINIMUM*	~~Standard 4.2~~(35)Associates/Assistants to the Superintendent - Associates/assistants to the superintendent in the areas of curriculum and instruction must have, as a minimum, a master's degree and a valid Missouri teaching certificate. All other associates/assistants to the superintendent should have appropriate training in their field.(who determines this) *MINIMUM*	

4th Cycle MSIP	Proposed Resource Standards 2009	Notes/Supporting Research/Successful Implementation/Recommendations MSIP 5
STANDARD Certificated Staff Members (FTE) / Assistants to Superintendent (FTE) 1-100: 0 101-200: 1 201-300: 2 301-400: 3 401-500: 4 501-600: 5 601-700: 6 701-800, etc.: 7, etc. Assistant superintendents must have a master's degree and a valid Missouri teaching certificate if their primary responsibilities involve the areas of curriculum and instruction. Other assistant superintendents should have training in their field (i.e., an MBA might be appropriate for an assistant superintendent of finance). Please note that there is no reference to title in this requirement. Whether districts elect to call the people occupying these positions associate superintendents, deputy superintendents, assistant superintendents, assistants to the superintendent, coordinators, or directors is a local	*STANDARD* Certificated Staff Members (FTE) / Assistants to Superintendent (FTE) 1-100: 0 101-200: 1 201-300: 2 301-400: 3 401-500: 4 501-600: 5 601-700: 6 701-800, etc.: 7, etc. Assistant superintendents must have a master's degree and a valid Missouri teaching certificate if their primary responsibilities involve the areas of curriculum and instruction. Other assistant superintendents should have training in their field (i.e., an MBA might be appropriate for an assistant superintendent of finance). Please note that there is no reference to title in this requirement. Whether districts elect to call the people occupying these positions associate superintendents, deputy superintendents, assistant superintendents, assistants to the superintendent, coordinators, or directors is a local option.	Why do districts often ask for something different? Curriculum, instruction, and assessment.
Standard 4.3 **Principals/Building Administrators - Certificated principals, career education directors, and assistant administrators are employed and assigned consistent with the MSIP staff ratios:** *MINIMUM STANDARD* / *DESIRABLE STANDARD* Students / FTE / Students / FTE 1-100 .25 / 1-300 1.00 101-200 .50 / 301-375 1.25 201-300 .75 / 376-450 1.50 301-500 1.00 / 451-525 1.75 501-600 1.25 / 526-600 2.00, etc.	~~Standard 4.3~~**(36) Principals/Building Administrators - Certificated principals, career education directors, and assistant administrators are employed and assigned consistent with the MSIP staff ratios:** *MINIMUM STANDARD* / *DESIRABLE STANDARD* Students / FTE / Students / FTE 1-100 .25 / 1-300 1.00 101-200 .50 / 301-375 1.25 201-300 .75 / 376-450 1.50 301-500 1.00 / 451-525 1.75 501-600 1.25 / 526-600 2.00, etc.	

4th Cycle MSIP	Proposed Resource Standards 2009	Notes/Supporting Research/Successful Implementation/Recommendations MSIP 5
601-700 1.50 701-800 1.75 801-1000 2.00, etc.	601-700 1.50 701-800 1.75 801-1000 2.00, etc.	
Certification/Planning		
Standard 5.1 **Teacher Certification - All administrators and teachers must be appropriately certificated for their assignments in accordance with the guidelines contained within the Core Data Manual (Exhibit 10: "Course Code/Certificate").**	**~~Standard 5.1~~ (37) Teacher Certification - All administrators and teachers must be appropriately certificated for their assignments in accordance with the guidelines contained within the Core Data Manual (Exhibit 10: "Course Code/Certificate").**	
Standard 5.2 **Planning Time - Each full-time classroom teacher, including kindergarten teachers, shall have a minimum of two hundred fifty (250) minutes of scheduled planning time each school week. It is desirable to have fifty (50) minutes of planning time each day. Planning time is calculated between the official start and close of the school day and does not include travel time, lunch time, or time before or after school. (Planning time is not required for administrators, counselors, or librarians.)**	**~~Standard 5.2~~ (38) Planning Time - Each full-time classroom teacher, including kindergarten teachers, shall have a minimum of two hundred fifty (250) minutes of scheduled planning time each school week. It is desirable to have fifty (50) minutes of planning time each day. Planning time is calculated between the official start and close of the school day and does not include travel time, lunch time, or time before or after school. (Planning time is not required for administrators, counselors, or librarians.)**	**If planning time is increased to 60 minutes per day that could facilitate more PE, music, art, etc.**
Instructional Resources		
	(39) Electronic Instructional Resources – Electronic instructional resources and equipment that support and extend the curriculum are readily available to instructional staff and students.	This standard was previously included in the 4th Cycle Process Standards - 6.4 Instructional resources and equipment that support and extend the curriculum are readily available to teachers and students.