



Colorado Department of Education

**Definitions Survey Report:  
21<sup>st</sup> Century Skills, School Readiness, Postsecondary Readiness and Workforce Readiness**

**October 2008**

The following are results of a month-long online survey, and thirteen regional forums in which Coloradans were asked to provide feedback and impressions regarding the definitions of 21<sup>st</sup> Century Skills, School Readiness, Postsecondary Readiness, and Workforce Readiness. The survey was also disseminated at the September 26, 2008, Colorado Association of School Executives (CASE) meeting in which results were collected by “clicker” response. The outcomes of each of these three survey tools are included in this report. This survey and series of regional forums are in response to the mandates outlined in Senate Bill 08-212 as a step towards aligning Preschool with K-12 Education, and K-12 Education with Higher Education. The definitions will be used as a guide by those revising the thirteen Colorado Model Content Standards – a process that is also mandated by SB 08-212.

Both the survey and the regional forums were heavily promoted through the following resources: media and press releases, Colorado Department of Education’s (CDE) The Scoop and other communications tools, Colorado Principal’s Center, Colorado community college and university offices, CTE associations, Colorado Education Association, Colorado PTA, discipline-specific associations, i.e. arts, STEM, environment, etc., and all chambers of commerce in Colorado, including cultural chambers.

The surveyed terms and definitions were based on independent research performed by WestEd.\* This research included, but was not limited to, the application of models implemented by the Partnership for 21<sup>st</sup> Century Skills, enGauge 21<sup>st</sup> Century Skills (NCREL & the Metiri Group), ACT College Readiness Standards & Benchmarks, College Board Standards for College Success, Educational Policy Improvement Center, Understanding University Success (Standards for Success—Association of American Universities & The Pew Charitable Trusts), American Diploma Project, Are They Really Ready to Work? (The Conference Board, Corporate Voices for Working Families, the Partnership for 21st Century Skills, the Society for Human Resource Management), Equipped for the Future (National Institute for Literacy), and The Secretary’s Commission on Achieving Necessary Skills.

In addition, CDE included information from Colorado school districts that have successfully created 21<sup>st</sup> Century Skills, and Readiness definitions at the district level. These districts include JeffCo Public Schools, Douglas County School District, and Littleton Public Schools.

**Online Survey**

The Online Survey was opened to the public on September 10, 2008, and closed on October 10, 2008. The survey received 3,329 responses. CDE utilized SurveyMonkey as the data collection tool. The results are as follows:

*\*WestEd: A research, development, and service agency, works with education and other communities to promote excellence, achieve equity, and improve learning for children, youth, and adults.*

## Demographics

<b>What BEST describes your community?</b>	
Mountain	8.2%
Rural	28.8%
Suburban	42.0%
Urban	21.0%

<b>What BEST describes the geographic region where you live?</b>	
Denver Metro (e.g. Denver, Boulder, Castle Rock, Arvada)	41.3%
North Central (e.g. Greeley, Weld County, Ft Collins, Longmont)	14.8%
Northeast (e.g. Bennett, Limon, Kit Carson, Idalia, Yuma)	8.7%
Northwest (e.g. Aspen, Steamboat Springs, Summit/Eagle/Garfield/Lake counties)	5.9%
Pikes Pike (e.g. Colorado Springs, Pueblo)	13.7%
West Central (e.g. Grand Junction, Delta, Telluride, Ouray,	2.7%

<b>What BEST describes the geographic region where you live?</b>	
Montrose)	
Southeast (e.g. Fowler, Huerfano, Lamar, Trinidad, Walsh)	7.7%
Southwest (e.g. Archuleta, Creede, Monte Vista, San Luis Valley, Silverton)	5.4%

<b>What BEST describes your role? (NOTE: You may make 2 selections.)</b>	
Educator, PreK-12	52.7%
Educator, Higher Education	16.0%
Policy Maker	2.7%
Parent (Currently have children in PreK-College)	28.0%
Community Member (non-parent or no children in PreK-College)	8.3%
Business Person	6.3%
Student(PreK-College)	2.6%
Other	11.0%

<b>Your gender is</b>	
Female	73.9%
Male	26.1%

<b>What generation are you? When were you born?</b>	
1901-1924 - G.I. Generation	0.2%
1925-1942 - Silent Generation	1.9%
1943-1960 - Boomer	41.6%
1961-1981 - Gen X	51.1%
1982-2002 - Millennial	5.4%

<b>Ethnicity (Optional)</b>	
African-American	1.0%
Asian	0.9%

<b>Ethnicity (Optional)</b>	
Caucasian	88.7%
Hispanic	5.9%
Native American/Alaskan	0.9%
Other	2.6%

**21<sup>st</sup> Century Skills and Abilities**

Participants were asked to respond to and rank 12 skills, and to choose 3 that were of greatest importance.

<b>Senate Bill 212 requires that the Colorado Model Content Standards be revised to include 21st century skills and abilities. To that end, how would you rate the importance of each of the following 21st century skills and abilities?</b>					
	<b>1-Not at all critical</b>	<b>2-Not Important</b>	<b>3-Somewhat Important</b>	<b>4-Important</b>	<b>5-Extremely Critical</b>
Civic Engagement	0.9% (29)	2.4% (75)	22.6% (710)	53.2% (1670)	20.8% (654)
Collaboration	0.5% (16)	1.2% (37)	13.8% (434)	45.9% (1443)	38.7% (1216)
Critical Thinking	0.2% (6)	0.2% (7)	2.5% (80)	22.4% (706)	74.6% (2352)

**Senate Bill 212 requires that the Colorado Model Content Standards be revised to include 21st century skills and abilities. To that end, how would you rate the importance of each of the following 21st century skills and abilities?**

Financial Literacy	0.3% (9)	0.4% (12)	10.8% (340)	48.1% (1515)	40.5% (1275)
Information Technology	0.3% (8)	0.5% (16)	6.3% (199)	37.7% (1188)	55.2% (1741)
Innovation	0.4% (13)	1.1% (35)	17.5% (549)	47.3% (1486)	33.7% (1060)
Leadership	0.4% (12)	1.0% (31)	19.0% (597)	47.3% (1488)	33.4% (1055)
Personal Wellness	0.8% (25)	2.2% (69)	18.4% (579)	45.2% (1426)	33.4% (1055)
Productivity	0.4% (13)	1.4% (44)	15.1% (475)	49.3% (1552)	33.8% (1062)
Reasoning	0.2% (5)	0.1% (3)	4.3% (135)	32.9% (1038)	62.5% (1971)
Self Direction	0.2% (7)	0.6% (20)	7.9% (250)	38.1% (1200)	53.1% (1670)
Social and Cultural Awareness	1.0% (31)	2.4% (73)	15.9% (496)	43.4% (1351)	37.4% (1165)

**Which three of the following 21st century skills and abilities do you believe are the most important and should be included in the Colorado Model Content Standards? Please make 3 choices.**

Civic Engagement	14.6%
Collaboration	23.4%
Critical Thinking	70.6%
Financial Literacy	24.7%
Information Technology	38.8%
Innovation	12.0%
Leadership	13.8%
Personal Wellness	15.9%
Productivity	13.0%
Reasoning	31.6%
Self Direction	25.5%
Social and Cultural Awareness	21.1%

### School Readiness

Participants were asked to react to the following statements, then rank a list of school readiness indicators.

<b>To what extent do you agree with the following statement: Early school readiness means that students are prepared to enter and be successful in Kindergarten.</b>	
Strongly Disagree	4.1%
Disagree	8.7%
Agree	50.0%
Strongly Agree	37.3%

<b>To what extent do you agree with the following statement: Early school readiness means that school systems are prepared to meet the needs of all incoming Kindergarten students.</b>	
Strongly Disagree	4.4%
Disagree	19.6%
Agree	43.1%
Strongly Agree	33.0%



**How would you rate the importance of each of these as a measure of a child's preparedness to enter kindergarten and succeed in a learning environment?**

	<b>1-Not at all Critical</b>	<b>2-Not Important</b>	<b>3-Somewhat Important</b>	<b>4-Important</b>	<b>5-Extremely Critical</b>
Physical Abilities: Motor Skills	0.9% (27)	3.4% (104)	35.1% (1063)	49.4% (1494)	11.2% (338)
Child's Feelings About Themselves And Others	1.0% (29)	2.7% (81)	28.0% (847)	48.9% (1479)	19.5% (590)
Ability To Form Relationships	0.7% (21)	2.1% (63)	22.6% (682)	51.5% (1556)	23.2% (702)
Ability To Understand The Perspectives And Feelings Of Others	0.9% (28)	4.1% (124)	31.0% (936)	45.5% (1376)	18.5% (560)
Skills Needed To Get Along Well In A Group Setting	0.6% (18)	1.6% (48)	19.3% (584)	48.1% (1456)	31.1% (937)
Verbal And Nonverbal Skills To Convey And Understand Others' Meaning	0.5% (14)	1.7% (50)	18.3% (551)	48.6% (1465)	31.1% (937)
Early Literacy Skills: Awareness Of Print, Understanding That Writing Has Meaning	1.1% (34)	4.2% (128)	23.5% (711)	42.2% (1279)	28.9% (876)

<b>How would you rate the importance of each of these as a measure of a child's preparedness to enter kindergarten and succeed in a learning environment?</b>					
Exhibits Basic Knowledge About The World	1.7% (52)	9.0% (272)	36.7% (1117)	38.2% (1152)	14.4% (436)
Early Mathematical Skills: Knowledge Of Numbers, Shapes, And Simple Patterns	1.3% (38)	5.6% (169)	26.4% (796)	41.6% (1256)	25.1% (759)
Basic Problem-Solving Skills: Understanding Of Similarities And Differences	0.9% (28)	4.4% (133)	24.1% (728)	43.8% (1322)	26.7% (806)

### **Postsecondary Readiness**

Participants were asked to react to the following statements, then rank a list of postsecondary readiness indicators. The term *Postsecondary* refers to college, technical or trade school, or other form of higher education. The term *Remediation* refers to a student requiring instruction in a content area before he/she can gain admittance to a credit-bearing, entry-level course.

<b>How do you define postsecondary readiness? Select one</b>	
A student's ability to be accepted into a postsecondary institution.	9.6%
A student's ability to be accepted into a postsecondary institution and perform successfully, without remediation, for one year.	16.9%
A student's ability to be accepted into a postsecondary institution and perform successfully, without remediation, for two years.	10.6%
A student's ability to be accepted into a postsecondary institution and ultimately earning a degree or certification.	62.9%

**How would you rate the importance of each of these as indicators for a student to enter and be successful in a postsecondary institution?**

	<b>1-Not at all Critical</b>	<b>2-Not Important</b>	<b>3-Somewhat Important</b>	<b>4-Important</b>	<b>5-Extremely Critical</b>
Intellectual openness	0.5% (16)	2.7% (82)	21.4% (643)	52.6% (1583)	22.7% (683)
Inquisitiveness	0.2% (7)	1.2% (35)	17.0% (511)	53.1% (1599)	28.5% (859)
Analysis	0.1% (2)	0.4% (12)	11.9% (356)	50.3% (1510)	37.4% (1122)
Reasoning and argumentation	0.1% (3)	0.5% (16)	10.9% (327)	50.9% (1531)	37.5% (1128)
Interpretation	0.2% (6)	0.6% (18)	14.6% (438)	57.3% (1718)	27.2% (816)
Precision and accuracy	0.2% (7)	1.5% (45)	23.3% (699)	57.0% (1712)	18.0% (539)
Problem solving	0.1% (4)	0.1% (3)	4.0% (119)	34.8% (1041)	61.0% (1826)
An understanding of how college operates as a system and culture	1.3% (40)	5.8% (175)	32.8% (984)	41.8% (1255)	18.3% (549)

**How would you rate the importance of each of these as indicators for a student to enter and be successful in a postsecondary institution?**

Human relations skills necessary to cope within this system	0.4% (11)	1.6% (49)	15.4% (463)	46.0% (1381)	36.6% (1100)
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**Workforce Readiness**

Participants were asked to rank a list of workforce readiness indicators, then respond to two questions regarding workforce preparation.

**How would you rate the importance of each of these indicators as a measure of a student's preparedness to successfully perform entry-level work in a 21st century workforce?**

	<b>1-Not at all Critical</b>	<b>2-Not Important</b>	<b>3-Somewhat Important</b>	<b>4-Important</b>	<b>5-Extremely Critical</b>
Read with understanding	0.0% (1)	0.1% (2)	1.3% (40)	24.8% (745)	73.8% (2222)
Convey ideas in writing	0.1% (2)	0.2% (7)	6.3% (190)	40.1% (1206)	53.3% (1603)
Listen actively	0.1% (2)	0.2% (6)	3.6% (109)	37.8% (1135)	58.3% (1749)
Identify and solve problems	0.1% (3)	0.1% (4)	3.5% (106)	31.7% (953)	64.5% (1939)
Plan	0.1% (2)	0.3% (8)	8.9% (266)	47.6% (1429)	43.2% (1297)

**How would you rate the importance of each of these indicators as a measure of a student's preparedness to successfully perform entry-level work in a 21st century workforce?**

Communicate decision process	0.1% (4)	0.9% (27)	12.5% (376)	51.8% (1553)	34.7% (1040)
Cooperate with others	0.2% (5)	0.4% (12)	5.9% (178)	34.1% (1025)	59.4% (1783)
Advocate and influence	0.3% (9)	3.2% (95)	27.1% (814)	49.7% (1493)	19.7% (592)
Resolve conflict	0.3% (8)	1.2% (37)	13.5% (404)	44.1% (1320)	41.0% (1227)
Use information and communications technology	0.3% (8)	0.4% (13)	6.0% (181)	39.0% (1168)	54.3% (1627)

**To what extent do you agree or disagree with this statement? The knowledge and skills required to enter the workforce from high school are the same skills necessary to enter college.**

Strongly Agree	8.9%
Agree	30.3%
Disagree	47.9%
Strongly Disagree	12.8%

<b>To what extent do you agree or disagree with this statement? Colleges and universities are preparing students for a 21st century workforce.</b>	
Strongly Agree	4.4%
Agree	54.8%
Disagree	35.7%
Strongly Disagree	5.1%

After reviewing the data according to Gender, Geographic Region, Ethnicity, and Role (Parent, Business, Higher Education, etc), all trends were statistically similar; with the following exceptions:

(1) The Policymakers' and the Silent Generation's viewpoint on whether or not Postsecondary Readiness and Workforce Readiness skills were the same -- 52.4% of Policymakers and 69.8% of the Silent Generation respondents indicate that these readiness indicators are the same, while 60.7% of other participants indicate that they are not the same.

(2) 66.7% of the G.I. Generation indicated that successful Postsecondary Readiness is a student's ability to complete 2 years of postsecondary work, without remediation. Whereas, 62.9% of all other respondents believe that a student's ability to earn a degree or certification defines postsecondary readiness.

Reports based on specific demographic data can be found in the appendices of this document.

## Results of Comment Sections of the Survey:

### *21<sup>st</sup> Century Skills*

*Of the 456 comments in this section, these were the most commonly cited opinions:*

- Critical thinking and reasoning skills are vital.
- Use Information Literacy instead of Information Technology Information Literacy is more comprehensive and inclusive.
- Include Communication, Creativity, Ethics, Cultural Literacy, Personal Responsibility.
- What is the difference between Critical Thinking and Reasoning?
- Leadership is not something that can be taught.
- Concern on how these skills can/will be assessed.
- As a teacher, how do I teach these? I don't want to be accountable for these.
- Reading, Writing, Math only. Schools shouldn't be responsible for teaching these skills.
- Failing Parents: parents are not teaching these skills, so schools are forced to.

### *School Readiness and Indicators*

*Of the 587 comments in this section, these were the most commonly cited opinions:*

- Too much disparity in ability levels in Kindergarten those that are ahead don't have their skills fostered, those that are behind often remain behind throughout schooling.
- "Education in America lacks the structure to facilitate individuality."
- The social-emotional skills are more important than academic skills. "Academic skills are not as important as social and problem-solving skills."
- Must have adequate funding to hire and train qualified staff at the PreK level.
- Parents and families need to be more engaged in their children's preparation for PreK.
- Parents and educators need to be on the same page regarding expectations at the PreK level.
- Currently there is not equitable access for all children to attend quality PreK programs.

### *Postsecondary Readiness*

*Of the 357 comments in this section, these were the most commonly cited opinions:*

- If postsecondary institutions came to a consensus on admissions and expectations for incoming students, remediation could be less of an issue. Remediation can happen to students whose high school has told them they are prepared when, in fact, they are not.
- "For a student to perform successfully without remediation, secondary and postsecondary institutions need to align the definitions of standards and the process for evaluating students."
- Our secondary system has to become more rigorous so students are prepared to move forward. "Possessing 6<sup>th</sup> grade math skills does not prepare a student for college."
- The less prepared the student is, the more we all pay for postsecondary education.
- There are many reasons why students do not succeed in a postsecondary environment that have nothing to do with preparedness.
- The ultimate goal of any entrant into to a postsecondary institution should be to earn a diploma or certification – otherwise, what is the point in going in the first place?
- If the student is successful the first year, the high school has done its job.
- Mere acceptance is not meaningful since Colorado community colleges have no entrance requirements other than a GED or HS diploma.
- The lack of emphasis on critical thinking impedes even the brightest students.
- Different types of high school diplomas should be considered.
- How do you measure these indicators? A solid curriculum will support these skills.

- It would be great if secondary and postsecondary teachers possessed these traits!
- All of these indicators are important but if they are not built within a system of foundational knowledge, there is no way students can be successful.
- Other indicators to consider: self-advocate, time management, study skills, motivation, ethics, life skills, decision-making, using information

### *Workforce Readiness*

*Of the 100 comments in this section, these were the most commonly cited opinions:*

- Other indicators to consider: persistence, communication, cooperative skills, adaptability, responsibility for self, work ethic, listening to others, ability to cope with adversity, financial literacy, citizenship, empathy, decision-making, conflict resolution, time management
- We need individuals who can “think outside the box”, create, innovate.
- These indicators are important based on the type of work a person is doing.
- Workforce and postsecondary indicators are the same.
- Students who are taught in K-12 with an engaging curriculum will possess these skills at the end of high school.
- How does a teacher (K-12) teach these skills?



## Regional Forums

September 15-30, 2008, CDE toured the State to discuss these definitions and readiness indicators with Colorado citizens. Meetings were held in Alamosa, Castle Rock, Colorado Springs, Denver, Durango, Golden, Grand Junction, Fort Collins, Fort Morgan, La Junta, Leadville, Pueblo, and Steamboat Springs. More than 300 Coloradans participated in these meetings. The following is a synopsis of the discussions at each location:

*Golden, September 15, 2008*

### 21<sup>st</sup> Century Skills

- Don't see any academic based skills in this list, all of them are social
- Expecting to see more content specific skills, rather than emotional and social, which seems to be the majority on the 21<sup>st</sup> century skills list?
- Wants to see communication skills included across the board (World language clearly specified through other areas.)
- Would like to see problem-solving, environmental literacy, tolerance, personal responsibility, self advocacy.
- Information technology – How can you be a critical consumer of the massive resources available for technology? If technology is going to be imbedded in the content areas like math and science and so forth, who is going to teach those technology pieces, will it be the content teachers or is a tech specialist to coming in and teaching how that technology is implied and implemented?
- "I never learned these skills in school, but I have had to learn them while in the workforce. My concern though is how you would measure these 21<sup>st</sup> century skills in the classroom."

### School Readiness

- Group agreed that the definition for Early School Readiness should be defined by both statements.
- Skills by importance that measure a child's preparedness to enter school:
- The skills on the list are skills that you LEARN IN Kindergarten. Possibly a child may not been exposed to these skills in their home environment. This shouldn't limit the child from entering kindergarten where these skills can be taught.
- What would go on the list for schools to be ready? ....Knowledge, accommodations for students, assistance with technology.
- What about day cares and "care givers" what would be on their list to prepare students?

### Post Secondary Readiness

- Mixed responses from group, some feel that readiness for post secondary is when a student can enter into a post secondary institute and not need remediation at all. Others felt that a student is ready if they only need one year of remediation.
- A student however can enter post secondary and not need remediation, yet still fail, maybe in the 2<sup>nd</sup> year because he was not prepared maybe emotionally.
- "Graduating from college with a degree in 4 years is not always possible because students change majors, life happens. Graduating in four years doesn't necessarily define success."
- A seamless transition should be built in with remediation as an option.
- Look at Higher Ed to determine what remediation is.
- It can't just be about knowledge level, but also about access availability that plays a role in determining a student's success.

- Economy, self initiation, self advocacy, life skills, prioritizing / time management, study skills, financial literacy, economic knowledge, Evaluation (results of actions) should be skills included in this list, human relations skills to cope with community at large.
- Ability to know how to learn
- Take the skills out of silos, because when you leave school you're not just learning math or science all the skills become integrated.
- A student's success or desire to be successful isn't always based on academics but on all areas of life. A loss of job-financial issues, being a parent – no time
- Colleges need to be prepared for students entering, no matter where they are at, not just "You are not cutting it, Good bye!"
- How do we ensure that students have the access to the good instruction of these skills?
- There needs to be a clear definition of each skill identified in this list, being sure to put standards into words that are clear in definition, of what is expected to be learned by the student.
- Think about taking content people out of rewriting the standard's they may need to step back and allow an "outsider" to come in.

### Workforce Readiness

- Postsecondary and workforce readiness should involve the same set of skills.
- Today, many entry level workforces require at least a 2 year degree.
- Should create a set of standards for all students to succeed whether entering postsecondary or workforce, yet possibly still creating a list with more specifics for those choosing to enter college.
- For those in a community college you have to keep in mind that those students have to be prepared for both postsecondary readiness and the workforce because they may already be engaged in both types of environment.
- "They (colleges/universities) aren't teaching and may not even be aware of the life skills that students need because they are focused on preparing students for yet another four years of school.
- Are we preparing students for jobs 15-20 years from now because 21<sup>st</sup> century jobs are NOW?
- If there is a disconnect between schools and businesses then we are losing effectiveness in preparing students.
- What are technology skills?

*Grand Junction, September 15, 2008*

### 21<sup>st</sup> Century Skills

- Collaboration outside of your normal environment; collaborate with other classes, schools, communities, etc.
- Critical Thinking
- Civic Engagement responsibility of being a citizen, keeping our democracy strong
- Innovation this is what made America so strong in the first place, it is what is needed to find creative solutions to problems
- Leadership with components of humility
- Personal Wellness knowing how to take care of your self – physically, mentally, and financially
- Information Technology without this in today's society you can't achieve the rest
- Financial Literacy beyond just finances students must learn how to put value on their decisions; practical skills are important

- We must find a way to wrap these soft skills in to concrete curriculum guidelines

*Facilitator: How are 21<sup>st</sup> century skills different from other skills?*

- Speed
- Advance citizenship
- Technology
- Life expectancy
- Skills and use of available tools needed today compared to years ago
- Today we are consumers
- We need the skill of discernment – to determine what is really important
- We rely on technology, but students need to learn how to adapt to change and seek multiple solutions to problems – for example, what can you do if technology is not working, what is the alternative?

*Facilitator: What is not an essential skill on this list?*

- Personal Wellness believes that this is a habit or a lifestyle rather than a skill
- Self Direction teaching this is difficult
- Productivity is a goal rather than a skill

*Facilitator: What is missing?*

- Library skills
- 2<sup>nd</sup> language acquisition
- Independent or efficient learner
- Media literacy

### School Readiness

- In an ideal world – BOTH. However, schools need to rely on parents and others who influence the child before they enter school
- Schools systems must be a part of school readiness – they need to reach out to the community during the early years – reach out should be directed to Preschools, churches, parents. They need to build a network with parents
- Missouri already does this – We should look at their “Parents as Teachers” initiative which reaches out to parents of children as soon as 6 months of age to inform parents of skills students need to acquire to be ready for schools and provide resources and information for school choice
- Schools spend a lot of time and resources to catch students up, but we need to have real expectations of what a five year old should be able to do. Don’t treat them (or give them expectations) like a seven year old
- Child’s Feelings about Themselves and Others – thinks US schools put too much emphasis on the child’s feelings; feelings will not be found within the European standards
- Exhibit Basic Knowledge About the World – it is interesting that this is reflected in the school readiness portion but “global thinking” is missing from the 21<sup>st</sup> century skills
- Children can be “caught up” in the first seven areas, however the last two items (Early math skills and basic problem solving skills) can not be “caught up” without holding other students back in the process
- These items used to be standards for being successful in kindergarten; now we are looking at them as things students should master before they enter...Is that right?
- It is important for students to be socially and emotionally ready to enter school
- A foundation of learning begins at home from 0-4 years of age which will allow students to be successful in school. The first four years are critical when considering a child’s ability to learn to read and write.

- IF children beginning school in kindergarten is mandatory, THEN schools need to be ready of all students who enter. IF not, this is a very different question.

*Denver, September 15, 2008*

### 21<sup>st</sup> Century Skills

- Economics vs. financial literacy?
- Questioned value of “productivity” on the list. How would you define that?
- More emphasis on communication and information technology.
- What about a love of learning?

### School Readiness

- Not just kinder, but add 1<sup>st</sup> grade as an option.
- What skills are identified to be taught in pre-school?
- Is this really a conversation about proliferating pre-school?
- With regard to the specific skills listed, what are the expectations, and what belief statements underlie these items?

### Post Secondary Readiness

- Significant concern about levels of remediation required at post secondary, particularly expressed by the Community College folks present.
- The group was all over the map on this one.

*Colorado Springs, September 16, 2008*

### 21<sup>st</sup> Century Skills

- Thought the skills listed were primary characters needed in the workforce but how do you embed them into academics?
- Would like to see added to list: Ethics, civil discourse, adaptability
- Most important skills thought to be: Critical Thinking, information literacy, Social and culture awareness and reasoning

### School Readiness

- Group wanted to know what prepared actually meant referring to definition number one about a student being *prepared* to enter Kindergarten.
- Believed that “We are all hoping that a student would come to us ready to successfully enter Kindergarten, but believes that definition #2, that the school system is prepared to meet any child’s incoming need is required and should be a given.
- Group thought that inner disciplinary skills need to be included in the list.
- Wanted success defined because maybe success for one kindergarten child is to sit for a period of 15 minutes.

### Post Secondary Readiness

- Most of the group was thrown off by the options of remediation.
- For the most part, a large portion of the group thought that post secondary readiness meant having the ability to complete a degree program. That a diploma should mean that a student is sufficiently prepared to enter post secondary and complete a degree or certificate earning program. However, that remediation should still be available.
- Group thought that the skills listed are BASIC skills that EVERY student should know.

- All skills are necessary
- Would like to see high cooperation and tolerance of others added to list
- Communication skills, Civil discourse, self assessment, reflective learner.

### Workforce Readiness

- Believed that the lists for workforce readiness and postsecondary readiness should be the same.
- Think that all students deserve the same opportunity and therefore should be taught equally.
- Group believed that CDE was ahead of Higher Ed. on this matter.

*Durango, September 16, 2008*

### 21<sup>st</sup> Century Skills

- Life long learning: continuing to be curious about knowledge and how to find opportunities to learn; different form of information skills because you need to be able to discriminate between truth and opinion and current events or statistics versus past news
- Ethics and ethical awareness
- Global knowledge
- Quest for knowledge – someone who continues to want to learn
- Collaboration, critical thinking, innovation – these skills allow you to problem solve and do it through team work
- Critical thinking, information technology, reasoning – information technology is important but that does not lead to critical thinking or reasoning skills naturally
- Civic engagement, critical thinking, financial literacy
- Civic engagement because it leads to the survival of our community – it fosters collaboration and tolerance. Productivity is also important for survival
- Collaboration, critical thinking and reasoning because they can be measured?
- Foundation of any community;
- World is changing so dramatically; many of the jobs 8<sup>th</sup> graders will have are not created yet – we have to prepared them to collaborate, have interpersonal skills, think critically and other strategies to prepare them.

### School Readiness

- In the past, public education has been a system to fit kids into and now we need to plug systems in to help kids.
- Kids being prepared for kindergarten could never happen – Forcing kids to fit into a program does not help their development.
- Both are important – schools need to be able to adapt to the students at all levels, but as much support as we can give for parents to prepare children is also important
- We have limited control over how children are brought to us, how can we make this change?
- Important that the public school system takes responsibility for any child who is five. We can't say to parents – “Sorry they are not ready and they can't come to school.”
- Developmentally readiness is important instead of just focus on age

### Post Secondary Readiness

- Critical thinking and problem solving – “half of our non-science majors have the ability to think in abstract terms”
- Interpretation – draw inferences from situations and make decisions
- Reasoning and problem solving

- Problem solving and human relation skills are critical – allows people to be able to work in a team if you can't solve a problem on your own, the team can.
- Implementation with the current class sizes will not allow this to happen...class size needs to be between 12-18 to make this achievable
- If we are serious about this then once they get there they should not need remediation.
- Compare to Europe who decides very early on a child is going to college and then they focus on preparing them to succeed... if we are educating kids to go to college they need to be ready to succeed without remediation
- Kids should be mastering material at each grade.
- What are we doing to prepare them in high school... if you are going to college, teach kids what it is like, what is available; teach kids in high school with real world connections
- If you can't succeed without remediation then they are not prepared.

### Workforce Readiness

- Needed abstract thought which is best developed in project based learning
- Where have all the vocational technology courses gone?
- They are not different (Postsecondary and Workforce readiness indicators)
- Personal Experience: Participant went into the workforce first because she knew she wasn't ready for the postsecondary system. The two difference lists are important because knew she did not have the skills to succeed in college, but was very successful in her field.
- There is a need for two distinct tracks in high school to prepare kids for postsecondary or workforce readiness
- Institution should prepare all students to choose their own path- tracks allow the institution to make choices for students. This is not good. Everyone has to be prepared to make the choice that fits them best.
- High school counselor asked dropouts of college why they left. Many kids have admitted that they couldn't function in the college system because of the lack of understanding of how college operates.
- If what we do is not relevant or interesting the kids, they will not do anything with it... why force kids to take courses that don't apply to their interest/major
- There is a real need for real life projects with local businesses, current events, and business leaders to have application with textbook material
- Competency based advancement should be considered more at all levels
- Requiring courses that are not major-related is important because it could expose you to other things
- Colleges are forming learning circles to help students adjust which is really helping
- Make education a profession – colleges need to teach skills of application to succeed in the workforce to help build the relevance
- Kids who take liberal arts classes are more well-rounded and exposed to other issues like tolerance and understanding.

*Alamosa, September 17, 2008*

### 21<sup>st</sup> Century Skills

- Underlying driving force behind these items is economics... marked them all as not critical because the one thing that is missing is ethical literacy. If ethical literacy is tied in then they become important... why is ethical literacy so important? Review page two of Bill Powell's notes. Notes on trust, wisdom, compassion, fairness, courage, duty, judgment, kindness, temperance, citizenship... contents that reach well beyond economics;

- Ethics and Honor
- Missing is the overarching skill that binds all these together... the ability to communicate. Using a variety of modes for a variety of purposes in front of a variety of audiences – oral written, numeric, visual,... Purpose of share info, persuasion, instruction.... Audiences are one on one, large audience, small group;
- Professional school counselors – realization of what we want students to achieve is due to professional counseling services.... Make sure PCSs are at the table and involved in the process – they have a unique point of view and access to info that others don't they have a global view
- Most extremely critical.... Ethics – educators model ethical and moral behavior but as we talk about ethics how much responsibility do schools have in the ethics of the child and how much is the responsibility of the parent. We see a degradation of ethics today.
- Not skills – understanding of technology is no longer a 21<sup>st</sup> century skill because it is inevitable. This is as common as public speaking was in the 90s.
- Where are the basics – spelling, essay writing, written and oral communication skills
- Most critical – critical thinking, intuition, reasoning and self direction
- Surprised that there is a different set of skills for workforce and postsecondary education and question the role of education in providing these skills – are we willing to take on the deficiencies?
- We are being asked to change our view from the last ten years of looking at success as who can correctly fill out the bubbles. We don't fill out bubbles in the workforce they need to know how to work together and use critical analysis, Thomas Jefferson used these skills, but our education system's direction changed.
- How are we going to teach self direction and motivation and ethics and then how do we measure it... MOTIVATION IS critical to add to this list. How do we deliver instruction differently to motivate?
- We compartmentalize everything but Socrates learned science, history, and ethics in the context of life. Make everything relevant. We expect children who have the most creativity and the best brains to fill in bubbles in stead of applying the knowledge and making a difference
- They are not necessary 21<sup>st</sup> century skills... we should be asking how to make a 21<sup>st</sup> century educational system.

### School Readiness

- There is a dual responsibility – we have to be ready for whatever and whoever walks through the door. Hierarchy of finger pointing ... they didn't get them ready for me. At third grade for example the teacher has to be ready, why shouldn't a kindergarten teacher?
- Preparing teachers and family and other organizations to think about individual children and not about the content. We need to prepare preschool teachers though 3<sup>rd</sup> grade.
- What does ready look like?
- Social and emotional and everything else will come eventually. The physical needs are the responsibility of families, BUT families need support!
- Personal Experience: Mother expressed concerns that her child was not ready due to separation anxiety and the school wouldn't take her in kindergarten. However the family couldn't pay for Head Start therefore the student never had an opportunity to get ready for entering school – she was denied and education she deserved.
- National education platform.... Ready schools, ready children, and ready community
- Pre-k students were sent to visit kindergarten classes and they lost interest because they saw children sitting in desks.
- It is about child development and the individual student

- Continuous progress versus specific standards for everyone – the assumption built into the system is that the children are alike at the start and stay that way... that is not reality. It is imperative to engage in more diagnostic descriptive design for teaching.
- Readiness starts with the quality for the human relationship with the child and educator –touch the spirit of the child every day to make the child willing to participate and take risks
- We are talking about things that legislatures can't legislate.
- Where else would they learn the skills, what choice is there other than the school being ready to take anyone
- Legislatures can create laws about inoculations and preparedness, and require this before you are entered into education, but the American society will not support that
- Society has already mandated preschool because all of our parents have to work and children are sent somewhere – the question is what are the expectations of preschools?
- In favor of preschool to everyone, but we need a qualified teacher in that classroom to make it work.
- We (early childhood educators) are daycare
- What are schools for – a school can not do well when society is doing poorly. Legislatures can mandate whatever they want, but if there is a problem in society or in an individual family what can the school fix
- Better late than never.
- There should not be a checklist for early childhood readiness, each student should be taught as an individual.

#### Post Secondary Readiness

- Where are the vocational opportunities for high school students? Where are the choices in high school for preparing them for college or workforce? It is implied that our schools are college preparatory, but they are not.
- Community forums about graduation – clear that it is part of the uniqueness of American society to give students choices and second chances. Many students would not have met any of the indicators provided on the list but they were able to succeed.

#### Workforce Readiness

- Why are these different from postsecondary?

*Fort Collins, September 17, 2008*

#### 21<sup>st</sup> Century Skills

- Mixture of group believed that most of the skills on the 21<sup>st</sup> century list did not really fall into the educator's role of responsible skills to teach. "Are these skills the responsibility of the public educator"
- Would like to see more focus applied on Math & Science
- "Some words thought to seem 20<sup>th</sup> century still."
- Would like to see included and thought most important in the 21<sup>st</sup> century skill list - Ethical Content, Intelligence, character, adaptability, innovation, social awareness (competency), self direction, critical thinking, civil engagement, financial literacy
- Believed that any of the skills that end up making "the list" need to be researched based.
- "Need to be careful of additional things that we put on the "plate" because even the content and skills we do have aren't being taught all that great. Educator's role should be more focused on teaching content area such as math, reading, science, because as it is these scores are down."



- Still, however, the majority if not all of the group marked down these skills listed to be of relevant importance for a student to know.

### School Readiness

- The overall group agreed that early school readiness was a “meet in the middle” of both of the definitions given.
- If they had to choose one, the group disagreed with the first statement that a child had to be ready and able to do certain things before entering school. The thought that a school should be prepared to except all students no matter what level the child may be at.
- The problem with the first statement about a child must be prepared to enter school is that it might create an anxiety for parents; advantage is that it helps to create a clear expectation and understanding role for the parent.
- Though that this list of skills implied that a child would be tested and have to pass before being permitted to enter Kindergarten. What happens if a child doesn’t meet these expectations? Can he not enroll into Kindergarten?
- Some in the group believed that early development has seen a huge shift into a social and emotional focus.
- Want to see skills added to list that represent alphabetical and numeric learning and also impulse control – ability to sit still for a period of time and class readiness.

### Post Secondary Readiness

- Majority of group believed that postsecondary readiness meant ultimately obtaining your degree or certification.
- Believed that none of the options given for a definition of post secondary readiness expressed an end result. “It’s more than just getting a student through college, but readying a student to have options. We need to prepare students not just for college but for whatever options they choose.”
- “If a student is post secondary ready then that student should have the ability to earn their degree. A student needing remediation is not completely post secondary ready.”
- Believe that we need to create and require higher standards to prepare students so that remediation isn’t needed.
- “Hopefully the revision of standards will bring unity between P-K and Higher Ed.” And a clear agreement between the two.
- Should set the bar as high as possible for every student as to provide EVERY student the opportunity to complete a higher education. At the same time however we should be conscious that we don’t set it to high that we set up for failure and difficulty in measuring.
- Problem identifying and problem solving – idea of learning how to learn.
- Having an understanding of post secondary options and what steps need to be taken.
- Communication skills

### Workforce Readiness

- On the idea of whether post secondary skills and 21<sup>st</sup> century workforce skills should be the same, the group thought that there should be a union of the skills so that more options are given and attainable to students.
- Believed that personal expectations was important
- “A knowledge base is needed no matter if you’re going to college or the workforce and we can’t loose that.”
- Post secondary is Possession of Knowledge
- Workforce is application of knowledge

- “A study shows that in civil engagement a student entering workforce knew more at the end of four years than a student entering a university.”

*Castle Rock, September 17, 2008*

### 21<sup>st</sup> Century Skills

- Should emphasize economic development
- Will the assessments change to reflect change in standards?
- More focus on global issues, multilingualism, and multi cultural
- More emphasis on communication skills.
- Civic engagement seems vague. Are we talking about democracy?
- Seems like it would make sense to have broad categories, with sub-categories of more specific 21<sup>st</sup> century skills.
- What about foreign language linked to 21<sup>st</sup> century economy?
- Non-verbal communication
- Is this another “layer on the cake?”, i.e. more for teachers to have to teach? Recommend fewer standards that go deeper.

### School Readiness

- Clarify ages—4 and 5 year olds?
- Too many options for preparing kids—home, pre schools, etc. Who decides what’s best?

### Post Secondary Readiness

- Discussion around where motivation fits into the equation.
- Same issues as with Denver.

### Workforce Readiness

- High school diploma seems meaningless in the current environment.
- Significant support for career and technical education among the group.

*Pueblo, September 18, 2008*

### 21<sup>st</sup> Century Skills

- As a college professor and union leader – the thing that is most often missing is critical thinking. Why are critical thinking and reasoning different items? Every year he is told the important thing is critical thinking but no one does it well.
- Can not come up with a difference between critical thinking and reasoning and the question will be split and alter the results of the survey. If they were in the same category or only one was on the list, almost everyone would pick that one.
- All skills need to be applied and relevant to the core content area and real life.
- Information technology – most people think for this first but the schools are behind – middle school is not preparing for high school and high school is not preparing for college; concern that students are using sites that are not factual and not safe – this needs to be addressed in the schools and these are skills students need all the way though college
- Our understanding of these terms is broader – i.e. cultural awareness – at one time it was just where you were from, now it involves learning about other cultures
- It is extremely important that we learn more about communication

- Technology can be counter productive because they do not know how to find things away from the Internet. Today the Internet is costly; lost ability to use other resources; how to use a library, tech is the biggest difference from the 1<sup>st</sup> century
- Ability to work in a diverse and multicultural environment
- It's not looking back and it is taking advantage of what our children can teach us.
- Working faster and learning sooner.
- It is looking forward to help students work more efficiently and be connected to world

### School Readiness

- If we place expectations on students to be ready we will put 40% more children at risk. Schools need to be ready to accept students
- Schools being prepared to meet the students needs is the only thing we have control over; Ideally, we would want children to be prepared for school, but reality is that schools have to be prepared
- There are different cultures in our communities that have different ideas in what young children should know. How can we dictate what students need before they enter the educational system?
- We work under a system that says if you are certain age you can go to kindergarten; we need to have some kind of standards to ensure success and allow them to compete; if they can't meet the criteria we need to have programs in place to help bring them up to speed
- Kindergarten used to be in place to get kids ready for first grade; now we need Preschool to get kids ready for Kindergarten soon we will need pre-preschool
- Our focus has always been on moving kids by age rather than ability
- I ask myself: "What would I want my child to go to school not having?" And the answer is that I want them to have everything on this list

### Post Secondary Readiness

- Last option (entry and a degree) is the only one that make sense to a college professor
- College readiness is equal to early school readiness in that we want them to be successful throughout their educational career
- There is more to college readiness than just getting into college – measurement has to include some sort of success in that environment. However, I am not sure how far you should take it.
- Maturity is missing
- Inquisitiveness- many students develop these skills as they enter because they are finding their passions and they are seeing themselves as a part of the common good. They find they can play a role in changing lives
- Problem solving is important but it needs to be open ended with limited information types of problems

### Workforce Readiness

- Innovation is missing – we depend upon this in industry
- Critical thinking is missing
- All of them are important
- Teamwork goes beyond cooperate with others
- "Collaborate with others" is better than cooperate with others
- Must be able to read and communicate – i.e. teacher showed a McDonalds ad to his students – The expectations for hiring were to be able to read and communicate. It is needed wherever you go.

- They should be equal (postsecondary readiness and workforce readiness); at the end of high school children should be ready for each but they will still be entering into a learning process
- We made a differentiation and we shouldn't have – my father never went to college, but he knows more math than I do – college just makes you elite and well-rounded to be able to cross over to other fields.
- By the time they are entering the workforce they should need less handholding provide independent skills
- No difference because there are too many similarities
- To prepare students for the 21<sup>st</sup> century workforce would be to take on a job and get up to speed within 6 months
- Liberal arts prepares kids for critical thinking but then they have to learn the job
- Community colleges are doing well with preparing students

*Leadville, September 18, 2008*

### 21<sup>st</sup> Century Skills

- The skills cannot be enforced by standards, they are important but these are mostly facts that can be learned. We would need to have two different sets of standards to accomplish these.
- “If hiring a chemical engineer I wouldn't look for any of these skills. I would rather look for how well they do in the content areas”
- The 21<sup>st</sup> skills look more like personality skills.
- “These skills can all be learned in service learning projects rather than during “actual” classroom time.
- Critical Thinking and reasoning are important because with jobs changing their needs to be adaptability, self – direction, financial literacy, ability to teach.
- Would like to see included- lifelong learner, adaptability, becoming a contributing citizen and global awareness.
- How will we assess these skills?
- Are these skills going to be defined before or after the standards revision?
- How will teachers be trained to teach these skills?

### School Readiness

- Group believed that early school readiness should be defined by both of the above statements.
- That a school should be prepared for any student to enter.
- With the first statement about students being prepared to enter school, are we setting expectations for parents that they can't or won't meet?
- Thinks that the success of a student's readiness is tied to the parent's education and engagement.
- Believes some of these skills should actually be taught in kindergarten and not necessary to have before the child enters kindergarten.
- Some skills in this list need to be more clearly defined.
- Some believed that if a parent could teach a child to sit in a circle long enough to take a direction or to listen; the school should and can teach the rest.

### Post Secondary Readiness

- We need to get out of the mentality that postsecondary just means an AA / BA degree, but that it also that technical and military are all just as important.

- It is extremely important to clearly define that postsecondary options doesn't just meaning a college education
- The college standards should be the same as other colleges around the World so that it is ensured that when a student graduates college they are accurately prepared for the global workforce.
- Would like to see Social Readiness
- Clearly defining "Understanding of how a college operates as a system and a culture"
- Ethics, self awareness, self responsibility, self evaluation (Knowing what to do with your strengths and your weaknesses)

### Workforce Readiness

- Believed that the lists for workforce readiness and postsecondary readiness should be the same, the only difference will be the application of the skills.
- Need self starters
- Many of the attendees complained that the schools can't do it all and that there has to be an initiative taking place on the parents end.

*Steamboat Springs, September 18, 2008*

### 21<sup>st</sup> Century Skills

- They're inclusive, the same ones we've been talking about ever since the issue of 21st century skills and abilities was raised. The more I talk about them with business professionals, they're nothing new, they're *basics* critical thinking, innovation, leadership, self-direction.
- What's missing is flexibility, adaptability to change. Our world is changing so rapidly. Students have to be able to deal with that, although they are dealing with it better than our staff is they're living it. Another thing that hit me: it's really difficult to transition to teaching these skills effectively. Embed them in the core curriculum. Pedagogy *how* we teach will get to these skills.
- They're not very comprehensive it's the same stuff our high school covers in leadership classes. They're important, but we can do a better job. [What's more important is the] ability to research, find information you need, the ability to teach yourself. We are hearing presentations that say what we learn today will be obsolete. We need to teach kids how to find information, how to think, how to teach themselves new skills the adaptability piece.
- Application of skills and knowledge to a problem, to produce something, that's basically what you have here [with 21st century skills], combining content while actually producing something, having an outcome combining critical collaboration with knowledge and skills.
- The other thing, under social and cultural awareness, is the ability to see connections beyond you, and out to the global world. For example, today's financial situation how will that affect you?
- I chose financial literacy exactly because of [the previous comment]: economy and the global market. We are not training our kids to have an in-depth understanding of finance, economics, global economy, the world market we need to do better.
- Critical thinking, [which provides] access skills to other areas. In order to be financially healthy, learning healthy, physically healthy you need to have good critical thinking skills.
- Critical thinking, but these should not be model content standards. They should be embedded in the core curriculum and focused on as we teach. No more model [separate, stand-alone] standards around these skills and abilities.
- Information technology: that's our world, more and more. Math literacy and the ability to evaluate components of technology we have access to, access and introduce it, teach how to use it critically.
- Make sure libraries get high emphasis.

- I like productivity; it is a higher level, more inclusive. You're talking about an outcome and a lot of skills go into that: time management, self-discipline, that extra step to solve a problem and produce something.
- Critical thinking, self-direction, and reasoning: those are the skills kids need to find what they want.
- This was a hard exercise.

### School Readiness

- I disagree a little. Kindergarten is a moving target as to what it really is. Some people think it's the new first grade. That scares me, they don't understand where our kids should be. I disagree.
- I have an early childhood background. I strongly agree if you're looking at the social emotional piece and not the academics.
- I strongly agree, but also all children need to have early childhood *opportunities*.
- The social emotional piece is the most critical for readiness.
- These definitions are so generic; we need to clearly define what skills we're talking about. Social emotional, literacy, what is the target for that? It's so nebulous. Sure, they should be prepared, but what does that mean? The state should come up with that it's more social/emotional readiness than academic.
- If it's not in kindergarten [where we decide to measure readiness], then where is it? Where is that magic place that "readiness" happens?
- Basic knowledge about the world is not necessary for a kindergartner. Is that something a five-year-old needs to know?
- Also put "desire to learn" that's critical. That's a reason I kept my son out of kindergarten, he wasn't ready to read. A child needs to be open to it, that window has to be open.
- Physical abilities are important so that a child is able to control himself in certain ways not have to go to the bathroom for a couple hours, be able to sit still for a couple hours, motor skills. My boys always struggled with fine motor skills, although using scissors isn't critical to starting kindergarten.
- Motor skills are a precursor to reading skills and other important abilities.
- I agree they're a precursor, but they're less important. Being able to follow instructions, the academic pieces, math I put those more in the middle. If children come in ready socially/emotionally, they can follow simple directions, teachers can teach them all the skills they'll need. They need to come in with non-academic skills.
- I think that this list doesn't address well early literacy skills, and maybe some are embedded. Cognitive development for young children play things, social, vocabulary, concept development I don't see these strongly embedded [in these measures. They don't] target early childhood.
- Are you saying that the number of vocabulary words a child has in his/her repertoire is critical to accessing literacy?
- Yes, [it reflects the] richness of their environments. They don't need that but the skill development is so critical to making connections between their world and what they know of the world the real world, what they've been taught.
- I get concerned about pre-K and what was said earlier about access. My brain is thinking, how can we change what we expect of kindergarten if we cannot provide opportunity and access for every kid? How can we manage that? I struggle with concreteness, with all that needs to happen from birth to four years of age, birth to two years things are wired by then. For some kids, by then it's too late, the damage is done, they haven't had the exposure to enough.

### Post Secondary Readiness

- Fourth one: to me if you need remediation, you're not ready.
- Postsecondary ready means workforce ready. There is no standard definition of remediation. I have a hard time putting remediation in there anywhere. There is nothing in SB 212 about the workforce. I testified against this bill. A lot of definitions are being lumped together and they shouldn't be.
- Intellectual openness is not at all critical, supposed to be intellectual to be productive.
- All are at least somewhat important. Extremely important would be inquisitiveness and human relations skills [such as] dealing with different kinds of professors, roommates, being away from home, etc.
- They link that as being successful out in the workforce, as one of the most important skills. [With that ability] there are a lot of other things one can learn. Also, the only thing that's missing here, kids enter college with a certain idea about what they're going to do, then change their mind. So flexibility, ability to adapt to change that's really important. Students tend to change a lot in the course of four years. The world *is* flat.
- Not important: understanding how a college operates. Intellectual openness inquisitiveness, ability to analyze these is extremely critical. Our kids lives will change exponentially in their own lifetimes, they need the ability to analyze, change, and think critically.
- I agree, how a college operates is not important. Intellectual openness is critically important, being open to new ideas, be willing to try things different from high school.
- "Collaboration" and "self-discipline" from the list of 21st century skills need to be here. Also the ability to work with others; confidence, self-esteem, personal security (secure in who you are as a person); perseverance, ability to overcome obstacles.

#### Workforce Readiness

- I would say that information and communications technology is the most important. A student has to be able to function technologically, be able to read with understanding and *listen* they don't hear what you think they hear.
- All of these are important to me, every one of them.
- Me too.
- Cooperating with others I had a little higher. I work with that in the classroom.
- Top four are our core: read, write, listen, identify and solve problems.
- I was thinking, no they're not, but when I look back and read the skills we're talking about, they're identical: learning how to work with people, communicate, use technology, listen they're all the same.
- I strongly disagree. Not that there isn't enough crossover, but one is very practical and one is theoretical, the execution is very different that gets lost in this discussion.
- Re: workforce readiness: I hear from CCHE that students need algebra 2, geometry, calculus the pre-college curriculum. [Kids going directly into the workforce] don't need that curriculum. First of all they're not learning in the same way, they don't have the values placed in the same areas as those kids heading to college. The knowledge they want is practical so they can use it right away. They probably don't need calculus. They might get it better by building a house rather than sitting in a classroom. I don't believe they're exactly the same, although there is a great deal of crossover.
- I disagree with the statement. Again, there is crossover on certain things, some math, what I see in schools are students' interests and skills going in different directions.
- I take the other side. I struggled at first but I agree with the statement because I feel like the rest of the world is passing us by. Their basic level is so much above our high level. Businesses say they wish entry-level workers had better skills. We are settling for less. I want to raise the bar.
- What kind of skills are employers asking for?

- Workers all need to be more reliable, able to think for themselves.
- Self-direction. If you sit down with a person in the business community, even in Steamboat, [they'll tell you] kids need babysitting, they can't go from one task to the other. It's the same thing in college, one class to the other, homework time management is a problem. But it's an issue both in the workforce and in higher education you still have to be able to do it.
- I don't think they are. There is tremendous accountability in K-12, but when we turn students loose to institutions, there is no accountability or efficiency on anything we're talking about. Students take it upon themselves, which they should, but colleges don't take a vested interest in helping kids succeed.
- I very much agree. Colleges are failing our kids. They are doing a very poor job of building upon what they're given.
- At some point you have to say it's the student's job, the student's initiative [to succeed,] but I'm not sure college and universities are communicating with the workforce to get students ready.
- I agree with this statement. When you look at colleges throughout the country, there is a huge spectrum. Sure, some don't care, but the length they go to ensure student success and retention is tremendous. My own personal experience is positive. The curriculum is based on the industry, industry problems in the curriculum. Colleges are meeting needs of kids.
- Unfortunately, some colleges have dumbed down education completely. That's why we're not competitive in the global market place. It starts in preschool and goes all the way up. It should not be top down, it needs to be bottom up.
- I think that colleges and universities have a program and the kid has to fit in or not. My experience: the school has not been adaptable, the kid adapts to program. It can be a rough road. Also, re: job interviews: I don't think people come out prepared to do any of the jobs we expect them to do in the workforce. Students come out of college with their degrees, but they still have to be re-taught skill development.
- I'll answer with a different interpretation: It's important for kids to get intellectual openness, inquisitiveness in high school, but I was pleased that my kids were getting some of those things in college that they didn't have in K-12, which was more rote. In college it was more open and there was more exposure. Colleges are changing; there is more attention now to practical experiences, internships. I know it's different in where kids go to college, but in my own experience, we had those opportunities available. I thought they were doing some things right.
- A big issue is having higher education look at itself (P-20 council discussions).
- CU just did a 20-30 visioning process, taking hard looks at what students need.
- It could be a different school within the whole university. For example, the business school at CSU is very active with business community.
- Kids have a lot more options in colleges, some of it is depending on how much they want to do, but there are a lot of opportunities.

*La Junta, September, 29, 2008*

### 21<sup>st</sup> Century Skills

- Group wanted to see moral, ethics added to list
- Thought most important skills were critical thinking, civic engagement, reasoning, self direction, financial literacy and personal wellness

### School Readiness



- Majority of this group believed that the definition on school readiness was best expressed through definition number 1. Although there were some that still believed that a school should be ready to accept any child that comes in.

### Post Secondary Readiness

- Response on what the group thought that post secondary readiness meant was split. Half of the group believed that if a student could complete the first year of college without remediation then a student wouldn't need it to get through the rest and that they were prepared for post secondary. The other half expressed that post secondary readiness meant a student ultimately would earn a degree or certification.
- "Sustaining education and perseverance to earn a degree or certification is a true measure of readiness."
- "Students should not need remediation in college. Colleges need to be more selective and if they feel that a student is not ready for college, then do not accept him until requirements are met."
- Group thought that these skills were important in defining post secondary readiness.
- Believed that a better job of implementing these skills into teaching could be and should be done.
- Some thought that these skills could be taught in college, that the presence or absence of these skills didn't necessarily define if a student was ready for post secondary or not.

### Workforce Readiness

- Interpersonal skills
- Ability to read with understanding
- Cooperation skills
- Group believed that if you were to separate the skills required to enter college from skills required to enter the workforce that you would make elite and one not. They need to be the same set of skills for both.
- Many of the skills should be the same it would just be the application of the skills that would have to be different.
- Group believed that the colleges and universities are for the most part preparing students, but brought up a couple of questions..... "Are we educating students for our past workforce or our future workforce?" "Is the return investment for these institutes paying off for them?"

*Fort Morgan, September, 30, 2008*

### 21<sup>st</sup> Century Skills

- Critical thinking – can be seen as the umbrella for many of the other skills listed, really it is in the application of the skill where you see the critical thinking skill unveil.
- Personnel wellness, adaptability
- Would like to see productivity added to list-implies that an individual is using their time to get results. "What good is critical thinking if you're not doing anything with it?"

### School Readiness

- "It's almost impossible to control what happens in a home between a child's birth and the time they enter school. So I don't believe that we can ask that a child has to have a set of skills before entering kindergarten. But a school should be prepared to take the child as is and prepared to teach that child. Although it would be nice to have a child ready with the skills to at least be able to sit and listen and to get along with others.

- Part of the group felt that several of the skills were really not that important for a child to know before entering school, because they felt that these were skills the children could pick up fairly quickly in a routine setting like in school.
- The development of core skills is really more important than the academic ones.

### Post Secondary Readiness

- Partial group believed that postsecondary success was defined by ultimately finishing with a degree or certification
- Comment about remediation during 1<sup>st</sup> year. “Seems that if a student can complete the first year without remediation then more than likely they will not need a second year or third year of remediation.
- “Over ½ of students attend a community college, which does not require admittance. Really if we define postsecondary readiness by the statement that success is obtaining a four year degree, then we eliminate the majority of our students from being successful.”
- Believe that the skills listed, although important, are not critically necessary for a student to know before acceptance into a postsecondary institute is admitted. Students will learn these skills in the process
- However have seen that when a student has received early exposure to skills such as these tend to succeed at a higher level than those later exposed to these skills.
- Would like to see included on list self-awareness, self-direction, and a lifelong learner.

### Workforce Readiness

- Group felt that this list was the most relevant compared to the school readiness list of skills and the postsecondary list of skills.
- If you’re entering the workforce then you have to know these skills NOW. If you’re going to college then you have a little time to acquire and grow in them.
- Believed that some of the skills were necessary for both college bound and workforce interested students to know.
- Skills for both types of students should be the same, yet consequences for not knowing these skills are much different for the two.
- The skills required should equip every student for equal opportunity, whether it is workforce or college.
- The concern was stated that why should we require a student to learn something that he will not need to know. Referring to not every student wants to attend college so why require them to have to have the same skills as those who want to go?

## CASE Conference Results:

On September 26, 2008, 57 Superintendents representing all regions of Colorado convened for a retreat in Keystone. The Superintendents participated in a “clicker” survey to assess attitudes towards 21<sup>st</sup> century skills, and readiness indicators for school, postsecondary, and workforce. The results of this survey are as follows:

Which of the following 21st century skills and abilities do you believe are the most important and should be included in the Colorado Model Content Standards?

Top three choices:

1. Critical thinking and innovation
2. Leadership and collaboration
3. Information technology

	First choice (n = 52)	Second choice (n = 42)	Third choice (n = 38)	Average
Civic Engagement	3	3	2	2.7
Critical Thinking and Innovation	<b>32</b>	<b>10</b>	3	<b>15</b>
Financial Literacy	1	3	2	2
Information Technology	<b>5</b>	<b>13</b>	4	<b>7.3</b>
Leadership and Collaboration	<b>5</b>	<b>8</b>	<b>10</b>	<b>7.6</b>
Personal Wellness	0	0	0	0
Productivity and Self Direction	<b>5</b>	5	<b>9</b>	6.3
Social and Cultural Awareness	1	0	<b>8</b>	3

How much emphasis should be placed on 21st century skills (e.g., creativity, inquiry, critical thinking, problem solving, collaboration, etc.) within Colorado standards? (n = 36)

- Should be a preface to standards (“through problem solving, students demonstrate knowledge of ...”) – 47%
- Should be benchmarks in standards, as appropriate – 33%
- Should appear as stand-alone standards – 14%
- Should not be included (they are not truly content) – 6%

When it comes to reporting student progress toward standards, how much emphasis should be placed on 21st century skills (e.g., creativity, inquiry, critical thinking, problem solving, collaboration, etc.)? (n = 45)

- Standards should be inferred by how students did on content standards (“via problem solving, students show knowledge of...”) – 49%
- Should tell how students did on 21st century skills that appear as benchmarks in standards (as appropriate) – 40 %
- Should tell how students did on stand-alone standards related to particular 21st century skills – 9%
- Should not describe at all how students did on 21st century skills (because standards deal with skills, not content) – 2%

Trade-Offs: Comprehensiveness vs. Parsimony – how specific is enough? (n = 36)

Colorado should:

- Define standards and benchmarks, not curriculum – 53%
- Prescribe standards, benchmarks and curriculum – 17%
- Specify standards just to the level of standards – 17%
- Big ideas matter most (a la Singapore and TIMSS) – 14%

Early school readiness means that students are prepared to enter and be successful in Kindergarten. (n = 55)

- Agree – 40%
- Strongly agree – 36%
- Disagree – 22%
- Strongly disagree – 2%

Early school readiness means that school systems are prepared to meet the needs of all incoming Kindergarten students. (n = 45)

- Strongly agree – 36%
- Agree – 27%
- Disagree – 20%
- Strongly disagree – 18%

College is the new high school (whether students attend college or not, high school should prepare them to be successful in college if they do go). (n = 40)

- Strongly agree – 42%
- Agree – 35%
- Disagree – 12%
- Strongly disagree – 10%

The term *Postsecondary* refers to college, technical or trade school or other form of higher education. The term *Remediation* refers to a student requiring instruction in a content area before they can gain admittance to a credit-bearing, entry-level course. How do you define postsecondary readiness? (n = 55)

- A student's ability to be accepted into a postsecondary institution – 33%
- A student's ability to be accepted into a postsecondary institution and perform successfully, without remediation, for one year – 33%
- A student's ability to be accepted into a postsecondary institution and ultimately earn a degree or certification – 29%
- A student's ability to be accepted into a postsecondary institution and perform successfully, without remediation, for two years – 5%

Which of the following indicators do you believe are the most important for a student to enter and be successful in a postsecondary institution?

Top three choices:

1. Problem solving
2. Human relations skills necessary to cope within this system
3. Intellectual openness and inquisitiveness

	First choice (n = 49)	Second choice (n = 49)	Average
Intellectual Openness and Inquisitiveness	<b>9</b>	<b>7</b>	<b>8</b>
Analysis	1	6	3.5
Problem Solving	<b>16</b>	<b>17</b>	<b>16.5</b>
An understanding of how college operates as a system and culture	8	4	6
Human relations skills necessary to cope within this system	<b>12</b>	<b>12</b>	<b>12</b>
Reasoning and Argumentation	2	0	1
Interpretation	0	3	1.5
Precision and Accuracy	1	0	.5

Which of the following indicators do you believe are the most important as a measure of a student's preparedness to successfully perform entry-level work in a 21st century workforce?

Top three choices:

1. Identify and solve problems
2. Read with understanding
3. Use information and communications technology

	First choice (n = 48)	Second choice (n = 48)	Average
Read with understanding	<b>12</b>	<b>14</b>	<b>13</b>
Convey ideas in writing	0	1	.5
Listen actively	4	3	3.5
Identify and solve problems	<b>25</b>	<b>18</b>	<b>21.5</b>
Advocate and influence	0	0	0
Use information and communications technology	<b>5</b>	<b>6</b>	<b>5.5</b>
Plan	0	2	1
Communicate the decision process	2	4	3

To what extent do you agree or disagree with the following statements (11-13)?

The knowledge and skills required to enter the workforce from high school are the same skills necessary to enter college. (n = 50)

- Agree – 42%
- Strongly agree – 20%
- Disagree – 20%
- Strongly disagree – 18%

## Conclusion:

The Colorado Department of Education engaged more than 3,600 Coloradoans in our conversations to define 21<sup>st</sup> century skills, school readiness, postsecondary readiness, and workforce readiness. We received valuable input from every region of the State and from a wide variety of sectors (P-20 education, business, parents, students, policymakers, community members). Synthesis of these survey results and discussions has led to some guiding thoughts for our definitions recommendations. We continue to ask the community for their thoughts and feedback as we work towards re-envisioning education in Colorado.

A summary of the responses to *21<sup>st</sup> century skills* reveals the following trends and questions:

*Trends:* critical-thinking, problem-solving, personal responsibility, self-advocacy, information literacy, ethics, adaptability, collaboration, innovation, reasoning, interpersonal skills, self-direction, and motivation.

*Questions:* How will we measure these skills? How will they be imbedded in the standards, then curriculum? How will teachers be trained to promote these skills in their students?

A summary of the responses to *school readiness* reveals the following trends and questions:

*Trends:* Schools must be ready to accept students as they come, but information and resources need to be available to parents and child-care providers in order to better prepare students; the social-emotional attributes were rated as much more important than academic indicators. However, many Kindergarten teachers cited that a large number of students came to school not ready to engage in any of these activities, i.e. many are still not potty-trained, able to sit and listen for a short period of time, or able to take simple instructions; it was suggested that each student start an individual plan at Kindergarten to help educators, parents and the student track progress and address needs.

*Questions:* What do the school indicators include? What is meant by a child being “successful?”

A summary of the responses to *postsecondary readiness* reveals the following trends and questions:

*Trends:* Important attributes: ethics, time-management, study skills, self-assessment, perseverance, communication, civil discourse, tolerance, cooperation, critical thinking, problem-solving, reasoning, human relation skills, collaboration, and motivation. If a student needs to be remediated at postsecondary entry, then they are not ready to participate in postsecondary experiences. These skills must be fostered within content areas and experiential learning. Higher education and K-12 education must align their expectations in order for students to be prepared.

*Questions:* What options or choices do high school students have so they may prepare for the appropriate two-year, four-year, or career and technical education postsecondary option? Should all high schools be “college-bound” focused only?

A summary of the responses to *workforce readiness* reveals the following trends and questions:

*Trends:* Important attributes: persistence, communication, collaboration, adaptability, responsibility for self, work ethic, listening to others, read with understanding, able to take initiative, ability to cope with adversity, financial literacy, critical thinking, information literacy, citizenship, empathy, decision-making, conflict resolution, time management, creativity, innovation, identify and solve problems. Project-based learning is the best way to develop these skills and prepare students to apply them in life. Most agreed that while the indicators for postsecondary and workforce readiness are or should be the same, citizens also agreed that student preparation for each should be different. The ability for a student to choose their own path - college, CTE, military, workforce – should be available. Alignment between higher education and the workforce should be a priority.

*Question:* Not every student wants to attend college so why require them to have the same skills as those who want to go?