CERTIFICATES OF EDUCATIONAL ATTAINMENT

FOR IN-SCHOOL YOUTH:

ACCEPTABILITY AND FEASIBILITY

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Tying academic diplomas to high stakes assessments raises concerns that some high school students who do not perform well on standards-based tests may leave school without academic credentials, or they may choose to drop out rather than receive only a certificate of attendance. Local educators proposed addressing these concerns by capitalizing on the potential overlap between K-12 and adult education academic standards. It was hoped that by using an established adult education certification process (CEAs) to document students' increasing academic skills at multiple points in their high school careers, students might be more motivated to stay in school and continue to pursue a diploma. Because little was known about the potential benefits and consequences of instituting such a use of CEAs within the current K-12 system of standards and accountability assessment, this study addressed two major questions.

➢ Did students, parents, teachers, and school administrators consider CEAs to be an acceptable method for documenting student achievement and progress on the Delaware Content Standards?

➢ How feasible was it for school staff to gather and evaluate CEA assessment materials?

The students, parents, teachers and administrators in this study saw CEAs for in-school youth as an acceptable and positive option, but had a few concerns regarding successful implementation. They believed that offering CEAs to in-school youth would motivate many students to work harder and achieve more because it focused on what students could do, not what they could not do. They believed it could potentially provide positive reinforcement for students that typically did not receive much positive reinforcement with regards to academics. However, they also realized it would not be a panacea for all students. They felt that while offering CEAs to students would encourage most, for some it would be no more than a piece of paper. Many

students as well as parents felt that a student's attitude toward education was pivotal in determining what impact offering CEAs to high school students would have.

While no student or parent viewed a CEA as a replacement for a diploma, they believed it would have a differential impact on a student's desire to stay in school. Several believed, because of the motivation factor, it would encourage many to continue their education in high school with the goal of earning a diploma. However, some realized that because of other factors, this system might not have any impact on some students' desire to stay in school. A few participants questioned whether there would be a sub-population for which this system would encourage them to drop out of high school. They felt this remained to be seen.

Participants identified two major issues that limit, at present, the feasibility of using CEAs for the in-school youth targeted in this study. First, there was a mismatch between the academic skills and knowledge the high school teachers were expected to teach and those that must be evidenced for the adult basic education CEA Levels L-2. Except for student participants enrolled in an alternative academic program, high school students like those in this study typically would not be working within curricula where instruction and assessment of basic skills were likely to occur. Another related problem was when and how, in the current context of standards-based curriculum reforms, basic skills remediation should be offered to students.

The second feasibility problem was closely related to the first. The differences in curricula offered introduced problems related to efficient and timely documentation of the skills represented in the adult basic education curriculum. The greatest problem reported by teachers as they attempted to document students' skills for CEAs was that they did not have a single assessment that efficiently sampled all the required skills. Teachers had to assemble a variety of student products from work at hand, or they had to create and administer brief informal

assessments. Only the alternative academic high school program shared any assessments in common with the approved set of adult education assessments. Further, we found little research that would suggest technically adequate and valid assessments that might be shared between the two systems.

Finally, an unexpected issue emerged through conversations with participating teachers regarding the skills that must be evidenced for CEAs. Teachers commented on the similarities between the adult basic education skills list and the "Competency Card" system previously coordinated through the middle schools. The Competency Card system may have represented a "minimal competency" approach to accountability that was in conflict with initial efforts to institute "high standards" forms of accountability in the State. The abandonment of the Competency Card system highlighted the need for clarification of the value of basic skills assessment in the current climate of accountability.

In sum, the concept of CEAs for in-school youth generated positive comments from students, parents, teachers and administrators. However, participants identified problems with feasibility and raised concerns about implementation contexts and target groups. These issues and concerns should be carefully considered to ensure that, if and when implemented, CEAs for in-school youth are meaningful and functional for students, parents, and educators. In this light, we suggested and discussed in the last section of the report several policy questions regarding the following points:

➢ Philosophical differences between standards-based and basic skills educational approaches;

➢ Skills addressed in the adult basic education curriculum and those currently addressed in high schools;

➢ Lack of technically adequate and valid assessment strategies; and

➢ CEAs as a drop out prevention strategy.

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INTRODUCTION

The purpose of this research study was to determine the acceptability and feasibility of permitting in-school youth to seek an adult education Certificate of Educational Attainment (CEA). The Delaware State Department of Education, through its adult education programs, approved CEAs as a means to certify academic skill attainment of adults and out-of-school youth. These individuals typically used CEAs as documentation for employment, entry into training programs, and motivation for continued personal development.

At the time of this study, Delaware offered CEAs at four levels of academic achievement: L (Literacy), 1, 2, and 3. Levels L -2 represented reading, writing, and mathematics skills typically mastered prior to high school entry, and Level 3 represented skills in reading, writing, mathematics, and content knowledge in social studies and science at the high school level. In Delaware, students receiving a Level 3 CEA were considered capable of passing the General Education Development (GED) test or obtaining a high school diploma.

In the adult education system, obtaining a CEA at any level required mastery of all specified reading, writing, and mathematics skills at that level. In other words, a student who mastered the reading and writing skills at Level 2, but mathematics skills at Level 1 would be eligible for a CEA Level 1. The CEA Level 2 would not be granted until the student assembled an assessment portfolio that also demonstrated mastery of the mathematics skills at that level. Similar to a high school diploma, CEAs were considered "non-expiring" once conferred.

The idea of making CEAs available to in-school youth was proposed by local educators in the context of Delaware's recent educational reforms. Some educators expressed concern that tying academic diplomas to passing high stakes assessments, as Delaware intended to do, would influence some high school students, especially those categorized as low achieving or having special needs, to leave school prior to completing an educational program. They believed that

having failed the state tests, some students would see a diploma as unattainable or too difficult to achieve. This has been a common concern when states implement high stakes accountability systems, especially if a single test carried great weight in defining success (Guy, Shinn, Lee, & Thurlow, 1999; Langenfeld, Thurlow, & Scott, 1997; Thurlow, Ysseldyke, & Anderson, 1995; Wagner, 1991).

Unfortunately, the reality of this concern has been difficult to confirm due to the continuing flux in accountability and graduation requirement reforms across the nation and the limited research available (Langenfeld et al., 1997; Thurlow et al., 1995). Some studies have found evidence of a connection between failure on accountability tests and dropping out (Catterall, 1989; Reardon, 1996) while others have found a connection only for higher achieving students who experience test failure (Griffin & Heidorn, 1996). There is some evidence to suggest that students with disabilities are more likely than their peers without disabilities to drop out under failure conditions (Wagner, 1991). The connection between state test failure and dropping out may be most likely realized if test failure is also connected with retention in grade and becoming overage for grade; factors that have been directly tied to dropping out (Goldschmidt & Wang, 1999; Langenfeld et al., 1997; Roderick, 1994). It is possible that students at either end of the achievement spectrum perceive reduced performance incentives when single pass/fail opportunities or cutoff scores are in place. Performance incentives may increase if students perceive increasing rewards associated with successive achievement levels (Bishop, 1996).

Given these concerns and beliefs, local educators proposed that one means for addressing the situation would be to use the established adult education certification process to document students' increasing academic skills at multiple points in their high school careers. The proposed

target student group was 9th and 10th graders, given the high numbers of students who exit the school system in those grades. The belief was that if students had opportunities to document what they could do and success was tied to positive adult outcomes (i.e., multiple CEAs), then they would be less likely to drop out. Further, students might be more interested in continuing to pursue a diploma if they saw CEAs as benchmarks of progress toward that end; similar to the function of CEAs in the adult education system as stepping stones toward an adult credential (GED or high school diploma).

The idea of offering adult education credentials to in-school youth had not been implemented or tested previously. Adult education programs were usually seen as an alternative to high school programs for adolescents who elected to leave the K-12 system. Thus, unless an out-of-school adolescent enrolled in adult education, he/she would have been unlikely to encounter this type of basic skills certification model. It should be noted, that local educators were not proposing a concurrent enrollment system; rather they wanted to explore an overlapping assessment and certification system specifically for students who might not receive a diploma by age 21, yet wished to show evidence of academic skills mastered in school.

Because little was known about the potential benefits and consequences of instituting such a use of the CEA system within the current K-12 system of standards and accountability assessment, this study addressed two major questions.

➢   Did students, parents, teachers, and school administrators consider CEAs to be an acceptable method for documenting student achievement and progress on the Delaware Content Standards?

➢   How feasible was it for school staff to gather and evaluate CEA assessment materials?

Answering these questions was intended to help local decision-makers consider whether to push forward with implementation and/or lay the groundwork for further study, as needed.

Participants Selected

Three comprehensive high schools, one alternative academic program housed in a comprehensive high school, and one Intensive Learning Center (ILC) in Delaware participated in this study. Initially, only three of the five schools – one from each Delaware county - were contacted. Each of the three schools was asked to select a team of educators consisting of at least four teachers to participate in the study -- one 9th grade and one 10th grade mathematics teacher and one 9th grade and one 10th grade English Language Arts teacher. Two schools chose to include at least one special education teacher and/or reading specialist to complete their team. Each team with the assistance of a school counselor and/or building administrator was to identify a sample of 16 students for participation. This sample was to include 9th and 10th grade students who received a score of "well below" or "below" the standard on the mathematics or reading section of the Delaware Student Testing Program in the spring of their 8th grade year. This target group was selected because of the high drop out rate among students, especially those experiencing academic failure, during the first two years of high school. Further, because students with special education needs were thought to be more often affected by state test failure, local educators requested that this group be over-represented in the participant group.

One high school declined to participate further after an initial meeting with the research team and difficulties securing student consent forms. At that point, two additional schools were contacted and agreed to identify students and teachers who would participate in portions of the study. (See Table 1 regarding how schools contributed to the study.)

A total of 30 students and their parents agreed to participate by returning a signed copy of the parent and student consent forms. The sample was evenly divided between 9th and 10th grade

students. Students ranged in age from 18 to 14 years; average age was 15.69 (median = 16, mode = 15). Table 2 shows how participating students compared to other students in Delaware who also received scores of below or well below standard. Of the 14 students classified by the schools for special education, 10 were identified as having a Learning Disability, 2 were classified as having an Emotional or Behavioral Disorder, and 1 each was identified as having Mild Mental Retardation or an Attention Deficit Disorder. Of the general education students, 10 attended the alternative academic program housed within the comprehensive high school. Three students with special education needs attended the ILC. We received 10th grade DSTP scores on 9 students. All nine received ratings of below or well below the standard in English and mathematics. Two general education students met the standard in writing.

Table 1. Information Provided through Participating Schools.

	Initial Project Meetings	Student Focus Groups	Parent Interviews	Teacher/ Administrator Focus Groups	Individual Student Assessment Materials
Comprehensive High School A	X	X	X	X	X
Comprehensive High School B	X				
Comprehensive High School C		X	X	X	
Alternative Academic Program	X	X	X		X
Intensive Learning Center		X	X		

Table 2. Students Who Scored Below or Well Below Standard on the DSTP in 1998, 1999, and 2000 -- Study Participants vs All Delaware Students

	2000	1998			2000			1999		
	Participants	8th Graders			10th Graders			8th Graders		
		Reading	Writing	Mathematics	Reading	Writing	Mathematics	Reading	Writing	Mathematics
	n=30	N=8254	N=7934	N=8235	N=7278	N=6894	N=7244	N=8219	N=7733	N=8227
Female	57%	39%	37%	49%	44%	44%	52%	43%	41%	51%
Special Education	47%	21%	17%	14%	12%	8%	7%	22%	15%	14%
Low Income	32%	52%	44%	45%	32%	26%	27%	49%	39%	41%
Ethnicity										
White	53%	49%	58%	56%	50%	62%	57%	51%	60%	57%
African-American	43%	44%	37%	38%	42%	32%	37%	42%	34%	37%
Hispanic	4%	6%	4%	5%	5%	4%	4%	6%	5%	5%

Research Design

Acceptability. To answer the first research question regarding the acceptability of the CEAs, focus groups with students, telephone interviews with their parents, and focus groups with educators (teachers and administrators) were conducted during the late spring and early summer. Thirty students across three high schools agreed to participate in the focus groups; however, two students were unable to participate due to their absence on the day of the focus group. In addition to the student focus groups, a parent from each of these students' homes was contacted for a telephone interview. While twenty-nine parents agreed to participate, only nineteen parent interviews were conducted. The other ten parents did not participate in the interviews for the following reasons: 1 moved out of state for the summer; 1 declined to participate; 3 did not return our phone calls; 2 had phones that had been disconnected, and 3 were telephone numbers that did not exist (verified with both the school and directory assistance). Teacher and administrator focus groups were also conducted at each school. Teachers included regular education math and English Language Arts teachers as well as special education teachers. Administrators included an assistant principal, a reading specialist, and district curriculum supervisors. Four administrators and nine teachers participated in the focus groups. Copies of the focus group and interview protocols are located in Appendix A of this report.

Feasibility. To address the second question of feasibility, four activities were undertaken: (1) face-to-face meetings and follow-up telephone calls with teacher and administrator teams, (2) collection and review of student work samples, (3) face-to-face meetings and telephone conversations with Delaware Department of Education staff

(adult education and transition systems change), and (4) a literature review focused on assessments used by adult education and the participating high schools. The information collected through these activities was compiled and synthesized to highlight common questions or issues and to identify program features that would facilitate or impede collaboration on CEAs between high schools and adult education.

Three meetings were held with small groups of staff from three different schools (two comprehensive high schools and the alternative academic program). A total of 14 teachers and administrators participated. Of the 10 general and special education teachers who contributed information, 5 primarily taught English, 4 primarily taught mathematics and 1 had responsibility for both subjects. Three of the 10 teachers were primarily responsible for students with special education needs. One principal, 1 assistant principal, and 2 guidance counselors also participated and represented a single comprehensive high school.

Each meeting lasted approximately 2.5 to 3 hours. School staff were informed of the scope of basic skills and types of evidence currently accepted by adult education for CEAs. They discussed the match between the schools' current curricula and the adult basic education skills curricula and identified potential sources of evidence available within the schools. Based on the assumption that participating students were performing below high school level on basic academics, the study focused on evidence of performance at CEA levels L-2.

Teachers from two schools (one comprehensive high school and the alternative academic program) collected examples of student work that might meet adult education criteria and made notes regarding amount of time needed to do so. Individual assessment

folders were assembled for 12 students; 5 with special education needs and 7 general education students. Additionally, the general education mathematics teachers provided anonymous samples of other student work to illustrate the type of work completed in their classes. Another comprehensive high school was unable to obtain consents for any students and elected not to submit any work samples other than anonymous sample items shared in the initial meeting. The four administrators from a comprehensive high school also met to review individual student assessment folders to determine if they met adult education criteria and to identify additional questions or concerns.

Meetings and conversations with Department of Education (DOE) staff focused on responding to questions raised by school staff as they discussed CEAs and collected and reviewed student work samples. Answers and clarifying information were in turn shared with the school staff. Additionally, DOE staff discussed which aspects of the adult education system were more or less flexible.

Based on the specific assessments currently in use in the participating high schools as identified by school staff, a literature search was conducted through ERIC (1982-7/2000) and PsychInfo databases (1989-7/2000), and the BUROS Institute Mental Measurements Yearbooks. The purpose of the literature review was to locate research and test reviews regarding the technical quality or concurrent validity of assessments used by the schools and adult education programs.

Acceptability

Based on the data gathered from focus groups with students and educators as well as interviews with the students' parents, their comments about permitting in-school youth to seek a CEA were divided into four categories:

➢ the perceived purpose of a CEA,

➢ the advantages and disadvantages of allowing in-school youth to seek a CEA,

➢ barriers and enabling conditions for implementation,

➢ and unresolved issues.

Perceived Purpose. Most saw the purpose of CEAs as a way to show what the student has achieved. As one student said, it was a way to "see how smart we are." Some students also saw CEAs as a way to identify their strengths and weaknesses. Many parents saw CEAs as a way to motivate and encourage their son/daughter to do better in school. Some educators also saw CEAs as a way to give students recognition of attaining skills even if not mastering the state Content Standards at their grade level. One educator saw the purpose as a way to encourage students not to drop out of high school.

Advantages and Disadvantages. Nearly all students felt being able to seek a CEA would encourage students to work harder in school. One student commented, "I like that it is based on performance and not time (like high school)." They believed that because the CEA shows what you CAN do instead of what you CANNOT do, it would be a motivator to many students. One student described it by sharing that it "feels good to say I did this and earned this." The students felt that it reinforced what they can do and they would see their progress. Another student commented that the CEA would help her

realize her own ability. She commented that "[now I] know that I'm smarter than I thought I was."

While most parents expressed these same advantages, they saw the CEA as more than just a motivator. Some also saw the CEA as a document that could be used when their son/daughter applied for a job. In addition, they noted that the CEA was a document that could provide valuable information to them as parents and to their son/daughter's teachers. The parents saw it as a way to identify the strengths and weaknesses so the student could improve on them. While educators shared these same comments, they also felt that the CEA might help curb the drop out rate especially among the special education population.

Nearly all students interviewed viewed obtaining a CEA as valuable. Many stated that "it lets you know what you can do and where you need help" and it could "show employers because they can see you are trying to make an effort in school." The students stated it would be something they would be proud of. They would frame it and show to family and friends as "proof that I can do it."

While most parents and students saw no disadvantages, a few stated that some students might view it as an easy way out. Some are also concerned that it may set kids apart if not available to all students. One parent described this as "a consolation prize -- they [the students] are viewed as less than average."

Barriers and Enabling Conditions. In addition to advantages and disadvantages, many discussed some enabling conditions to successful implementation. One pervasive belief was that a student's attitude toward school and his/her perception of him/herself as a learner was pivotal. That is, a CEA would be beneficial for students who lacked self-

confidence in their ability to learn, but had a strong desire to do well in school. For these students, most perceived the CEA as a strong motivator. One student explained this point by stating, "I don't like school, but if I got more positive feedback and encouragement, then I'd try more. A CEA is a way for me to receive positive reinforcement." However, for students who had a strong desire to get out of school as quickly as possible, a CEA might not be a motivator at all. Some stated that students who don't feel like doing work or coming to school would not benefit.

Nearly all students believe that this system would have a differential impact on student attrition. As one student explained when asked if allowing high school students to apply for a CEA would encourage a student to stay in school, "it depends on the person." Most believed it would depend on the students' beliefs about learning and the value of an education. One student explained, "I'd work harder to have one and say I did something." But, another shared a different perspective, " if this helps to get there [a diploma] then it is useful. If not, then I don't want it. If not for credits, then there is no sense to go for a CEA." All students did, however, seem to agree that a high school diploma was the goal and they did not view a CEA as a substitute for a diploma. As one student explained, I "don't want a CEA. I am here to get my diploma and then I am out!" Another explained this point a bit differently by sharing "I'd be proud, but more proud if I finished high school."

Some educators also discussed that the current structure of the CEA was restrictive. They felt that for it to be successful for in-school youth, there should be a certificate for each content area -- math, reading, and writing --- not one certificate for all three. Since students learn at different rates in different content areas, it was stated this

would be a more appropriate way to show and reward progress. There was also some concern about the math skills listed for CEA L, 1, and 2. The teachers described these math skills as part of the middle school curriculum, not the high school curriculum, which might present a problem of documentation if collection of student work samples did not begin until a student reached high school.

Unresolved Issues. Participants seemed to disagree on one issue: Who should be permitted to apply for a CEA?

When asked who should be permitted to apply for a CEA, many students and parents felt it should be for anyone in high school because as one student explained "everybody deserves a chance." Some expressed this as an issue of fairness. Some expressed it in terms of high (or low) expectations. As one student commented, "we can't all be honor students." Another student expressed it in terms of pacing when commenting, "everyone learns at their own level and should be allowed to earn something at that level."

On the other hand, some felt it should be restricted to certain grade levels (such as 11th and 12th grade students only) or to certain students (those functioning at least 2 levels below grade level). Some teachers and parents also believed that allowing anyone in high school to apply for a CEA might open a Pandora's Box. They stated that some students choose the route of least resistance and might view the CEA as an easier route.

Feasibility

Two major issues emerged that would affect the feasibility of offering CEAs as an option for in-school youth: (1) differences in curricula offered and (2) available assessment strategies.

Curricula Offered. Currently, there is a mismatch between the academic skills taught in high school and those that must be evidenced for the adult basic education CEA levels. Students entering high schools were expected to have mastered the basic skills of reading, writing, and mathematics that comprise the adult basic education curriculum. Traditionally, high school students who had not mastered those basic skills would receive remedial instruction, lower-level content, or accommodations to overcome basic skill deficits that prevented access to "higher level" content. With the advent of recent academic standards and accountability legislation in Delaware, the high school staff in this study believed they had or would be moving further away from offering remedial basic skills instruction. They believed basic skills instruction would become the province of the lower grades, summer school programs, and intensive remediation "academies" set apart from the general high school curriculum. Further, with the shift of emphasis in the state standards toward more critical thinking skills, such as problem-solving, they believed there were fewer incentives or opportunities to address basic skills at the high school level, especially in mathematics. Thus, they were concerned that high school students like the ninth and tenth graders in this study would not be working within curricula where instruction and assessment of basic skills were likely to occur.

The largest difference in curricula offered was seen in the area of ***mathematics***. The staff from comprehensive high schools noted that documenting performance for Level L mathematics, which emphasized computation using addition and subtraction (see Appendix B for complete list of skills by CEA level), was very difficult because these skills were simply not part of their mathematics curriculum. One school noted that next year it would eliminate the lower level mathematics course where these computation

skills might have been taught. Further, the general consensus among teachers was that students who had not mastered computation would be accommodated through the use of calculators, enabling them to engage in higher-level problem-solving exercises rather than continue to be frustrated by poor computational skills. In Delaware's adult basic education system, unaided computation is considered an essential skill.

Additionally, the comprehensive high schools noted that the mathematics curricula they use (in special education as well as general education courses) only addressed some of the mathematics skills required for CEA Levels 1 and 2, and not the complete set of skills in either level. Teachers found themselves sampling across curricular materials when attempting to document all required CEA skills within a level. Further, they noted that some skills would be taught in separate classes not available to participating students. For example, instruction related to angles would occur in Geometry, a class that under the current course sequence in most high schools many students in this study would not be taking. [Note: However, several Delaware high schools have adopted new mathematics curriculum packages, such as Contemporary Mathematics in Context and MATH Connections. These curriculum packages weave many areas of mathematics together, for example, teaching algebraic and geometric concepts simultaneously. Students are able to make connections between diverse topics in mathematics as opposed to addressing individual mathematics subject areas each year, e.g., algebra, geometry, trigonometry, and calculus.]

Teachers suggested that the mathematics skills in CEA Level 2 were the closest match to the standard high school curriculum. The Level L and 1 mathematics skills were said to be more like the functional mathematics addressed in nondiploma track Life Skills

classes enrolling students with moderate to severe cognitive deficits. However, they noted that unaided computation would not be required in Life Skills classes, thus making it impossible under current adult basic education requirements to demonstrate proficiency at Level L even for these students.

The mathematics curriculum issue was not a problem for the alternative academic program, because it had adopted a computer-based individualized instructional program (*Learning Unlimited*) that is also used in Delaware adult basic education programs. Staff from one comprehensive high school said their school had used another similar program (also used by adult education programs) for summer and special tutoring programs on a limited basis, but this program was not regularly available to students. They noted that technical difficulties and limited technical support impeded continued use of the computerized program.

Writing instruction was seen as less problematic. Although the schools were not explicitly teaching the same writing formats (e.g., for composing a business letter) as used in the adult basic education system, teachers said the formats were similar, and they could easily instruct students across formats. Adult education staff also indicated some flexibility about format, because their primary focus was on clarity of written communication. Some of the lower level CEA skills (e.g., alphabetizing) were not explicitly taught by the high schools, but teachers said it would be easy to document that students had these skills. A potential concern was the greater emphasis within adult education on legible handwriting. Participating special educators suggested that for some students typing and using word processing software were important instructional supports

or accommodations. Adult education staff were open to the possibility of allowing documented accommodations in this area.

In regard to *reading*, high school teachers (except for some special educators) noted that they do not explicitly teach reading skills. However, they believed that because content reading occurred across the high school curriculum, there would be many opportunities for students to be exposed to a variety of reading materials and to demonstrate their level of comprehension, which is the major emphasis in adult basic education. The schools noted that they planned to offer more intensive reading instruction in the future for students who needed it and were in the process of adopting new assessments and curricula to support these efforts (e.g., *Corrective Reading, Accelerated Reader*). Again, the alternative academic program most closely aligned with the adult basic education curriculum because it also used the reading component of *Learning Unlimited*.

Available assessment strategies**.** Adult education staff in the Delaware Department of Education have approved assessments that may be used by adult education programs to document attainment of basic reading and mathematics skills corresponding to CEA levels (see Appendix B). Typically, the adult education programs use the *Test of Adult Basic Education* (TABE) or *Learning Unlimited* (LU) assessments. Writing assessment is accomplished through specified student products (e.g., spelling 25 words, completing a bank check, composing a job application letter). None of the approved assessments were used in the participating high schools, except that the alternative academic program used the curriculum-based assessments provided with *LU*.

The greatest problem reported by several high school teachers as they attempted to document students' skills was that they did not have a single assessment that efficiently sampled all the required skills. Therefore, teachers had to assemble a variety of student products from work at hand, or they had to create and administer brief informal assessments. Five teachers from one of the comprehensive schools documented the amount of time needed to collect student work samples in a single subject area (math or reading/writing) for four to five students. Their activities included preparatory work (e.g., creating or copying a teacher-made test of relevant content), administering informal assessments, and compiling previously completed work or assessments. The total amount of time needed for these activities ranged from 1.5 hours to 6 hours; the two special education teachers required an average of 4.75 hours and the three general education teachers required an average of 3.08 hours.

The mathematics teachers especially had to comb through student work samples to locate items that represented specific skills. Their workload might have been reduced if teachers had been able to collect work samples throughout the year, rather than trying to locate work within the few weeks allotted for the study. Even so, this "hunting and gathering" approach to assessment may raise questions about the technical adequacy of the work samples for certifying student performance.

Each school planned to or had administered the *Stanford Achievement Tests (SAT9)* to students in grades not scheduled for DSTP assessments. Because the DSTP is in part based on the SAT9, schools intended to have annual norm-referenced grade-level performance scores on all students to guide individual and school-level programming. Schools also had access to other norm-referenced achievement tests (e.g., *Peabody*

Individual Achievement Test) for some students through the periodic re-evaluation of individual students for special education services. On a limited basis, the participating schools and individual teachers used diagnostic reading assessments that produced "grade equivalent" scores. For example, one school was implementing the *Corrective Reading* program for all special education students and others who did not pass the DSTP. This program as implemented by this school included curriculum-based tests showing word decoding proficiency (but not comprehension) at pre-primer, 2nd-3rd, 4th-5th, and 8th grade levels. This school planned to pilot a reading comprehension assessment in the future. The participating special education teachers at this school sometimes used the *Stanford Diagnostic Reading Test* (SDRT, 4th ed.) and the *Basic Reading Inventory (BRI)*, an informal reading assessment of decoding and comprehension. Another school recently began using the *STAR* reading assessment to facilitate placement in remedial reading programs. According to the staff, *STAR* generated grade level proficiency information for both decoding and comprehension.

With each of these standardized or informal assessments there were two major concerns for this study. First, would their content equate to that of the TABE and other approved adult education assessments? For example, were the reading passages and comprehension questions on the Basic Reading Inventory of the same type as those on the TABE? Did the PIAT and the TABE assess the same set of mathematics skills? Content validity would be necessary to permit certification that the set of adult education skills was adequately represented within a given assessment. Second, would the resulting scores mean the same thing? For example, would students taking the Corrective Reading and TABE assessments receive the same "grade level" from both assessments, and how

would those grade-levels relate to the local school grade-level expectations? Our review of the literature failed to locate any studies addressing concurrent or criterion validity of the TABE with any measures used or proposed for use by the schools. Information about the concurrent or criterion validity would provide greater confidence that students' scores on one test adequately represented their performance on another similar test. A related concern was that the technical adequacy of some of these measures for purposes of certification was not well documented (e.g., see Conoley & Impara, 1995, regarding the BRI; Impara & Plake, 1998, regarding SDRT-4; and for TABE reviews, see Impara & Plake, 1998).

It also became apparent upon review of the student work that many students, especially those with special education needs, would be eligible only for the CEA Level L. This was because of discrepancies among their individual performance levels in writing, reading, and mathematics, coupled with the adult education requirement that CEAs must be awarded at the level at which mastery in all three areas is demonstrated. Thus, the awarded certificate would most clearly represent the minimum performance level mastered by the student and would not reflect some skills mastered for higher level certificates.

A Lesson From The Past

Related to the mismatches between curricula offered and assessment strategies of the high school and adult basic education programs was a philosophical difference in assessment purpose. The purpose of the adult basic education assessments was to indicate that students had mastered a specified set of basic academic skills and achieved a specific

level of basic literacy. None of the various assessments used by the participating high schools was used for this purpose. Many of the assessments used locally were for *diagnosis, placement*, and *instructional plan development*. Although the DSTP and SAT9 provide *achievement* information, the resulting scores were interpreted as representing attainment (or not) of expected *grade-level standards* rather than *mastery* of specific skills.

The importance of this distinction is illustrated by the fate of an earlier mastery-based assessment system that was in place in Delaware in the early 1980s. As we met with teachers and administrators for this study, several teachers commented on the similarities between the adult basic education skills list and the "Competency Card" system previously coordinated through the middle schools. Like the adult education CEAs, Competency Cards focused on attainment of basic mathematics, reading, and writing skills. For example, under the Competency Card system, students had to master correct spelling of 250 words, demonstrate mathematics application skills related to measurement and money, and demonstrate the ability to identify a main idea or recall details. Teachers familiar with the system told us that, generally, students were expected to master the required skills by 6th grade, but could continue to work on them through middle school. Teachers were responsible for "checking off" skills listed on the Competency Cards when students passed a certain level on criterion-referenced tests or other measures sanctioned by the schools and districts. If students had not mastered 2/3 of the required skills by end of 8th grade, then students would have some sort of "pre-9th" grade remediation experience. Some schools offered summer classes aimed at remediating the specific skills listed on the Competency Cards.

The Competency Cards were tied to high school exit documents. If students passed required courses and had mastered all items on the Competency Card, they received a diploma. Those who passed courses, but not the competencies received a Certificate of Attendance. Certificates of Performance were given to students with special education needs who met goals as identified in their Individual Education Program plans. According to participants in this study, the Competency Card system was ended by a new state superintendent because of what appeared to be limited and inconsistent implementation. It was believed that the Competency Cards had become a technically inadequate "check off" without much validity and, most importantly, embodied a less valued "*minimum competency*" approach that was not in line with education reforms aimed at promoting "*high standards*". At the time the Competency Card system was ended, Delaware was just beginning to develop standards that would form the basis of the new DSTP assessment and accountability system.

CONSIDERATIONS FOR STATE POLICYMAKERS

In this section, we pose several issues for policymakers' consideration. Each issue is followed by a discussion of concerns or questions raised by the participants in this study as well as highlights of any relevant research.

How can policymakers reconcile the disconnect between the philosophies of basic skills instruction versus the standards-based reform effort?

Nationally, within the standards-based reform effort there has been an emphasis on conceptual knowledge rather than learning only skills or facts. As stated in the *Principles and Standards for School Mathematics* (2000) from the National Council of Teachers of Mathematics (NCTM), "one of the most robust findings of research is that

conceptual understanding is an important component of proficiency, along with factual knowledge and procedural facility (Bransford, Brown, and Cocking, 1999)." (p. 19). The NCTM Standards embody the notion that students should be engaged in complex mathematical tasks of which technology is an essential component. On the other hand, in the K-12 educational system the assessment of basic skills has been commonly linked to minimum competency testing. "Minimum competency testing has been seen as a method for holding schools accountable for graduating literate students with at least basic skills." (Beard, 1986, p. 1).

Delaware schools had a basic skills mastery assessment system and abandoned it. The fate of the Competency Card system underscores the need for proponents of CEAs for in-school youth to clarify the value of certifying basic skills in a high standards, high stakes accountability system. To the extent that basic skills certification is seen as "lowering the standard" or "giving up", especially for students with special needs or a history of low achievement, we believe it is likely to be resisted or rejected. However, study participants did view the CEA as a viable option that, if appropriately packaged and consistently implemented, would provide positive "assurance" of one aspect of students' academic abilities.

Participants' views suggested to us some possible points of discussion regarding the value of CEAs for in-school youth, and we raise the following questions for critical dialogue. One way to attempt to reconcile the differences between basic skills and high standards philosophies would be to explore the value basic skills certification might add to a standards-based curricular model. For example, would basic skills certificates' value within the standards-based system be enhanced by:

➢ Treating them as one among several outcome indicators of students' schooling?

➢ Highlighting the fact that they represent SCANS (U.S. Dept. of Labor, 1992) foundation skills, which are considered critical for entry-level employment?

➢ Using them to create new links between students and postsecondary education institutions such as adult education and community colleges?

➢ Marketing them as "insurance" for those students whose goal it is to get a diploma, but eventually drop out?

How can policymakers bridge the gap between the academic skills of the adult basic education curriculum and the skills in the Delaware 9-12 standards-based curriculum?

An implicit assumption within this study was that early high school was a reasonable point in time for broadening the purpose of assessments to include certification of adult education skills <u>if</u> students were not demonstrating satisfactory grade-level achievement. Participating parents, students, and teachers supported this view. However, it became clear that the high school curriculum was not designed to teach or readily assess skills typically associated with lower grade-levels.

Within the secondary schools participating in this study there were different views about <u>who</u> should and would be responsible under the state accountability program for teaching older students who had not mastered basic reading, writing, and mathematics skills. There were also differing opinions about how and when these basic skills should be taught. This is a common and not easily resolved dilemma at the secondary level. Most view these basic skills in reading, writing, and mathematics as necessary tools to access content in other areas such as science, social studies, and foreign languages. This presents a dilemma for educators because at the secondary level there tends to be a shift from the acquisition of basic skills in reading, writing, and mathematics to an emphasis

on utilizing basic skills as tools to acquire content in many different subject areas as well as transitioning to adult life (Curtis & Longo, 1999; Masters, Mori, & Mori, 1999; Edgar & Polloway, 1994; Zigmond, 1990).

Some students need to further develop basic academic competency. At the same time, they are expected to acquire strategies and accommodations for accessing new content they are already encountering in classrooms, on the job, and in the community. In addition, the time frame for accomplishing these multiple objectives is short. Furthermore, the methods used with younger students are likely to be ineffective and frustrating for older students who have experienced academic difficulties repeatedly. Teaching the same content in the same way rarely works. "Simple repetition of a year's worth of material does little to help students who have failed" (Banicky, 2000, p. 2). The implication is that secondary educators must discuss not only what is taught, but also how it is taught. Consequently, a range of different curricular and instructional approaches is needed at the secondary level because a narrower basic skills remediation approach is likely to be insufficient for many adolescents.

This dilemma suggested to us that if CEAs were to become a common certification process, then there must first be further discussion about those elements the curricula have in common. What, if any, elements are in contradiction? And what other curriculum elements students might need, but find unavailable in either? Each question we pose about bridging of the gap between the academic skills of the adult basic education curriculum and the skills in the Delaware 9-12 standards-based curriculum suggested to us the importance of explicitly discussing the timing, context, and purpose of using CEAs with in-school youth.

➢ At what points in a student's academic career is it feasible and desirable to document competencies for the CEAs? Would the middle school years provide a better curriculum match and still represent a desirable time frame for certifying adult basic skills? If so, how would policymakers ensure that history is not repeated (the abandonment of the Competency Card System)?

➢ If a student has not mastered all the basic skills before entering high school, how and where will students acquire these skills?

The closest existing model that might help answer this question is the type of alternative academic program that participated in this study. It would be advantageous to examine the impact of such programs; keeping in mind the importance of first resolving the issue about differing philosophies between standards-based reform efforts and basic skills education.

➢ How would the different views of essential skills (e.g. unaided calculations, handwriting) and the role of accommodations be resolved?

➢ How would expansion of the target in-school population increase the complexity of identifying common curriculum elements? For example, in what ways does the content of high school ESL programs align with the adult basic education curriculum?

How can policymakers overcome the absence of common, valid assessment strategies between adult education and K-12 programs?

At this point, the high schools and adult education do not share common assessment strategies, and the research base that might suggest common assessments is lacking, even where common curriculum elements seem to exist. The standard adult education assessment, the TABE, has been normed on students age 16 and up, and thus could be considered for use with in-school youth. However, it has not been normed for students with special education needs or non-native English speakers, nor is there information available on its validity when various accommodations are provided. Additionally, the full TABE is lengthy (up to 3 hours for administration), which may make wide scale use in schools less likely. A study by Venezky, Bristow, & Sabatini

(1997) raised interesting questions regarding potential uses of a shorter relative of the TABE - the TABE Locator test. The TABE Locator test contains 25 vocabulary and 25 arithmetic items and takes approximately 37 minutes to complete. The investigators found that the TABE Locator test predicted placements in adult education classes as well or better than the full TABE and a variety of other assessments. It should be noted that predicting placement (a rough indicator of instructional level) is not the same as certifying skill mastery. Before using the TABE Locator test for certification purposes, it would be necessary to determine what relationship, if any, existed between instructional level and skill mastery as indicated by the TABE Locator test and other measures suitable for use with in-school youth with and without special education needs.

The limited information in this area suggested to us that additional discussion and research is needed to identify assessment strategies that could be used by in-school youth who wished to obtain CEAs.

➢ Are there achievement tests in use by other schools or adult education programs that are technically adequate and valid for use within both systems?

➢ Could assessments used by community colleges or other postsecondary institutions to identify students in need of basic skills remediation be used within high schools or adult basic education programs?

➢ What are the anticipated costs in dollars and time if additional or new assessment tools must be utilized?

Should policymakers consider CEAs as a "drop out" prevention strategy?

Research points to lack of academic success as one factor that leads to dropping out (Benard cited in Duckenfield & Brown, 1997; Finn, 1989; Kaplan, Peck, & Kaplan, 1997; Wagner, 1991). But, lack of academic success is just one of many factors that leads to or contributes to disengagement from school. Research has shown that there are many

student (misbehavior, retention, employment, achievement in math and reading) and family (single parent home, family income, parent education level, and parental involvement) characteristics as well as school (private/public school, attendance rate, characteristics of student population) characteristics that contribute to the likelihood of a student dropping out of school. In addition, some factors are better predictors than others.

While family characteristics become more important predictors as the student enters high school, student characteristics are still stronger predictors than family characteristics. In fact, retention and student misbehavior are by far the two most important factors for predicting dropping out (Goldschmidt &Wang, 1999). Roderick (1994) also suggested that being "overage" (and thus retention, which creates overage conditions) increases the risk of dropping out. She suggested that promotion with remediation is a better solution than promotion alone or retention with remediation.

While retention and student misbehavior increase the likelihood of dropping out, higher achievement in math or reading reduces the likelihood of dropping out. However, above and beyond behavior and academic performance, commitment to education is a strong influence (Janosz, LeBlanc, Boulerice, & Tremblay, 2000). For example, of the various type of students who typically drop-out of school such as the "Quiets," "Disengaged," "Low Achiever," and "Maladjusted," the "Quiets" may not perform as well academically, but they are more educationally committed than the other drop-out types. The students in the focus groups alluded to this when stating that those students who are going to drop out probably will, but those who think education is important may be encouraged to stay if given more positive reinforcement.

Because multiple factors contribute to dropping out, engaging students in school requires a multi-component approach. Furthermore, the literature clearly delineates that dropping-out is a "developmental" process of disengagement; that is, the culmination over time of experiences that alienate the student from the school environment (Finn, 1989). Thus, implementing a program at the high school level only will likely have little impact. Programs that have been successful in keeping students in school, despite potential risk factors, tend to have several common features. Primary among these is a supportive, yet challenging environment in which students perceive adults as caring coaches or advocates who respond to their individual needs while also providing persistent guidance (Benz, Lindstrom, & Yovanoff, 2000; Kortering & Braziel, 1999; Rossi, 1995; Sinclair, Christenson, Evelo, & Hurley, 1998). Programs that help students to identify personal transition goals and achieve them through a relevant curriculum are more likely to keep students engaged in school (Benz et al., 2000; Kortering & Braziel, 1999). Also, successful programs provide support services without calling attention to their specialized nature, or they create significant incentives for students to participate, such as access to helpful adults or paid work (Rossi, 1995).

The drop out literature and the views of participants in this study suggested to us one fundamental question that begs to be explored:

➢ Which school environments or contexts can capitalize on the motivational aspects of CEAs while also attending to the multiple factors that promote student engagement?

This study was not designed to resolve these issues, but the findings pointed to some fundamental questions and potential options. Consequently, we identified some

alternatives we believe are worth exploring. No particular option or course of action is recommended, rather these questions are intended to promote discussion regarding the different views and underlying assumptions about curriculum and assessment choices.

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Appendix A:

Instruments

Student Focus Group Questions

1) Based on this information, what do you think is the purpose of the Certificate of Education Attainment (or CEA)?

2) Right now, CEA's are only available to students enrolled in an adult education program. Do you think that high schools students should be permitted to seek these certificates? Why or why not? (PROBE: For which students should it be permitted? All students, students with special needs, only those over age 16, etc.)

3) What would be the advantages of permitting high school students to seek a CEA? (PROBE: Advantages to students seeking the certificate, to other students, to teachers, to administrators, to employers, to parents, etc.)

4) What would be the disadvantages of permitting high school students to seek a CEA? (PROBE: Advantages to students seeking the certificate, to other students, to teachers, to administrators, to employers, to parents, etc.)

5) Do you think CEA's would be a valuable way to show what you can do in mathematics, reading, and writing? Why or why not? (PROBE: For whom would it be valuable, i.e., employers, parents, high school teachers, adult education teachers, etc.?)

6) Do you think offering CEA's to high school students would encourage them to stay in school? Why do you think that?

7) Do you think offering CEA's to high school students would encourage them to drop out of high school? Why do you think that?

8) Would you like the opportunity to seek a CEA while still in high school? Why or why not?

9) What would you do with the certificate if you received one?   (PROBE: take to job interview, throw it away, keep as a memento, etc.)

Parent Interview Questions

1. Based on the information you received last week, what do you think is the purpose of the Certificate of Education Attainment (or CEA)?

2. Right now, CEAs are only available to students enrolled in an adult education program. Do you think that high schools students should be permitted to seek these certificates? Why or why not?

   (PROBE: For which students should it be permitted? All students, students with special needs, only those over age 16, etc.)

3. What would be the advantages of permitting high school students to seek a CEA?

   (PROBE: Advantages to students seeking the certificate, other students, teachers, administrators, employers, parents, etc.)

4. What would be the disadvantages of permitting high school students to seek a CEA?

   (PROBE: Advantages to students seeking the certificate, other students, teachers, administrators, employers, parents, etc.)

5. Do you think CEAs would be a valuable way to show what <u>your</u> high school son or daughter can do in mathematics, reading, and writing? Why or why not?

   (PROBE: For whom would it be valuable, i.e., employers, parents, high school teachers, adult education teachers, etc.?)

6. Do you think offering CEA's to high school students would encourage them to stay in school? Why do you think that?

7. Do you think offering CEA's to high school students would encourage them to drop out of high school? Why do you think that?

8. Would you like the opportunity for your son or daughter to earn a CEA while still in high school? Why or why not?

9. What do you think the certificate would mean to your son or daughter?

Teacher/Administrator Focus Group Questions

1. Based on the information you just read, what do you think is the purpose of the Certificate of Education Attainment (or CEA)?

2. Right now, CEAs are only available to students enrolled in an adult education program. Do you think that high schools students should be permitted to seek these certificates? Why or why not?

   (PROBE: For which students should it be permitted? All students, students with special needs, only those over age 16, etc.)

3. What would be the advantages of permitting high school students to seek a CEA?

   (PROBE: Advantages to students seeking the certificate, other students, teachers, administrators, employers, parents, etc.)

4. What would be the disadvantages of permitting high school students to seek a CEA?

   (PROBE: Advantages to students seeking the certificate, other students, teachers, administrators, employers, parents, etc.)

5. Do you think CEAs would be a valuable way to show what your students can do in mathematics, reading, and writing? Why or why not?

   (PROBE: For whom would it be valuable, i.e., employers, parents, high school teachers, adult education teachers, etc.?)

6. Do you think offering CEA's to high school students would encourage them to stay in school? Why do you think that?

7. Do you think offering CEA's to high school students would encourage them to drop out of high school? Why do you think that?

8. What do you think the certificate would mean to your students?

9. What would need to change in this school environment, if anything, to give high school students the opportunity to seek a CEA?

10. Do you think that the concept of the CEA is in line with the Delaware Content Standards?

Appendix B:

Delaware's Adult Basic Education

Certificates of Educational Attainment

Skills and Accepted Evidence

CEA LEVEL L

Mathematics Skills (L)	Accepted Evidence
Add two-digit numbers with regrouping Subtract two-digit numbers with regrouping	*One of the following (timed):* 2.0 or above on **TABE**, Form E 2.0 or above on **ABLE**, Level 1, both math tests minimum 80% mastery of **Learning Unlimited** Level A, all components minimum 80% mastery of **Computer Curriculum Corp**. (mathematics concepts and skills 3.0 for AD and SU) 80% mastery on **CEA-L Math Skills Assessments**
Reading Skills (L)	**Accepted Evidence**

Demonstrate appropriate skill use in the following areas:
 	
    *Comprehension
 	
    *Find Main Idea
 	
    *Identify Fact / Opinion
 	
    *Find Details
 	
    *Draw Conclusions
 	
    *Make Inferences
 	
    *Follow Sequence
	One of the following (timed):
	
	2.0 or above on **TABE**, Form E
	
	2.0 or above on **ABLE**, Level 1
	
	minimum 80% mastery of **Learning Unlimited** Level A, all components
	
	minimum 80% mastery of **Literacy Volunteers of America Assessment**, Level C
	
	minimum 80% mastery of **Laubach Literacy Action**: Skill Book 3 or Challenger 1
	
	minimum 80% mastery **Computer Curriculum Corp**. (Readers Workshop 3.0 for LC15, LC17, IC20-22 and PC33, 35, 36)
	
	Voyager (Books F and 1)

Writing Skills (L)	Accepted Evidence
Write complete sentences that clearly communicate ideas Spell 50 most used words Alphabetize by first letter	*All of the following (untimed):* 3 hand-written sentences in final form consisting of 7 or more words. Final form means legibly written after student proofreads and makes revisions. There shall be no teacher marks on the writing sample. 95% words correct on written spelling test of 50 most used words 100% accuracy on alphabetizing 10 words by the first letter (with different second letters) using a state developed list

CEA LEVEL 1

Mathematics Skills (1)	Accepted Evidence
Place values through millions Round to the nearest thousand Write numbers through 999,999 Estimate reasonable numbers Decimals using dollars and cents Add large numbers with regrouping Subtract large numbers with regrouping Multiply up to 3-digit by a 2-digit number Divide a large number by a 1-digit number	*One of the following (timed):* 5.0 or above on **TABE**, Form M, Problem Solving and Computation 5.0 or above on **ABLE**, Level 2, both math tests minimum 80% mastery of **Learning Unlimited** Level B, all components minimum 80% mastery of **Computer Curriculum Corp**. (SU 4.50, MU 7.20, DC 5.60, AD 5.65, DV 6.00; Not assessed: place value, rounding, writing numbers) minimum 80% mastery of **AMES**, Level C (Computation 5.4; Applied Problem Solving, 5.2; Not assessed: Decimals using dollar and cents; place value, rounding, writing numbers)

Reading Skills (1)	Accepted Evidence
Comprehension Recognize point of view or bias Draw an inference Interpret cause and effect Find details in a passage Draw conclusion Follow a sequence Find the main idea	*One of the following (timed):* 5.0 or above on **TABE**, Form M 5.0 or above on **ABLE**, Level 2 minimum 80% mastery of **Learning Unlimited** Level C, all components 5.0 or above on **Literacy Volunteers of America Assessment** 5.0 or above on **Laubach Literacy Action** minimum 80% mastery **Computer Curriculum Corp**. (Readers Workshop 5.0 for I 20, 23, 27; LC17; PC32, 33, 35, 36, 38, 39, 43) **Voyager** (Book 4) 5.5 or above on **AMES**, Level C; (not assessed: Cause and effect)
Writing Skills (1)	**Accepted Evidence**
Write a paragraph that clearly communicates ideas Write a friendly letter in correct format that clearly communicates ideas Write a check	*All of the following (untimed):* 1 handwritten paragraph in final form. Final form means legibly written after student proofreads and makes revisions. The paragraph should include an introductory sentence and 4-5 supporting detail sentences. There shall be no teacher marks on the writing sample. 1 handwritten friendly letter in final form. Final form means legibly written after student proofreads and makes revisions. (Follows format of sample in training packet.) There shall be no teacher marks on the writing sample. 1 completed check. 100% accuracy on spelling and numerals.

CEA LEVEL 2

Mathematics Skills (2)	Accepted Evidence
Read and write fractions and decimals	*One of the following (timed):*
Determine equivalent fractions, decimals, percents	8.0 or above on **TABE**, Form D,
Compare whole numbers, decimals, fractions	8.0 or above on **ABLE**, Level 3, both math tests
Add fractions and decimals	
Subtract fractions and decimals	minimum 80% mastery of **Learning Unlimited** Level D, all components
Multiply fractions and decimals	minimum 80% mastery of **Computer Curriculum Corp**. (Mathematics
Divide by a two-digit number	Concepts and Skills; DC8.10, DV7.4, FR8.1; AP7.0, GE6.3, ME7.9; Not
Divide fractions and decimals	assessed: compute total cost; measure and read length; choose appropriate instrument;
Compute highway distance	compute highway distance)
Identify a right triangle	
Identify a right angle	minimum 80% mastery of **AMES**, Level D (Computation 8.3; Applied Problem
Find volume of a cube or rectangular solid	Solving, 7.8; Not assessed: read and write
Compute the total cost, given cost per unit	fractions and decimals; determining equivalent fractions, decimals, percents;
Measure and read accurately to the eighth of an inch	identifying parallel, perpendicular and intersecting lines)
Read and interpret bar, line, and circle graph	
Read and interpret a table or chart	
Find/use the mean of a group of numbers	
Identify parallel, perpendicular, intersecting lines	
Identify the radius, diameter, and center as related to circles	
Find the perimeter and area of a square, rectangle and triangle	
Choose an appropriate measurement instrument involving both customary and metric units	
Convert common measurements	
Find the percent of a number in situations as simple interest, discount, commissions, and taxes	

Reading Skills (2)	Accepted Evidence
Comprehension Recognize point of view or bias Draw an inference Interpret cause and effect Find details in a passage Draw conclusion Follow a sequence Find the main idea	*One of the following (timed):* 8.0 or above on **TABE**, Form D 8.0 or above on **ABLE**, Level 3 minimum 80% mastery of **Learning Unlimited** Level E, all components 8.2 or above on **AMES**, Level D; (not assessed: Cause and effect)

Writing Skills (2)	Accepted Evidence
Write a message Write a formal letter of application Write a multi-paragraph essay	*The purpose is to clearly communicate ideas in a final form. Final form means legibly written after student proofreads and makes revisions. Student must use correct spelling, efficient grammar and punctuation.* *All of the following (untimed):* 1 handwritten message with a minimum of three complete sentences. This may be a memorandum written in the interagency format or a message of some kind. 1 letter of application written in business letter format. 1 multi-paragraph essay on a topic of choice. May be handwritten or typed. Paragraphs must be more than one sentence in length. Should include more than simple sentences.