

Appendix D

Stakeholder Feedback

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CTE Surveys: Students, Parents, and Staff

As part of the CTAE evaluation, multiple surveys were administered in the spring and fall of 2016. In addition, questions were added to some already-existing surveys such as the annual senior survey and the biannual Community Satisfaction Survey. All student and parent surveys were available in Spanish as well as English.

Table 1 shows the response rates and margin of error for each survey administered. The margin of error for this survey is calculated at a 95% confidence interval, meaning that we can be 95% confident that the sample result reflects the actual population within the margin of error. In other words, in 19 out of 20 cases the data obtained would not differ by any more than the percentage points in the margin of error in either direction if the survey were repeated multiple times employing the same survey methodology and sampling method across the same population. When the margin of error is greater than 5, the results should be interpreted with caution.

Table 1: Response Rates for CTE Surveys

<i>Response Group</i>	<i>Date Administered</i>	<i>Population Size</i>	<i>Number of Responses</i>	<i>% of Population</i>	<i>Margin of Error</i>
<i>High school seniors – general questions</i>	spring 2016	1,329	1,329	100%	n/a
<i>High school seniors – CTE-specific questions*</i>			1,026	77%	1.46
<i>CTE students (grades 7-8)</i>	spring 2016	1,445	820	57%	2.25
<i>CTE students (high school)</i>	spring 2016	2,100	1206	57%	1.84
<i>Parents (Community Satisfaction Survey)</i>	spring 2016		603		3.9
<i>All students (grades 5-11) (CSS)</i>	spring 2016		1,286		2.7
<i>Teacher (non-CTE)</i>	fall 2016	2,225	511	23%	3.8
<i>Counselors</i>	fall 2016	92	42	46%	11.2
<i>Principals and APs</i>	fall 2016	92	51	55%	9.2
<i>CTE Teachers</i>	fall 2016	63	49	78%	6.7

*Not all seniors responded to the questions included in the senior survey that specifically address the CTE program. Since questions of both types – general and CTE-specific – are included in this evaluation, response rates and margin of error are provided for both types of questions.

Survey data is presented in this appendix in table format. Depending on the type of question presented in a table, it may include two types of percentages:

- **Percent:** the percentage of respondents selecting a particular response
- **Cumulative percent:** the cumulative percentage of all responses, from the beginning of a scale to the end. These are included only in tables where the responses fall onto a scale, such as a frequency scale (Daily, Once a week, Once a month, Four times a year, Once or twice a year, Never)

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Table 3: During my time as an APS student, I was encouraged to explore career opportunities. (High School Seniors by CTE Participation)

CTE Participation	Statistics	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree	Don't know
Took CTE Course (n=567)	Percent	41%	37%	12%	6%	3%	1%
	Cumulative Percent	41%	79%	91%	97%	99%	100%
Didn't Take CTE Course (n=479)	Percent	25%	41%	16%	13%	4%	1%
	Cumulative Percent	25%	65%	81%	95%	99%	100%

Table 4: During my time as an APS student, I was encouraged to explore career opportunities. (High School Seniors by Post-HS Plans)

Post-HS Plans	Statistics	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree	Don't know
4 year college (n=848)	Percent	31%	39%	15%	10%	4%	1%
	Cumulative Percent	31%	70%	85%	95%	99%	100%
2 year college (n=201)	Percent	47%	38%	9%	3%	1%	1%
	Cumulative Percent	47%	85%	94%	97%	99%	100%
Business, Trade/ Technical School (n=20)	Percent	90%	5%	5%	0%	0%	0%
	Cumulative Percent	90%	95%	100%			
Work (n=37)	Percent	49%	27%	16%	3%	5%	0%
	Cumulative Percent	49%	76%	92%	95%	100%	
Military (n=15)	Percent	67%	27%	0%	0%	7%	0%
	Cumulative Percent	67%	93%			100%	
No plans at this time (n=13)	Percent	23%	31%	23%	8%	0%	15%
	Cumulative Percent	23%	54%	77%	85%		100%

Table 5: My high school helped me select courses that aligned with my college and career goals. (High School Seniors by CTE Participation)

CTE Participation	Statistics	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree	Don't know
Took CTE Course (n=558)	Percent	32%	37%	17%	8%	6%	1%
	Cumulative Percent	32%	69%	85%	93%	99%	100%
Didn't Take CTE Course (n=478)	Percent	24%	38%	17%	13%	7%	0%
	Cumulative Percent	24%	63%	80%	93%	100%	100%

Table 6: My high school helped me select courses that aligned with my college and career goals. (High School Seniors by Post-HS Plans)

Post-HS Plans	Statistics	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree	Don't know
4 year college (n=845)	Percent	27%	38%	17%	10%	7%	1%
	Cumulative Percent	27%	65%	82%	92%	99%	100%
2 year college (n=198)	Percent	38%	33%	15%	8%	3%	3%
	Cumulative Percent	38%	72%	87%	95%	97%	100%
Business, Trade/ Technical School (n=19)	Percent	63%	21%	5%	5%	0%	5%
	Cumulative Percent	63%	84%	89%	95%		100%
Work (n=34)	Percent	38%	24%	24%	12%	0%	3%
	Cumulative Percent	38%	62%	85%	97%		100%
Military (n=14)	Percent	64%	21%	7%	0%	7%	0%
	Cumulative Percent	64%	86%	93%		100%	
No plans at this time (n=12)	Percent	17%	33%	25%	0%	17%	8%
	Cumulative Percent	17%	50%	75%		92%	100%

Table 7: How frequently do you cover career exploration in your instruction? (Teachers)

Level	Response Group	Statistics	Daily	Once a week	Once a month	Four times a year	Once or twice a year	Never
Elementary	Non-CTE (n=281)	Percent	1%	5%	10%	11%	37%	36%
		Cumulative Percent	1%	6%	16%	27%	64%	100%
Middle School	CTE (n=16)	Percent	19%	31%	19%	25%	6%	0%
		Cumulative Percent	19%	50%	69%	94%	100%	
High School	Non-CTE (n=87)	Percent	1%	3%	15%	11%	41%	28%
		Cumulative Percent	1%	5%	20%	31%	72%	100%
	CTE (n=33)	Percent	21%	33%	21%	0%	24%	0%
		Cumulative Percent	21%	55%	76%	0%	100%	
Non-CTE (n=127)	Percent	9%	8%	17%	18%	28%	20%	
	Cumulative Percent	9%	17%	34%	52%	80%	100%	

Table 8: Please provide some examples of ways that you help students learn about careers. (Middle School CTE Teachers)

<i>Number of Responses</i>	<i>Response theme</i>	<i>Examples</i>
9	Projects/Units/Research on careers	“We do an in-depth unit on careers.” “The students are currently doing a project on a career of their interest learning about what it takes to get hired in that career as well as what that job entails.”
4	Guest Speakers	“Guest speakers”
4	Other	“Identify things they can do now and in high school to prepare for securing their dream job.” “Engineer Exploration, through daily warm-ups that give the students an example of a technology that is currently in development” “Partnerships” “Field trips”

Table 9: Please provide some examples of ways that you help students learn about careers. (High School CTE Teachers)

<i>Number of Responses</i>	<i>Response theme</i>	<i>Examples</i>
14	Guest speakers/Discussions with professionals	“Guest Panelist related to the medical field.” “I invite a wide range of professionals to come in as guest speakers.”
8	Field trips/tours of professional locations	“Visiting salons” “Tours of hospital and clinics related to physical therapy.”
8	Projects/Units/Research on careers	“I do an entire unit where students research a career and then present the information to the class. This allows the students to learn about 15-20 different careers in the field.” “I had students select a career of interest and research the educational requirements.”
6	Internships	“We also have AYES (automotive youth educations Systems) that gives a student on opportunity to get job internship with dealerships.” “Through paid internships and shadowing at the workplace.”
3	Hands-on work	“Most of the instruction is hands on and working on cars in the shop.” “The students in my courses (and a lot of CTE courses) engage hands-on in "real" work experiences, and are able to explore career interests that way.”
2	Make connection between lesson/activities and careers	“During class, I will discuss with students various aspects of engineering. What specific engineering majors do and how they employ things they learn in class/school.” “Providing students with an example what we are learning and how it directly relates to specific careers. This helps

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<i>Number of Responses</i>	<i>Response theme</i>	<i>Examples</i>
3	Other	students better determine if a certain career is for them or if there is one they didn't realize they may be good at and enjoy." "Community events" "Career expo" "Emphasize workplace readiness skills."

Table 10: How frequently do you learn about different careers at school? (All Students)

<i>Level</i>	<i>Statistics</i>	<i>Daily</i>	<i>Once a week</i>	<i>Once a month</i>	<i>Four times a year</i>	<i>Once or twice a year</i>	<i>Never</i>
<i>Elementary (n=210)</i>	Percent	0%	17%	29%	14%	33%	7%
	Cumulative Percent	0%	17%	46%	60%	93%	100%
<i>Middle School (n=426)</i>	Percent	0%	6%	20%	15%	37%	21%
	Cumulative Percent	0%	6%	27%	42%	79%	100%
<i>High School (n=587)</i>	Percent	0%	8%	19%	11%	39%	23%
	Cumulative Percent	0%	8%	27%	38%	77%	100%

Table 11: How frequently does your instruction replicate or simulate practices and situations found in business and industry? (CTE Teachers)

<i>Level</i>	<i>Statistics</i>	<i>Daily</i>	<i>Once a week</i>	<i>Once a month</i>	<i>Four times a year</i>	<i>Once or twice a year</i>	<i>Never</i>
<i>Middle School (n=16)</i>	Percent	69%	13%	13%	6%	0%	0%
	Cumulative Percent	69%	81%	94%	100%		
<i>High School (n=33)</i>	Percent	73%	18%	6%	3%	0%	0%
	Cumulative Percent	73%	91%	97%	100%		

Table 12: Thinking about this school year, what do you do in your classes to learn about careers? You may choose more than once response. (All Students)

<i>Response</i>	<i>Level</i>	<i>%</i>
<i>We have guest speakers who talk about their careers.</i>	Elementary (n=215)	40%
	Middle School (n=437)	27%
	High School (n=599)	20%
<i>We go on field trips related to careers.</i>	Elementary (n=215)	26%
	Middle School (n=437)	18%
	High School (n=599)	14%
<i>We participate in career fairs or Career Day.</i>	Elementary (n=215)	20%
	Middle School (n=437)	16%
	High School (n=599)	10%
<i>We watch videos about careers.</i>	Elementary (n=215)	23%
	Middle School (n=437)	29%
	High School (n=599)	19%
<i>We do role-play activities related to careers.</i>	Elementary (n=215)	14%
	Middle School (n=437)	13%
	High School (n=599)	5%
<i>We visit career websites.</i>	Elementary (n=215)	27%
	Middle School (n=437)	32%
	High School (n=599)	20%
<i>We learn what skills you need to have for different careers.</i>	Elementary (n=215)	34%
	Middle School (n=437)	31%
	High School (n=599)	25%
<i>We practice applying for jobs.</i>	Elementary (n=215)	7%
	Middle School (n=437)	10%
	High School (n=599)	8%
<i>We read books about careers or about people who have a specific career.</i>	Elementary (n=215)	28%
	Middle School (n=437)	23%
	High School (n=599)	11%
<i>Nothing</i>	Elementary (n=215)	16%
	Middle School (n=437)	27%
	High School (n=599)	44%
<i>Other, please specify:</i>	Elementary (n=215)	4%
	Middle School (n=437)	4%
	High School (n=599)	3%

Table 13: Thinking about this school year, what does your counselor do to help you learn about careers? You may choose more than one response. (Elementary Students, n=215)

Response	%
He/she visits my class to talk about careers.	68%
He/she reads books about careers to our class.	11%
He/she has a career cafe where I can learn about careers.	14%
Nothing.	17%
Other, please specify:	11%

Table 14: **Middle School:** Thinking about this school year, what does your counselor do to help you learn about careers? You may choose more than one response./**High School:** Thinking about this school year, what do your counselor and your college and career specialist do to help you learn about careers? You may choose more than one response.

Response	Level	%
He/She/They assist me with my course schedule based on my career interests.	Middle School (n=437)	36%
	High School (n=599)	46%
He/She/They give me advice about college based on my career interests.	Middle School (n=437)	24%
	High School (n=599)	36%
He/She/They provide me with materials related to careers and choosing a career.	Middle School (n=437)	20%
	High School (n=599)	22%
He/She/They help me with my [MS] six-year / [HS] four-year academic plan.	Middle School (n=437)	32%
	High School (n=599)	53%
He/She/They teach me how to use Naviance to learn more about myself.	Middle School (n=437)	27%
	High School (n=599)	37%
He/She/They teach me how to use Naviance to explore careers.	Middle School (n=437)	32%
	High School (n=599)	40%
Nothing	Middle School (n=437)	30%
	High School (n=599)	20%
Other, please specify:	Middle School (n=437)	3%
	High School (n=599)	1%

Familiarity and Perceptions

Table 15: How familiar are you with courses/opportunities offered through the Career and Technical Education program? (Parents, Students, and Staff by Level)

Level	Response Group	Statistics	Very familiar	Somewhat familiar	A little familiar	Not at all familiar	Do Not Know*
Elementary	Parents (n=248)	Percent	3%	10%	15%	67%	5%
		Cumulative Percent	3%	13%	28%	95%	100%
	Non-CTE Teachers (n=286)	Percent	4%	9%	19%	67%	
		Cumulative Percent	4%	13%	33%	100%	
	Counselors (n=13)	Percent	0%	8%	23%	69%	
		Cumulative Percent	0%	8%	31%	100%	
	Administrators (n=33)	Percent	6%	21%	45%	27%	
		Cumulative Percent	6%	27%	73%	100%	
Middle School	Parents (n=113)	Percent	5%	22%	29%	35%	9%
		Cumulative Percent	5%	27%	57%	91%	100%
	CTE Students (n=239)	Percent	11%	46%	28%	16%	
		Cumulative Percent	11%	57%	84%	100%	
	Non-CTE Teachers (n=89)	Percent	6%	27%	27%	40%	
		Cumulative Percent	6%	33%	60%	100%	
	Counselors (n=13)	Percent	8%	62%	15%	15%	
		Cumulative Percent	8%	69%	85%	100%	
Administrators (n=7)	Percent	29%	43%	0%	29%		
	Cumulative Percent	29%	71%	0%	100%		
High School	Parents (n=184)	Percent	11%	22%	24%	36%	7%
		Cumulative Percent	11%	33%	57%	93%	100%
	CTE Students (n=1202)	Percent	20%	43%	22%	15%	
		Cumulative Percent	20%	63%	85%	100%	
	Non-CTE Teachers (n=128)	Percent	16%	34%	23%	26%	
		Cumulative Percent	16%	51%	74%	100%	
	Counselors (n=16)	Percent	75%	25%	0%	0%	
		Cumulative Percent	75%	100%	0%	0%	
Administrators (n=10)	Percent	50%	40%	10%	0%		
	Cumulative Percent	50%	90%	100%	0%		

*included in parent survey only

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Table 16: How familiar are you with courses/opportunities offered through the Career and Technical Education program? (High School Seniors by CTE Participation)

<i>CTE Participation</i>		<i>Statistics</i>	<i>Very Familiar</i>	<i>Somewhat Familiar</i>	<i>A Little Familiar</i>	<i>Not at all Familiar</i>
<i>Took CTE Course (n=549)</i>	Percent	42%	31%	15%	12%	
	Cumulative Percent	42%	73%	88%	100%	
<i>Didn't Take CTE Course (n=194)</i>	Percent	5%	25%	28%	42%	
	Cumulative Percent	5%	30%	58%	100%	

Table 17: How familiar are you with courses/opportunities offered through the Career and Technical Education program? (High School Seniors by Post-HS Plans)

<i>Post-HS Plans</i>		<i>Statistics</i>	<i>Very Familiar</i>	<i>Somewhat Familiar</i>	<i>A Little Familiar</i>	<i>Not at all Familiar</i>
<i>4 year college (n=787)</i>	Percent	19%	29%	22%	29%	
	Cumulative Percent	19%	48%	71%	100%	
<i>2 year college (n=169)</i>	Percent	41%	25%	18%	15%	
	Cumulative Percent	41%	67%	85%	100%	
<i>Business, Trade/Technical School (n=17)</i>	Percent	59%	24%	6%	12%	
	Cumulative Percent	59%	82%	88%	100%	
<i>Work (n=31)</i>	Percent	48%	23%	19%	10%	
	Cumulative Percent	48%	71%	90%	100%	
<i>Military (n=12)</i>	Percent	50%	17%	17%	17%	
	Cumulative Percent	50%	67%	83%	100%	
<i>No plans at this time (n=10)</i>	Percent	30%	30%	20%	20%	
	Cumulative Percent	30%	60%	80%	100%	

Table 18: Which of these descriptions of the CTE program best matches your understanding of the program? (Parents, Students, and Staff by Level)

Level	Response Group	It primarily benefits...				
		college-bound students.	both college-bound students and students who are not on a path to college equally.	students who are not on a path to college, but college-bound students may benefit as well.	students who are not on a path to college.	I don't know.
Elementary	Parents (n=248)	6%	34%	24%	5%	31%
	Non-CTE Teachers (n=287)	1%	20%	19%	3%	57%
	Counselors (n=13)	8%	31%	23%	8%	31%
	Administrators (n=33)	0%	58%	27%	3%	12%
Middle School	Parents (n=111)	5%	41%	24%	5%	24%
	CTE Students (n=801)	13%	45%	7%	1%	35%
	Non-CTE Teachers (n=88)	1%	39%	22%	5%	34%
	CTE Teachers (n=16)	0%	94%	6%	0%	0%
	Counselors (n=13)	0%	62%	31%	0%	8%
High School	Administrators (n=7)	0%	71%	14%	0%	14%
	Parents (n=161)	5%	45%	30%	6%	14%
	CTE Students (n=1201)	16%	53%	7%	1%	23%
	Non-CTE Teachers (n=126)	2%	58%	23%	2%	15%
	CTE Teachers (n=33)	3%	88%	9%	0%	0%
	Counselors (n=16)	0%	94%	6%	0%	0%
	Administrators (n=10)	0%	90%	10%	0%	0%

Table 19: Which of these descriptions of the CTE program best matches your understanding of the program? (High School Seniors by CTE Participation)

CTE Participation	It primarily benefits...				
	college-bound students.	both college-bound students and students who are not on a path to college equally.	students who are not on a path to college, but college-bound students may benefit as well.	students who are not on a path to college.	I don't know.
Took CTE Course (n=561)	11%	54%	12%	2%	21%
Didn't Take CTE Course (n=470)	3%	36%	12%	3%	45%

Table 20: Which of these descriptions of the CTE program best matches your understanding of the program? (High School Seniors by Post-HS Plans)

Post-HS Plans	It primarily benefits...				
	college-bound students.	both college-bound students and students who are not on a path to college equally.	students who are not on a path to college, but college-bound students may benefit as well.	students who are not on a path to college.	I don't know.
4 year college (n=787)	6%	45%	11%	2%	35%
2 year college (n=177)	14%	45%	10%	3%	28%
Business, Trade/Technical School (n=18)	17%	72%	11%	0%	0%
Work (n=34)	9%	47%	21%	0%	24%
Military (n=12)	0%	33%	50%	0%	17%
No plans at this time (n=13)	8%	38%	31%	0%	23%

Table 21: While you were a student in APS, did you ever take a CTE course (for example, Engineering, Business, Information Technology, Computer Science, Food and Fitness, Child Development, Teachers for Tomorrow, or Career Center classes)? (High School Seniors by Post-HS Plans)

Post-HS Plans	Yes	No
4 year college (n=809)	48%	52%
2 year college (n=180)	73%	27%
Business, Trade/Technical School (n=18)	78%	22%
Work (n=34)	79%	21%
Military (n=12)	83%	17%
No plans at this time (n=14)	71%	29%

Table 22: Please select the one response that best describes your plans after you graduate (High School Seniors by CTE Participation)

Post-HS Plan	Took CTE Course (n=578)	Did Not Take CTE Course (n=489)
4 year college	67%	87%
2 year college	23%	10%
Business, Trade/Technical School	2%	1%
Work	5%	1%
Military	2%	0%
No plans at this time	2%	1%

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Table 23: If no: Which of the following factors impacted your decision not to enroll in a CTE course? (Select all that apply) (High School Seniors by Post-HS Plans)*

Reason	4 year college (n= 424)		2 year college (n=48)		Work (n=7)	
	N	%	N	%	N	%
<i>I couldn't fit it into my schedule.</i>	192	45%	21	44%	3	43%
<i>I wasn't interested in the content of any of the CTE classes.</i>	168	40%	11	23%	1	14%
<i>I was not familiar with the CTE course options.</i>	163	38%	25	52%	5	71%
<i>I couldn't take a CTE course and earn all the credits I needed for an advanced diploma.</i>	35	8%	0	0%	0	0%
<i>The CTE course I was interested in taking was at the Career Center and the transportation options didn't work for me.</i>	25	6%	1	2%	3	43%
<i>I thought a CTE course would look bad on my transcript.</i>	24	6%	0	0%	0	0%
<i>My parents discouraged me from enrolling in a CTE course.</i>	20	5%	0	0%	0	0%
<i>It would have lowered my GPA even if I got a good grade.</i>	17	4%	3	6%	0	0%
<i>A staff member at my school discouraged me from enrolling in a CTE course.</i>	6	1%	1	2%	1	14%
<i>Other (please specify)</i>	22	5%	2	4%	1	14%

*Military, Business, Trade/Technical School, and No Plans at this Time are not included as fewer than five respondents reported not having taken a CTE course.

Table 24: Did you know that a CTE course could be used as a fine or practical arts credit? (High School Seniors by Post-HS Plans)

Post-HS Plans	Yes	No
4 year college (n=806)	39%	61%
2 year college (n=177)	56%	44%
Business, Trade/Technical School (n=19)	74%	26%
Work (n=28)	61%	39%
Military (n=11)	55%	45%
No plans at this time (n=12)	33%	67%

Table 25: Did you know that a CTE course could be used as a fine or practical arts credit? (High School Seniors by CTE Participation)

CTE Participation	Yes	No
Took CTE Course (n=562)	60%	40%
Didn't Take CTE Course (n=479)	24%	76%

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Table 26: How likely are you to encourage the following types of students to enroll in a CTE course?
Students with disabilities, English language learners (Secondary Staff by Level)

Response Group	Level	Response	Students with Disabilities		English Language Learners	
			Percent	Cumulative Percent	Percent	Cumulative Percent
Non-CTE Teachers	Middle School (n=45)	Very Likely	53%	53%	49%	49%
		Somewhat Likely	38%	91%	38%	87%
		A Little Likely	7%	98%	13%	100%
		Not at All Likely	2%	100%	0%	
	High School (n=90-91)	Very Likely	50%	50%	51%	51%
		Somewhat Likely	40%	90%	41%	91%
		A Little Likely	7%	97%	5%	97%
		Not at All Likely	3%	100%	3%	100%
CTE Teachers	Middle School (n=14-15)	Very Likely	67%	67%	79%	79%
		Somewhat Likely	20%	87%	14%	93%
		A Little Likely	13%	100%	7%	100%
		Not at All Likely	0%		0%	
	High School (n=31-32)	Very Likely	71%	71%	75%	75%
		Somewhat Likely	16%	87%	19%	94%
		A Little Likely	13%	100%	6%	100%
		Not at All Likely	0%		0%	
Counselors	Middle School (n=12)	Very Likely	67%	67%	67%	67%
		Somewhat Likely	33%	100%	33%	100%
		A Little Likely	0%		0%	
		Not at All Likely	0%		0%	
	High School (n=16)	Very Likely	69%	69%	63%	63%
		Somewhat Likely	31%	100%	38%	100%
		A Little Likely	0%		0%	
		Not at All Likely	0%		0%	
Administrators	Middle School (n=5-6)	Very Likely	67%	67%	60%	60%
		Somewhat Likely	17%	83%	0%	
		A Little Likely	17%	100%	40%	100%
		Not at All Likely	0%		0%	
	High School (n=10)	Very Likely	80%	80%	80%	80%
		Somewhat Likely	20%	100%	20%	100%
		A Little Likely	0%		0%	
		Not at All Likely	0%		0%	

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Table 27: How likely are you to encourage the following types of students to enroll in a CTE course? Students pursuing a standard diploma, students pursuing an advanced diploma (High School Staff by Level)

Response Group	Response	Standard Diploma		Advanced Diploma	
		Percent	Cumulative Percent	Percent	Cumulative Percent
Non-CTE Teachers (n=91)	Very Likely	52%	52%	49%	49%
	Somewhat Likely	41%	92%	37%	86%
	A Little Likely	3%	96%	7%	92%
	Not at All Likely	4%	100%	8%	100%
CTE Teachers (n=32)	Very Likely	91%	91%	88%	88%
	Somewhat Likely	9%	100%	13%	100%
	A Little Likely	0%		0%	
	Not at All Likely	0%		0%	
Counselors (n=16)	Very Likely	81%	81%	63%	63%
	Somewhat Likely	19%	100%	31%	94%
	A Little Likely	0%		6%	100%
	Not at All Likely	0%		0%	
Administrators (n=10)	Very Likely	80%	80%	56%	56%
	Somewhat Likely	20%	100%	44%	100%
	A Little Likely	0%		0%	
	Not at All Likely	0%		0%	
Total		100%		100%	

Table 28: How likely are you to encourage your child to enroll in a CTE course? (Parents by Level)

Level	Response	Percent	Cumulative Percent
Elementary (n=246)	Very Likely	28%	28%
	Somewhat Likely	28%	56%
	A Little Likely	14%	70%
	Not at All Likely	9%	79%
	Do Not Know	21%	100%
Middle School (n=112)	Very Likely	29%	29%
	Somewhat Likely	26%	54%
	A Little Likely	21%	76%
	Not at All Likely	13%	89%
	Do Not Know	11%	100%
High School (n=161)	Very Likely	29%	29%
	Somewhat Likely	21%	50%
	A Little Likely	16%	66%
	Not at All Likely	25%	92%
	Do Not Know	8%	100%

Accommodations for Students with Special Needs in CTE Courses

Table 29: Does your CTE teacher for this class help HILT/HILTEX students/students with disabilities understand the lesson if they need help? (CTE students indicating they are/have been in the HILT/HILTEX program or have/have had an IEP or 504)

Response	HILT/HILTEX				Students with Disabilities			
	Middle School (n=94)		High School (n=284)		Middle School (n=109)		High School (n=218)	
	Percent	Cumulative Percent	Percent	Cumulative Percent	Percent	Cumulative Percent	Percent	Cumulative Percent
He/she is very helpful.	45%	45%	51%	51%	32%	32%	44%	44%
He/she is somewhat helpful.	18%	63%	13%	64%	14%	46%	17%	61%
He/she is a little helpful.	9%	71%	3%	67%	8%	54%	5%	66%
He/she is not at all helpful.	2%	73%	4%	70%	6%	61%	3%	69%
I don't know.	27%	100%	30%	100%	39%	100%	31%	100%

Table 30: What accommodations do you provide for the HILT/HILTEX students in your classes? (Middle School CTE Teachers)

Number of Responses	Response theme	Examples
6	Peer support/paired with another student	“Pair them up with another student who speaks the same language.” “Peer to peer mentorship.”
5	Multiple modes of instruction provided	“Communication through sketching & drawing.” “Written and verbal instructions as well as demonstrations.”
4	Vocabulary support	“Vocabulary lessons.” “Word banks that accompany worksheets and quizzes.”
4	Additional time	“Extra time.” “Extended time to complete assignments.”
4	Additional support/help from teacher	“After school help” “One-on-one help”
3	Preferential seating	“Front seating” “Preferential seating.”
3	Model/demonstrate	“Demonstrations and practical application” “Model/demonstrate work to be done.”
3	Group work	“Small group work” “Group work in lab.”
2	Hands on activities/testing	“Alternative hands on activities.” “Hands-on testing.”
2	Monitoring/observation	“Observation” “Extra monitoring”

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2	Modified lessons with SIOp techniques	“Lessons are modified and taught with the SIOp teaching techniques.” “SIOp lessons.”
2	Other	“Second-language dictionaries.” “Spanish language materials.”

Table 31: What accommodations do you provide for the HILT/HILTEX students in your classes? (High School CTE Teachers)

<i>Number of Responses</i>	<i>Response theme</i>	<i>Examples</i>
16	Utilizing SIOp techniques	“I use SIOp strategies.” “My curriculum is SIOp based.”
6	Additional time	“Extra time as required.” “More time to complete assignments.”
5	Additional support/help from teacher	“I provide one on one help.” “Additional tutoring sessions.”
4	Multiple modes of instruction provided	“Instruction is done by - oral instruction, visual diagrams and physical modeling of project.” “Visual representation with written vocabulary to build English academic vocabulary.”
4	Vocabulary support	“Additional terms to better understand assignment.” “Word walls.”
3	Peer support	“Students who possess higher English abilities provide peer tutoring.” “Student pairs.”
2	Differentiated instruction/assignments	“Differentiated instruction” “Differentiated support.”
2	Collaborate with other staff	“Collaborate with HILT Program coordinator.” “We have assistants from the hilt program that help us co-teach.”
2	Teacher presentations available online	“I record my lessons and post in google classroom so they can replay.” “Teacher presentations online (available to all students).”
2	Language assistance	“Language assistance.” “I speak Spanish fluently and can teach the content in Spanish if needed.”
2	Other	“Shortened tests” “Graphic organizers.”

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Table 32: What accommodations do you provide for the students with disabilities (IEP/504) in your classes? (Middle School CTE Teachers)

<i>Number of Responses</i>	<i>Response theme</i>	<i>Examples</i>
21	Additional time	“Extended time on assignments, quizzes.” “More time on their tests and assignments,”
15	Adhering to IEP and 504 plans	“Students with disabilities (IEP/504) are provided several accommodations in my classes.” “IEP/504 specified accommodations.”
10	Additional support/help from teacher	“One-on-one help when needed.” “One-on-one assistance as needed/”
10	Preferential seating	“Front seating” “Proximity seating.”
10	Modified assignments/tests	“Differentiated assignments.” “Alternatives to pen and paper testing in order to demonstrate competency.”
3	Peer Support	“Buddy system” “Pair/share.”
3	Group work	“Group work.” “Small groups.”
2	Google classroom	“Use Google classroom so they are able to type rather than write.” “I record my lessons and post in google classroom so they can replay.”
2	Copies of notes	“Copy of teacher’s notes.” “Copies of notes.”
2	Calculation devices	“Calculation Devices.”
2	Other	“Graphic organizers” “Use of private testing room”

Table 33: What accommodations do you provide for the students with disabilities (IEP/504) in your classes? (High School CTE Teachers)

<i>Number of Responses</i>	<i>Response theme</i>	<i>Examples</i>
18	Additional time	“More time on their tests and assignment.” “More time to complete assignments.”
11	Adhering to IEP and 504 plans	“IEP/504 specified accommodation.” “Implement all student IEP/504 identified accommodations.”
7	Modified assignments/tests	“Private testing accommodations in adjacent room.” “Simplified assignments.”

7	Preferential seating	“Special seating selection.” “Preferential seating.”
5	Additional support/help from teacher	“One on one instruction if needed” “One-on-one assistance as need.”
2	Calculation devices	“Calculation devices”
2	Copies of notes	“Copy of teacher notes” “Copies of notes”
2	Hands on work	“Hands-on experiences.”
3	Other	“Graphic organizers.” “Allow re-do of assignments and quizzes.” “Group work.”

Community and Business Partnerships

Table 34: How frequently do you work with community and/or business partners in your CTE courses? (CTE Teachers)

Level	Statistics	Daily	Once a week	Once a month	Four times a year	Once or twice a year	Never
Middle School (n=16)	Percent	13%	13%	19%	19%	31%	6%
	Cumulative Percent	13%	25%	44%	63%	94%	100%
High School (n=33)	Percent	6%	30%	24%	9%	21%	9%
	Cumulative Percent	6%	36%	61%	70%	91%	100%

Table 35: Approximately how many of your students participate in the following opportunities through the CTE program (for your CTE program area)? (High School CTE Teachers)

Opportunity	Statistics	None	1-25%	26-50%	51-75%	76-100%
Internships (n=31)	Percent	26%	68%	3%	3%	0%
	Cumulative Percent	26%	94%	97%	100%	
Job Shadowing (n=27)	Percent	37%	44%	7%	7%	4%
	Cumulative Percent	37%	81%	89%	96%	100%
Work Experience Programs (n=28)	Percent	32%	36%	14%	4%	14%
	Cumulative Percent	32%	68%	82%	86%	100%
Field Trips (n=32)	Percent	3%	22%	16%	13%	47%
	Cumulative Percent	3%	25%	41%	53%	100%
Mentorships (n=28)	Percent	39%	32%	14%	4%	11%
	Cumulative Percent	39%	71%	86%	89%	100%

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Table 36: Have you ever participated in any of the following work-based opportunities through a CTE course? (Select all that apply) (High School CTE Students, n=1206)

Opportunity	Percent
Internships	7%
Cooperative education ("Co-op")	4%
Job shadowing	9%
Work experience programs	9%
Field trips	26%
Mentorships	5%
None of the above	61%

Table 37: Why haven't you participated in any of the above opportunities? (High School CTE Students, n=731)

Response	Percent
I am not aware of what opportunities are available.	52%
I am aware of the opportunities, but I am not interested.	15%
I am interested, but I can't fit something like this into my schedule.	22%
Other	11%

Table 38: Please provide some examples of how you work with community and/or business partners in your CTE courses. (Middle School CTE Teachers)

Number of Responses	Response theme	Examples
9	Guest speakers/classroom visits	"Speakers and presenters include Engineers and Construction Workers." "I have guest speakers come into the classroom such as professionals from the engineering industry as well as the photography industry."
5	Students work on projects that provide services to community	"Provide a t-shirt service for people in and around Arlington through the TSA, Technology Student Association." "Service project for Doorways for Women."
2	Mentors and volunteers	"I have a community volunteer that helps with my Act II." "Mentors for extracurricular robotics team."
2	Other	"Field trips to local businesses." "Our Design & Engineering club meets during every week and we do events where we share our projects with the community."

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Table 39: Please provide some examples of how you work with community and/or business partners in your CTE courses. (High School CTE Teachers)

Number of Responses	Response theme	Examples
9	Guest speakers/classroom visits	“I invite people in as guest speakers at least once a month.” “We have our partners come to talk to our students.”
9	Internships/externships/shadowing opportunities	“Have reached out regarding externships and speakers.” “I currently work with an engineering firm to ensure our students are able to participate in an internship.”
6	Observe/tour professional locations	“Students observe open-heart surgery at INOVA Fairfax Heart and Vascular Institute.” “The students go to visit the partners.”
3	Employment opportunities	“I try to connect students to summer employment opportunities that will allow them to get even more experience in the field.” “Work opportunities”
3	Hands-on experiences	“Partnership local business related to profession, allowing students to receive additional hands-on training outside of the classroom.” “Our students participate in real job site activities
2	Students volunteer at community events	“Students volunteer at a wide range of community functions and Annual Awards event.” “Community service CG for various organizations (e.g. DEA, DOJ, Hiring Vets, etc.).”
2	Other	“Partnership with Arlington Community Credit Union.” “I work with Marymount and NVCC faculty to bring in more realistic work into curriculum.”

Table 40: Overall, how beneficial are community and business partnerships to the APS CTE program? (High School CTE Teachers, n=28)

Response	Percent	Cumulative Percent
Very beneficial	86%	86%
Somewhat beneficial	7%	93%
A little beneficial	0%	
Not at all beneficial	0%	
I don't know	7%	100%

Table 41: What are some benefits of community and business partnerships that you've seen in your work with the APS CTE program? (High School CTE Teachers, n=28)

Number of Responses	Response theme	Examples
7	Internships/shadowing opportunities	"Business partnerships equal internships for our students." "Various opportunities for students to be in the workplace shadowing or actually working."
6	Provides real-world experiences	"Opportunities to practice in realistic settings." "It gives them real live experience."
4	Employment opportunities	"A significant number of students have gained employment from these partners." "Employment opportunities."
3	Other	"Junior Achievement" "Scholarships" "Coming to the class to share with the students."

Table 42: Overall, how valuable was your [work-based learning opportunity] experience? (High School CTE Students)

Work-based Learning Opportunity	Statistics	Very valuable	Somewhat valuable	A little valuable	Not at all valuable
Internship (n=79)	Percent	81%	15%	3%	1%
	Cumulative Percent	81%	96%	99%	100%
Co-op (n=47)	Percent	68%	30%	0%	2%
	Cumulative Percent	68%	98%		100%
Job Shadowing (n=108)	Percent	59%	35%	5%	1%
	Cumulative Percent	59%	94%	99%	100%
Work Experience (n=112)	Percent	70%	25%	4%	1%
	Cumulative Percent	70%	95%	99%	100%
Mentorship (n=60)	Percent	55%	35%	5%	5%
	Cumulative Percent	55%	90%	95%	100%

Table 43: Overall, the work-based learning opportunity or opportunities... (High School CTE Students)

The opportunity...	Statistics	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree	I don't know
...provided me with work-related skills. (n=249)	Percent	63%	33%	1%	1%	2%
	Cumulative Percent	63%	96%	96%	98%	100%
...helped prepare me for a career. (n=248)	Percent	56%	36%	3%	2%	3%
	Cumulative Percent	56%	92%	95%	97%	100%
...helped me determine a career path. (n=246)	Percent	42%	41%	8%	3%	6%
	Cumulative Percent	42%	83%	91%	94%	100%

Table 44: I am still interested in this career path. (High School CTE Students, n=247)

Statistics	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree	I don't know
Percent	43%	36%	13%	3%	6%
Cumulative Percent	43%	79%	91%	94%	100%

Table 45: Generally, would you say that the work/effort required of staff to set up community and business partnerships is... (High School CTE Teachers, n=29)

Response	Percent	Cumulative Percent
Completely worth it	66%	66%
Somewhat worth it	24%	90%
Not at all worth it	3%	93%
N/A – I am not involved in this.	7%	100%

Table 46: How do you engage and maintain relationships with businesses that are related to your program area? (High School CTE Teachers, n=29)

Number of Responses	Response theme	Examples
7	Frequent Contacts with partners/multiple types of contact	“Consistent communication and invitation to visit classroom.” “Regular contact”
3	Showing appreciation/gratitude	“I think it helps to put in the extra effort to demonstrate gratitude- I find people most appreciate a nice e-mail to their supervisor after they have come to speak or helped the program in some way. “ “Thank you's and more thank you's.”
1	Other	“Social events.”

Table 47: Please share your thoughts about what might facilitate more effective community and business partnerships. (Middle and High School CTE Teachers)

Number of Responses	Response theme	Examples
13	Opportunities to network/outreach/raise awareness	“Placing news stories in community news sources.” “Reaching out to those people in community and business who can provide help we need for our students.”
7	List of available partnerships in community	“If a list of people available in the community who were willing was made it, more partnerships could be developed.” “Lists of people we can work with or more education programs in the businesses.”

<i>Number of Responses</i>	<i>Response theme</i>	<i>Examples</i>
3	More support/direction from about making partnerships	<p>“Having more direction on how the process works and what a good partnership looks like.”</p> <p>“We should have a professional development day where we learn strategies to engage other potential partnerships. Then during the second half of the day, we reach out and start the process of making contacts with potential partners.”</p>
3	Employ a coordinator to work with business partners on a daily basis.	<p>“Employ a full time cooperative education/internship coordinator to work with business partners on a daily basis.”</p> <p>“The Career Center used to have a person who served as a liaison between the school and industry; this also included coordinating public relations events - this was an effective means of facilitating community and business partnerships. The person who had served in this position had experience in public relations.”</p>
3	Time to build relationships.	<p>“Time to interact with businesses during the school day as this is the only time they are available.”</p> <p>“More time, it is difficult to fit in with all other responsibilities.”</p>

Resources

Table 48: Do you have access to the student data you need to effectively do your job as a CTE teacher? (CTE Teachers)

<i>Level</i>	<i>Statistics</i>	<i>All</i>	<i>Most</i>	<i>Some</i>	<i>None</i>
<i>Middle School</i>	Percent	50%	19%	31%	0%
<i>(n=16)</i>	Cumulative Percent	50%	69%	100%	
<i>High School</i>	Percent	28%	41%	31%	0%
<i>(n=32)</i>	Cumulative Percent	28%	69%	100%	

Table 49: How would you rate the ease of accessing the student data you need? (CTE Teachers)

<i>Response</i>	<i>Level</i>	<i>Percent</i>
<i>Student data is easily accessible.</i>	Middle School (n=15)	47%
	High School (n=33)	21%
<i>Student data is accessible but it can be cumbersome sometimes.</i>	Middle School (n=15)	27%
	High School (n=33)	52%
<i>Student data is so cumbersome to access it frequently hinders my ability to access it.</i>	Middle School (n=15)	13%
	High School (n=33)	24%
<i>Student data is virtually impossible to access.</i>	Middle School (n=15)	13%
	High School (n=33)	3%

Table 50: What would make accessing the student data you need easier? (CTE Teachers)

Number of Responses	Response theme	Examples
4	Access to info on previous CTE students	<p>“Having access to previous students.”</p> <p>“Post student contact information. Access to synergy previous students.”</p>
3	Data/synergy support	<p>“Allowing staff members to have a direct line to a data person who can find the data, generates the report and provides it to the person who requested it. There are plenty of data people in the County but the typical classroom teacher has no idea who to contact to get it. Thus they either spend hours finding it (instead of planning); they look at incomplete data (which isn't necessarily helpful) or they simply ignore data (which impedes appropriate instruction).”</p> <p>“Synergy training.”</p>
2	Easy IEP/504 report in synergy	<p>“It takes a lot of time to research and read the real accommodations”</p> <p>“In Synergy, there is a way to print a class report that lists all the health conditions in a particular class on one sheet. This is really helpful to print out, and keep with my class roster. It would be REALLY helpful to be able to print out a similar report for the required accommodations for IEP/504 students..”</p>
2	Data for home school information	<p>“Synergy needs to be "tweaked" so as to allow access to home school information; currently, Synergy does not allow schools to share information. As an example, there is no listing for any of the students' counselor at the home school - this information must be acquired via telephone, which also takes some time.”</p> <p>“Synergy should show the home school.”</p>
2	Other	<p>“having the level of hilt or ess listed on the students profile.”</p> <p>“Data needs to be in one place so that we don't have to hunt for it.”</p>

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Table 51: How frequently do you use these tools to collect data to inform your CTE instruction? (CTE Teachers)

Tool	Level	Statistics	Daily	Once a week	Once a month	Four times a year	Once or twice a year	Never
CanDo	Middle School (n=14)	Percent	0%	0%	7%	21%	36%	36%
		Cumulative Percent	0%	0%	7%	29%	64%	100%
	High School (n=31)	Percent	0%	10%	19%	26%	10%	35%
		Cumulative Percent	0%	10%	29%	55%	65%	100%
Synergy	Middle School (n=16)	Percent	81%	13%	6%	0%	0%	0%
		Cumulative Percent	81%	94%	100%			
	High School (n=33)	Percent	64%	21%	3%	0%	3%	9%
		Cumulative Percent	64%	85%	88%		91%	100%
Taskstream	Middle School (n=14)	Percent	0%	7%	0%	7%	0%	86%
		Cumulative Percent	0%	7%	0%	14%	0%	100%
	High School (n=30)	Percent	0%	7%	7%	0%	0%	87%
		Cumulative Percent	0%	7%	13%	0%	0%	100%

Table 52: What additional data or data tools would help you in informing your CTE instruction? (CTE Teachers)

Number of Responses	Response theme	Examples
2	Student contact information	“Detailed contact information - e-mails, cell phones - of parents of students; name of counselors of students.” “Information on where students are currently.”
2	Information on how to use tools.	“I guess I do not know what is available through Taskstream.” “More information regarding how to use they tools, what is expected, and how they relate.”
2	Competency data	“I heard the CanDO system ran into a problem at the state level, although the competencies are still tracked.” “I can not use CanDo.”
2	Other	“Club participation data.” “Pre-Assessments and Post-Assessments.”

Table 53: To what extent do the following resources meet your needs? (CTE Teachers)

Resource	Level	Statistics	Completely	Somewhat	Not at All
Access to internet	Middle School (n=16)	Percent	88%	13%	0%
		Cumulative Percent	88%	100%	
	High School (n=33)	Percent	67%	33%	0%
		Cumulative Percent	67%	100%	
Computer hardware	Middle School (n=16)	Percent	69%	31%	0%
		Cumulative Percent	69%	100%	
	High School (n=33)	Percent	58%	42%	0%
		Cumulative Percent	58%	100%	
Computer software	Middle School (n=16)	Percent	75%	19%	6%
		Cumulative Percent	75%	94%	100%
	High School (n=33)	Percent	55%	45%	0%
		Cumulative Percent	55%	100%	

Table 54: The tools, equipment, and supplies in my classroom/lab meet the standards of those used in industry. (CTE Teachers)

Level	Statistics	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	I don't know
Middle School (n=16)	Percent	38%	31%	13%	19%	0%
	Cumulative Percent	38%	69%	81%	100%	
High School (n=32)	Percent	31%	56%	6%	6%	0%
	Cumulative Percent	31%	88%	94%	100%	

Table 55: How current is the equipment that you have in your classroom? (CTE Teachers)

Level	Statistics	Completely up-to-date	Somewhat up-to-date	Somewhat out-of-date	Completely out-of-date
Middle School (n=16)	Percent	19%	56%	19%	6%
	Cumulative Percent	19%	75%	94%	100%
High School (n=32)	Percent	16%	63%	19%	3%
	Cumulative Percent	16%	78%	97%	100%

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Table 56: What is the impact of your out-of-date equipment on your ability to teach your content? (CTE Teachers)

Number of Responses	Response theme	Examples
6	Hinder instruction/application	“The industry that this program is based on changes and evolves; new equipment, three year updating of standards; without the latest equipment and information, keeping students up-to-date is very difficult - their instruction may be viewed as antiquated” “Can't teach cybersecurity tools etc.”
1	Other	“I'm competing against home schools that have more up to date classroom environments and equipment. This makes it hard to market my class as more attractive.”

Table 57: How would you rate the efficiency of the process for updating... (CTE Teachers)*

Equipment	Level	Statistics	Very efficient	Somewhat efficient	Somewhat inefficient	Very inefficient
Laboratory Machinery Equipment	Middle School (n=15)	Percent	13%	47%	27%	13%
		Cumulative Percent	13%	60%	87%	100%
Computers	High School (n=23)	Percent	13%	43%	22%	22%
		Cumulative Percent	13%	57%	78%	100%
Laboratory Machinery Equipment	Middle School (n=16)	Percent	31%	38%	13%	19%
		Cumulative Percent	31%	69%	81%	100%
	High School (n=31)	Percent	23%	35%	19%	23%
		Cumulative Percent	23%	58%	77%	100%

*These questions included an N/A response option for teachers who do not use laboratory machinery or computer equipment in their instruction. N/A responses were removed in order to calculate these percentages. Total N/A responses were 1 MS teacher and 9 HS teachers for laboratory machinery equipment, and 1 HS teacher for computer equipment.

Table 58: How could the process for updating laboratory machinery equipment or computers be improved? (CTE Teachers)

Number of Responses	Response theme	Examples
8	Utilize teacher input	“These decisions are made with no input from the teachers who must use these computers.” “Better communication with classroom teachers.”
8	Regular maintenance/increase response time	“Regular maintenance vs waiting to call the Help Desk.” “I submit tickets for work and it can take weeks

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<i>Number of Responses</i>	<i>Response theme</i>	<i>Examples</i>
		before someone comes from another facility and performs the fixes needed.”
3	Increase funding for computers/technology/equipment	“More money made available to the school to get what computers we need.” “Technology changes quickly and thus CTE should have budget that can respond to changes.”
2	Inventory equipment/technology and scheduled maintenance	“Five - Ten Year Capital improvement plan schedule (rotate old out, in with the new)” “Create an excel on all the appliances; date purchased and create a renewal cycle for the appliances.”

Table 59: Please rate your level of satisfaction with division-level support for the following from the CTAE Office. (CTE Teachers)

<i>Area of Support</i>	<i>Level</i>	<i>Statistics</i>	<i>Very Satisfied</i>	<i>Somewhat Satisfied</i>	<i>Somewhat Dissatisfied</i>	<i>Very Dissatisfied</i>	<i>I don't know</i>
<i>Curriculum</i>	Middle School	Percent	56%	31%	6%	6%	0%
		(n=16) Cumulative Percent	56%	88%	94%	100%	
	High School	Percent	42%	33%	12%	9%	3%
		(n=33) Cumulative Percent	42%	76%	88%	97%	100%
<i>Communication</i>	Middle School	Percent	63%	25%	13%	0%	0%
		(n=16) Cumulative Percent	63%	88%	100%		
	High School	Percent	31%	47%	13%	9%	0%
		(n=32) Cumulative Percent	31%	78%	91%	100%	
<i>Advocacy</i>	Middle School	Percent	50%	25%	13%	0%	13%
		(n=16) Cumulative Percent	50%	75%	88%		100%
	High School	Percent	38%	31%	16%	9%	6%
		(n=32) Cumulative Percent	38%	69%	84%	94%	100%
<i>Student organizations</i>	Middle School	Percent	31%	38%	13%	0%	19%
		(n=16) Cumulative Percent	31%	69%	81%		100%
	High School	Percent	48%	24%	9%	6%	12%
		(n=33) Cumulative Percent	48%	73%	82%	88%	100%
<i>Data collection</i>	Middle School	Percent	38%	31%	0%	6%	25%
		(n=16) Cumulative Percent	38%	69%		75%	100%
	High School	Percent	41%	16%	9%	22%	13%
		(n=32) Cumulative Percent	41%	56%	66%	88%	100%
<i>Technology</i>	Middle School	Percent	56%	13%	19%	13%	0%
		(n=16) Cumulative Percent	56%	69%	88%	100%	
	High School	Percent	34%	44%	19%	3%	0%
		(n=32) Cumulative Percent	34%	78%	97%	100%	

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<i>Area of Support</i>	<i>Level</i>	<i>Statistics</i>	<i>Very Satisfied</i>	<i>Somewhat Satisfied</i>	<i>Somewhat Dissatisfied</i>	<i>Very Dissatisfied</i>	<i>I don't know</i>
<i>Professional development</i>	Middle School (n=16)	Percent	75%	13%	6%	6%	0%
		Cumulative Percent	75%	88%	94%	100%	
	High School (n=33)	Percent	45%	42%	6%	6%	0%
		Cumulative Percent	45%	88%	94%	100%	
<i>Dissemination of state reports</i>	Middle School (n=16)	Percent	44%	13%	6%	0%	38%
		Cumulative Percent	44%	56%	63%		100%
	High School (n=32)	Percent	31%	34%	3%	9%	22%
		Cumulative Percent	31%	66%	69%	78%	100%
<i>Funding for supplies</i>	Middle School (n=16)	Percent	50%	13%	19%	13%	6%
		Cumulative Percent	50%	63%	81%	94%	100%
	High School (n=32)	Percent	34%	38%	16%	9%	3%
		Cumulative Percent	34%	72%	88%	97%	100%

Table 60: What other support would you like to receive from the CTAE Office? (CTE Teachers)

<i>Number of Responses</i>	<i>Response theme</i>	<i>Examples</i>
5	Supplies/equipment	“Updating machinery that aligns with state curriculum. “Supply and equipment budget has not increased for the past five years while the number of students enrolled per semester has increased by the factor of 3.”
4	Satisfied	“They are already doing an outstanding job!” “The CTAE office is more supportive than any other level of leadership in APS. It allows me to grow my personal teaching techniques as well as the program.”
2	Support with data	“They seem to ask teacher to collect data that should be accessible in Synergy which means many people are doing the same searches and then someone has to collate the data, a waste of resources.” “We've experienced in an increase in the amount and type of data we must track. This takes away from instructional planning time. Data collection does not enhance student classroom experience.”
2	Other	“Teacher assistance needs to be provided in electives to support preparation” “Countywide meeting should be spent sharing with others.”

CTE Completer State Follow-Up Survey

The Virginia Department of Education (VDOE) requires school divisions to administer a follow-up survey to all CTE completers within 9-12 months of graduation. The goal of the survey is to gauge completer transition to further education or employment, as well as satisfaction with how well the CTE program prepared them for that transition. Divisions are tasked with achieving a response rate of 75% or higher. Each year, the CTAE Office reaches out to alumni via US mail and phone calls to invite them to participate in the online survey, until the survey reaches the required response rate. The CTAE Office provided the Office of Planning and Evaluation with responses to this survey from the past four complete administrations.

Table 1: Overall, how satisfied are you with the preparation you received in your high school Career and Technical Education program for further education or employment?

	2012 (n=368)	2013 (n=404)	2014 (n=154)	2015 (n=358)
<i>Very satisfied</i>	52%	47%	59%	42%
<i>Satisfied</i>	46%	51%	38%	55%
<i>Dissatisfied</i>	1%	2%	3%	3%
<i>Very dissatisfied</i>	Less than 1%	Less than 1%	0%	Less than 1%

Table 2: Did you receive an industry, occupational, or professional certification or license as a result of completing the CTE program?

	2012 (n=362)	2013 (n=406)	2014 (n=152)	2015 (n=92)
Yes	33%	39%	42%	26%
No	67%	61%	58%	74%

Table 3: Are you currently working to obtain an industry, occupational, or professional license?

	2012 (n=353)	2013 (n=402)	2014 (n=147)	2015 (n=88)
Yes	22%	21%	26%	21%
No	78%	79%	74%	79%

Table 4: Are you currently on active duty in the U.S. Armed Services?

	2012 (n=368)	2013 (n=406)	2014 (n=154)	2015 (n=358)
Yes	2%	2%	2%	2%
No	98%	98%	98%	98%

Table 5: Are you currently employed in a full-time position?

	2012 (n=368)	2013 (n=406)	2014 (n=154)	2015 (n=358)
Yes	22%	22%	18%	15%
No	78%	78%	82%	85%

Table 6: Are you currently employed in a part-time position?

	2012 (n=368)	2013 (n=406)	2014 (n=154)	2015 (n=358)
Yes	41%	41%	42%	54%
No	59%	59%	58%	46%

Table 7: Are you currently seeking current employment?

	2012 (n=135)	2013 (n=91)	2014 (n=59)	2015 (n=35)
Yes	27%	10%	48%	40%
No	73%	90%	52%	60%

Table 8: Were you required to complete your high school CTE program in order to qualify for your job?

	2012 (n=331)	2013 (n=313)	2014 (n=89)	2015 (n=50)
Yes	7%	5%	12%	14%
No	93%	95%	88%	86%

Table 9: Is your current job in a field that is related to any of your past CTE courses?

	2012 (n=331)	2013 (n=304)	2014 (n=88)	2015 (n=55)
Yes	20%	12%	28%	42%
No	80%	88%	72%	58%

Table 10: Is your current job in a field that is related to any certification you earned through your high school CTE program?

	2012 (n=304)	2013 (n=295)	2014 (n=88)	2015 (n=48)
Yes	16%	8%	15%	17%
No	84%	92%	85%	83%

Table 11: How much of what you learned in your CTE courses are you using for your current job?

	2012 (n=312)	2013 (n=299)	2014 (n=87)	2015 (n=51)
<i>Most</i>	12%	7%	20%	28%
<i>Some</i>	16%	12%	14%	16%
<i>Little</i>	20%	8%	9%	14%
<i>None</i>	53%	73%	58%	43%

Table 12: Have you received training or any other education since graduation from high school?

	2012 (n=368)	2013 (n=406)	2014 (n=154)	2015 (n=358)
<i>Yes, you are currently enrolled</i>	83%	80%	64%	78%
<i>Yes, you were enrolled previously but not now</i>	5%	2%	9%	1%
<i>You received no further training or education</i>	12%	18%	27%	21%

Table 13: Are you currently or were you a full-time or part-time student?

	2012 (n=319)	2013 (n=324)	2014 (n=110)	2015 (n=197)
<i>Full-time</i>	86%	84%	84%	94%
<i>Part-time</i>	14%	16%	16%	6%

Table 14: Types of education you have participated in since high school.

	2012 (n=317)	2013 (n=315)	2014 (n=114)	2015 (n=244)
<i>Community college</i>	43%	42%	38%	37%
<i>Registered apprenticeship</i>	0%	0%	0%	0%
<i>Business/Industry training through your employer</i>	0%	Less than 1%	4%	0%
<i>Occupational/technical training through a local school system</i>	0%	0%	0%	0%
<i>Four-year university</i>	55%	56%	55%	62%
<i>Technical School/college</i>	1%	1%	3%	1%
<i>Other</i>	Less than 1%	0%	2%	0%

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Table 15: To what extent is/was your area of study related to the CTE program you completed in high school?

	2012 (n=314)	2013 (n=305)	2014 (n=110)	2015 (n=92)
<i>Closely related</i>	30%	28%	31%	34%
<i>Somewhat related</i>	24%	29%	23%	27%
<i>Not related</i>	47%	43%	46%	39%

APS-Developed CTE Alumni Survey

Students who take CTE courses may complete a sequence, which is defined as taking two sequential CTE courses in the same program area (for example, Auto I and Auto II). Students may also be considered to be a “completer” if they take just one class in EMT, physical therapy/sports medicine, and forensics. A student is considered to be a completer once they graduate.

As part of the CTAE evaluation, a survey was sent to APS alumni who had completed a CTE sequence while at APS. The survey was administered in the fall of 2016. The CTAE Office provided the Office of Planning and Evaluation with lists of CTE completers who had graduated in 2011-12 and 2012-13. Planning and Evaluation invited alumni to participate in the survey by 1) mailing a letter to the last known mailing address of the student, and 2) sending an email invitation to those students who had provided one in their senior survey when they graduated. The survey was available online.

Table 1 shows the response rates and margin of error for the survey. The margin of error for this survey is calculated at a 95% confidence interval, meaning that we can be 95% confident that the sample result reflects the actual population within the margin of error. In other words, in 19 out of 20 cases the data obtained would not differ by any more than the percentage points in the margin of error in either direction if the survey were repeated multiple times employing the same survey methodology and sampling method across the same population. When the margin of error is greater than 5, the results should be interpreted with caution.

In total, 93 people responded to the survey. Of those, 31 responses were filtered out based on responses to one of two questions:

- What year did you graduate from Arlington Public Schools?
- Did you complete a CTE sequence while in APS? “Completing a sequence” is defined as taking two sequential CTE courses in the same program area (for example, Auto I and Auto II). This also includes EMT, physical therapy/sports medicine, and forensics, even if you only took one class.

If a respondent selected “N/A – I did not attend Arlington Public Schools” or indicated that they had not completed a CTE sequence while at APS, the survey ended and the respondent received the following message: “Your response indicates that you are not part of the intended audience of this survey. Thank you for your participation.” The margin of error is calculated based on the total number of valid responses.

Table 1: Alumni Survey Response Rate

<i>Letters Sent</i>	<i>Returned letters</i>	<i>Emails Sent</i>	<i>Invalid Emails</i>	<i>Responses</i>	<i>Response Rate</i>	<i>Margin of Error</i>
937	175	757	56	62	7%	12

Completer Information

Table 2: What year did you graduate from Arlington Public Schools? (n=62)

<i>School Year</i>	<i>Percent</i>
2011-12	32%
2012-13	68%

Table 3: Please indicate all CTE areas you took courses in while in high school (select all that apply): (n=62)

<i>CTE Program Area</i>	<i>Percent</i>
Business and Information Technology and Marketing	8%
Computer Science	18%
Family and Consumer Sciences	18%
Technology Education	16%
Trade and Industrial Programs	68%

Table 4: Did you receive an industry or professional certification or license as a result of completing the CTE sequence? (n=62)

<i>Response</i>	<i>Percent</i>
I don't know	10%
No	50%
Yes	40%

Table 5: Are you currently working to obtain an industry, or professional certification or license? (n=62)

<i>Response</i>	<i>Percent</i>
No	57%
Yes	44%

Table 6: Where did you take CTE courses while in high school? (n=62)

<i>Location</i>	<i>Percent</i>
At my home school	21%
At the Career Center	69%
Both at my home school and at the Career Center	8%
The Career Center was my home school.	2%

Post-High School Experience

Table 7: Which of the following describes your current employment and/or education status? (Select all that apply) (n=62)

<i>Post-High School Plans</i>	<i>Percent</i>
<i>Enrolled in a four-year college</i>	55%
<i>Have a full-time job</i>	32%
<i>Have a part-time job</i>	26%
<i>Enrolled in a two-year college</i>	19%
<i>Enrolled in another postsecondary institution (for example, a trade school)</i>	2%
<i>Military</i>	0%
<i>Other</i>	8%

Table 8: How much of an impact did the APS CTE program have on your level of preparation for your current work or education status? (n=62)

<i>Response</i>	<i>Percent</i>
<i>It had a strong impact.</i>	53%
<i>It had a moderate impact.</i>	34%
<i>It had no impact.</i>	10%
<i>I don't know.</i>	3%

Table 9: How did the CTE program help prepare you for your current work or education status?

<i>Number of Responses</i>	<i>Response theme</i>	<i>Examples</i>
21	Helped prepare student with college coursework/provided skills in the field of interest	<p>“Computer science course gave me experience in Python and Java programming, which was helpful when I took undergraduate courses in computer science.”</p> <p>“I took the Physical Therapy class at the Career Center and am now on a track to complete a Bachelors of Science in Nursing. The foundation in human anatomy has greatly helped with my college courses.”</p>
19	Guided student to selection of career/college major	<p>“It inspire me to study exercise physiology and to teach. Without the CTE classes I took I would have been lost about what to study in college and to do as a career. Those classes have helped me define the rest of my life. Because of them I plan on getting my doctorates degree. It would not have happened without them. It made for a rewarding high school experience that was critical for my success.”</p> <p>“It helped me delve into the world of Criminal Justice, which led me to my college majors, which led me to my current job in the Federal Court system.”</p>
4	Helped to obtain employment	<p>“After successfully completing the auto tech classes offered at the career center I was able to obtain a well-paying job at a dealership. Being that I wasn't planning on immediately leaving to a four year institution, working as a technician gave me the opportunity to even</p>

<i>Number of Responses</i>	<i>Response theme</i>	<i>Examples</i>
		be able to afford the tuition for my bachelor's degree. Now I am studying at a four year institution working on my Mechanical Engineering degree." "I was able to get a job as a Carpenter's Helper for my first year out of school."

Relevance to Job

Table 10: You indicated that you are currently working part- or full-time. How closely related is your job to the CTE sequence you completed in high school? (n=34)

<i>Response</i>	<i>Percent</i>
<i>Closely related</i>	38%
<i>Somewhat related</i>	29%
<i>Not related</i>	32%

Table 11: How much of what you learned in your CTE courses are you using for your current job? (n=34)

<i>Response</i>	<i>Percent</i>
<i>Most</i>	29%
<i>Some</i>	41%
<i>Little</i>	15%
<i>None</i>	15%

Table 12: Were you required to complete your high school CTE sequence in order to qualify for your job? (n=34)

<i>Response</i>	<i>Percent</i>
<i>No</i>	88%
<i>Yes</i>	12%

Table 13: You indicated that you received an industry or professional certification or license as a result of completing the CTE sequence. Is your current job in a field that is related to this certification/license? (n=12)

<i>Response</i>	<i>Percent</i>
<i>No</i>	50%
<i>Yes</i>	50%

Table 14: Were you required to have this certification/license in order to qualify for your job? (n=12)

<i>Response</i>	<i>Percent</i>
No	75%
Yes	25%

Relevance to Area of Study

Table 15: You indicated that you are currently a student. How closely related is your area of study to the CTE sequence you completed in high school? (n=47)

<i>Response</i>	<i>Percent</i>
Closely related	49%
Somewhat related	32%
Not related	19%

CTE Work Experience Programs

Table 16: Did you ever participate in any of the following work-based opportunities through a CTE course? (Select all that apply) (n=62)

<i>Opportunity</i>	<i>Percent</i>
Internships	23%
Cooperative education ("Co-op")	2%
Job shadowing	27%
Work experience programs	16%
Mentorships	15%
None of the above	58%

Table 17: Overall, how valuable was your [work-based learning opportunity] experience?*

<i>Work-based Learning Opportunity</i>	<i>Statistics</i>	<i>Very valuable</i>	<i>Somewhat valuable</i>	<i>A little valuable</i>	<i>Not at all valuable</i>
<i>Internship</i> (n=14)	Percent	93%	7%	0%	0%
	Cumulative Percent	93%	100%	100%	100%
<i>Job Shadowing</i> (n=17)	Percent	76%	18%	6%	0%
	Cumulative Percent	76%	94%	100%	100%
<i>Work Experience</i> (n=10)	Percent	100%	0%	0%	0%
	Cumulative Percent	100%	100%	100%	100%
<i>Mentorship</i> (n=9)	Percent	78%	11%	11%	0%
	Cumulative Percent	78%	89%	100%	100%

*Only one response for Co-op; data omitted

Table 18: Overall, the work-based learning opportunity or opportunities...

The opportunity...	Statistics	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
...provided me with work-related skills. (n=25)	Percent	72%	20%	8%	0%
	Cumulative Percent	72%	92%	100%	100%
...helped prepare me for a career. (n=25)	Percent	68%	24%	8%	0%
	Cumulative Percent	68%	92%	100%	100%
...helped me determine a career path. (n=25)	Percent	64%	20%	12%	4%
	Cumulative Percent	64%	84%	96%	100%

Relevance of Work Experience Programs

Table 19: Is your **current job** in the same field as the work-based learning opportunities you participated in as a CTE student in APS? (n=14)

Response	Percent
No	36%
Yes	64%

Table 20: Is your **current area of study** in the same field as the work-based learning opportunities you participated in as a CTE student in APS? (n=17)

Response	Percent
No	47%
Yes	53%

Open-ended Responses

Table 21: If there is anything else you would like us to know about your experience with the APS CTE program, please enter it here.

Number of Responses	Response theme	Examples
12	Participation in courses provided guidance towards career choice	<p>“The computer science courses were immensely helpful towards furthering my passion for the field and preparing (or overpreparing) me for university. I urge you to continue offering these programs and encourage new students to take them if they have any interest in a career involving computers.”</p> <p>“The Arlington Career Center was crucial in developing the skills needed for my career. The experience in dealing with many types of animals was helpful in opening up other fields of opportunities and my own personal hobbies with exotic reptiles.</p>

<i>Number of Responses</i>	<i>Response theme</i>	<i>Examples</i>
5	Supportive/engaging teachers	<p>It also helped increase interest in extending my education to a college degree to supplement my technical schooling.”</p> <p>“I wish that the Arlington County School Board would stop its agenda to eradicate the Career Center. In the quest to make every student fit into advanced placement courses, they have veered away from caring about the individual needs of students. The Career Center provides an excellent opportunity to have on the job training that guides us into a career path. Please create an environment within the Arlington school system that encourages (not ostracizes) students to take CTE classes.”</p> <p>“The teachers were also important in helping to keep my interest in education during difficult times.”</p>
4	Prepares students for college coursework	<p>“For whatever it's worth, Anne Cupero, who taught Forensics, is still one of the best teachers I've ever had. She's honest, helpful, motivating, and so caring. She made the class one of the best I've ever taken, despite whatever was thrown at us.”</p> <p>“The career center was an invaluable resource to choosing my current field of work and helped me to be much more prepared for the classes that I took in college than many of my fellow classmates.”</p>
3	Course participation provides students with skills	<p>“I noticed also when I went to EMT classes at nova (Springfield) I was much more prepared then the other students.”</p> <p>“The Career Center is awesome and gives so many opportunities for learning useful real skills and it's fun.”</p>
2	Course participation provides students with hands-on experiences	<p>“Loved the Career Center and my EMS class. Even though I am not pursuing a health-related career, my class and three years at the rescue squad were absolutely invaluable experiences in shaping my leadership and critical decision-making skills.”</p> <p>“I think the CTE program is very important because not all people want to go to a 4 year college for a degree. There are a lot of people who are more hands-on people who can benefit from learning about the trades and other options available to there.”</p>
4	Other	<p>“I think that the physical therapy/sports medicine was extremely valuable to my education. It was the only course that I took in high school that I found in relevance to the field I wanted to go into. It was the most interactive as well as most hands on experience I had in high school.”</p> <p>“As part of my CTE class I had the opportunity to speak with the united states department of education in DC about the importance of CTE classes. I chose to except this role because of</p>

<i>Number of Responses</i>	<i>Response theme</i>	<i>Examples</i>
		<p>my strong belief that CTE classes are important for educational advancements in both Arlington and the country as a whole. They should be a key component of high school education in the future.”</p> <p>“PT/Sports Medicine was my favorite course throughout my entire high school education.”</p>

Demographic Information

Table 22: While in APS, were you ever in the ESOL/HILT or HILT/HILTEX program? The ESOL/HILT and HILT/HILTEX programs are for students who speak English as a second language. (n=62)

<i>Response</i>	<i>Percent</i>
No	89%
Yes	11%

Table 23: While in APS, did you ever have an Individualized Education Plan/IEP (special education) or Section 504 Plan? An IEP or Section 504 Plan is for students who have a disability. (n=62)

<i>Response</i>	<i>Percent</i>
No	82%
Yes	18%

*Table 24: Race/Ethnicity (n=62)**

<i>Response</i>	<i>Percent</i>
Asian	11%
Black	5%
Hispanic	29%
White	50%
Other	5%

*Based on combined responses for two questions: “Are you Hispanic or Latino?” and “What is your race? Select all that apply.”

Table 25: Gender (n=62)

<i>Response</i>	<i>Percent</i>
Female	63%
Male	37%

Table 26: Annual Income (Asked only if working)

<i>Job Status</i>	<i>Response</i>	<i>Percent</i>
<i>Part-Time Job (n=14)</i>	\$0 to \$24,000	71%
	\$24,001 to \$51,000	14%
	\$51,001 to \$72,000	0%
	\$72,001 to \$86,000	0%
	\$86,001 to \$110,000	7%
	\$110,001 to \$150,000	0%
	\$200,001 or higher	7%
<i>Full-Time Job (n=20)*</i>	\$0 to \$24,000	20%
	\$24,001 to \$51,000	40%
	\$51,001 to \$72,000	20%
	\$72,001 to \$86,000	5%
	\$86,001 to \$110,000	5%
	\$110,001 to \$150,000	10%
	\$200,001 or higher	0%

*includes two respondents who reported they have both a full-time and a part-time job

CAREER-TECHNICAL EDUCATION AND COLLEGE ADMISSIONS

Prepared for Arlington Public Schools

March 2017



In the following report, Hanover Research presents findings from in-depth interviews and secondary research on four-year college and university admissions committees' views of Career-Technical Education. The report focuses primarily on perceptions of these courses among admissions staff in Virginia and the Southeastern United States.

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EXECUTIVE SUMMARY AND KEY FINDINGS

INTRODUCTION

Arlington Public Schools (APS) has asked Hanover Research (Hanover) to investigate the impacts of students' participation in various types of Career-Technical Education (CTE) on their college admissions prospects. The district defines CTE as both vocational courses—such as auto maintenance and culinary arts—and college preparatory courses or programs including Project Lead the Way pre-engineering courses and classes in entrepreneurship or accounting. The district is also interested in learning about how vocational and academic dual enrollment programs are perceived. Specific questions include:

- How do admissions officers understand and define CTE courses?
- What impacts does CTE participation have on students' admissions prospects?
- If a student takes CTE courses in a field related to his or her anticipated major, will those programs affect his or her admissibility?
- How do colleges and universities view academic and CTE dual-enrollment credits or state or industry certificates earned through CTE?

In seeking to answer these questions, Hanover conducted five in-depth interviews (IDIs) with admissions representatives throughout Virginia and the Southeast. One of these respondents, representing James Madison University, agreed to have his name, title, and institution appear in the report. The remaining contacts, all members of admissions departments at universities in Virginia (three institutions) and throughout the Southeast (one institution), requested varying degrees of personal and institutional anonymity. As a result, this report refers to them using the designations listed in Figure I.1.

Figure I.1: Designations and Attributes of Interview Respondents and their Institutions

NAME/ DESIGNATION	TITLE	INSTITUTION/ DESIGNATION	STATE	GOVERNANCE	UNDER- GRADUATE POPULATION	PERCENT ADMITTED
Respondent A	Dean of Admission	Institution A – R1 University	--	Public	20,000-25,000	71-80%
Michael Walsh	Dean of Admission	James Madison University	VA	Public	19,144	66%
Respondent B	Regional Senior Assistant Director	Institution B – Large Master's College or University	--	Public	8,000-10,000	61-70%
Respondent C	Anonymous Admissions Staff	Institution C – R2 University	--	Public	6,000-8,000	31-40%
Respondent D	Dean of Admission	Institution D – Small Master's College or University	--	Public	4,000-6,000	51-60%

KEY FINDINGS

- **Admissions officials at public, southeastern universities seldom see applicants with substantial CTE courses, which they define as classes that prepare students for technical careers or teach specific vocationally-applicable skills.** This perspective accords with the U.S. Department of Education’s 2012 blueprint for technical and vocational education, which mentions the relationship between CTE and postsecondary education as one of several key growth areas but still prioritizes industry partnerships and vocational training. There is no clear consensus about whether these courses are becoming more common on students’ applications at competitive institutions.
- **Most college and university admissions committees prioritize students’ test scores, grades, and participation in rigorous coursework when assessing applicants.** Admissions personnel typically check applicants’ schedules against the most rigorous courses offered at their schools and seldom consider courses outside of core academic disciplines in their initial review of an application. As long as students meet their general requirements for academic rigor and accomplishment, it does not matter whether or not they participated in substantial CTE courses in addition to meeting those performance benchmarks.
- **CTE participation can be much more influential in cases where a student’s academic credentials do not clearly warrant acceptance or rejection, or at institutions that prize students whose passions extend beyond traditional academic achievement.** In these cases, students and their high school recommenders can cite their extensive CTE experience as evidence of their wide-ranging interests, institutional “fit,” or commitment to a major or program. The interviews suggest that even very selective institutions value experiences like CTE coursework that help students to stand out relative to other academically qualified students.
- **Almost all of the interviewees cited in this report state that students should use their essays or supplemental application materials to show how their CTE courses have prepared them for college.** Students should not make excuses for focusing on CTE at the expense of traditional academic disciplines, but rather be able to account for their interests. Similarly, recommendation letters and school reports appended to applications should explain why a student took substantial CTE coursework rather than additional AP or honors courses. Commonly accepted reasons for CTE participation include career exploration, general interest in the field, and a school culture that prizes CTE and provides challenging courses to advanced students.

- **Most colleges and universities do not consider CTE participation as preparation for a major, and there are rarely clear policies defining credit transfer for technical courses in fields like computer science, health, or business.** The major reason admissions staffers do not pay significant attention to CTE coursework is that 75 to 80 percent of students in four-year institutions change their major at least once, so planning admissions around students' proposed majors is difficult. Some interview respondents expressed hope that increased CTE participation could help high school students choose their majors more wisely, but it is unclear whether this is the case.
- **Respondents were divided about whether or not schools should prioritize additional CTE for their college-bound students or focus on academic fundamentals.** Their perspectives may have been influenced by the types of institution they represent. For instance, one respondent at a large, moderately selective university emphasized ensuring that students complete key courses like Algebra II to improve their chances of postsecondary success. Representatives of more selective schools, whose applicant pools may be more academically qualified, were more likely to favor additional CTE options for students to explore their interests.

SECTION I: PERCEPTIONS OF CTE COURSES AMONG COLLEGE ADMISSIONS PERSONNEL

This section examines the overall perceptions of CTE courses among the college admissions personnel interviewed for this report. Specifically, it looks at respondents' general understanding of and views about CTE programs and their impacts on the applicants they evaluate. It also looks more generally at the question of whether admissions officials want to see additional emphasis on CTE among high schools, or whether they would prefer that schools and students focus on other academic priorities.

GENERAL PERCEPTIONS OF CTE PROGRAMS

This subsection examines admissions representatives' views of the perceived benefits, drawbacks, and opportunity costs of robust CTE programs in public schools from a general perspective. The four subsections below look at the potential value of these courses in helping students to choose their major wisely, the overall prevalence of CTE courses in recent application cycles, and the two-tiered classification system by which admissions committees compare technical and vocational programs against CTE courses that are potentially relevant to students' majors at four-year colleges and universities. Finally, a fourth subsection summarizes two perspectives on the overall value and opportunity cost of expanding CTE programming for different populations of students, and whether these types of initiatives can syphon off essential resources that could be used to help academically at-risk students succeed in college.

VALUE OF CTE FOR CAREER AND MAJOR EXPLORATION

Several admissions personnel who participated in this study acknowledge the value of CTE courses, both for students' communities and as a means of career and major exploration.

The Dean of Admission at Institution A, a large R1 university in the Southeast, stated that he views CTE courses as "classes that often either provide career exploration for students in specific disciplines or potential job areas." He also suggested that they are especially useful for helping students to identify a major in the event that they ultimately choose to attend a two or four-year institution.¹

The Dean of Admission at Institution D, a small, overwhelmingly undergraduate master's university, was similarly enthusiastic about CTE courses as a way for students to explore their career and major choices prior to declaring a major at their college or university.² Likewise, Respondent C noted that he views CTE courses as "very useful for our students" because "they expose them to new skills, new knowledge, [and] new ways of thinking," that are "outside of the standard classes that these students usually take." Of the three interviewees who commented on the benefits of CTE participation, this respondent was the most emphatic

¹ Telephone interview with Respondent A, Dean of Admission, Anonymous R1 University, May 10, 2016.

² Telephone interview with Respondent D Dean of Admission, Anonymous Small Master's College and University, May 11, 2016.

about their value. Perhaps counterintuitively, this contact’s institution (Institution C) is also the most selective of the five universities represented in the IDIs.³

Two respondents—Respondent A and Respondent D—commented on the potential for CTE courses to convey college credit, but both indicated that such decisions are made on an individual basis. According to Respondent A, whether or not a CTE course satisfies transfer requirements or anticipates college admissions and coursework requirements depends in part on the extent to which schools prioritize postsecondary education for their CTE graduates.⁴ Respondent D was similarly cautious when it comes to making blanket statements about the transferability of CTE credits. He observed that students with substantial CTE experience:

...might not have as many traditional college courses that will transfer here based on the curriculum that we offer here but we've got to look at that as a valuable thing for them to be doing in high school instead of maybe a college-level course in a core area because, again, they're validating their interest in their chosen field earlier than they would be.⁵

PREVALENCE OF CTE COURSES IN RECENT APPLICATION YEARS

Admissions officers do not appear to agree about whether they are seeing more CTE courses on current applications than they did in previous years. It is therefore hard to determine whether or not significant CTE participation is becoming more widespread among college-bound high school students.

“...[T]he evolution of CTE is making it a more popular and viable option for students of all abilities.”

Certainly CTE coursework is common among high school students in general, with some studies indicating that 90 percent of high school students earn at least some CTE credits before graduating. Furthermore, the American Institutes of Research contends that “the evolution of CTE is making it a more popular and viable option for students of all abilities.”⁶ Despite substantial interest nationwide in enhancing CTE options for college-bound students, the most recent National Center for Education Statistics (NCES) data indicate that only 28.6 percent of students have earned five more CTE credits. Thus, “most students have some interaction with CTE during their high school experience,” but the majority of these students are not immersing themselves in CTE.⁷

Interview participants were divided on whether or not they have seen an increase in CTE credits on students’ transcripts, and on what subjects are most frequently chosen by their

³ Telephone interview with Respondent C, an Anonymous Regional Admissions Staff Member, Anonymous R2 University, May 12, 2016.

⁴ Telephone interview with Respondent A, Dean of Admission, Anonymous R1 University, Op. cit.

⁵ Telephone interview with Respondent D, Dean of Admission, Anonymous Small Master’s College and University, Op. cit.

⁶ “How Career and Technical Education Can Help Students Be College and Career Ready: A Primer.” American Institutes of Research. March 2013. p. 2. <http://www.aypf.org/wp-content/uploads/2013/04/CCRS-CTE-Primer-2013.pdf>

⁷ Hodges, Tim. “Career and Technical Education Should be the Rule, Not the Exception.” Gallup. March 10, 2015. <http://www.gallup.com/opinion/gallup/181922/career-technical-education-rule-not-exception.aspx>

applicants with CTE involvement. Respondent D observed that there has been a recent uptick in the number of students applying with CTE courses. This is particularly true in subjects such as health sciences, nursing, or occupational therapy, where CTE courses offer students the chance for “contact hours that are so important in the field.”⁸ Other admissions staff members asserted that they rarely see CTE credits on their applicants’ transcripts. Even as he affirmed the value of CTE programs, Respondent C indicated that he and his colleagues at several elite Virginia institutions see CTE courses somewhat rarely on applications. When they do appear, they are usually in the company of other courses like AP, honors, or IB options.

Respondent C indicated that most common types of CTE courses he sees on applications are business, entrepreneurship, and accounting, along with a selection of culinary and agricultural classes.⁹ This selection of courses differs from the health-related CTE courses that Respondent D has seen an increase in. It may be that Respondent D’s institution offers more health care-related programs than Institution C, and that students with an interest in those fields and CTE credits to match those interests are more likely to apply there. The respondent from Institution B also noted that admissions officers at his comprehensive, public master’s university seldom see applicants with CTE credits.¹⁰

DIVERGING VIEWS OF VOCATIONAL AND PRE-POSTSECONDARY EDUCATION CTE COURSES

While some CTE courses may expose students to fields they will later select as their college major, admissions officers view other types of CTE instruction as purely vocational training. Multiple respondents noted that some CTE courses and tracks serve as direct vocational preparation designed to serve local or regional economies and employers. As a result, Respondent D suggested that some types of courses may not be particularly applicable to students’ college careers.¹¹ The Regional Senior Assistant Director of Admission at Institution B, a large regional master’s university, contends that students in more vocationally oriented types of CTE programs, such as cosmetology and aeromechanics are “not really looking” at universities like his because they do not offer additional training in those fields. On the other hand, students entering fields like engineering or cyber security with CTE credits in those fields may have a “good base” in their prospective majors as a result.¹²

A review of secondary research upholds the interviewees’ divided views of certain CTE courses as either academically or vocationally oriented. The U.S. Department of Education’s 2012 blueprint for CTE lists four core principals. Only the second, entitled “Collaboration,” deals with the relationship between CTE courses and college attendance, and it is equally as focused on connections between CTE and industry (see Figure 1.1). In short, current national

⁸ Telephone interview with Respondent D, Dean of Admission, Anonymous Small Master’s College and University, Op. cit.

⁹ Telephone interview with Respondent C, an Anonymous Regional Admissions Staff Member, Anonymous R2 University, Op. cit.

¹⁰ Telephone interview with Respondent B, Regional Senior Assistant Director of Admission, Large Masters University, May 26, 2016.

¹¹ Telephone interview with Respondent A, Dean of Admission, Anonymous R1 University, Op. cit.

¹² Telephone interview with Respondent B, Regional Senior Assistant Director of Admission, Large Masters University, Op. cit.

plans to reform CTE do not appear to focus extensively on providing technical education to students who are planning to attend a four-year college or university.

Figure 1.1: Four Core Principles of CTE

U.S. DEPARTMENT OF EDUCATION CORE PRINCIPLES FOR CTE	
▪	Alignment: Effective alignment between high-quality CTE programs and labor market needs to equip students with 21st-century skills and prepare them for in-demand occupations in high-growth industry sectors;
▪	Collaboration: Strong collaborations among secondary and postsecondary institutions, employers, and industry partners to improve the quality of CTE programs;
▪	Accountability: Meaningful accountability for improving academic outcomes and building technical and employability skills in CTE programs for all students, based upon common definitions and clear metrics for performance; and
▪	Innovation: Increased emphasis on innovation supported by systemic reform of state policies and practices to support CTE implementation of effective practices at the local level.

Source: U.S. Department of Education¹³

While the Department of Education’s blueprint for CTE continues to focus on vocational training, some scholars are calling for enhanced integration of CTE curricula into the curricula for college-bound students. Shepherd Siegel writes that “career + technical education is the original and logical place for contextual, project-based, and community-based learning.” He argues that enhanced CTE could help the United States produce more Science, Technology, Engineering, and Mathematics (STEM) graduates at the college level.¹⁴

Admissions officials did not comment extensively on the academic benefits of CTE participation among their students, but **one respondent was somewhat dubious that CTE coursework could help students enter colleges more prepared.** Michael Walsh, Dean of Admission at James Madison University (JMU), noted the Virginia legislature’s proposal that high schools offer a three year sequence of computer science courses in lieu of foreign languages and indicated that he was somewhat skeptical that it would improve future computer science majors’ academic preparation.¹⁵ While he said he is “ready to see some changes” in how CTE courses are viewed, he argued that “most of the computer science courses offered in high schools...do not prepare the student for college.” He elaborated that “even the A[dvanced] P[lacement] Computer Science, until the most recent one came out, was frowned upon by computer science faculty.”

¹³ Principles quoted verbatim from: “Investing in America’s Future: A Blueprint for Transforming Career and Technical Education.” United States Department of Education Office of Vocational and Adult Education. April 2012. p. 2. <https://www2.ed.gov/about/offices/list/ovae/pi/cte/transforming-career-technical-education.pdf>

¹⁴ Siegel, Shepherd. “A Meaningful High School Diploma.” Phi Delta Kappa. 90.10, June 2009. Accessed via EBSCO host.

¹⁵ On March 25, 2016, the Virginia Legislature passed House Bill 831, which adds computer science instruction to the Virginia Standards of Learning. Governor Terry McAuliffe signed the bill into law on May 16, 2016. See:

[1] “Bill Text: VA HB831, 2016, Regular Session, Chaptered.” LegiScan. <https://legiscan.com/VA/text/HB831/20162>

[2] “Governor Adds Computer Science to Virginia SOLs.” RVA News. May 16, 2016. <https://rvanews.com/etc/governor-adds-computer-science-to-virginia-sols/137501>

Walsh thinks the current computer science initiative is unlikely to lead to useful computer science courses for most high school students. However, he conceded that he and his staff are monitoring developments and expect that future CTE programs of this nature may warrant additional consideration in the admissions process. He suggested that, historically, the schools that have been able to add effective technical content to their curricula tend to be affluent districts, but that attempts to add instruction in fields like computer science are “hit or miss” from one school or district to the next.¹⁶ Other respondents were similarly unsure of how they would classify certain types of CTE. Respondent A indicated that participation in certain programs, such as Project Lead the Way, have “some alignment” with courses that students might “take at the technical college,” but would be unlikely to convey college credit in his university’s engineering programs.¹⁷

CTE PROGRAMS AND ACADEMIC COURSEWORK IN SCHOOL PRIORITIES

Two respondents commented extensively on the way they believe schools should prioritize CTE programs and specialized academies relative to other types of academic offerings. While both affirmed the value of CTE, one respondent suggested that schools would be better served to devote their resources to other types of academic programming. The respondents’ divergent perspectives on the degree to which schools should prioritize CTE could stem in part from the student populations their institutions serve.

Respondent B, who expressed ambivalence about schools adding additional CTE courses for college bound students rather than covering essential academic skills, serves at a large, regional master’s university that admits between 61 and 70 percent of its applicants. Thus, his comments are most likely focused on bolstering the high school preparation for students who have the capacity to succeed at his university, but may matriculate with gaps in their skillsets. This respondent emphasized the **value of “core classes” in math, science, English, history, social sciences, and foreign language as the best predictors of a student’s success.** This is because “in college you are going to have to take them all, regardless of your concentration.”¹⁸

Respondent B expressed a conflicted opinion of increased CTE offerings. From the perspective of a college admissions officer, he would prefer to see more emphasis and resources going toward helping students achieve milestones in their core subjects. For instance, he contended that students who complete Algebra II are much more likely than non-completers to persist in college. At the very least, research by the Virginia Department of Education suggests that “students’ success in Algebra II in high school was strongly associated with whether they enrolled in credit-bearing mathematics courses in college and whether they earned a grade of C or better in their first college mathematics course.”¹⁹ Many are in favor of requiring

¹⁶ Telephone interview with Michael Walsh, Dean of Admission, James Madison University, May 10, 2016.

¹⁷ Telephone interview with Respondent A, Dean of Admission, Anonymous R1 University, Op. cit.

¹⁸ Telephone interview with Respondent B, Regional Senior Assistant Director of Admission, Large Masters University, Op. cit.

¹⁹ Jonas, Deborah, et al. “High School Predictors of College Readiness: Determinants of High School Graduates’ Enrollment and Successful Completion of First-Year Mathematics and English College Courses in Virginia.” Virginia Department of Education. May 2012. p. 3.

Algebra II among college-bound students, but it should be noted that this perspective is not universal.²⁰

Assuming that a student intends to go to college at all, Respondent B would rather see schools focusing on core academic preparation in certain cases:

“...APS and other very prominent, powerful, well-known, and respected school systems have the ability to set the tone.”

It’s kind of like being between the sword and the wall. I completely agree with giving students more options. Like you said, it could possibly make sure that they are interested in engineering or cyber security in high school and develop interests, but the other part of me wants to say, are all books up to date, how are they allocating money properly?²¹

Given his emphasis on core subject preparation, it is perhaps not surprising that Respondent B expressed reservations about special focus academies at the high school level. While he conceded that in some cases, “academies are great,” he mentioned serving on a panel with representatives from the University of Virginia (UVA), the College of William & Mary (William & Mary), and Virginia Polytechnic Institute (Virginia Tech). Representatives from each of these institutions agreed that special focus academies such as music or computer science academies are only viewed positively if they produce **well-rounded graduates who are broadly prepared for college-level coursework.**²²

While some admissions officials are somewhat skeptical of CTE courses and academies, Respondent C is more laudatory and even **called for high-performing school districts to emphasize these options at the expense of overloading students with Advanced Placement (AP) courses.** Again, the context in which districts offer their CTE courses and the degree to which successful applicants to the respondent’s university are already well-prepared academically may impact his views. The respondent’s university, which is the most selective institution among those represented in the interviews, has had districts reach out to it about limiting the number AP courses students can take in a given year.²³

Respondent C views concerns about students taking “too many AP courses as a related concern to the historically poor perception of CTE courses. Moreover, he suggested that “APS and other very prominent, powerful, well-known, and respected school systems have the ability to set the tone” with regard to this issue of an academic arms race among high-achieving students and schools. He noted that his institution and other “top schools and universities know the caliber of students coming out of this school system.” He emphasized

http://www.doe.virginia.gov/instruction/college_career_readiness/research/determinants_of_enrollment_and_completion_of_english_and_mathematics.pdf

²⁰ Robelen, Erik W. “Questions Arise About Need for Algebra 2 for All.” Education Week. June 11, 2013.

http://www.edweek.org/ew/articles/2013/06/12/35algebra_ep.h32.html?r=1057799070&preview=1

²¹ Telephone interview with Respondent B, Regional Senior Assistant Director of Admission, Large Masters University, Op. cit.

²² Ibid.

²³ Telephone interview with Respondent C, an Anonymous Regional Admissions Staff Member, Anonymous R2 University, Op. cit.

that he does not want APS to believe that its “CTE classes are lesser, or [that] students who take these classes are viewed as being lesser.”²⁴ Tellingly, the respondent also alluded to a recent admissions roundtable hosted by T.C. Williams High School in Alexandria, Virginia, in which the school’s counselors raised identical questions about how their CTE courses would be perceived at elite institutions.

The Changing Face of Career Academies

A June 2013 feature published by the U.S. Department of Education’s Office of Career, Technical, and Adult Education profiles a cluster of Vocational-Technical schools in Scotch Plains, New Jersey that are sending many students to elite colleges:

“It used to be that enrollment in career and technical education, much less a full-time area career center, would not be the best option for students preparing for college, particularly at one of the leading universities in the nation. Union County Vocational-Technical Schools has fundamentally changed this situation and now makes enrollment in career and technical education the ‘sought-after option’ for high school students.

Union County Vocational-Technical Schools offers five academy schools on its campus, including The Academy for Allied Health Sciences, The Academy for Information Technology, and a Magnet High School which focuses on STEM-related programs. Students participate in rigorous academic courses that are integrated with their career and technical education courses, complete work-based learning, earn college credit for courses taken during high school, and earn industry-recognized certificates.”

Source: “College-Bound Students Choose CTE Pathways in High School.” U.S. Department of Education. <http://sites.ed.gov/octae/2013/06/06/college-bound-students-choose-cte-pathways-in-high-school/>

POST-ENROLLMENT BENEFITS AND DRAWBACKS OF CTE PARTICIPATION

Four of the five interview respondents commented extensively on the potential benefits and drawbacks of CTE participation when it comes to helping students to choose their major. Essentially, there are two opposing perspectives on the question of whether or not CTE participation could be valuable as a means of helping students make informed major decisions and limit potentially costly major changes later on in their college careers, or whether schools should devote their efforts to students’ core academic preparation.

One position voiced by Respondents A and D is that that CTE courses could expose students to their anticipated major or career field during high school and allow them to make an informed decision, thereby limiting the number times they switch majors. Another position articulated by JMU’s Michael Walsh and Respondent B contends that students are likely to change their major regardless of prior exposure to a field, and that a more effective strategy for ensuring that they graduate on time is providing high-level general education courses rather than career-specific options.

²⁴ Ibid.

CTE PARTICIPATION, MAJOR SELECTION, AND TIME-TO-GRADUATION

Nationwide, it is estimated that 20 to 50 percent of four-year college students enter without a major, and that at least 75 percent will change their major one or more times during their postsecondary career.²⁵ These findings were largely echoed in the interviews Hanover conducted. Of the 4,500 students in JMU's fall 2016 entering class, roughly 900 (20 percent) are undeclared.²⁶ Similarly, 35 percent of students entering Institution D—a small, master's university with a liberal arts focus—have historically been undecided.²⁷

Changing majors can cost substantial time and money, delay graduation, and discourage students, but the effects of a major change are not necessarily dire.²⁸ One recent study of 7,009 students at Western Kentucky University found that students who enter undeclared and subsequently declared a major had the highest graduation rate (83.4 percent) and a low average time to degree (4.45 years). Students who entered with a declared major and did not change it or only changed their major once graduated at rates of 72.8 and 71.7 percent in an average timespan of 4.44 and 4.46 years, respectively. Students who changed their major repeatedly or remained undeclared had lower overall graduation rates and higher times-to-degree, however. Considerations like institutional policies relating to major changes and the field a student switches from and into are likely to impact individual outcomes.

It cannot be argued with certainty that students entering undeclared or switching their majors always leads to definitively worse outcomes, but **some universities appear to be worried about the impacts of students switching majors, or even universities as they explore their options.** Respondent A stated that “changing majors is expensive,” both for the student and for the institution. As a result, he sees tremendous potential in CTE courses:

At face value, I think CTE coursework could be very helpful for a student identifying, does this kind of work interest me? Do I see myself in this kind of a discipline long term? Do I feel like I have enough adequate information about what I want to be when I grow up, what I want to major in? Am I making a good sound choice of institution, of choice of major, of location, of cost? All of these things are important to me based on that.²⁹

Similarly, Respondent D argued that “the earlier [students] they get the opportunity to validate their interests and find out what they're good at and what they enjoy doing, the better off they are here in terms of graduation, grades and things like that.”³⁰ Because

²⁵ Freedman, Liz. “The Developmental Disconnect in Choosing a Major: Why Institutions Should Prohibit Choice until Second Year.” *The Mentor: An Academic Advising Journal*. June 28, 2013. <https://dus.psu.edu/mentor/2013/06/disconnect-choosing-major/>

²⁶ Telephone interview with Michael Walsh, Dean of Admission, James Madison University, Op. cit.

²⁷ Telephone interview with Respondent D, Dean of Admission, Anonymous Small Master's College and University, Op. cit.

²⁸ Foraker, Matthew J. “Does Changing Majors Really Affect the Time to Graduate? The Impact of Changing Majors on Student Retention, Graduation, and Time to Graduate.” Office of Institutional Research, Western Kentucky University. 2012. pp. 3, 11. https://www.wku.edu/instres/documents/air_major_change.pdf

²⁹ Telephone interview with Respondent A, Dean of Admission, Anonymous R1 University, Op. cit.

³⁰ Telephone interview with Respondent D, Dean of Admission, Anonymous Small Master's College and University, Op. cit.

approximately 35 percent of the student population at the respondent's university enters without a declared major, the university does not weight it heavily in the admissions process. The respondent observed that liberal arts institutions like his university purposefully allow students to explore their majors. However, he expressed concern about growing administrative pressure to graduate students in four years. He suggested that CTE courses at the high school level are valuable in their ability to help students determine what they want to do beforehand, and potentially graduate more quickly as a result.³¹

PROPOSED ALTERNATIVES TO CTE AND TIME-TO-GRADUATION

Walsh argued that most students at JMU change their major in their first or second year of study. As a result, the admissions process pays less attention to applicants' proposed majors than it otherwise might. While he suggested that it would be very interesting to see whether CTE exposure at the high school level impacts students' final choice of a major, there appears to be limited research on the connection between CTE participation and persistence in a college major.

Walsh contended that other types of courses offered at high schools might be more helpful in lowering his institution's average time-to-graduation and improving student outcomes. He argued that "CTE courses should support a skill," but realistically it might not be a "transferrable" one that prepares them for an academic major. In other words, the most important thing CTE courses should do is develop students' academic skills to ensure that they will succeed in college. This type of general academic preparation is more important than discipline-specific knowledge related to the student's future major, and the most beneficial courses may not have anything to do with CTE. For example, Walsh cited high school physics courses as high-value options that impart general critical thinking skills in addition to content knowledge. He noted that physics majors outperform most other majors on the LSAT when applying to law schools.³²

Respondent B, who is a regional Senior Assistant Director of Admissions at a large master's university, argued that **most CTE and even AP courses do not quite match the rigor of college-level courses in those subjects, and have limited value for helping students determine whether they would like a major or not.** When choosing between a CTE course in a field like engineering or computer science and traditional academic options, the respondent recommended that students stick to challenging AP or honors courses in core subjects such as physics or calculus. He argued that "college level classes are completely different than what can be taught at the high school," so students should be prepared for that level of work rather than a particular career or major. The respondent stated that courses at his institution tend to cover the entire content of an AP or dual enrollment course in one semester. Thus, while

³¹ Ibid.

³² Telephone interview with Michael Walsh, Dean of Admission, James Madison University, Op. cit. For the 2014-2015 application year, physics majors had the third highest LSAT scores of any major, behind Astronomy and Statistics. See: "Undergraduate Majors of Applicants to ABA-Approved Law Schools." Law School Admissions Council. [http://lsac.org/docs/default-source/data-\(lsac-resources\)-docs/2014-15_applicants-major.pdf](http://lsac.org/docs/default-source/data-(lsac-resources)-docs/2014-15_applicants-major.pdf)

college credit-bearing courses are useful in introducing students to the rigor of college-level study, they will “never mimic it.”³³

³³ Telephone interview with Respondent B, Regional Senior Assistant Director of Admission, Large Masters University, Op. cit.

SECTION II: PERCEPTIONS OF CTE COURSES DURING THE ADMISSIONS PROCESS

This section distills the findings of Hanover's interviews with five college admissions professionals interviewed for this report. It examines their advice for students when it comes to deciding how many CTE courses to take and framing their CTE involvement for admissions committees. A final subsection looks at interview respondents' advice to high school faculty and guidance counselors for recommending students with substantial CTE experience.

MAXIMIZING BENEFITS AND MANAGING OPPORTUNITY COSTS

This subsection examines admissions officials' views of the benefits and drawbacks of CTE participation during the admissions process. **The two major concerns include the degree to which CTE involvement could benefit an applicant and whether, and to what degree, students are able to balance their CTE courses with advanced courses in disciplines like English, mathematics, and the sciences.**

LIMITATIONS AND POTENTIAL BENEFITS OF CTE IN ADMISSIONS DECISIONS

Applicants may experience different levels of benefit, ranging from no benefit to a moderate benefit, as a result of CTE involvement. CTE participation may be more likely to improve their chances at particular types of institutions. According to Respondent A, who has worked in admissions at several universities in different states throughout the Southeast, admissions directors at state public universities regularly require a baseline set of courses for admission. In general, these core requirements include benchmarks in English, Math, Science, Social Studies, Foreign Language, and potentially other disciplines that are state or school-specific. If students do not have these courses on their transcripts by graduation, they are much less likely to be admitted.³⁴

It is clear that the interviewees cited in this report privilege core subject academic offerings and look most favorably on students who take their schools' most challenging courses. **Most respondents do not generally consider CTE participation as favorable or unfavorable since their decision centers on students' traditional coursework.** Respondent B indicated that because his university emphasizes core subject academic preparation so strongly, a well-prepared student's decision to take a few CTE courses is unlikely to influence his decision at all.³⁵ JMU's admissions staff looks at students' English, math, laboratory sciences, foreign languages, and social studies courses. Generally, they do not consider technical courses because there is a lot of variation in their content and rigor from school to school.³⁶ Respondent C contends that students should take academically rigorous courses that are likely to make them stand out in the classroom, and fairly little attention is paid to courses

³⁴ Telephone interview with Respondent A, Dean of Admission, Anonymous R1 University, Op. cit.

³⁵ Telephone interview with Respondent B, Regional Senior Assistant Director of Admission, Large Masters University, Op. cit.

³⁶ Telephone interview with Michael Walsh, Dean of Admission, James Madison University, May 10, 2016.

that are classified among the less challenging offerings at the applicant’s school.³⁷ At Institution D, a student’s chances of gaining admission are unlikely to be strongly affected by taking CTE courses, particularly if the student is competitive in other respects like GPA and test scores.³⁸ Figure 2.1 provides a quick-reference summary of respondents’ major comments on CTE participation and admissibility organized by institution.

Figure 2.1: Summary of Respondents’ Perceptions of CTE by Institution

INSTITUTION A	JAMES MADISON UNIVERSITY	INSTITUTION B	INSTITUTION C	INSTITUTION D
R1 University	Large Master’s College or University	Large Master’s College or University	R2 University	Small Master’s College or University
Acceptance Rate: 71-80%	Acceptance Rate: 66%	Acceptance Rate: 61-70%	Acceptance Rate: 31-40%	Acceptance Rate: 51-60%
<ul style="list-style-type: none"> Admissions decisions are primarily based on grades, test scores, and academic rigor Students with borderline qualifications may be able to demonstrate institutional “fit” or distinguish themselves via CTE participation As a large R1 university with over 100 programs, Institution A is less concerned than many institutions with institutional “fit” 	<ul style="list-style-type: none"> Mainly considers students’ English, math, laboratory science, foreign language, and social studies courses CTE courses are not generally emphasized due to strong variations in course quality and emphasis Some areas of Virginia, especially rural districts, may lack extensive AP or IB offerings but provide rigorous and popular CTE programs that admissions committees may consider 	<ul style="list-style-type: none"> GPA and test scores are the major variables in admissions decisions CTE participation is unlikely to affect students one way or the other unless it was undertaken at the expense of courses in core academic subjects 	<ul style="list-style-type: none"> Little attention is paid to courses that are not among the most rigorous offered by an applicant’s school While traditional indicators of academic strength are prioritized, CTE participation can show that students have broader interests and indicate intellectual curiosity Students and schools should show how CTE participation prepares applicants for college 	<ul style="list-style-type: none"> GPA and test scores in core academic subjects are emphasized CTE participation is seldom a major factor in calculating students’ academic qualifications Institution D is a moderately competitive university, so students do not need 7-8 AP courses to be admitted CTE participation could be beneficial in the interview-based admissions process because it demonstrates drive and engagement

Source: Section II analysis of interviews

When interviewees offered additional details about their admissions process, it was clear that **CTE participation is one way among many for students to distinguish themselves after meeting baseline academic requirements.** Respondent A suggested that most admissions decisions at his large R1 institution are fairly clear cut—students either have the core course

³⁷ Telephone interview with Respondent C, an Anonymous Regional Admissions Staff Member, Anonymous R2 University, Op. cit.

³⁸ Telephone interview with Respondent D, Dean of Admission, Anonymous Small Master’s College and University, Op. cit.

grades and test scores to get in, or they do not. However, **in cases where a student's academic credentials were borderline, his or her other activities and academic pursuits, including CTE, could matter more.** His institution uses a two-tiered admissions review process. The primary review ensures that a student's courses meet basic admissions requirements. A "secondary review" looks at institutional "fit" and may consider courses outside of the required fields, including CTE, for cases that are not determined by the primary review:

The mission of a large public for us, we're very transparent, the majority of our decisions are based on a combination of grades and test scores and then we do holistically review people in the middle, but it's an opportunity for us to try to identify people who may be better than their numbers.³⁹

CTE participation is likely to harm a student during the primary phase of the admissions review "if they're doing CTE as an alternative to a traditional college bound path." However, thoughtful involvement in CTE may benefit students who make it to the secondary phase because it may help demonstrate "fit" with their major and the university at large.

Respondent A added that his institution's admissions policies are constrained in part by state regulations that require it to report how many of its admitted students meet the state's performance benchmarks in core high school subjects and note any exceptions made to meet other institutional needs (e.g. strong musicians, athletes). However, because the respondent's institution is a large public research university with more than 100 degree programs, it does not pay as much attention to "fit" as smaller or more specialized colleges might.⁴⁰ In discussing his institution's admissions procedures, Respondent A conceded that "you might find that public and private institutions respond to that question very differently based on their needs."⁴¹

Respondent D suggested that at "moderately competitive" universities like his own, which admits approximately half of its applicants, **students may not need to take seven or eight AP or IB courses to get in.** He indicated that when applying to highly competitive universities such as the University of Virginia or William and Mary, students' decisions to maximize their AP or IB courses could make much more of a difference. This is because "whether they admit it or not," elite institutions "have to look at the context of their applicant pool[s]."⁴²

Furthermore, in Institution D's interview-based admissions process, students could benefit from branching out and pursuing other interests such as CTE. As a liberal arts institution with small classes, the university places a heavy emphasis on recruiting engaged students. To this end, their admissions process features an interview. Because CTE courses may help students make more informed decisions about their majors, Respondent D said they could be an asset in the admissions process. For instance, experiences drawn from their CTE courses could

³⁹ Telephone interview with Respondent A, Dean of Admission, Anonymous R1 University, Op. cit.

⁴⁰ Ibid.

⁴¹ Ibid.

⁴² Telephone interview with Respondent D, Dean of Admission, Anonymous Small Master's College and University, Op. cit.

empower students to articulate their interests more forcefully in the interview. However, the respondent suggested that it would be very rare for this sort of coursework to be a tie-breaker when comparing similar students:

I would say it never comes down to two students and whether they get a spot or not but if it did, all things being equal, the student has some real life experience that a CTE course, I'm assuming would give them, in the area that they're both intending to major in, that would be a stronger candidate.⁴³

Respondent D emphasized that admissions decisions are contextual. Students are compared to the classmates, and their schedules are compared to the most rigorous options available to them. He continued that “a lot of times [CTE experiences] can be courses that set a student apart,” especially if the program provided “a unique out-of-classroom academic experience.” In conclusion, he suggested that “speaking for a school like us...it could actually benefit the student being in a CTE course.”⁴⁴

Ironically, the most selective institution that agreed to interview for this report (Institution C) was the most vocal in pushing for students who have already proven their academic prowess in AP and other programs to branch out into areas like CTE. This institution’s overall admissions strategy is holistic, but emphasizes academic preparation as a sort of baseline.⁴⁵ When discussing admissions to elite universities at a recent roundtable in Northern Virginia, Respondent C gave the following advice:

Especially in Virginia, right so Fairfax County, Old Town Alexandria, I think that students can get in these swim lanes right where they assume I have to take all these AP and IB enrollment classes and nothing else...I just told the audience that I really don't want students to adhere to that. I want to push back against that because, yes, we are looking for students to challenge themselves academically and do well. But more importantly than that, I think a big purpose in education—whether it is high school, college, or both—is to explore your interests inside and outside the classroom and discover new passions.⁴⁶

In short, the respondent was careful to emphasize that he does not want students, particularly those from competitive high schools in Northern Virginia, to only focus on IB and AP courses. They should definitely take those courses in order to be considered, but branching out into other areas such as CTE shows that the applicant has interests and a desire to lead a “balanced lifestyle.”⁴⁷ He cautioned, however, that it is possible for students to concentrate excessively on CTE courses, to the extent that they do not take upper level academic courses that make them competitive with other students at their school.

⁴³ Ibid.

⁴⁴ Ibid.

⁴⁵ Telephone interview with Respondent C, an Anonymous Regional Admissions Staff Member, Anonymous R2 University, Op. cit.

⁴⁶ Ibid.

⁴⁷ Ibid.

BALANCING CORE ACADEMIC SUBJECTS WITH CTE IN VIRGINIA ADMISSIONS DECISIONS

Within Virginia, some admissions personnel appear to be reconsidering the traditional hierarchy in which AP or IB courses are more beneficial than high-level CTE courses or other programs. This reconsideration may be prompted by the overwhelming, perhaps even harmful, focus on maximizing the number of AP courses taken among high schools in Northern Virginia and other competitive regions.⁴⁸

Not all schools or regions emphasize AP or IB to the same degree, and as a result, admissions and scholarship decisions are getting more complicated. Walsh noted that the methods schools use to calculate students' GPA may favor AP or IB courses among those applying to competitive colleges. He observed that especially in the suburbs of Northern Virginia, there is strong competition among students to take the most challenging courses they can. On the other hand, some schools in rural areas of Virginia seem to attract substantial numbers of students to their CTE courses and provide challenging curricula, and JMU is figuring out how to account for those cases. For the present, however, he suggested that sometimes CTE course participation carries an opportunity cost since students have less room to take advanced or AP courses in traditional academic fields.

While there is evidence that admissions officers' regard for CTE courses is rising, Respondent A maintained that the safe bet for students applying to competitive colleges is to avoid the potential stigma of CTE as less-challenging work. He argued that students seeking admission to competitive programs or honors colleges should load up on AP and IB courses, if offered, in order to distinguish themselves:

If you're trying to get into [University of Georgia], or Virginia Tech, or something like that, which are hard to get into—a William & Mary—they're probably going to say, you need to take the most rigorous academic curriculum your school offers. What is that and how do you show that? We would advise the same. That would definitely be the case for us if a student wanted to get into our honors college for example. [CTE] courses would probably not be regarded as rigorous compared to an AP or an IB coursework path.⁴⁹

He noted that, whether it is justified or not, “one of the perceived stigmas associated with CTE is that it's not really academic work.”

⁴⁸ The debate about the value of AP courses remains unresolved and complex. Jay Mathews of the Washington Post has covered this issue with a regional focus for years and suggests that three to five AP courses are usually adequate to distinguish a student at top colleges without overloading them:

[1] Mathews, Jay. “A father's pressing question: How many AP courses are enough?” Washington Post. March 15, 2015. https://www.washingtonpost.com/local/education/a-fathers-pressing-question-how-many-ap-courses-are-enough/2015/03/15/9e01271e-c8d5-11e4-a199-6cb5e63819d2_story.html

[2] Mathews, Jay. “Too Many AP Courses? It's Possible, Official Says.” Washington Post. February 7, 2007. <http://www.washingtonpost.com/wp-dyn/content/article/2007/02/06/AR2007020600738.html>

⁴⁹ Telephone interview with Respondent A, Dean of Admission, Anonymous R1 University, Op. cit.

APPLICATION ADVICE TO STUDENTS AND SCHOOLS

Four of the five interviewees provided advice to students about how to present themselves and frame their CTE experiences effectively during the admissions process. They also emphasized the importance of having school counselors and letter of recommendation writers provide additional context when students opt to take CTE courses or make other enrollment decisions that could be perceived as less rigorous than focusing on AP, IB, or honors courses in math, English, or the sciences. **In both the student-authored and recommender-authored materials, the focus should be on showing the admissions committee why the student made the choices they did and what it should tell the committee about their interests, character, background, and academic readiness.**

ADVICE TO STUDENTS

Several respondents contended that students with strong CTE interests should highlight them in their essays and explain their passions. The degree to which this type of explanation matters depends upon context. As noted previously, it is most impactful for students who have already met the academic requirements for admission but may need to distinguish themselves in some way or demonstrate their level of “fit” with the institution they are applying to. Respondent A noted that “if [applicants are] writing any personal statements or anything like that that talks about what they’re interested in, or why they’re selecting an institution, that could be helpful,” for student’s whose grades or test scores are borderline.⁵⁰

Respondents expressed several theories about how students should present their CTE participation on their applications. Respondent C encouraged students to frame their CTE and extracurricular participation in their essays. He also observed that many students choose instead to discuss their additional activities, such as extracurriculars or CTE, in the “additional information” section of the application. The respondent indicated that either of these options is fine, and that admissions committees do read these materials.⁵¹

The location on their applications where students account for their enrollment decisions matters less than how they present their choices. Respondent C argued that when students “advocate for themselves” in the open-ended portions of their applications, it “gives us as an admission committee more context to go with and a better understanding of why they made” a given decision to participate in one activity or course over another. He also advised that students should not simply make excuses or try to “explain away” a choice—they should own it and say why they did it and what it says about them as a person.⁵²

⁵⁰ Ibid.

⁵¹ Telephone interview with Respondent C, an Anonymous Regional Admissions Staff Member, Anonymous R2 University, Op. cit.

⁵² Ibid.

JMU's Walsh emphasized the need for applicants to show how their CTE courses are preparing them for college rather than simply telling their readers that they took these courses without discussing what they achieved in doing so. He stated that "if somebody's going to explain to us why they are taking these CTE courses they need to show us why it is preparing them for college." Applicants do not need to "use big words" but they need to clarify why they took the course and how they expect it to help prepare them for college. This type of reflection ideally gives admissions committees insight into applicants' character.⁵³ Elsewhere, Walsh reiterated the need for students in their essays and teachers in their recommendations to "show" admissions committees how a particular trait or skill manifests itself in their academic and extracurricular activities:

"...[I]f somebody's going to explain to us why they are taking these CTE courses they need to show us why it is preparing them for college."

Don't tell us, show us. Show us how that student is different or special...Show us if you're a detailed oriented person, if you see things through to completion, if you're open minded, if you're whatever. Show us, don't tell us...If a student's trying to explain to us how that course is preparing them for college...they need to show us how it prepares them for college.⁵⁴

ADVICE TO RECOMMENDERS AND GUIDANCE COUNSELORS

Crafting an effective school report for admissions committees was a major recommendation among the respondents who discussed schools' roles in recommending their students. For example, Respondent C argued that high schools should frame their school reports to admissions committees—and the individual student recommendations that accompany them—in order to highlight why the student took CTE courses as opposed to other options. He cited a recent roundtable discussion with representatives from UVA, JMU, and University of Richmond in which all participants agreed that their admissions staffers "very strongly look to the secondary school report in and of itself."⁵⁵

This emphasis on school reports means that schools and guidance counselors should explain how CTE courses are viewed within their schools and highlight particularly rigorous programs for additional consideration from admissions personnel. Respondent D emphasized the need for schools to describe "how [CTE] courses are viewed within their school system, why they're valued and the philosophy behind [them]." He continued that admissions officials need to know when schools encourage CTE courses "to help students have skills, validate [their] interests," or as alternatives to traditional honors or AP courses. This type of contextual information can illuminate a student's decision to take a course of this nature.⁵⁶ Respondent C made the same argument:

⁵³ Telephone interview with Michael Walsh, Dean of Admission, James Madison University, May 10, 2016.

⁵⁴ Ibid.

⁵⁵ Telephone interview with Respondent C, an Anonymous Regional Admissions Staff Member, Anonymous R2 University, Op. cit.

⁵⁶ Telephone interview with Respondent D, Dean of Admission, Anonymous Small Master's College and University, Op. cit.

On a case by case basis, if there was a student who took lots of these CTE classes, there is room on the actual guidance counselor letter for this counselor to advocate on behalf of that student saying this student took some CTE courses and they did so for X, Y, or Z reasons.⁵⁷

Respondent D elaborated that “beyond the cold, hard facts of the GPA, a weighted, un-weighted GPA, an SAT score, and ranking class, we rely heavily on the school counselor and the faculty who are writing letters of recommendation to help us predict” whether a student will succeed academically. This type of outreach on behalf of students is particularly helpful when admissions committees review applications from students who studied at specialized academies focusing on specific academic disciplines (e.g. sciences, mathematics, engineering, music). Respondent D stated that “a non-traditional curriculum” like the ones offered at many special focus high schools can make it “harder to compare” applicants across schools. In such cases, standardized test scores, interviews, and recommendations may be especially important.⁵⁸

Walsh went even farther by suggesting that schools should reach out to colleges and universities they send large numbers of students to and describe changes to their requirements or menu of courses that may result in more students taking CTE. Specifically, schools should discuss the classes they plan to de-emphasize in favor of CTE offerings so that admissions personnel know not to look for the retired courses:

If Arlington's going to [enhance its CTE offerings] it would be really good for Arlington to reach out to the Universities and say ‘These are the following courses we're going to not have our students take.’...They need to go out and they need to market those things to us.⁵⁹

Additionally, any conversation between schools and universities regarding new courses or requirements that might impact students’ admissibility should include information about the course itself, including a syllabus. This enables admissions personnel to solicit feedback from the faculty at their institutions and make informed decisions about how, and whether, to count particular courses.⁶⁰

⁵⁷ Telephone interview with Respondent C, an Anonymous Regional Admissions Staff Member, Anonymous R2 University, Op. cit.

⁵⁸ Telephone interview with Respondent D, Dean of Admission, Anonymous Small Master’s College and University, Op. cit.

⁵⁹ Telephone interview with Michael Walsh, Dean of Admission, James Madison University, May 10, 2016.

⁶⁰ Ibid.

APPENDIX: INTERVIEW TRANSCRIPTS

UNIVERSITY A

Dean of Admission, Large Public Research I University. Telephone interview, May 10, 2016.

Hanover Research: Excellent. Before we begin our interview, I'd like for you to know that your participation is voluntary. You can choose not to answer any questions and you may end our interview at any time without penalty. We will keep the information you provide as confidential and neither your name nor your organization will be associated with your answers unless you give us permission to do so. We may use your anonymous information in our research library or to address other needs in the future, but anonymously. Should you choose to complete the interview, we will be happy to share with you readopted copy of our final report to share with you as a thank you for your time. Do you have any hesitations with being cited in a report that we will share with Arlington Public Schools, or do you prefer to remain anonymous in any way?

Respondent: You're welcome to cite us, but do so anonymously as a large State Research One Institution, means that we're a large public university in the South.

HR: Great, sounds good. In order to evaluate my performance, my manager may listen to the recording of this interview. I'll be taking notes throughout our conversation, just so you know. To begin, I would just like to hear, from your point of view, what is your understanding of CTE and what courses on a transcript do you and your admissions committee consider to fall in this category?

Respondent: Our operational understanding of career and technical education courses are those classes that often either provide career exploration for students in specific disciplines or potential job areas. Help students identify a path of study, perhaps a preferred major path when they do choose to go to college, whether that be at a 2 year or a 4 year institution. For some schools and in some school districts, we know that this takes more precedence in the advising process because there might be students who are not college bound. The course work does help them identify a path and may lead them to a certificate of some sort, especially if the courses included taking course work at a nearby 2 year community college or technical college where they're receiving some classes that would count towards a certificate.

We have a number of schools in [redacted] for example, that do that in the Public School districts, with varying levels of participation and involvement depending on what the immediate career or the job needs are in the immediate community. For example, you might have somebody who goes to a High School that's in a portion of the state that has a nuclear power plant. They might have some sort of course work or a pathway that explores nuclear

engineering, or somebody going to work in welding or those types of technical fields that we needed to support the work force in one of the largest employers in the area. What we'll see is that in different parts of the state, some of the technical career paths that are offered through the course work may lead to fulfill a work force need once the students graduate from high school and hope to find that path for them when they leave high school.

Some of those courses, depending on what they take may be eligible for satisfying what we call the college prep high school requirement. They might take a math class that's needed in order to secure the certificate. They may take some sort of a language class or some other type of applicable field. There's a lot of ... Project lead the way for example, in engineering courses, a lot students might participate in that and there might be some alignment between what they take at the technical college and what they receive credit for in high school. That's our operational understanding of how that program is influencing our student's career path, potential major choices, or maybe whether or not they plan on going to college in a traditional setting after they leave high school based on what kind of training they've had in high school. Do you feel like that's a pretty similar alignment between what Arlington Public Schools is doing as well?

HR: Yes, yes, I think so. They're coming from a point of view where they are trying to, again, as you said, try to design CTE offerings that are applicable to students that will help them find either a major or a career path and support their local economies. I think they're running into a little hesitation from some students who are potentially high performers that worry that CTE isn't going to help them get into their choice college, that it will potentially look bad on their transcripts. That's in part where this is coming from. Trying to free those students to make a decision that will help them in whatever way that means.

Have you witnessed any general patterns among applicants reporting CTE course completions on these transcripts or anything like that?

Respondent: I think a lot of times it depend on what community you go to school in or what the priorities of that school district are a lot of times. You might find that some school districts have very well developed CTE paths and depending on the community you come from, that might be something that people look forward to. They might look forward to getting involved with that. We have legislation in the State of [redacted] where students pick majors at the beginning of their 9th grade year and they take a series of classes to help go into those majors. They run the full gamut of, 'I think I want to be an engineer,' to, 'I think I want to be a photographer' and everything in between. Students can take some of these career development oriented type classes to see if this is what they want to be when they grow up or maybe pursue that major.

Not all of the courses will satisfy what we call a college prep curriculum. There is a standard sequence of classes that are state commissioned, our higher

education says, "All students must have this curriculum in order to be admitted to a 4 year institution in the state". Every public institution in the state is required, 2 and 4 year education is required to report on how many students come in having met this sequence. These are the classes that in conjunction with the department of [redacted], they said that we think this is the best college prep track. To be college ready, to have the basic skills you need in order to be successful in college, this is the course sequence that we recommend. Everybody is geared towards that initially. They know they want to go to college, then they fill in around the edges with some of these other classes that might be recommended or they're developed through compliance with the EEDA legislation. One of the tracks is, I just want to be college prep. One of your majors is, "I'm planning on going to college." Kind of thing if I'm interpreting it correctly.

The vast majority of students in our state that are on this pathway in [redacted] as we whole, from what I'm told from the people who work in the [redacted] technical education system and the people who work in a lot of the work force development areas of the state, they're kind of considered a model in this. We know that maybe not everyone's going to go to a 4 year college right away or has any intention on doing that, we have a lot of new industry in our state that requires immediate work force. It may not require an advanced degree to do that. It may not require that first degree, it may only require a certificate. They're high paying, high wage types of jobs for people who maybe are taking the appropriate course sequence in high school and they're coming out ready to do that.

Students have an opportunity to do both. They can explore the career area in addition to taking the sequence of classes they need to gain admission. I would not be surprised though, if you have an out of state student, who thinks they want to go out of state for college, that one of the first things they do is to look at, what does it take to get in? Our course requirements are listed front and center on our admissions page that says, you've got to have 4 math, 4 English, 3 lab science, 3 years in social studies, 2 years in the same foreign language, a PE class, a fine arts class, an additional academic elective. These are the things that we require for admission to the University of [redacted].

Any institution in the state of [redacted] that's a 4 year college ... We have a lot of people from Virginia that come to the State of [redacted] for higher education, they're going to have to meet that same sequence. That might be why you have a little bit of push back from people who say, "Well these classes aren't required for admission to the kinds of colleges I'm looking at." We wouldn't even evaluate a class ... You might have a project lead the way class that you can get an engineering base course that is a foundational intro to engineering class that you take that's dual enrollment that satisfies your CTE requirement, and you might even get credit for it when you come to the University of [redacted], but in the initial evaluation, it doesn't count. It doesn't count, you'll have a grade, you'll have coursework, it'll get posted to your

transcript after the fact, but it's not used for the preliminary evaluation on what your weighted GPA is. That's what our state requires us to report on.

I've worked in a couple of other states where you have a course sequence of college prep classes to take, if you're going to college, this is what you should be taking in high school. Of the 3 states I've worked in in the south, they all have roughly the same thing, it's English, Math, Science, Social Studies, Foreign Language, an something else, pseudo-academic, or maybe fine and performing arts. Those are the classes that are looked at. The first question that you ask yourself is, "Has this person taken the appropriate course sequence in order to be admitted into this institution? Okay, yes." Then you have the secondary review that says, "Okay now I look at the transcripts in its entirety. What are they interested in, what are the goals of the institution? What am I required to report on, verses what does the institution want to enroll for shaping needs?" You might find that public and private institutions respond to that question very differently based on their needs.

A private school might say, "Oh, this is great. Not only does this person have the college prep curriculum that we would typically see, that they may graduation for their own state college prep curriculum in Virginia. Wow, they want to be an engineering and have continued that. Look how they've dedicated to their interest. They've shown me that their interested and they're a good fit for this program through the classes they've taken at CTE."

A different institution may look at that very differently based on what their evaluation matrix is.

HR: Absolutely. That was a really thorough explanation and overview. You're generally saying, students should focus on hitting all of those required courses and then after that point consider the possibility of taking CTE courses, is that right?

Respondent: If students are looking at the University of [redacted] specifically, or any public institution in the state of [redacted], we would look at your core academic classes first before we look at anything else. The only thing that would matter in the evaluation for most of the public institutions in the state, is whether or not you've met that college prep sequence. We as institutions in the state receiving public funding, are required to report on how many people meet that curriculum, verses those that don't. We have to do that for both in and out of state students. That's the reporting objective. That's one threshold that all the public's are looking at, do you meet or do you not meet.

Do institutions make exceptions to that? Absolutely. They're within their right to do that, but they're going to be reporting those exceptions as well. They have to balance, do I want to be an institutions filled with exceptions and have this publicly available where people see that I'm constantly making exceptions to the State's recommended curriculum, or do I make exceptions within reason

using alternate criteria for example. Using better grades, better test scores, faster runners, things like that based on whatever the objective is for the institution. All the public's in our state have to report on those 20 classes that we're looking at.

HR: Great, alright. Excellent.

Respondent: The other states that I've worked at to, and I'll just say, I've worked in Georgia, and I've worked in Louisiana before. Some of them interpret it a little differently, when I was in Georgia, the school I worked at, the public institution I worked at there, their criteria, was, has this person met their State's high school college prep curriculum, is that answer yes or no? Verses, have they met mine, because it would be unreasonable to expect that a student from out of state would be familiar with my state's graduation requirements - that may be difficult. That was the philosophy that that institution took. Whereas the State of [redacted] has assumed, this is what the curriculum is, that's fine if you want to make exceptions, but tell us how many people you've made exceptions for, even if they're from out of state.

HR: Alright, excellent. Let's say you're evaluating applications from students who earned their diploma at a CTE center, is that evaluation going to vary compared to a more traditional student?

Respondent: It probably would depending on what courses the student has taken. I will admit, I'm not as familiar with the curriculum that a typical CTE student would do in Arlington Public schools. If they did it alongside a traditional college prep curriculum, the only thing we would evaluate are the college prep classes for this particular institution. It may vary by other institutions but for us, we would only look at the academic courses. If they're doing CTE as an alternative to a traditional college bound path, it will adversely impact them on the evaluation.

HR: Of course, alright. Great. The next group of questions, it's just one question for you, has to do with something you touched on previously about CTE courses supporting student's intended majors. It seems like based on what [redacted] has in place, that this would be helpful for a student applying to college, to show their interest in a particular potential major, is that true? Do you perceive that from an admissions standpoint that would be good?

Respondent: Again, I think it depends on the institution and what their enrollment goals are. You might find that some institutions pay more close attention to that than others based on what type of student they're trying to bring in. The mission of a large public for us, we're very transparent, the majority of our decisions are based on a combination of grades and test scores and then we do holistically review people in the middle, but it's an opportunity for us to try to identify people who may be better than their numbers. Then we make a limited number of offers of admission to people who are on the bubble. Then go from there. A private school might have much more flexibility because they are really

only accounting for themselves. Fit for the institution may be very different as a large public with a lot of different majors, a lot of different disciplines to choose from.

Our mission is very different. We are not a small private little arts college with an emphasis on the fine and performing arts. We are a large public institution with over 100 different degree programs at the undergraduate level seeking to serve every economic driver in the state of [redacted]. You could be a musician, but you could also be an engineer. You could be a social worker, or you could be a journalist. You could go to med school, or you could go to law school. We're supporting a much broader range of disciplines. People are going to fall in along the way. For the admissions decision, it's probably not going to make as much of an impact for an institution like mine, based on my observation and my experience, but I wouldn't say that it isn't good for the students for their own personal exploration.

We know that students, when they choose to come to college and they pick a college based on the availability of ones major. They'll say, "I'm picking that school because they have my major." That's a big determinate. Most students change their major within the first year. Sometimes within the second year. We find that a very large proportion of our student body has changed their major at least once by the time their sophomore year is over. That's a function of exploration and exposure to different course work. For a student who has experienced CTE, this would be a fantastic research study to look at longitudinally, did what you study as a CTE student, did you pick a major that was in that same disciplinary area when you went to college and when you went on to get an advanced education beyond high school, did you stick with it? It would be very interesting to see if that was a formative experience for the student in identifying an area where they are likely to excel or be happy.

Changing majors is expensive. It's expensive for the student, it's expensive to the institution. You may add time to the degree when you do that. You may face anxiety of all these other kinds of things where you're just worried about trying to figure out, am I in the right institution? Does it cost you your scholarship at an institution because you changed your major to something that's no longer offered at your institution and you end up having to transfer back to your home school? Have you wasted money at another school where you've spent time in a class or in a curriculum that might not be a good fit for you? At face value, I think CTE coursework could be very helpful for a student identifying, does this kind of work interest me? Do I see myself in this kind of a discipline long term? Do I feel like I have enough adequate information about what I want to be when I grow up, what I want to major in? Am I making a good sound choice of institution, of choice of major, of location, of cost. All of these things are important to me based on that.

If you happen to additional advanced credit through anything that you might have done, through dual enrollment, then that's just a bonus. It could help

people make better decisions about what they want to major in. That's probably a totally different research study. I would think that it would be helpful.

HR: I agree definitely. Now you've given me another thing to study and I love it.

Respondent: More work, got to tell your boss, I need to do yet another research project.

HR: Exactly! Great. I want to be respectful of your time, I just have one more question left for you. We talked a little bit from the district level, but talking more directly to students, what would be your advice for a student that has a strong application, has met the college preparation requirements and also has CTE experiences, how would you suggest they present this in the admissions process and explaining their decision to pursue CTE, what would you recommend?

Respondent: Whether or not they should continue with CTE verses something else?

HR: Just how they should explain it in the process.

Respondent: I think that those kinds of things can be very formative when they're writing their essays. If they're writing any personal statements or anything like that that talks about what they're interested in, or why they're selecting an institution, that could be helpful for that. For a school like the University of [redacted], that stuff is going to be combed through. It's probably not going to make much of a difference for the majority of evaluations for a school like mine. That doesn't mean that they're not valuable in their own right. It's going to have to be a personal choice for the student to decide, "Is this a good fit for me based on the long term educational objective?"

If somebody asked me, "[REDACTED], should I take CTE, or should I be in this more traditional academic path? Which would you recommend? Should I try to take as many advanced courses on the academic side, or should I take the bare minimum and then explore in CTE?" Only the student can decide whether or not that's good for them. As a rule, most colleges want to see that a student is taking the most challenging curriculum that they can take and also do well in it. Most families and students would interpret that as, "What you're telling me is if I can take an AP exam, or take an AP class, I should probably take it." If you feel like that's a good fit for your academic objectives, and you want to demonstrate that you're taking the most rigorous curriculum available to you at the high school, that's a good way to show that. One of the perceived stigmas associated with CTE is that it's not really academic work. That's a very real perception, or it may be real, it may be true that the academic course work is not as rigorous as a traditional academic path.

Depending on what the student's objectives are, what their goals are, I could see why a student or family member may push back on it and say, "No, I'm

trying to get in to this really highly selective public." If you're trying to get into UGA, or Virginia Tech, or something like that, which are hard to get into, a William and Mary, they're probably going to say, you need to take the most rigorous academic curriculum your school offers. What is that and how do you show that? We would advise the same. That would definitely be the case for us if a student wanted to get into our honors college for example. Those courses would probably not be regarded as rigorous compared to an AP or an IB coursework path.

HR: Great, absolutely. You did an excellent job answering all of my questions. You really were fantastic to speak with. Thank you. Research is ongoing, so I don't have an exact deadline of when I'll get that report to you, but I imagine the next 6 to 8 weeks I will have that to you. If you have any questions about anything we talked about today or the kind of research that we're doing after we hang up, please reach me either by email or phone, either way. Do you have any final questions for me before we hang up?

Respondent: No, I was just going to ask you if you can, share your results or your white paper with me, I'd love to see if other people agree, or they're like, "No! That woman is crazy."

HR: Yeah, absolutely. This is kind of a gray space in this transition from secondary to post-secondary, it's a little bit unclear for all parties.

Respondent: On top of a politically charged topic, because I know it is in the state of [redacted] as well. You've got 2 camps, and they're both valid, they've both have their role and their purpose within the state. Then you have the people that might be toying with going either way or maybe exploring both. You have to figure out, "What is it that I want to do long-term.? What is going to facilitate that path based on what I have right now?" You're going to have to make an imperfect decision with imperfect information at the time while trying to maximize all your opportunities. That's a hard decision for a lot of 13, 14, 15 year old kids to make.

More up-front, the parents often times are spending a lot of time doing the advising and insisting when they're selecting their initial college sets and things like that, are going to be very involved and they're going to have an opinion on it. You do need to be honest about, this is what this type of school looks for. If you thinking you're headed here, this is what you need to be thinking about. Verses, if you're over here, maybe you can do a little bit of both. If this particular type of institution is not the primary goal for you. Not that it's bad, it's just different.

HR: Absolutely. Thank you again, so much for everything. It was such a pleasure speaking with you. Feel free to reach out if anything else comes up.

Respondent: Okay, thank you Louisa, good luck.

HR: Thank you very much, have a good day.

Respondent: You're welcome. Bye-bye.

JAMES MADISON UNIVERSITY

Michael Walsh, Dean of Admission

Walsh, M. Dean of Admission, James Madison University. Telephone interview, May 10, 2016.

- Hanover Research: Excellent. Ultimately, Hanover will write a report and deliver this report to Arlington Public Schools in which will summarize the contents of this and other interviews. Do you initially have any desire to remain anonymous in this report?
- MW: No. No.
- HR: Okay. Great and we can, of course, revisit that topic at any point. I know you haven't heard my questions yet. I just wanted to check. Do you have any questions for me before we begin?
- MW: No ma'am.
- HR: Okay. Excellent. To begin, what is your general understanding of these courses, these CTE courses and what courses on a transcript do you and your committee consider to fall in this category?
- MW: Okay. Currently, we look at 5 areas. We look at the courses you've taken in English, what you've taken in the math, lab sciences, foreign languages and social studies. Normally, the technical courses we don't look at because there's just a wide variety of rigger and content from school to school. Now, if a school happens to contact us and say this is what this particular course does and they describe it to us, maybe send us a syllabus, we may then talk with our faculty and say "Well, it's not covered by those 5. That's truly a challenging course." We would add it to where we would look at. For example, where we don't look at the art course but we do look at AP art. If somebody might say "Michael, that's worth considering," we would do that. Currently, we don't really look at the technical courses because there's no standard.
- HR: Absolutely.
- MW: Across the state.
- HR: Absolutely. That relates to some other questions that I have for you too. I guess, we'll get to maybe in a couple questions. You're not actively considering these CTE courses unless they're flagged and kind of vouched for by a specific school. Just kind of generally speaking, witnessed any sort of generally changes or patterns among applicants involvement in CTE course completion?

MW: Not in the state of Virginia but we've seen a little bit out of the state. This is my personal opinion. Students in Virginia, especially in the suburbs, there's kind of a race to see who can take the most challenging curriculum. A lot of the CTE courses, they're not listed as honors or AP so there's no extra quality points so why do I take them because it will hurt my GPA.

I do see, in the rural areas, an increase in the CTE courses and I do see in some of the academies, or out of state, some of the high schools out of state that have more of a technical forces, more CTE and again, our recruiter who handles that area will talk to the school and get an idea. Then they came back and said "We really need to consider these courses because they're meaningful. We will listen to them.

In the state of Virginia, I'm not seeing quite the same as I see outside of the city of Virginia or some of the rural areas. Then the rural areas, some of the courses are more designed for kids who are going to go to the community college then go to work. They're not really designed for somebody going onto a 4 year school.

With that said, I am ready to see changes. For example, there was a proposal this year in the state legislature that high schools create a 3 year sequence of computer science courses that students could maybe use in lieu of foreign languages. Okay. Now, there's a few problems with that.

Number 1 is most of the computer science courses offered in high schools are really not ... Do not prepare the student for college. Even the most advance course, if you take the computer science course in college, you start beyond that anyway. Even the AP computer science, until the most recent one came out, was frowned upon by computer science faculty.

The other side is, in order to do that correctly, there's going to have to be a lot of homework done to prepare the sequence and there's going to have to be a lot more funding provided by the state to build in our path. However, I would not be surprised in the next couple years if we don't see a more meaningful bill come through. I would expect that the Department of Education will start developing something that's meaningful in the technology area. We need to be ready when that happens to take a look at it and figure out where it should fit. Now some of the science faculty, they would prefer that sequence be 1 of the sciences. The faculty as a whole keeps saying "Why do you keep picking on foreign languages because they're needed today too." That's a whole 'nother story.

Part of me says it's going to happen and we need to be ready to deal with it. Part of me ... I would also like to see the standards come from the state versus the high school because then we're back to having different levels of meaningful courses depending on what the high school does. Does that make sense?

- HR: Yes. Absolutely.
- MW: Okay.
- HR: Those were really great points. I think that will really ... As you mentioned this sort of race to accumulate as many honors and AP courses as possible is exactly what Arlington Public Schools is seeing. They may have some very rigorous CTE courses but they're having, in some cases, a hard time convincing students that if you're interested in computer science, take a computer science course. That may be a bad example. Having a hard time kind of getting through to students that ... Yeah. Not to feel kind of trapped by this idea.
- MW: What I have seen at some schools is that some of the schools are putting the technical courses into some of their existing honors and AP courses. More honors, not necessarily AP. AP's pretty locked in. I am seeing people trying to get some technical into different ... It's kind of like our college Art's and Science's has a part of ... Not Art's and Science's. Art's and Letter's. Anybody comes through Art's and Letter's has an opportunity to take several courses. You can take, whether it's English or History or whatever, and have a technical course that helps you be ready to come out and go into the work place and practice. We are seeing, on the college level in areas that people have historically said "Well, that may be good but what if he's an English major." Modernize it so that they can come out and work in today's business world which is a lot of technical things.
- I've seen some high schools try to bring some technical stuff into their curriculum but it's, again, hit and miss from school to school. It's usually the more affluent schools that are able to do that right now.
- HR: Absolutely. Great. I don't want to get too much into the weeds of ... It sounds like your consideration of CTE courses is very much on a case by case basis so I don't know that it's really helpful for us to go into the weeds about, in this case.
- MW: I would say that one of the keys ... If Arlington is going to do this ... I've actually just had some meetings with the Arlington people. We're dealing more with their AVID students. If Arlington's going to do something like this it would be really good for Arlington to reach out to the Universities and say "These are the following courses we're going to not have our students take." Supervised so we can look at them. We can bounce them off faculty in our departments and then go back to Arlington. They need to go out and they need to market those things to us.
- HR: Absolutely. Yeah. That seems like a very clear thing that they should do, for sure. Let's see. Another topic, within CTE, that APS is interested in is the weight in which CTE courses can relate to students intended majors in the admissions processes. I think this is another area where they may run into a roadblock.

Students are hesitant to take a course that they may be interested in because it either doesn't fit their intended major for college or they don't know what that intended major is. In your mind, do you think that's it's important that these CTE courses support a later major or is this something that students should not worry so much about?

MW: I think the CTE courses should support a skill, not necessarily that's transferable. We, for example ... at JMU, I don't admit you to a major, I admit you to the University. The freshman class of 4500 this year, probably around 900 will be undecided. While most of the students who change majors stay within the college they're in, we do have about 25% of the students who change they're major switch to other colleges.

What high school should do is ... The best thing is prepare you. Give you the skills to be successful in college. Even though you may be an English major and I maybe a science major on our application ... Since I'm going to be a science major, we expect you to be good in the non-science areas. As an English major, we do expect you to come in with a certain level of the math. Especially in the math area because 80% of our majors require math beyond just the general math. If you come here, we want you to have the passion to at least be academically prepared for almost any major. I think the key in the CTE courses is more of a skill that's transferable regardless where you're going for a major.

I think that's the key part there. Again, as I go to the Letter's, the sciences you can get a lot of technical training in the Art's and Letter's or even in, for example, some of the health services area. You won't get as much technical training but you'll get some. Most of it is just so you can exist in the world.

Most jobs now you spend your time on the internet or on the computer. More interested in those types of skills. I mean, I'll give you a perfect example of ... We're biased. I'm biased. I'm not a science. I was a history major.

HR: Right.

MW: I try to explain to students that one of the best science courses you can take is physics. I realize it scares the heck out of people but we even tell students if you take regular physics, we'll treat it as a honors course when we review it. Physics is a course that teaches you certain principals and in the second half of the physics class, you study problems and you solve them.

The key thing about physics is that students actually look at problems and solve them. They get into that problem ... In regards to your major, you're used to learning to analyze a problem and find a solution that doesn't, in itself, create another problem. Physicists, for example physics major as a whole do better on the LSAT. If you look at how students do on the law school exam when they're applying, physics majors do the best. Part of it is the thinking. It's the

skills they learn as physicists that prepares them for it. It's the same ideas. All these things should be transferable regardless of what their majors are.

HR: Absolutely. I can relate to that. I remember the physics course I took in high school and went on to become a political science major. Also not a science person myself. Yeah, that was a great class but incredibly hard.

MW: It is. It is.

HR: Yeah.

MW: We all have that experience that some of those hardest courses, in regards for a major, help us today.

HR: Excellent. I do want to be respectful of your time. I just have 1 more question. We touched on a lot of important things. I will, of course, pass along your guidance that APS should play an active role in marketing their courses and being really transparent about the rigger involved. On a student level, do you have any advice for students as they represent their CTE participation in essays or interview and what should they emphasize about their decision?

MW: Kind of like, when I ... I do presentations on how to write an essay to students and I also do presentations to faculty on how to write a reference. Don't tell us, show us. Show us how that student is different or special for the student. Show us if you're a detailed oriented person. If you see things through to completion if you're open minded. If you're whatever. Show us, don't tell us. The same thing, if a student's trying to explain to us how that course is preparing them for college and they need to show us how it prepares them for college.

Let me tell you about an essay that a young lady one time wrote. She was already going to be admitted. She was going to be a music major and the school of music really wanted her. She had taken everything she needed. She had taken a really good schedule. She had a math and in her senior year, she was dared by some of her friends at the high school to take an even more advanced math than she took. The young lady got an F in her first test and by the end of the semester, she got a B.

Basically, she wrote an essay about that experience. She said "Maybe I was foolish to take it but I'm open to dares but once I decided to take it, I wanted to see it through to completion. She explained to us how she got the B. She explained to us how she became very focused on it. That she found somebody who would tutor her. The teacher said "You can come talk to me. As long as I know that you try things." She regularly went to see the teacher. "I'm working on it, you know." Got help on it and by the end of the semester, it was a 1 semester course, she got her B.

What that showed us was that somebody ... What happened was the scholarship crew came down and they looked at the essays of kids who, you know ... They read her essay and they said, after they finished, they said "Well, here's 1 person that's getting the scholarship." It shows how the person ... They showed us that she wasn't afraid to challenge herself and they showed us how she forced herself to be successful. It's something she didn't even have to take.

If somebody's going to explain to us why they are taking these CTE courses they need to show us why it is preparing them for college. Don't use big words but they need concrete to show us why they took it and how they expected it to make them better prepared for college. It shows us an attribute of that student. Does that make sense?

HR: Yeah, oh absolutely. That's great advice. Yeah. Excellent. That brings us to the end of the questions I have for you. You've been incredibly helpful. Thank you so much. As I mentioned, I'd be happy to share with you a copy of the report once it's completed. Research is ongoing so I'm not sure exactly of that exact timeline but I'm estimating kind of in the next 6 to 8 weeks. Somewhere in that time frame. In the meantime, if you have any questions about anything we talked to today or about the research we're doing in general, please reach out to me via email or I can leave the phone number. [crosstalk 00:18:25] Have a great rest of your day. Thank you very much.

MW: One last thing, if they wanted to go with this, I had talked about the marketing tools. I was just thinking, if Arlington said that on this particular day we're going to do a presentation such and such a place and we want to tell you about this new approach and how it will impact our school. I think a lot of universities, myself included, would send somebody up to listen.

HR: That's a great point. Excellent.

MW: Yeah.

HR: Yeah.

MW: Okay.

HR: Great. Well, thank you very much.

MW: No problem. [crosstalk 00:18:54] Good luck and take care.

HR: You as well.

MW: Bye-bye.

UNIVERSITY B

Dean of Admission, Anonymous university. Telephone interview, May 11, 2016.

Hanover Research: The recording would only be shared internally here. We wouldn't share it directly with our client at all. Thank you. You're seeing that CTE courses are popping up more frequently on transcripts with applicants. Is that right?

Respondent: They are with students in both technology, as I mentioned, but also the health sciences in CTE types of courses that give students who are interested in going into things like nursing, physical therapy, occupational therapy or even medical school ... They're getting those contact hours which are so important in the field. It's so important in helping them validate that that's the route they want to go into but they're taking the place of what traditionally for high-ability academic students, those electives would be in things like AP courses, IV courses or dual enrollment courses, college-level course work in the core areas. That's English, math, language, science and history. We're having to weigh the value of say a student wants pre-medicine. They meet the qualifications for a pre-med scholarship program.

They might not have as many traditional college courses that will transfer here based on the curriculum that we offer here but we've got to look at that as a valuable thing for them to be doing in high school instead of maybe a college-level course in a core area because, again, they're validating their interest in their chosen field earlier than they would be. The earlier they get the opportunity to validate their interest and find out what they're good at and what they enjoy doing, the better off they are here in terms of graduation, grades and things like that. Then again, back to we're seeing it more yes on particularly within the technology curriculum, as well as the health sciences curriculum.

We don't see a lot of career and technical coursework within the curriculum for a student who's looking for residential liberal arts experience that's in things like the culinary arts, welding, auto mechanics or any of those, again, maybe myself a little bit of those historically traditional career and technical education. If you are on the things that match up with whatever the outcomes they're after to a liberal arts education like graduate school and the sciences, computer science, those areas that require hands-on contact hours throughout the undergrad experience and not just when they graduate.

HR: Absolutely. Great. I think you bring up a great point. This is something that APS is interested in, the ways in which CTE courses can relate to students' intended majors. I think they're just trying to support their students who other students are college-ready and who are otherwise very academically prepared, they're a little bit hesitant in some cases to take CTE courses because they are concerned that they won't be taken seriously on a transcript or they don't know what major they want to pursue when they're in college. They are concerned

that if they take a CTE course in something, they may not major in may look "bad" on their transcripts. What advice would you have in these cases? How much does it help a student on an admission standpoint that their CTE background aligns with their intended major?

Respondent: Of course, I can't speak for all colleges. We're also different both in what we value, what our indicators on a high school transcript in terms of potential to succeed academically here. For a highly-competitive environment where you've got to demonstrate equity and assets. All things being equal with grade point average and test scores if someone's in a curriculum that you would consider more rigorous, which usually means college level, they're going to be a more competitive applicant than someone who is not. At a place like [REDACTED] that's moderately competitive and we're only going to admit half the kids that are going to apply, it's not so important that they be in seven or eight dual-enrollment in AP and IB courses where CTE curriculum would really hurt them.

It's going to be more important overall that their grade point average is strong and competitive and their test scores are where they need to be and all of the other things we look at in our review, which is we're more heavy on the interview, best fit and engagement level and those surface things. It just depends on the student and what their aspirations are in terms of college environment. I just had this conversation with one of our academic deans about their daughter. They're going through this process in sophomore year of, "Do we take AP or honors? How is that going to affect three years from now when they're applying to UVA, William and Mary and wherever?" It's going to affect them. Whether they admit it or not, they have to look at the context of their applicant pool.

They've got to demonstrate some equity into access. They're choosing between all students have great grades and test scores and strong curriculum. What are they valuing internally, not what they're saying to the public, but what are they valuing internally in terms of ranking those students who gets offered admission, wait lists and deferred and deny? I can only see for CNU taking CTE coursework alone isn't going to preclude them from admission or make them not competitive. It depends on all those other factors we look at. The intended major piece, every student goes three majors by the time they graduate but I think nationally here is no different. 35% of our students historically enter as undecided.

We're a liberal arts school. That's what liberal arts education is about, figuring out once you're here but I think more and more we're charged with retention. A four-year graduation rate is what we're trying to motivate students to get into. The earlier they can validate that interest and get on-track, the better. CTE courses do that better than core area courses or they can do that, I should say. You've got to look at that as valuable, as a valuable indicator. A lot of students are applying for biology and want to go to med school. Do they really

know what that's about? Perhaps in a CTE course, they're exposed to physicians. They do hours in a hospital.

I would suggest that that student has had the opportunity to know whether or not that's what they want, Number One. Number Two, are they going to be competitive in that field? They don't know until they see it and experience it. I would say it never comes down to two students and whether they get a spot or not but if it did, all things being equal, the student has some real life experience that a CTE course, I'm assuming would give them, in the area that they're both intending to major in, that would be a stronger candidate.

HR: Interesting. That's a great point. Excellent. You mentioned that your admissions committee, things such as the interview, and that's the engagement level, are taken into consideration maybe more strongly than another institution. What would be your advice for students on how they should talk about their CTE participation and their decision to pursue CTE?

Respondent: That's a great point of emphasis is how does that experience in a CTE course help a student articulate their direction, whether it's in an essay, an interview, the recommendation letters. Different schools put varying emphasis on those non-academic characteristics of an applicant. Here, because they're in small classes, no teaching assistant, so our best faculty are teaching freshmen in classes with 20 students, we expect that student to be engaged. The engagement level's hard to get off a transcript and an SAT score and even an activity list on an application. That's why we put so much emphasis on the interview.

A student being able to effectively articulate what they've learned in a CT course and how, again, it's delegated their interest to go into a particular field or not, and this is valuable, the experience that they gained and how that's going to make them a better student and maybe, perhaps, be more inclined to do undergraduate research, go study abroad or be engaged in another ... Since we value engagement so highly here in a small college environment, perhaps articulating that CTE experience as encouraging them to do that earlier on, that would make them a stronger applicant because those are unique experiences. They vary so much from school system to school system a lot of times, particularly from different states.

A lot of times those can be courses that set a student apart. They've had a unique out-of-classroom academic experience a lot of times with the CT coursework. That's what a student's trying to do is distinguish themselves within a large applicant pool within a competitive environment. It doesn't help if the university they're applying to is in the business of counting college-level courses because usually CTE are not or they're looked at as applied sciences courses and not transferable but speaking for a school like us, they don't really do that. It could actually benefit the student being in a CTE course.

- HR: Great. That is a really good point. Again, I worked in admissions offices when I was an undergrad and after for a little bit.
- Respondent: I'm sorry.
- HR: I remember that these things are annoying when they get into the nitty gritty in the weeds of, "Hi, student," X, Y and Z very specific factors and you're supposed to give them anonymous thought decision. I'm not asking that but let's say if you're looking at an application from a student who attended a CTE specific academy versus just took courses, maybe took several CTE courses, what would be your advice or do you evaluate that application differently? If so, how?
- Respondent: Again, that's something I mentioned very early on in this conversation. You look at each application not only within the context of our applicant pool but also in the context of their immediate academic environment. They put on what was available to them to choose to do. What did they choose to do? How does that measure up with the rest of the class? Then what does that profile look like from that particular school in terms of, again, we're looking at the individual context of that. We do that more than we get in the business of comparing this school versus that school but since some of the easier evaluative measures like an SAT or ACT score might come into play because if a student's in maybe a non-traditional curriculum that it's harder to compare. That test might become more important and/or the interview. Did that answer your question?
- HR: Yeah. Absolutely. It definitely did. I do want to be respectful of your time here. I just have one final wrap-up question for you. It's very open-ended. Just any final words of advice to areas in public schools? How can they better communicate either to students or to institutions like yours about CTE and its benefits?
- Respondent: We looked at, obviously, a large number of transcripts from a large number of school systems from various states and internationally. The better a school system does in articulating on the high school profile through their school counselors, college placement coordinators, whatever they have, to the admission offices or to a specific admission officer in relation to a specific student, the better they do in articulating how those courses are viewed within their school system, why they're valued and the philosophy behind it. That gives us ammunition to give their students the most possible consideration for admission.
- They might not have as many AP or IV courses but if we know that CT is emphasized as a point to help students have skills, validate those interests, alternatively to the traditional honors, [ancillary 00:16:33] AP, whatever it is, we can give that student the benefit of that doubt. Really that's all it comes down to at the end of the day. We're trying to predict the student's success

here. The more college-level coursework they take, it takes the guessing game out because they're already demonstrating how they're going to do academically in a college-level environment. That's easy for us. What's not easy for us is why a student might have chosen to take a CT course versus say a high-level academic course, if they're a high-ability student. If that comes from the school system, that's a tremendous help to us.

HR: Great. Excellent.

Respondent: Those counselors are going to be the ones admitting the school report forms for the student's application. Their faculty are going to be the ones writing the letters of recommendation. We put a lot of emphasis on those things. Beyond the cold, hard facts of the GPA, a weighted, un-weighted GPA, an SAT score and ranking class, we rely heavily on the school counselor and the faculty who are writing letters of recommendation to help us predict that student success here academically. If they emphasize the value of the CTE curriculum within the context of the advanced study diploma in Virginia, that's really helpful. That's one of the sections when our admission officers are conducting a holistic review ... It's electronic now workflow.

It's not a paper file but on the review window, if you will, there's a whole section on academic rigor, the academic curriculum. Part of what they articulate in their review of the student is how rigorous of a curriculum did the student choose to take within the context of their immediate academic environment, which traditionally was how much did they go above and beyond the minimum? If they take an extra foreign language, did they take an extra math? Beyond the advanced studies diploma, what did they choose to take? Again, articulating the value of the CT program within that school system is valuable because they'll write that up. That will be part of the rigor evaluation to go along with how did they do in the interview, what was their demonstrated interest, what leadership positions did they hold in school and all those other things we look at.

HR: Right. Excellent. Thank you so much for taking the time to speak with me. I really appreciate it. I will plan going forward to keep you and your institution anonymous until you have a chance to look over and make any corrections to the citations that we may either keep anonymous or to you, we can confirm that after this.

Respondent: I look forward to that, to see what other folks had to say and look and see how your summary comes out.

HR: It sounds good. Thanks so much. If you have any questions about anything we talked about or the research that we're doing, feel free to contact me either at this phone number or my email. I'm happy to respond.

Respondent: Thanks so much. Good luck to you.

HR: Thank you ...

Respondent: Bye.

HR: ... very much. Have a good day. Bye.

UNIVERSITY C

Regional Senior Assistant Director, Anonymous university. Telephone interview, May 16, 2016.

- Hanover Research: Before we begin our interview, I'd like for you to know that your participation is voluntary. You can choose not to answer any questions and you may end our interview at any time without penalty. We will keep the information you provide as confidential and neither your name nor your organization will be associated with your answers unless you give us permission to do so. We may use your anonymous information in our research library or to address other needs in the future, but anonymously. Should you choose to complete the interview, we will be happy to share with you readopted copy of our final report to share with you as a thank you for your time. Do you have any hesitations with being cited in a report that we will share with Arlington Public Schools, or do you prefer to remain anonymous in any way?
- Respondent: Not at all.
- HR: In order to evaluate my performance, my manager may record and listen as I conduct this interview. I will also take notes throughout our conversation.
- Respondent: Ok.
- HR: First I would like to know, overall, what types of courses or academic activities have the greatest potential to distinguish an applicant?
- Respondent: I would say the Core classes. I was on a panel not too long ago where we had someone ask about academies in the sciences or things of that nature. But the Core classes really tell us what kind of a student they are. If there are math, science, English classes. It's great to have academies but it's also great to see how well-rounded of a student you are because in college you are going to have to take them all, regardless of your concentration. So I always say, as a student, to really make sure that you stick with your Core classes, like math, science, English, history and social sciences, and foreign language.
- HR: Right. What is your understanding of career and technical education courses and what courses on a transcript do you and your admissions committee consider to fall into this category?
- Respondent: We really don't look for those. I don't know how to... We obviously look at the experience as a whole, then again, not just the honors, AP, or dual enrollment, we really don't differentiate. We haven't seen too many of them to begin with so the student that apply to us just keep the basics at most.
- HR: You touched on my next question, which was how frequently do you see CTE courses on transcripts of applicants? It sounds like not very frequently. Is that right?
- Respondent: Correct.
- HR: It sounds like what you're saying is that, as long as a student maintains a strong background in the Core classes, if they were to – in addition – take CTE courses, that wouldn't necessarily help or hurt their application. Is that right?
- Respondent: I would say that. Depending on what kind of CTE course it is. I don't know any particular title of the top of my head. But what would be a normal STE course that a junior would take?

- HR: The types of courses, APS sees different levels of these CTE courses. On the “high-level” they have courses in engineering, business management, accounting, entrepreneurship, cyber security, and other tech areas. And then on the other end, they consider other fields, more traditional CTE areas, culinary arts, cosmetology, automotive technology, or pharmacy technology. Do you view CTE in a similar sense?
- Respondent: I would say that CTE courses geared to vocational work like cosmetology and aeromechanics, those students are not really looking at us because we don’t offer those things, we don’t offer culinary arts or cosmetology. Those are more vocational and can be served by a two-year school. So, not sugar coating it, but they don’t need to go to a four year institution if that’s really what they want to do. But cyber security and engineering, that’s a good base. It’s not going to hurt them and they have a little bit of a foundation. But college level classes are completely different than what can be taught at the high school. “If you are looking at going into engineering, definitely take CTE engineering.” No! I’d much rather tell them “if you have the opportunity, take AP physics take an extra calculus class. Once you’re in college, you’re going to have to take those classes again to get into any engineering school or continue on in the process of getting a n engineering school”
- HR: That’s a very good point and that echoes some of the things I’ve heard from other leaders. It’s great these courses are offered, but they can’t replicate what can be offered by an institution of higher education. This is something you’ve talked about already, but APS is interested in the ways in which CTE courses can relate to students’ intended majors in the admissions process. Do students indicate their intended majors in the application process?
- Respondent: They can. We give them an option to list their major, or if they want to go in undecided.
- HR: Does this indication have any bearing on their acceptance?
- Respondent: It’s more of a general indication. We feel that you start off as a clean slate in college and so we see the statistic very clearly. I don’t know if you know this, but the national statistic is 80% of freshman nationwide change their major at least once. At least once. So let’s say they want to go into nursing, they could switch. Eight out of ten students in accounting are probably going to switch. So it might apply to finance too. We’ve seen a lot here lately, that there is a lot more influence from parents and friends on what a student may study.
- HR: Are there particular areas that you are seeing students being influenced by their environment? And then they switch majors?
- Respondent: The health sciences. Everyone wants to go to med school, but they don’t really understand how long and tedious the process is. It’s more parents saying “this is where you’ll make the most money.” It’s unfortunate, because we do need people who are good at research like yourself. Or people who want to go into education and help the next generation. If we were all doctors, this world would be a world full of doctors with nothing else. It’s a catch-22. Everyone that wants to go to law school, that’s another career that makes a lot of money, but there is a lot of stress and students finds this out in college. And the work you’re putting in a political sciences or biology 404, you realize how much work is going into one specific subject and then there are at least another 8 years of this. The liberal arts are easier to switch in and out of. But health sciences and pre-law.

- HR: I think one argument that has come up in the district is that potentially these CTE courses – and lumped into that would be AP and honors courses – would help students come to these realizations sooner. Do you think there is merit to this argument? Or is it more like, you can only make that decision once you are at the college level?
- Respondent: Biology and AP anatomy can kind of start to open their eyes, but you are not going to slowly. This is no knock on any educator teaching AP courses. Normally what high school students learn in a year, they learn in 14 weeks in one semester in college. So it's a much shorter amount of time. And so a whole year compared to 14 weeks. I think the pace of it, you could never mimic the pace of the class. Even the dual enrollment classes are different because some are, I think in northern Virginia, most of the dual enrollment courses are taken at the high schools now. So they are making it available to students and that's great because it's opening their eyes to college and what they could possibly expect in college but it will never mimic it.
- HR: That makes sense. I have one more topic to discuss before we wrap up. It has to do with representing CTE participation during the application process. For the sake of argument, say that the student has a solid background in their core academic courses and they have also taken CTE courses, what would you recommend being the best way to talk about this decision in an interview or essays?
- Respondent: The CTE to me, really don't affect my decision at all, if they have a strong core background.
- HR: You would say, it's not necessary to address them at all?
- Respondent: Right.
- HR: What would be your advice to APS as they look at CTE programs? Is there a way that they could communicate the rigor of these courses with you and other admissions officers effectively? Or is it just not something that needs to be addressed?
- Respondent: It's kind of like being between the sword and the wall. I completely agree with giving students more options. Like you said, it could possibly make sur that they are interested in engineering or cyber security in high school and develop interests, but the other part of me wants to say, are all books up to date, how are they allocating money properly? Are they going to spend it all on the CTE classes and training teachers for those classes, when we have students who can't make it past Algebra II. You know what I mean? We firmly believe that the most successful students have at least an Algebra II or higher course in their math curriculum which is one of those things that we've noticed. When they come with this, they do better, their retention levels are higher. I would much rather see a focus going to all students to make sure they have Algebra II by their junior year. And making sure that the budget is being appropriated to the Core curriculum at the end of the day.
- HR: Lastly, any final points you'd like to make about anything we've discussed?
- Respondent: Just, academies are great. But again, I was on this panel with schools like UVA and William and Mary and Virginia Tech and we all came to an agreement that academies are great, but if they aren't balanced in math and English, what is the point of a music academy? Colleges look at everything differently, but for a fact we want balanced and well-rounded as opposed to someone who is strictly math heavy. You need to figure out a way to let these students find an interest in high school, but still finish the rounded curriculum, but they can hone in in college or at the master's level. Never in my life did I think I would be in education. You find something that you're

passionate about, but you actually end up developing that in college, not in high school.

HR: Right. Excellent. Thank you so much for taking the time to speak with me. I really appreciate it. As we discussed earlier, we are happy to share with you a redacted copy of the final report. Research is ongoing and we do not have an exact deadline at this point, but approximately 4 to 6 weeks. Can you confirm the best email to deliver this report to you?

Respondent: Yes.

HR: You mentioned before that you wouldn't mind being cited directly by name, title, and organization. Is this still true?

Respondent: You can use my title and name. I would keep the university out of it because I wouldn't want to speak for them. This is just how I look at it.

HR: Happy to do that. In case we have any further questions about your responses we may contact you for clarification. If we conduct similar studies in the future, are you willing to be contacted again for participation?

Respondent: Yes, that's fine with me.

HR: Thank you for your answers and for participating in our study.

Respondent: I appreciate it.

HR: Goodbye.

UNIVERSITY D

Anonymous. University D. Telephone interview, May 12, 2016.

Hanover Research: I have some more details to share with you as a part of informed consent. I want you to know that your participation is completely voluntary. You can choose not to answer any question and you can end our interview at any time without penalty. We will keep the information you provide confidential and neither your name nor the name of your organization will be associated with your answers unless you give us permission to do that. We may use your anonymous information in our research library or to address other research needs in the future.

Respondent: Okay.

HR: And so should you choose to complete the interview, we would be happy to share with you a redacted copy of our final report as a thank you for your time. In this report will be summarizing this and other interviews as well as kind of supplementary secondary information and literature. Of course, we can revisit this at any point during our interview and after you have heard my questions but do you have any initial thoughts about how you would like to be cited or otherwise addressed in this report.

Respondent: Yeah, well, I mean I appreciate you asking. What I would say is if it is okay with you, I might actually, so I am one of the Assistant Deans in our office and I am the Regional Dean for Old Town Alexandria but when it comes to matters like this, if it's all the same to you, I would likely after we are done, just run it by my boss, our Dean of Admissions, and to see if he has a preference and circle back up to you, if that's okay.

HR: Perfect, yeah of course, that works very well. In the meantime, I will plan to keep everything anonymous until I hear otherwise from you and if he would like to keep it that way, we are happy to do that. Great, to begin, I would just like to hear kind of a broad level and you can be as brief as you would like with this very broad question, but what types of courses or academic activities have the greatest potential to distinguish an applicant, generally speaking?

Respondent: Is this question saying the context, you just want to know the actual type of classes they can take as that what you look at more or something like that?

HR: Sure, I mean, I am thinking of the academic aspects of their application. What are the key high priorities, things that you are looking for?

Respondent: Yeah, well I think my answer, at least in an academic context because it is very much true that I kind of speak to our overarching review process in

that we do really embrace the holistic approach. Academics are extremely important as they should be right, I would argue in a review process. We take all different talents and strengths an applicant brings to the table into consideration equally. It all has a voice, a presence in our review process. Academics yes but also extracurricular involvements, personalities, how teachers describe them so on and so forth right. When it comes to the actual academic side of things, how an applicant can stand out, how I would describe it when giving an information session here on campus to visitors is that really all we can ask of a student is that in their school context, after school, are they taking full advantage of the educational resources available to them at that school which is a very kind of general statement to make but what I mean by that is at a school whether a school offers a combination of CTE courses but also AP, IB, Dillon Romans, Honors, whatever it happens to be, whatever combination, they look to that student at that school, are they taking a combination of those classes that generally and honestly challenges them in the classroom.

All right, so that's one thing we are looking at is that given the classes available to the student, did they take a challenging course schedule? Often times how we best gauge that, get a sense of is this challenging in this school context is I am sure you are familiar with this idea of secondary school reports or a school profile, right, where the school actually details for us in their minds, right in their expertise of knowing their school very well, what classes are challenging based on what students can take, what is more or less challenging in their eyes.

Then, we will go from there and really use their input in terms of what classes are like at their school to gauge how challenging a student's schedule is. Then on top of that, actually taking those classes, you always want to see students doing well in those classes. For us, we don't put an average GPA or expected GPA for most students out there just because we don't have one but suffices to say that approximately 80 to 85% of our med students on a given yearly basis are in the top ten percent of the graduating classes. I do think that there, if I am rambling too much you can cut me off.

HR: No perfect.

Respondent: I was just doing a panel actually at T.C. Williams, up in that area last week and there was a question kind of centered around this topic of CTE, do you look upon them favorably or do you look down upon them. I forget exactly what the question was, it was something along those lines. Especially in Virginia, right so Fairfax County, Old Town Alexandria, I think that students can get in these swim lanes right where they assume I have to take all these AP and IB enrollment classes and nothing else. I don't have time to take CTE classes or honors classes or whatever it happens to be. I just told the audience that I really don't want students to adhere to that. I want to

push back against that because yes we are looking for students to challenge themselves academically and do well but more importantly than that, I think a big purpose in education whether it is high school, college, or both, is to explore your interests inside and outside the classroom and discover new passions.

It think the best way to do that is to lead a balanced lifestyle and give yourself a chance to take CTE, Arts classes that most interest you to give yourself time outside of school to pursue academic or extracurricular activities that you are really passionate about. I want students to really believe that because that plays out our review process very much so that we are not looking you know from Old Town Alexandria if students have this number of AP classes and they will have this number of AP classes and not competitive, that is just not the case. They can be a very balanced individual. Yeah I am taking challenging classes but bring more in overall strengths to the table that they have taken time to actually pursue in a meaningful way. If we get that sense from an applicant, they can be exceedingly competitive in our progress. So, I will stop there, that was a long answer, I am sorry.

HR: No, that was an excellent answer. You hit on a lot of other important questions I had perfectly so let's talk a little bit about trends among CTE courses on transcripts. Do you see these courses frequently and can as a follow up, any changes either in overall growth or particular growing disciplines within CTE transcripts?

Respondent: It's a great question. Would I say there, golly how do I want to answer this? I wouldn't say they are exceedingly common. I think it's entirely school context dependent but if I am reading applications from , in our office we do read all applications from our specific regions. Like I told you, my in-state region is Old Town Alexandria but you know New York out of state, my colleagues read applications from all over the country and globe and I do as well you get exposed to applications from lots of different regions and so I don't get the sense that they are overwhelmingly common or at least in the sense that students who do elect to take them it's not the case where it's entirely CTE.

It will be a combination of AP, honors, CTE, all of the above. Specific classes that I have seen when it comes to applications for lots I would say business oriented ones, I would say I have seen in terms of entrepreneurship and accounting things like that, culinary classes, some agricultural classes right. I think a distribution of some of those main categories that are out there that I have seen in our process in the applications that I have seen. I really haven't, I mean to be completely transparent, I am wrapping up my second full year in reading applications for Old Town Alexandria and being part of the admission review process on our committee and so in that sense I don't even think I can really give you a good sense of what

[inaudible 00:09:50] or reduction in number of classes taken in an overall sense in that limited two-year frame.

HR: Sure, sure, yes. You have definitely described this already a little bit but what role do these courses play in the admissions process. It sounds like it doesn't necessarily hurt a student's profile. In what ways can it help and in what ways can it hurt, if that makes sense?

Respondent: Yeah, yeah, it's a great question. I mean in terms of helping, again, I would just kind of go back to what I was describing earlier in that I think there is a misconception out there of most students and parents especially that colleges are just looking for these out of this world, like honors, AP, dual enrollment students. We just want to see students who are taking those and the point I was trying to make during this panel is that you know sure and I think any college is being honest will say that they want to see very strong academic applicants but the misconception is that you have to be strong academically or take CTE, like those are mutually exclusive ideas which they are not. I would say that overarching purpose to our processes is getting a sense for the well roundedness of an individual, you know what are they bringing yes academically but otherwise as well.

A CTE class can help I guess if that is the right word in the sense that, that can show us that the students may have the strong passion for agricultural sciences, culinary arts, business accounting, whatever it happens to be and they have taken time to take classes in those fields and done well in those fields. That gives us a sense of yes, the student is strong academically but they have other interests as well if you will because they took these classes and also the student groups outside of the classroom to be involved with them outside the classroom. It helps in that sense to giving us a better idea of a just the well-rounded interests of a student and the fact that they haven't just limited themselves to straight I guess you know academic like the sciences, the maths, the four languages, the histories.

They have taken time to explore other subjects other topics in a meaningful and thorough way by taking a class in that subject. In terms of hurt, I don't know if hurt is the right way to put it, but I would say that you know a point that I made earlier is that we want to see a student take full advantage of the classes available to them so if a student was taking almost entirely CTE classes and weren't taking upper level courses in say Math or History, English, languages those more historically defined academic subjects that may not be as rigorous of a schedule as several other applicants who receive from that same school in that given admission cycle.

So, I think I have said this now probably what like five or six times, bringing a balance approach to learning. So, I will encourage students to no end to

explore those interests if they have them whether it is CTE, Arts or otherwise but just balance those interests with taking accounting classes in those more, what's the word I am looking for, those more kind of standard if you will or have [inaudible 00:13:50] like I was saying other than sciences, maths, histories, English's, languages, so on and so forth.

HR: Great.

Respondent: I hope that answers your question.

HR: Yes, oh perfectly, yeah and I think so again going back to something you mentioned, well my next question has to do kind of with from your end determining what are sort of high level CTE courses and more basic and it seems like that plays into this again, I don't like to use the word helping and hurting but in order for you to assess is this student taking full advantage of their academic environment. It sounds like and you mentioned this that you would then turn to the secondary school report to try to get a context of what the CTE means and the context of the school. How can APS and schools within APS, do this effectively. Should it be kind of only within the secondary school report or are there other ways that they can sort of "market" their CTE courses and convey to you?

Respondent: Yeah, I think it's a great question. I would say that I think, this panel that I was just doing recently was just colleagues at you know Virginia Tech and UVA and University of Richmond. So, big local schools JMU and my sense that we all kind of drew is the same way in the sense that review very strongly look to the secondary school report in and of itself. It is like the actual school profile where it details the different classes that are offered and what those types of you know the rigor and curriculum associated with those classes. I would say as parts of the secondary school report, I don't know if you have seen one of these or so basically it includes the school profile itself and a section for the counselor writing on behalf of that student to chime in as well both in terms of, you know on a common application at least and those who were common at school.

There is a kind of gradient with different categories and that this counselor can put checks in and some of those pertain to the actual schedule and class that the student has actually taken. Basically, there is ways on national school reports for the counselor to go this check system but also a letter on behalf of the student. On a case by case basis, if there was a student who took lots of these CTE classes, there is room on the actual guidance counselor letter for this counselor to advocate on behalf of that student saying this student took some CTE courses and they did so for X, Y, or Z reasons.

I think that the student took a very rigorous course schedule for X, Y, and Z reasons so we do really look for the input of the counseling staff

themselves right because they have worked with these students very closely and over a meaningful period of time throughout their high school career. So, just to answer your question I would just say the school profile but more so just how the counselor actually talks about the student's schedule and program in the letter that they sent to us on the student's behalf.

HR: Great, excellent. Shifting gears slightly, we've talked about how APS and its schools and its counseling staff can talk about their CTE courses and a student's general academic load. How have you seen affective ways of students demonstrating and talking about their decision and their experiences participating in CTE courses?

Respondent: Yeah, I would say to kind of make the conversation a little bit lighter, I mean just in terms of advocating for themselves sort of like a schedule decision or schedule choices for classes. I would say absolutely. I would say on the application itself in addition to the students pulling out their extracurricular involvement and sometimes we will see those CTE and other interests in the clubs they decided to pursue, right, outside the class and throughout the high school career so it can manifest itself there and how they have been involved in other classes with their student groups. Some students will write about it as part of their essays if they elect to write their essays that they write as part of their application on that subject.

More common, I would say the most common option is that there is a section on the application that is just called additional information. I think sometimes students can just look at that and not want to put anything there because they don't think it is going to be seen or read or what have you but we read as our staff, all six and myself, you know we read all parts of the application that the student decided to share with us.

Many students take that additional information section to really detail whatever they want to provide additional information about on their application and sometimes students will. If it is uncharacteristically low grade in a particular class or they decided to take this class over this other class, or whether it is a CTE over this or an honors instead of an AP. Whatever it happens to be right or a history class as opposed to taking a fourth year of math senior year. Whenever they make these thought out schedule decisions, students who advocate for themselves into detail why they made that choice on their application, it just gives us as an admission committee more context to go with and a better understanding of why they made that choice.

I would say to students, I would always tell them to do that. We don't view that as an excuse or the student trying to explain away a choice they made. It is the student actually taking the time to write why they did that

decision or course schedule and so that is what I would say for that. Whenever an application gives them the chance to give clarifying information about their schedule or other parts of their application, take advantage of it so we will have a better idea of where the student is coming from.

HR: Great and yeah I think just kind of a final, very open-ended question for you here. What kind of advice would you give to APS about just kind of supporting students and like you said having a balanced sort of experience when it comes to academic and extracurricular life and with particular focus on courses that would fall under CTE? Anything, final you would like to highlight?

Respondent: Yeah, another great question. I would say that, I am just going back to that first answer I was giving, is that I think APS and other very prominent, powerful, well known, and respected school systems have the ability to set the tone. I would just encourage them that, I think you know at [REDACTED] we clearly do and I think most top schools and universities know the caliber of students coming out of this school system. Right, it is a phenomenal school system and that goes without saying. I don't want them to feel as if again, like the CTE classes are lesser or students who take these classes are viewed as being lesser.

I mean it couldn't be further from the truth. I would just have them encourage them that if they feel it's right and again they know their students and they know what's right for their community, but to feel okay inviting students to explore their various interests whether it is CTE or otherwise. To not feel, how to best phrase where I am going, I think it is part of this larger dialog right. I have had schools reach to me about limiting the number of AP classes students can take in a given year or advance degrees versus non advance degrees and here this is is no CTE classes or not to offer CTE classes. It is all part of the same dialog I think of just how to best produce young scholars and students and members of the community who are competitive and [inaudible 00:22:59] them in the college admissions process specifically.

I am taking the the [inaudible 00:23:07] kind of say this overarching point that I've already made but just to have confidence knowing that students who take these types of classes can still very much be competitive in our review process specifically you know based on where I am coming from that if a student wants to take these classes to not shy away from allowing them to do so and offering these classes for students to have these interests and just knowing that if they do that and take these classes, the CTE courses, but supplement them with other vigorous classes and are involved in outside the classroom, and perform well in these classes and to have advocates in their school who can advocate for the students and so on and so forth.

If all these pieces come together with CTE classes as part of the student's back story and background in the school community, they can still be very effective and be very competitive in our applicants. They are not at a disservice or a disadvantage for haven taken these classes. I do think this is a valuable part in the education process and you know before I came to [REDACTED], I taught at a school in North Carolina, a public high school, where lots students did take the CTE classes. I view them as very useful for our students, right. I think they expose them to new skills, new knowledge, new ways of thinking, I don't know just different outside of the standard classes that these students usually take. I would just always encourage if there's an interest and if you are comfortable taking those if they are interesting in them. Yeah, I feel like this interview, that I have just talk, I have kind of rambled a bit because I am coherent to explaining to you.

HR: Oh yes, without a doubt. You have been very, very helpful so I appreciate it. Yes, just some final wrap up pieces here. I did mention before the interview information anonymous, both at the individual and institution level. Would it be helpful if I forwarded along some of the interview questions that I asked you or would you rather wait and get a copy of the analysis and summary for you to kind of run by your Dean of Admissions.

Respondent: Whatever, I would say all those options sound great to me. It could be enough that if you could send me the questions that were covered and I will give those to Tim our Dean and see what input he has. If he comes back wanting to see the analysis before committing to anything or what have you, then I will let you know and we can just go from there.

HR: Sure, that sounds good.

Respondent: Yeah, great, the questions would be fantastic. I appreciate you sending those.

HR: Of course and the final report should be ready in four to six week range so you can expect that then. In the case that we have further questions about your responses or that we have similar studies in the future, are you willing to be contacting again for participation?

Respondent: Yes, absolutely. You have my phone number and my email, absolutely, that's no problem.

HR: Great, okay, fantastic. Great, well thank you so much for taking the time. Again, I really appreciate it and if you have any questions after we hang up, definitely, reach out. I will be in touch in with interview questions but any questions what we talked about or the research that we are doing more broadly. I did actually have one final question for you. It sounded

like that panel you participated in at T.C. Williams was really kind of right up the alley of this research, do you have any more information about that panel or whether there is kind of like a record or public kind of record of it.

Respondent: I don't know if there is a public record, so it related to the structure a bit, so it was about eight of us on the panel from different institutions and it was moderated by two members of the T.C. Williams counseling staff and they would just kind of give us various questions that covered a whole bunch of different topics which we would talk about. One of the questions was specifically about CET courses, about how those are viewed in the review process and I think the answers given pretty much echoed what we discussed today.

HR: Great.

Respondent: In terms of public record, I don't know. Well, the T.C. Williams counseling staff is phenomenal so I have no doubt that if you were to talk to them for any input they would want to give or to talk to them they would be more than happy to kind of have a dialog with you for sure because they are really good people over but public record, I don't think so.

HR: Yeah, and I can reach out them, yeah, fantastic. Well, thank you again so much for all of your help today. I appreciate it and have a great rest of your afternoon.

Respondent: Yeah, thanks again for your call and best of luck with this study and research.

HR: Oh, thank you very much.

Respondent: Yep, sure thing. All right, take care.

HR: Goodbye.

Respondent: Bye.

Arlington Public Schools
Focus Group Research with Staff Members and Students on
Alternative Paths to High School Diploma or GED
Provided by the Career, Technical and Adult Education Program

October 12, 2016

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Background

This research project focuses on program and service offerings of Arlington Public Schools (APS) that serve students who need an alternative way to earning a high school diploma at a comprehensive high school or who need to earn a General Educational Development (GED) certification. APS offers:

- The High School Continuation Program (HSCP). In this program, students have the same course, credit, and Standards of Learning (SOL) requirements as students in comprehensive high schools, but with flexibility in the way and timeframe in which they earn their diplomas. For example, a student who must work late nights to contribute financially at home may be a good candidate for this program.
- The Individual Student Alternative Education Plan (ISAEP), which develops or refreshes the skills necessary to successfully earn a GED diploma.¹

A multi-faceted evaluation of the APS Career, Technical, and Adult Education (CTAE) program, which manages ISAEP, is underway. The evaluation explores the CTAE program using many different means including enrollment data, surveys of staff and students, a commissioned report on the value of career and technical education courses in the eyes of college admissions offices, and classroom observations.

This report summarizes qualitative research findings from:

- One focus group with high school counselors
- One focus group with high school Directors of Counseling (DOCs)
- Three interviews with students who dropped out of APS

This qualitative research was conducted in summer 2016. Importantly, all of the evaluation's data should be considered as a whole. In other words, focus group and interview findings will be most meaningful when considered together with findings from other facets of the overall evaluation of APS services for students who need alternatives to comprehensive high schools. Also, in interpreting the findings presented in this report, it is important to note that focus group discussions are a qualitative research method. While the discussions produce rich, detailed information about the perspectives of those interviewed and opportunities to further explore relevant new perspectives, focus group findings are descriptive in nature and cannot be generalized due to sampling approaches and small sample sizes.

Research Purpose

This qualitative research helps to answer the first of the two questions being asked by the CTAE evaluation, which is, "How effectively was the CTAE program implemented?"²

¹ APS also offers an adult GED-preparation program, but this report focuses solely on the ISAEP program, which is for APS students.

² The second of the two questions being asked by the full evaluation project is "What were the outcomes for the targeted population?" The focus groups and interviews described in this report did not focus on this question.

Research Method

Two 90-minute focus groups were conducted by an independent researcher, not employed by APS. One group was convened with high school counselors, one with DOCs. For the high school counselor group, the Office of Planning and Evaluation (P&E) invited all high school counselors and used scheduling software to select the date on which the greatest number of them said they could attend. Seven counselors participated. All DOCs were invited when that focus group convened—with 11 in attendance.

The counselors' and DOCs' discussion guide and the students' discussion guide are provided in Appendices A and B, respectively. In brief, the counselors' and DOCs' discussion guide explored:

- **Observations about what brings students to the point of dropping out.**
- **How these students get “on counselors’ radar.”**
- **Communication with students at the point of dropping out** (e.g., which staff members notice, which staff are typically in touch with students, what options they present to students and how they go about that).
- **Counselors’ descriptions and perceptions of the safety net at APS for these students and how educated they feel about each layer.**
- **Counselors’ suggestions for navigating students into the safety net.**

A set of up to 10 interviews with students who have dropped out was planned. However, intensive recruiting that P&E conducted by mail and telephone among 45 potential interviewees yielded only 6 students who agreed to be interviewed and only 3 who actually participated. Recruiting efforts were hampered not only by departed students' lack of interest but more greatly by the fact that many potential participants have moved or changed phone numbers since their last contact with APS. Recruiting was conducted in both English and Spanish to help eliminate language-related barriers. Students had the option of conducting the interview in English, Spanish, or another preferred language.

The students' guide explored:

- **The reasons the student left school.**
- **Their experiences with adults related to that decision** (e.g., which adults noticed, which options the student heard about, who spoke to the student about options).
- **What advice they would give APS when it comes to making sure students who want to drop out find another option that fits them.**

Detailed Findings

High School Counselors and Directors of Counseling

Observations about What Brings Students to the Point of Dropping Out

Counselors estimated that there are about one to ten students per year per counselor who are at risk of dropping out. The DOCs and counselors named the following as the core challenges they see among students at risk of dropping out. These challenges were instantly top-of-mind. In other words, these issues are well known among counselors and DOCs.

- **The need to work outside of school to support one’s family, or less commonly, oneself.** This need, and the concomitant risk of dropping out, is most pronounced *by far* among immigrant students. Two factors exacerbate the problem. First, fear of deportation makes students feel they must always prioritize working *now* over school—so, in the event they are deported, they have worked and earned as much as humanly possible in the time they had. Second, many of these breadwinner students have the dual challenge of arriving at APS already behind their peers’ grade level and not speaking fluent English.
- **Special education students who also have other, added needs**—such as childcare or flexible scheduling needs.
- **The need for support and childcare for parenting teens.** Counselors said when this program was ended, “it was a huge loss.”

DOC 1: *One of my students who dropped out last year, he was HILT B. I had taken him in as a mentor. I ran into him, and I said ‘Now, tell me what happened.’ He said ‘I think I’m going to be deported.’ That’s the current fear, right? He’s like, ‘I just need to work as much as I can before that happens.’*

DOC 2: *We get that all the time. ‘We’re going to be deported, so I’m going to work as hard as I can until that happens. So, I can’t spend time at school.’*

DOC 1: *He is smart. He’s probably one of those gifted kids that we were just talking about. The reality of his situation is he just needs money.*

—HS DOCs

I can think of four students this year who have recently come to this country, and they’re not engaged in coming to school. But, their immigration situation demands that they do. They’re sent by their guardians or the court. As soon as they turn 18, they are out of school. They are here because family members sent for them, so the student could work or make money. There wasn’t any intention for the student to come to school.—HS Counselor

The kids at [school] are 18 to 22 also. They have minimal previous schooling [when they arrive at the comprehensive high school]. They come from such trauma. The trauma of

their lives before they left their country. The trauma of the journey here. Then, the trauma of arriving here and being so disillusioned with this thought that [they] were coming someplace better. Objectively, it is better...but there's still not really an outlet. You can't come back from a third-grade education at age 19 and graduate in four years. It's not going to happen. They're all somehow tied into INS. And...they're in hearings every six months; it's a game of roulette. Is your day at court going to be the day when you get the boot, or the day you get to stay? For the most part, kids stay....They get these reprieves if they're not causing problems, if they do what they're supposed to do. But, you don't know. So, how can you invest in a future when you don't even know if you have one?—HS DOC

They're seeing, 'I can go work for four, five, six more years at high school, and come out to get paid to do the same job that I'm doing right now'... [and, it's not just the money] they can often get a job and feel successful. School doesn't ever feel successful to them. —HS DOC

*There's...so much [financial] pressure. These kids are reunited with family members who they've never lived with and who are named as their parents. But, they're not the parent who raised them. They're paying rent to their 'mom' or 'dad,' or they're living in a room somewhere. They're trying to piece together a life and for that you need cash...When construction season starts....there's a huge drop off in attendance because suddenly there's cash money to be made quickly. A bunch of those kids came back and did summer school. It's that fine balance of 'How do you help a kid for whom things feel hopeless?' Not that I'd quit [trying], but realistically if any of us were in that situation, would we be able to just piece it together? Would we say, 'I'm going to just keep going to school, reading at a third-grade level, when the reality is I'm probably not going to finish?' I think the school **community** is what brings some of them back, like their friends. They like that. But, for them, school is a luxury. I think we take that for granted.—HS DOC*

We have kids who are close to graduation with nowhere to put a baby that they've had in December. They don't have daycare, and they can't get on that list. They're so far in the back [of the list]. It's like, '[Counselor pleading] We're only a semester away. Come on.'—HS DOC

DOC 1: These kids, it's so hard. I think that what exists at the Career Center, that day care, is great. The kids we have who have used it have had great experiences. And they've finished school. How do we push for more?

DOC 2: And, the young father's program. That's gone, too. That was another huge loss.—HS DOCs

Other reasons for dropping out that were emphasized, although to a slightly lesser degree, included:

- **Mental health issues**—either the student’s own difficulties such as depression, schizophrenia, or anxiety or a parent’s mental illness. Counselors saw this as a major contributor while DOCs tended to think that there are good supports in place and students can usually be prevented from dropping out.
- **Substance use or abuse**—typically counselors spoke of the students’ issues, but sometimes parents’ issues were also mentioned.

How Students Come to Counselors’ Attention as At-Risk for Dropping Out

Attendance Problems

Attendance issues are typically the first “red flag.” It is usually teachers who notice and alert a counselor to a student’s potential problem.

The teachers will contact us. I think that's out of concern. They're noticing something and feeling like something's wrong. Again, it's not punitive, but I think the administrators, the APs will also be contacted. A teacher really could go either way. Sometimes a teacher will contact me, and say, 'This student hasn't been here. I just want to let you know first before I let so-and-so [the administrator] know,' out of care and concern.—HS Counselor

It's usually the teachers [who let us know], because the teachers would be the ones obviously to notice the change in attendance pattern. Usually the teachers will come to us first, kind of like a red flag.—HS Counselor

Attendance is like a symptom. There's stuff that's happening underneath that's causing the attendance issue. The attendance is what we can see quickly, that suggests there is a problem. And so that is your flag, that's your symptom.—HS Counselor

Attendance specialists are not typically the ones to first bring a student’s attendance issues to a counselor. Rather, counselors say the reverse is true. Counselors are more likely to approach attendance specialists with questions about a student who teachers say may be having problems. Part of the reason that alerts tend not to flow from attendance specialists to counselors is that there are limits to what specialists “see” on attendance reports. For example, an attendance specialist can write up an attendance contract for a student after three missed full days of school, so he or she watches for students who cross that threshold. However, if one or two of the student’s teachers do not take roll or report absences, then the student is shown as present for a class or two and the reporting system will not flag a missed full day of school.

We would contact an attendance specialist [for example, if a teacher] says, 'Hey, I haven't seen so-and-so in a while.' Then we can contact the attendance specialist and

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say, 'Can you check on them? Have you heard anything else about them?'—HS Counselor

Counselor 1: *[Attendance specialists] get involved by referral.*

Counselor 2: *Or when their numbers are so high on the reports that they get, they can't ignore it.*—HS Counselors

Proactive Identification

Counselors also proactively identify students who may have difficulty. For example, one DOC mentioned that administrators review incoming 9th graders, identify those they anticipate will struggle, and plan supports for them. At another DOC's school, teachers commented that when a student did not graduate it was often the case that his or her teachers could predict as early as 9th grade that completing high school would be a problem. So, this DOC has begun a practice of reviewing the grades of incoming 9th graders, filtering the student list by "any failing grades." Recently, the DOC found nearly 10 students who were not eligible to be promoted from middle school. However, some of these students—oftentimes, special education students—are getting so much older than the rest of the middle school population that they are promoted because they cause difficulty in the middle school.

The administration will take a look at the incoming 9th graders and...Identify [those who have been struggling] so we can, ahead of time, start focusing and seeing what kind of supports they need. We've even begun to set up different mentors to also check in with them.—HS DOC

As an aside, counselors noted that when one student is at risk of dropping out, it often means that siblings at that school or other schools likely need to be supported as well.

When you have one kid who's missing a lot, and in danger of dropping out, you [may] also have multiple [siblings] at risk. For example, one student...we just barely got his older sisters through. His mother [has] mental health issues. He was kicked out of the house and was literally jumping from friend to friend to friend, just in order to come to school a couple of times a month.—HS Counselor

Students or Parents Seek Help

To a far lesser degree, parents and students themselves sometimes approach the counselor on the topic of dropping out.

Occasionally, parents might call and say, 'Look my daughter doesn't want to go to school. I don't know what's going on.' Or, they might say what's going on but just to let us know that so-and-so doesn't want to come to school anymore. And then sometimes they say, 'You know, Miss _____, [student] is working two jobs and he's saying he's not going to come to school.'—HS Counselor

I've also had the kids come to me and say, 'I think I want to drop out. It's too hard,' especially the special education students. I had two that I can think of that hopefully will be graduating this year who came in their sophomore year and said, 'We think we're done'. So sometimes they'll self-identify. It's rare, but they'll do it sometimes.—HS Counselor

Communication with Students Who Are at the Point of Dropping Out and Their Parents

Relatively speaking, it is not often that the student's parents are involved in conversations about dropping out and alternatives to doing so. In fact, parents and family issues are at the root of the problem in many cases.

...from what I've seen with my few students [at risk of dropping out], there's a lot of family stuff usually going on. Like in one situation, a student's not supported by their parent to attend school. They want [the student] to work, they want them to contribute to their household because they need the funds...Or, the student sometimes can't talk to their parent, because the parent has significant mental health issues. I have a situation right now with a kid with divorcing parents. And, the kid is shut down emotionally. We've tried very much to get them mental health services outside, but the parents aren't following up with DHS. It makes it really hard if there isn't that follow-up. Also, the kid is over eighteen. You're a difficult situation then.—HS Counselor

Counselors face several challenges reaching these at-risk students and parents. These include:

- Many of these students are at school only sporadically and cannot be reached by other means. Contact information for students and parents in this situation is often unreliable. Counselors try to “catch” students on their rare attendance days. Large school sizes exacerbate the challenge of catching up with students when they are in school. In some cases when students “disappear,” the counselors have a hunch the student has moved away, but the counselors have no way to confirm that. This subset of students who depart without a word includes some who came from other jurisdictions and, as the counselors put it, “never lived here in the first place.”
- Parents are not involved. In other words, there is no way to get help from home. And, many times, the parent's own challenges are part of the problem.
- When students are over 18, attendance specialists do not get involved because of the student's adult status.

To overcome these challenges, DOCs mentioned doing occasional home visits.

We do home visits. We did a couple last year to try to get students to come in. We just knock on their door. Sometimes they don't open the door. We'll hear movement, see the curtains moving, then they'll finally open the door. We'll come in. We'll talk with them and find out what's happening. Is it, 'I haven't been in school because I have to work, I have to pay an [immigration] attorney?'—HS DOC

Counselors made a point of specifying that their conversations with students are never punitive. Consequences like after school detention are given by school administrators and not counselors.

[The conversation is] like, 'What's going on? I'm concerned that you're not coming to school.' So it's more just to allow the student to talk. And sometimes it takes more than one visit to find out what's really going on.—HS Counselor

Counselors' Descriptions and Perceptions of the Safety Net at APS

Before they were asked their opinions about the alternatives APS provides to help those at risk of dropping out, both DOCs and counselors spontaneously praised the offerings and said they were glad for them. Overall, they serve students well.

I do think in Arlington, we have some great programs available. I know the counselors [work hard to help]. We're meeting with the admins, meeting with the specials of the school, and trying to find alternatives. We can call out to Langston. We can call up the Career Center. We've got Arlington Mill. We've got New Directions. We've got so many different ways to try to provide that additional support. To me, it's really saying something when the student isn't making it. Because there are so many supports.—HS DOC

I think everything we've been naming is a strength. All of these [alternatives and supports] have been designed as different ways of trying to reach and help our students. I've worked in other counties. There are a lot more different types of programs and opportunities to try and reach our students here in Arlington.—HS DOC

The counselors and DOCs clearly are very knowledgeable about the supports available in Arlington to help them prevent student dropouts. And, they say that they support one another to a great degree in trying to find solutions. Any questions they had were not a lack of knowledge, but were related to how to work with the safety net in very specific cases.

I think it's nice that we're small enough that we do know people. That's all very easy.—HS DOCs

When you're talking about communicating, I think folks are pretty good at calling and trying to brace one another, too. If something's not working, we'll call somebody else and say 'Hey, what have you done, what have you tried to do?'—HS DOCs

They think of the safety net as a set of possible solutions and, among them, one should be a good match for a particular student. In other words, they do not conceive of the safety net as a set of layers with a final, last-resort endpoint. DOCs and counselors specified that the safety net works best for students under age 18 because they are not yet considered adults and

counselors can access support such as support from the courts and local mental health services. In fact, DOCs noted that being court-involved, while unfortunate, can very much help ensure students come to school. In some cases, they see students who do extremely well while court-involved drop out once the court determines they have done well enough that the court stops overseeing the student.

Positive highlights of the safety net include Langston High School Continuation Program and Arlington Mill High School, as well as the New Directions program, which prevents dropping out by providing small group attention and even morning pickup and afternoon dropoff to solve transportation problems. The addition of HILT capability at New Directions was very warmly received. At least one high school has recently tried not requiring high school seniors to have a full schedule. The effort has had mixed results in counselors' opinions—both freeing some students who have obligations such as work to support their families, while also unfortunately allowing some students to feel even less connected to school or to push the boundaries of these concessions.

I feel like [allowing some students to not have a full schedule] has really helped a lot of students, and hurt a lot of students. But for many it's definitely helped, because they are able to work and fulfill other obligations, but for some it's hurt.—HS Counselor

Yeah, sometimes we'll try to work with students [and make arrangements so] they don't have to come to school until ten o'clock. Then, guess what. Now they're not coming until eleven o'clock.—HS Counselor

Another part of the safety net, the ISAEP (GED) program, was valued. All of the high school counselors and DOCs knew, top-of-mind, the APS staff member to turn to for help with students' GED needs. The counselors saw the GED program as best-suited not for struggling students but instead for successful students who simply wish to be done with high school and move on. Some said that, despite the independent nature of GED study and completion, it is not ideal for students with issues such as anxiety and school avoidance because these students typically wish to have a diploma and not a GED. It is also not well-suited to students who struggle academically because GED completion requires good reading skills and a great deal of study.

Counselor 1: [GED program] would work really well for a kid who is very independent, with a lot of educational background anyway.

Counselor 2: [Agreeing] who just really wants to go off to NOVA, the community college, and get a certification in something.

Counselor 3: It's for that kid who's a great test-taker, doesn't like homework, and wants to just graduate.

*Counselor 2: And it's not even for our mental health kids who are stuck in their homes. They **don't want** to have a GED. They want the diploma because they want to be able to qualify for a university, and do university work online.—HS Counselors*

I had one kid, many years ago, who was behind in credits because they were homeless and he had a broken-up education. He was smart, and he was turning 18 and had to come back to school for another whole year. He was like, 'Or I could just get my GED and go to college?' I said, 'Yeah.' He said, 'Yes, I'm going to go do that.'—HS DOC

I don't think it's possible for the students I work with [to succeed in a GED program]. They would have to change the whole program, and offer classes, to raise the kid from down here, up to there...to get their reading where it needs to be. That would take years. So they might as well be in high school.—HS Counselor

Counselors and DOCs' Suggestions Regarding APS and Potential High School Dropouts

The major theme in counselors' and DOCs' suggestions was coordination. Their top suggestions were about trying to coordinate among county services that touch students' lives and perhaps even working with students' employers or NOVA community college. More specifically, suggestions about coordination included:

- Set up a monthly forum for representatives from schools and other services such as police, Department of Human Services (DHS), and the courts to go over specific cases and discuss how to best help. Among DOCs, this suggestion was most prominent.
- Provide an in-school DHS contact person who can assess a student's and family's mental health and other service needs and serve as a navigator to help them connect with providers. Among HS counselors, this suggestion was the most prominent. They said that a DHS staffer (as opposed to an APS employee) would have advantages such as knowing the mental health care system and the ins-and-outs of health insurance. Additionally, a non-school resource person would, hopefully, help parents and students feel more comfortable. He or she may be better able to position and address their challenges holistically, not just as they relate to school.
- Coordinate with other parts of the community such as employers and NOVA to prevent dropouts in general. The goal would be to ensure students develop a useful skill set. For example, perhaps APS would absorb some costs so that students can be licensed in a trade at NOVA.

I think if we could create a forum once a month with an administrator from the school, someone from the police, someone from the courts. Just this 'think tank' together. Students' problems are not [solely] 'school' problems [but are systemic in their lives] and they are served by many agencies that might be able to help better by working together.—HS DOC

I feel like NOVA may be an underused resource in this, too. They have pathways for the kids who aren't going to graduate, and they also have workforce development. We had a [NOVA] counselor come and she talked about all of these great things for kids who are aging out. The two barriers are that it's expensive and to get licensed you need [immigration] documentation. [The kids said they had heard off-the-record advice], 'Just take the course, don't worry about the license. You'll have the skill set, someone will hire

you.' The kids were so jazzed. They're 21, 22, ready not to be in high school with 14-year-olds anymore. Learning a skill, that's practical. Maybe we could absorb some of the cost.—HS DOC

[My idea is] a DHS liaison or something similar, someone who can come in, evaluate the student onsite, and maybe speak with the parents, so that they have someone to connect to right away. This would mean we're not trying to convince them to go someplace [unfamiliar and] out of sight...We used to have that in every high school. It came from the 9/11 grant.—HS Counselor

...yes [DHS could help with] stuff like, 'Do you have insurance?' And 'Oh, okay you do. Let's call that number together and get a list of who you could possibly see in the area. Maybe they have recommendations as to who's a good child psychologist.'—HS Counselor

Because a lot of times they want that help. We give them the information. But, it's them making the time to get there [to DHS or a health care provider]. All of the other things that are going on, that are maybe even causing this problem, prevent them from actually getting to help.—HS Counselor

The counselors' and DOCs' other suggestions related to students with special needs who also have an added need such as HILT or childcare:

- Establish a post-8th-grade academy for students who fail in 8th grade, but are neither well-suited to stay in traditional middle school (e.g., too old) nor to go to the Transition 9 (T9) Program (i.e., because they have special education needs that T9 cannot serve).
- Provide service specifically designed for special needs students who have children or HILT needs.
- Offer alternative schooling for students who perform well academically but experience mental illnesses such as schizophrenia or bipolar disorder and find attending a comprehensive high school to be overwhelming.

That, I think, is a real need in the county—these kids that really need T9, but they're special ed services, so T9 doesn't necessarily have the support for them. I would make an academy for the kids who fail eighth grade. But instead of going back to the middle school, they would go to the Career Center. They'd target just those core courses that they didn't pass in eighth grade, then try and get them started with some other courses.—HS DOC

What I see is that we have these kids that aren't making it at the comprehensive high school because we're all hitting over 2,000 [students per school]. They need a smaller setting, but they're in special ed. They have these service hours to get them in a smaller setting within the comprehensive high school, that's still not working. Then we try to put them at one of the programs, and they can't go to the programs because they have service hours.—HS DOC

Counselor 1: *Fortunately Arlington has other programs that could be a good fit...Our high schools run on a full school year schedule, whereas there are other programs that run on semester schedules, that could be helpful for the student to be able to work and then go to school part time...*

Counselor 2: *But generally, they can't take special education students, or those that need a significant amount of assistance, because they don't have the educators there for it.*

Counselor 3: *It just depends on what their accommodations are, because I have had students with IEPs go to Langston, and it's worked for them. It's just situational I think, because they only have one special educator.*—HS Counselors

I also want to mention, the [need for a] parenting teen program, especially for those who have special needs. We don't have any way of helping them.—HS Counselor

Counselors offered three additional suggestions.

- Ensure smaller class sizes and workloads that would allow teachers to notice issues more readily and react.
- Bring up alternatives sooner—as early as 10th grade—to better position them as true alternatives and not punishments or last resorts. Options like Arlington Mill and Langston are a privilege and adults should help students see them in that way.
- Provide as much support as possible at the comprehensive high school. While leaving the original comprehensive high school for an alternative school or program solves some problems, it can also cause new ones (e.g., new transportation needs, leaving friends, making it more difficult for the original counselor to track students' progress).

We can't ignore the sizes of the schools and the sizes of the classes. The resources in Arlington are amazing, but it doesn't change the size of everything. [I'm talking about] in the very beginning, how these kids get referred. Well it might take a really long time before they get referred, because the teachers have so many students, and they're overwhelmed just like we are.—HS Counselor

I think there's a lot of disconnect when you refer the student to another building, you kind of lose ... The student is already used to this building and how to get here, and their friends here, and they feel comfortable.—HS Counselor

Student Voices

Reasons for Dropping Out

As noted, just three students participated in a phone interview. They represent three different challenges. Yet, none of the three openly spoke of the major issues counselors highlighted (i.e., the need to work and mental health issues). Perhaps students with those particular major

issues were less likely or unlikely to be successfully recruited. Nonetheless, the stories of the three who did participate touch upon many issues that DOCs and counselors raised.

One student interviewed gave birth to a baby during her senior year. She attended school up until his birth and said she was within weeks of graduating at that point. She had already moved to an alternative APS high school for reasons unrelated to the baby and was likely to graduate. After the baby, she “was just going through a lot,” she said. She could not afford child care. “What am I going to do [without child care]?” she asked. Her counselor noticed she needed help. School tried to support her by encouraging her to pick up her work and do it at home. But, she felt like she needed to be with a teacher to really understand. Looking back, she is regretful, saying “I should’ve just taken the work home.”

A second interviewee described himself as never having “been excited to go to school,” but said that once he actually got into the school building he liked school. In large measure, he blamed his dropping out on class schedule changes that distanced him from his friends. Even when pressed by the interviewer that perhaps there was more to the issue than just not being with friends, he insisted—although ultimately, he described a few additional factors. First, his perception was that he was “kicked out” as opposed to having opted to leave. He said that he was told (he could not recall by whom) that his poor attendance meant he was “blacklisted” from his home high school and no longer allowed to attend. After hearing that term, “blacklisted,” he stopped trying, he said. However, when asked again, he said it was a term he heard only once. It was not regularly used nor its meaning discussed in full, in his recollection.

The third student dropped out one semester and earned a GED the following semester. This student, too, had taken one of the alternative paths to graduation and changed schools before officially dropping out. He quit because high school was not interesting to him, he said. His mother was key to getting him to complete the GED. She is also influential in his plans to attend community college.

Students’ Use of Options

Information about options that might make it possible or easier to graduate had clearly been shared with all three students. All three were identified and routed to one or more APS support in their high school careers. Two of the three students had moved from their comprehensive high school and attended an alternative available at APS. The third definitely recalls learning about Langston as an option, but said that he had decided he would rather not attend somewhere other than his original high school. Two of the three also attended classes at the Career Center during their high school years. One mentioned participating in a program that his probation officer arranged. The student could not recall the program name, but given the probation officer’s involvement, it is likely New Directions.

When students were asked which adults tried to help or to persuade them to stay in school, all three mentioned high school counselors, and one mentioned an “instructional studies” teacher who was very helpful to him. This student also had high praise for his 10th grade counselor.

But, when he was assigned a new counselor in 11th grade, he never established the same relationship.

Students' Suggestions for APS

The core theme in students' suggestions is wishing adults would be better listeners. In describing how he has finally come so close to deciding to drop out, one student said "They didn't listen, didn't hear what I have to say. The meetings were all them. Them talking. Them deciding." Notably, this student is not entirely ready to say he has dropped out and he was provided with phone and email contact information to move forward with exploring options. Advice from the student who had a baby was simply, "Listen and try to do as much as you can." And, the student who is headed to community college said that his advice is, "Take the time to ask and understand what the person [student] wants to do in life."

Conclusions

Counselors' and DOCs' Input

Observations about What Brings Students to the Point of Dropping Out

- **The need to work to support one's family is, qualitatively speaking, top among reasons students drop out.** In general, there was strong agreement among counselors that the following reasons are major contributors.
 - The need to earn income to support one's family, or sometimes oneself. This need, and the concomitant risk of dropping out, is most pronounced *by far* among immigrant students. Fear of deportation exacerbates the problem, making students feel they must always prioritize working *now* over school so they earn as much as they can in the window of time they have. Second, many working students also have the challenges of being far behind their peers' grade level and not speaking fluent English when they arrive at APS.
 - Special education students who also have other, additional needs—such as childcare or flexible scheduling needs.
 - The need for support and childcare for parenting teens. Counselors said it “was a huge loss” to lose this program in the past.
- **Other reasons for dropping out that were emphasized, although to a slightly lesser degree, included:**
 - Mental health issues—either the student's own difficulties such as depression, schizophrenia, or anxiety *or* a parent's mental illness. Counselors saw this as a major contributor while DOCs felt that there were good supports in place and students can usually be prevented from dropping out.
 - Substance use or abuse—typically counselors spoke of the students' issues, but sometimes parents' issues were also mentioned.

How Students Come to Counselors' Attention as At-Risk for Dropping Out

- **Attendance is almost always the first “red flag.”** Teachers are, by far, the school staff members most likely to alert counselors to attendance problems. Attendance specialists tend not to be the ones who approach counselors. In fact, the reverse is more typical—that is, the counselor will approach the attendance specialist with questions about a student. To a much lesser degree, students or parents approach counselors with worries about dropping out.
- **One reason it is less common for attendance specialists to approach counselors is that there are limits to what the specialists can “see” on reports.** The specialists can write attendance contracts for students who miss three full days of school. They monitor for

those who cross that threshold. Yet, if a single teacher does not report absences, the reporting system will not flag a missed full day of school.

- **DOCs noted that, as early as freshman year, they can often identify students at risk of dropping out.** At one school, administrators review incoming students and designate mentors for those they think may be at risk. At another, the DOC sorts the incoming 9th grade database for any failed classes and the reviews those students more carefully to ensure they are eligible to begin high school. In a recent example, this DOC found nearly 10 students who were not. Many of these students have special needs.

Communication with Students Who Are at the Point of Dropping Out and Their Parents

- **As a broad generalization, parents have limited involvement in discussions between counselors and the student about dropping out or alternatives.** In some cases, a parent's mental health or substance use issues are part of the problem. In others, the parents are simply not involved or the student is over 18 years old.
- **Counselors often find it challenging to even get in contact with a particular student who they believe is at risk.** These students are rarely at school. When they are, the large busy school building can hinder efforts to catch up with a specific student. It is also common for contact information to reach these students outside of school to be unreliable.

Counselors' Descriptions and Perceptions of the Safety Net at APS

- **These counselors and DOCs felt very positive about the safety net at APS.** Even as they openly discussed shortcomings, they emphasized how much they appreciate the alternatives APS provides to comprehensive high school and shared a strong perception that APS has more to offer potential dropout students than other jurisdictions do. Importantly, they offered this view spontaneously, without being asked.
- **Counselors and DOCs think of the safety net as a set of possible solutions and, among them, one should be a good match for a particular student.** In other words, they do not conceive of the safety net as a set of layers with a final, last-resort endpoint. For example, one student may need flexible scheduling in order to work and contribute money to his or her family. Another student may wish to earn a GED diploma in order to move on from high school sooner.
- **They feel very knowledgeable about the options they can offer students.** One benefit to the small size of the Arlington school system, they said, is that staff members know one another well and always know who to call.

Counselors' and DOCs' Suggestions Regarding APS and Potential Dropouts

- **The major theme in counselors' and DOCs' core suggestions was coordination.**
 - Set up a monthly forum for representatives from schools and other services such as police, Department of Human Services (DHS), and the courts to go over key cases and discuss how to best help.
 - Coordinate with other parts of the community such as employers and NOVA specifically to prevent dropouts. The goal would be to ensure students develop a useful skill set. Coordination may involve planning for individual students or broader help such as APS absorbing some costs so that students can be licensed in a trade at NOVA.
 - Provide an in-school DHS contact person who can assess a student's and family's mental health and other service needs and serve as a navigator to help them connect with providers. Among high school counselors, this suggestion was the most prominent. They said that an external, non-school employee would have many advantages such as knowing the mental health care system and the ins-and-outs of health insurance. He or she may be better able to address students' challenges holistically, not just as they relate to school.

- **Their other suggestions related to students with special needs who also have an added need such as HILT or childcare:**
 - Establish a post-8th-grade academy for students who fail in 8th grade, but are not well-suited for either traditional middle school (e.g., too old) or for the Transition 9 (T9) Program (i.e., because they have special education needs that T9 cannot serve).
 - Provide service specifically designed for special needs students who have children or HILT needs.
 - Offer alternative schooling for students who perform well academically but experience mental illnesses such as schizophrenia or bipolar disorder and find attending a comprehensive high school to be overwhelming.

- **Counselors offered three additional suggestions.**
 - Ensure smaller class sizes and workloads that would allow teachers to notice issues more readily and react.
 - Bring up alternatives sooner—as early as 10th grade—to better position them as true alternatives and not punishments or last resorts. Options like Arlington Mill and Langston are a privilege and adults should help students see them in that way.
 - Provide as much support as possible at the comprehensive high school. While leaving the original comprehensive high school for an alternative school or program solves some problems, it can also cause new ones (e.g., new transportation needs, leaving friends, making it more difficult for the original counselor to track students' progress).

Students' Input

- **The three students who were interviewed all used at least one alternative before dropping out**—the Career Center, New Directions, and Langston. One earned his GED and plans to go to community college.
- **When asked what adults tried to help or persuade them to stay in school, they indicated their counselors.** And, although, others were present in some discussions, they mostly recalled their counselors' involvement.
- **Their key wish looking back is that adults would be better listeners.** When asked for suggestions, their answers all centered on the theme of listening.

**Appendix A - CTAE Evaluation Discussion Guide
HS Counselors and DOCs on the Topic of Dropping Out of High School**

**DISCUSSION GUIDE ARLINGTON PUBLIC SCHOOLS (APS)
Focus Group Research on Career, Technical, and Adult Education (CTAE)
and Gifted Services
Discussion Guide – HS Counselors and DOCs
May 2016**

INTRODUCTIONS/WARM UP (10 minutes)

Welcome everyone. My name is _____. First, thank you for taking the time to join us. A word on our purpose today... Everyone here is a high school counselor in Arlington Schools. Our purpose is to talk about your experiences in that role and learn from you in order to strengthen two APS programs-- Career, Technical, and Adult Education (CTAE) and Gifted Services. Our discussion is part of larger evaluations underway for each program. We know how busy you are, so we'll cover both two today so we can have just one meeting instead of two.

A. Disclosures

- Audio taping. With your permission, I would like to audiotape. The tape will only be available to me to help me write my report. Once my report is accepted in final, I will delete the tape. I will not share it with anyone else.
- Confidentiality.
 - This focus group is unusual in that you may know one another or know people in common. I hope that you will feel comfortable sharing your opinions. And, I ask that you keep what is said here in confidence. That said, obviously I cannot bind anyone here to keep what they hear confidential. Therefore, you may choose *not* to say some things. If that happens and you wish to share information with me later, please feel free to contact me by phone or e-mail.
 - When I write my report, it will not identify anyone by name. Rather, I will use phrases like, "Several counselors expressed the opinion that _____."
- I am a professional moderator, and not an expert on teaching, school administration, or business community partnerships. My job is to listen to you and convey your input to the Offices of Planning and Evaluation, CTAE, and Gifted Services.

B. Participant introduction

- Your first name
- Which school is "yours"?

STUDENTS (10 minutes)

Let's talk first about the students you work with who are at risk of dropping out...

Appendix A - CTAE Evaluation Discussion Guide
HS Counselors and DOCs on the Topic of Dropping Out of High School

1. What patterns do you observe about what brings students to the point of dropping out? Our focus today will mostly be on those students who have reached a point where it is clear that they will leave the traditional path to graduation. This evaluation focuses on the layers of the safety net that come into play for them.

COUNSELORS' APPROACH (20 minutes)

1. How do these students typically "get on your radar?"
2. I made it sound like it's easy to know when it is "clear that they will leave the traditional path to graduation." But, it may or may not be. What are your thoughts on that?
 - a. When it becomes clear, what do you do and say in those cases?
 - i. Are there some things you say to all students? [What?]
 - ii. What do you say to parents?
 - b. How do you know when to bring up options other than the traditional path?
 - i. And, what options do you bring up?
 - ii. Do you use different approaches or make different suggestions in some cases?
 1. What factors do you consider in deciding how to persuade students or what paths to suggest?
3. For students who are at this point, what staff members at school are typically involved?
 - a. How so?
4. Once students are sure they will drop out, what do you observe about what students are thinking?
 - a. Thinking of students who ask about their options for completing high school or GED, what do they ask?
 - b. How interested are students in other options?
 - c. And, what do parents ask?

SAFETY NET AT ARLINGTON (15 minutes)

1. Let's back up and sketch out the safety net as it is designed today. Describe it for me. First what is the net like at school? Then, at the county level. [Sketch together on easel.]
 - a. At each level, what are its strengths?
 - b. Likewise, what are its weaknesses, or ways it could be improved?[If ISAEP or other parts of net are not known, fill them in after discussion. Share attached description of HSC, GED, ISAEP.]

**Appendix A - CTAE Evaluation Discussion Guide
HS Counselors and DOCs on the Topic of Dropping Out of High School**

2. Looking at these options—or, the layers of the safety net—how well-educated about them do you feel like you are?
 - a. If this is an area for improvement, what would be helpful to know about each layer?

3. To wrap up this part of our discussion...

Of course, Arlington Schools hopes 100% of students will graduate with a traditional high school diploma. But, indeed, there needs to be a plan for when that is not going to happen. As we see, the plan has several layers of options. My focus now is to give feedback from you that can help APS make sure that ISAEP is the best last layer of the safety net that it can possibly be.

So, thinking together, what suggestions or thoughts do you have on how well students who need that last safety net are being navigated into it?

- a. What is working well?
- b. What could be improved?

GIFTED SERVICES (30 minutes)

Let's turn our thinking to Gifted Services.

1. How do you come to know who gifted students are, if you indeed come to know?
2. Describe your role when it comes to students who have been identified as gifted.
3. What social and emotional needs are gifted students experiencing, that you see as linked to their gifted status, when they come to you?
 - a. How common is it for you to find these kinds of needs or other related issues in the classroom arise for gifted students?
4. How familiar are you with the gifted identification process?
 - a. Is it something you're normally involved in at your school (e.g., attend screening meetings)?
 - b. I understand that the identification process has been revised. It includes two pathways: mass screening (Naglieri Nonverbal Ability Test 2nd grade; CoGAT (cognitive abilities test in 4th grade) as well as referral (teacher, parent, community or self). Afterward, data are collected—work samples, Gifted Behavior Commentary (GBC) survey from teachers, testing. Are these familiar to you?

**Appendix A - CTAE Evaluation Discussion Guide
HS Counselors and DOCs on the Topic of Dropping Out of High School**

5. How much and in what ways do you work with the Resource Teacher for Gifted (RTG)?
 - a. Do you see that as too much, too little, just right? (And why?)
 - b. For what reasons is it that much/little?

6. I know that in high school, gifted students are expected to self-select to find their own challenges such as in AP and IB. And, I also know that the goal is to be sure that daily instruction meets the needs of gifted students. To what degree would you say that happens?
 - a. How does this goal fit into the rest of your work?
 - b. What kinds of support would help you to increase (or make it easier for you to continue) differentiating for gifted students in classrooms at your school?

CLOSING (5 minutes)

We have talked about two disparate topics. But, they are both related to serving students in special circumstances. As we wrap up, do you have any concluding thoughts or advice to share with APS on these topics?

Total time: 90 minutes (90-minute session)

**Arlington Public Schools
High School Continuation – GED - ISAEP
(content pasted from apsva.us)**

HIGH SCHOOL CONTINUATION

Since its inception in 1929, the High School Continuation Program has offered students an alternative way to earn a high school diploma. Although students are responsible to the same course requirements, numbers of credits, and SOL assessment verification as students in the comprehensive high schools, the program offers flexibility in the way and timeframe in which students can earn a high school diploma. Important information includes:

- Students are able to earn six or seven credits in a year.
- The program is divided into two semesters, and students may take one, two, or three two-hour classes each semester.
- The financial cost to students varies with age, for more information for Langston [link].
- Students may refer themselves to the program; the comprehensive high school may refer students; the courts may refer students.
- Students must be at least 16 years of age to enter the HSCP; there is no upper age limit.
- Langston is relatively small programs, with approximately 120 students.

GED

The General Educational Development (GED) Program is designed for persons who were once enrolled in school, but for various reasons, did not complete the requirements for high school graduation.

Classes are available for persons who wish to develop or refresh the skills necessary for successful completion of the GED test. Students are encouraged to take the GED test when their progress indicates their readiness.

The Individual Student Alternative Education Plan (ISAEP)

Current Virginia Law (as of November 1999)

Virginia law requires that all residents attend school until they receive a high school diploma or reach 18 years of age. In December 1999 the law was amended to allow students between the ages of 16 and 18 to choose an alternative school plan to satisfy the legal requirement. One option in the new plan is the GED combined with career training and counseling. This plan is called the Individual Student Alternative Education Plan (ISAEP).

A student who enrolls in the Individual Student Alternative Education Plan must follow and complete all requirements of the plan. Failure to do so puts the student in violation of the Virginia compulsory attendance law. (Virginia School Laws 22.1.254)

Students in an ISAEP program are counted in the average daily membership of the school division. SOL requirements do not apply to the ISAEP.

Appendix D5

ISAEP ELIGIBILITY REQUIREMENTS:

1. Meet with principal (or designee) and parents for counseling on the impact of failing to complete high school and for planning an individual student education program
2. Obtain a signed permission form from parent or legal guardian to take the practice and reading tests. *(All practice and reading tests are administered by ISAEP staff.)*
3. Take test for reading level. (A minimum reading level of 7.5 is required for eligibility to begin the ISAEP.)
4. Take practice tests in all four GED subject areas and score at least 125 in each area. (A total score of 600 is required for passing the actual GED test.) The four areas are: Reasoning through Language Arts, Mathematics, Science, and Social Studies
5. Meet with GED Coordinator and parent or legal guardian for planning an individual student education program. Obtain a school withdrawal notice to be signed by principal or designee. *(The student's home school must sign withdrawal notice to be officially enrolled in ISAEP at the Syphax Education Center.)*
6. A potential ISAEP student's attendance and disciplinary records are reviewed before being accepted into the ISAEP.
7. In order for a student to be eligible for enrollment in the ISAEP program, the student must be at least one full year behind in credits. Exceptions to this requirement may be made for students who are credit deficient and who are at risk of leaving school before completion.

ISAEP COMPLETION REQUIREMENTS:

(Students must take the following sequential steps)

1. Receive career testing and counseling (Virginia Wizard
2. Take practice tests in all four GED subject areas and score at least 150 in each area. (A total score of 600 is also required for passing the actual test.) The four areas are: Reasoning through Language Arts, Mathematics, Science, and Social Studies
3. Take placement test at Northern Virginia Community College and meet with counselor from Northern Virginia Community College
4. Complete Economics and Personal Finance Course if not already completed at home high school
5. Enroll in certification course at the Career Center or take the Microsoft Certification Course while enrolled in the ISAEP Program
6. Take and pass the GED test after verification of completing all the ISAEP requirements

**Appendix B - CTAE Evaluation Discussion Guide
Students on the Topic of Dropping Out of High School**

**DISCUSSION GUIDE ARLINGTON PUBLIC SCHOOLS (APS)
Telephone Interviews
For Career, Technical, and Adult Education (CTAE)
Discussion Guide – Students Who Have Dropped Out
May 2016**

INTRODUCTIONS/WARM UP (5 minutes)

My name is _____. Thank you for agreeing to share your experiences with me. As you probably remember from your invitation, I am talking with students who have left Arlington Schools—either dropping out before graduation or thinking about doing so. Our goal in talking is for me to hear about your experiences and learn from them in order to strengthen what Arlington has to offer students in the same position as you.

[NOTE: To the extent possible, students who have dropped out will be recruited over students who are actively considering it. Still, the introduction is worded as if the student may not have decided yet so that the door remains open.]

C. Disclosures

- Audio taping. With your permission, I would like to audiotape. The tape will only be available to me to help me write my report. Once my report is accepted in final, I will delete the tape. I will not share it with anyone else.
- Confidentiality.
 - When I write my report, it will not identify anyone by name. Rather, I will say things like, “Several students said that _____.”
- I am a professional moderator, and not an expert on teaching or schools. My job is to listen to you and share your feedback with Arlington Public Schools.

D. Participant introduction

- Your first name.
- When you left school, what were your reasons?
And, if you had to pick one main reason, what would you say it was. [Learn whether the student wanted to leave or left reluctantly to provide context for the discussion.]

YOUR STORY (5 minutes)

2. I'd like to hear *very briefly* about your experience with school. We'll keep it short. But, this way, I'll know a little bit about your story.
 - a. When did you start thinking you might not finish high school or might get a GED instead?
 - i. At that time, what (if anything) was pushing you toward finishing or GED?
 - ii. And, what was pushing you away?
 - b. Give me a picture of what happened after you started thinking you would not go all the way through to graduation in the regular way.

INTERVENTION (15 minutes)

1. Thinking back, who would you say *first* noticed that you might not stay in school? [Especially focus on adults: parent, probation officer, assistant principal, attendance specialist, counselor, teacher, ISAEP]
 - a. How do you know they noticed?
 - b. [For each who noticed earliest] What did _____ say to you?
2. Over time, who talked to you about your options? [Work to learn who spoke to the student and the options they described, as far as the student recalls.]
 - a. As far as you remember, what were the options?
 - b. And, what did you think about each of those options?
 - c. Did you try different options along the way? (staying in school, Langston, ISAEP)
3. Last topic. I'll describe something to you and then I'd like to hear your thoughts.

Overall, Arlington Schools hopes 100% of students will graduate with a traditional high school diploma. But, in reality, there needs to be a plan for when that is not going to happen. The plan right now has several layers of options. The hope is that every student who considers leaving school goes to the earliest possible alternative to stay in school. Other options are:

- Stay in regular school and graduate.
- Go into High School Continuation—Arlington Mill or Langston—where you earn a diploma but the schedule is more flexible and there are fewer students so there is closer attention and support for each person.
- Go into the ISAEP program, which has career counseling, GED practice tests, skills training, and help with taking and passing the GED.

Appendix D5

Did you hear about all of these options?

- a. If so, from whom?
- b. What are your thoughts on how people at school and others could have been helpful to you then?
- c. And, how can they be helpful now?

CLOSING (5 minutes)

What advice would you give APS when it comes to making sure that students who want to drop out find their way to the earliest possible alternate available that I described?

Before we go, let me share contact information for a very helpful person at Arlington—in case talking with me has made you think about going back in to find the layer that’s right for you. There surely is one. You can contact Jerri Young anytime at 703-228-7220, jerri.young@apsva.us. Her title is GED Coordinator. But, she can help you learn about all the potential options you have and make sure you find the best one for you.

If you want to share your phone number, email, or address, I can ask Jerri to contact you instead.

[If yes, write below.]

Total time: 30 minutes

Highlighted Qs only: 15 minutes (priority items if time is short)

**Arlington Public Schools
Focus Group Research with
Organizations Working in Partnership with
Career, Technical and Adult Education**

October 12, 2016

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Background

This research project focuses on program and service offerings of Arlington Public Schools (APS) that meet the needs of students who are working to acquire career and technical education. The Career, Technical and Adult Education (CTAE) program, offers courses in eight program areas:

- Business and Information Technology
- Computer Science
- Family and Consumer Sciences
- Health and Medical Sciences
- Marketing
- Military Science
- Technology Education
- Trade and Industrial Programs

CTAE forms local partnerships that involve the business community and APS students to foster training and career connections. As the CTAE website describes, “Students have many choices beyond high school: college, immediate employment, attend school part-time and work part-time, the military, or training programs. Deciding what direction to pursue after high school involves knowing themselves and understanding their interests, talents, and abilities...APS counselors and CTE teachers have information and resources to help students identify their career interests and help set them on the right education and training path to their chosen occupation or career.”

The APS Office of Planning and Evaluation (P&E) is conducting a multi-faceted evaluation of the CTAE program. The evaluation explores the CTAE program using many different means including enrollment data, surveys of staff and students, a commissioned report on the value of career and technical education courses in the eyes of college admissions offices, and classroom observations.

This report represents just one part the P&E evaluation. It summarizes qualitative research findings from five interviews with CTAE community business partners—three in the automotive sector and two in other sectors.

This qualitative research was conducted in summer 2016. Importantly, all of the evaluation’s data should be considered as a whole. In other words, interview findings will be most meaningful when considered together with findings from other facets of the CTAE evaluation. Also, in interpreting the findings presented in this report, it is important to note that focus group discussions are a qualitative research method. While the discussions produce rich, detailed information about the perspectives of those interviewed and opportunities to further explore relevant new perspectives, interview findings are descriptive in nature and cannot be generalized due to sampling approaches and small sample sizes.

Research Purpose

This qualitative research helps to answer the first of the two questions being asked by the CTAE evaluation, which is, “How effectively was the CTAE program implemented?”¹

Research Method

Five in-depth telephone interviews were conducted with business partners. Interviews lasted 30 to 60 minutes. Among APS partnerships, those with the local automotive industry are the most robust and far-reaching. Interviewees included representatives of both automotive and other types of partners such as civic associations—in order to learn what has made current partnerships successful and what could strengthen future ones. P&E extended invitations by mail and telephone using a list of partners generated by the CTAE program. In all, 5 partners participated—three in the automotive category and two in other categories. The discussion guide is attached as Appendix A. The questions were developed in collaboration with P&E and CTAE.

In brief, the partners’ guide explored:

- **The impetus for the partnership and the ways partners work with APS today.**
- **Perceived benefits and drawbacks of the partnerships.**
- **Suggestions for strengthening collaboration and promoting collaboration in general in the future.**

Detailed Findings

Impetus for Starting Partnerships and How Partners/APS Work Together Today

Partners noted three primary drivers for having started to work with APS:

- To develop future employees (primarily auto partners).
- Altruism and community-mindedness (partners from both auto and other industries).
- To meet a specific need the partner has that trained students could effectively fill (partners from both auto and other industries).

We need young technicians. [The auto-repair] field is aging. The field takes IT skills today. So, a lot our potential employees go into IT. We need to mentor and bring up those who are interested in our field.—APS Auto Partner

¹ The second of the two questions being asked by the full evaluation project is “What were the outcomes for the targeted population?” The focus groups and interviews described in this report did not focus on this question.

Years ago as a kid, I had work release. I'd go to school a half-day and work at a shop. It helped me out. Now that I have my own shop, I want to offer that same opportunity to students today.—APS Auto Partner

Our organization was started by teachers. [Partnering with schools] is part of our mission.—APS Non-Auto Partner

We sounded out possibilities with the Career Center because we needed trained people to videotape monthly civic meetings.—APS Non-Auto Partner

Three partners were not sure of exactly how the collaboration with APS began. For two of these, the relationship goes so far back that they simply do not remember the details. A third said the partnership's beginning extends years back, predating her tenure. Two partners said they had approached APS, as opposed to being approached by APS. In one of these cases, a customer who worked at the Career Center helped to get conversations started. In the other case, the partner placed several calls and found the right contact person.

The five interviewees shared several ways in which their organizations are involved with APS. The auto-industry representatives primarily employ APS students in an internship fashion. The banking-industry representative mentioned: in-school branches with trained students helping to staff, Career Day activities (grade-level appropriate, fun learning activities about careers in banking), bank tours, and a 6-week long Senior Experience program. In the Senior Experience, students work in a department at the bank. They must apply for that position. Thus, they go through the typical job application process from resume to interview to on-boarding. And, the civic organization partner uses the video-taping and editing skills of Career Center students to capture meetings.

Auto-industry partnerships are particularly numerous and successful at APS. In order to examine how to expand other partnerships, interviewees were asked why they think auto partnerships are so successful. They thought that reasons for the strength of the auto partnerships included:

- The tight-knit nature of the auto community (“we hear what’s going on”).
- The existence of a model for how students can work in partners’ businesses. In other words, potential new partners can see roughly how the relationship would work.
- Students’ familiarity with cars, often inspired by low-cost fixer-uppers students work on with family members or purchase themselves (“cars are what people know”).
- Interest among students sparked by entertainment media such as *Fast and Furious* movies and racing video games.

Benefits of Partnership with APS

The benefits of APS partnerships clearly accrue to both the students and to the business partners. For example, in one case, the partner’s work helps alleviate some pressure on the

schools for financial education. The partner explained that students who are highly involved learn in even greater depth about financial best practices, money management, and most importantly how to engage with an employer. The partner organization gets opportunities to be introduced to teachers and staff, and gain their goodwill and oftentimes, their business. In another case, students meet the partner's need for recordings of meetings. Students not only practice video and editing skills, but they also get to see civic involvement firsthand and network with local leaders. Across the board, these partners had high regard for APS and for its career and technical education-focused students.

Students learn how to engage with an employer...which is perhaps the single most important soft skill you need when leaving high school.—APS Non-Auto Partner

[Partnership] allows students to actually see civic engagement directly. They learn the issues, and meet the movers and shakers of the county. We have a gala in the spring and last year we invited the students. One parent who attended with a student said to me, 'I don't know what it is, but this work has had such an effect on my child, on civic activism.' The students were sitting with WETA executives, an extraordinary networking opportunity.—APS Non-Auto Partner

A strong theme among the auto-industry partners was that finding talent to work in auto maintenance and repair is difficult. Their partnership with APS helps toward solving that problem for two reasons. First, students arrive with excellent basic automotive knowledge they have gained at the APS Career Center. Second, the students have had enough exposure to automotive work to know whether they like it and want to choose it as a career—which increases the likelihood that they will be retained at employees.

We believe you're not going to just 'find' good technicians. You have to raise them. We are 'growing our own.' School does a very, very good job of giving them the basics. Then, we teach them 'our' way [of doing things]. I've currently got three staff from APS who have moved up through the ranks.—APS Auto Partner

The benefit [of the partnership] to the students is gaining knowledge. They get the basics at school, but are not hands-on as much as they eventually need to be working in the field. They have very good knowledge coming out of school, then we work to get them brand-oriented. We invest in them. We just sent one employee who came from Arlington through [brand] boot camp and he is now [brand] and ASE (Automotive Service Excellence) certified. This is an important investment for us both. One of our diagnostic tools costs \$10,800 [and we need skilled staff who know how to use it properly].—APS Auto Partner

We have a lot of [non-APS-program] applicants who come in and say, 'Hey, I changed my mom's oil and I want to be a mechanic.' But, Arlington students have background. Training goes faster. They're chomping at the bit. You know this is what they want to

do. They have an opportunity in a school setting to see if they like this work. So, they don't come in and then suddenly change their mind.—APS Auto Partner

The benefit to students is the opportunity to see this work in the real world, with all its plusses and minuses, while they are in an internship-type role. —APS Auto Partner

Partners also pointed out that the experience of being a mentor is positive, and greatly valuable to them. Auto-industry partners especially valued this role for current employees. They also pointed out that students who choose the auto industry in the face of social pressure to work elsewhere or go to college get exposure to successful professionals in the industry. These professionals can enable students to see the strengths of this field and engender positive feelings for students who specifically choose the industry.

The benefit to [business] is that the program is a way to give back. It gives staff a way to get involved in their community. And, it fulfills our mission to empower the financial lives of our community.—APS Non-Auto Partner

One benefit to us is that it's important for our employees to mentor. It's valuable work. And, it makes them feel important, as it should.—APS Auto Partner

I want them to see that this industry is not a last resort. I want them to feel, 'This is a profession.' Sometimes students who are not headed to 4-year college are pushed off to the side. Choosing this profession offers training and opportunities for growth. It has allowed me a comfortable living. You can own a home and support a family very well in this field.—APS Auto Partner

Drawbacks of Partnership with APS

Overall, partnerships are clearly win-win. In fact, most of the partners interviewed spontaneously said they hope for *more* involvement in the future. The challenges are primarily around the process of identifying students and making sure they are committed to their role as trainees and staff. All of the automotive partners told of instances in which students they had recruited either never showed up or began work but disappeared before the end of their commitment.

One downside is when students don't follow through. This year, three out of four showed. But, last year zero out of two did...This year, they had to apply. That process is very helpful to weed out those who really aren't interested.—APS Auto Partner

Partners struggle at times with students' learning curve as they move from the school environment to the workplace. They assume matters such as communication and responsibility are addressed in classes, but anything else instructors can do would be welcome. Specifically, some students arrive needing a stronger work ethic (e.g., awareness that any work you do not complete falls to a colleague, show a willingness to go above and beyond), better workplace

communication skills (e.g., how to properly speak to customers), and a greater sense of personal responsibility (e.g., cleaning up after themselves, not touching car interiors with dirty hands).

It's a steep learning curve to the real world. They need to be taught about work ethic and what is expected of you on the job.—APS Auto Partner

Lastly, one partner acknowledged that having student workers onsite “probably doesn’t help profit-wise.” But, this partner saw greater value in the partnership overall and any costs associated with having a student or learner onsite were more than off-set by that value. Another partner noted that his primary challenge in working with APS is his own extremely busy schedule.

Suggestions for Strengthening and Expanding the Partnership Program

A key strength of the APS Partnership program is that APS staff members maintain good one-on-one connections with representatives of the partnerships. Partners highlighted the importance of retaining this strength. One partner told of approaching another school system years ago to begin a partnership. There was clearly a lack of interest, with several different school representatives agreeing only to pass along information to students but nothing more. The attitude was described as, “I’ll give the information to students. And, they’ll do what they want.” The collaborative attitude at APS stands in stark contrast, says this partner. In fact, several interviewees mentioned wanting to increase their involvement and were keen to hear more about the evaluation results.

[Retain the strong connections that individual APS staff establish with partners.] What I experienced immediately with Arlington was that there was a person in charge of this program, this relationship, who had the backing of the principal and the county. The whole system backed him and that reflected back down to the kids. [By being interested and valuing partnership opportunities, adults sparked interest and pride among students.] I have access to the principal, to instructors if there are any concerns. These are things I value.—APS Auto Partner

[APS staff member] and I had to figure out the policies, make sure the students could work with us. These partnerships are probably something that needs to be worked on case by case. The big reason our partnership works is because [name] and I work well together.—APS Non-Auto Partner

All of these partners said they would recommend working with APS as a partner to others in the business community. In fact, they all said they had already done so. Partners actively want to help strengthen the program. Their suggestions included:

- Having conversations about how APS and partners could improve their work together. One interviewee strongly believed partners would be willing to invest by providing

expertise and likely manpower and funding as well—particularly if APS identified specific needs that partners could fill and asked for help.

- Publicizing the program more greatly in the business community. For example, showcase the program’s current good work and offer models to potential partners. Provide brochures and outreach material explaining the program. Use social media. Reach out to trade groups. Share success stories.
- Highlighting some of the well-known business names involved, which helps to give prospective partners a sense that the program has been vetted, that it is tried-and-true.
- Increasing educational offerings in competitive areas like technology/coding and in life skills like financial education.
- Sparking interest in technology (and subsequently in technology partnerships) by introducing the idea of technology-based careers to students early. Pique interest. Get students thinking, “I want to know about this.”
- Establishing a “Community Schools Department” tasked with identifying the needs of individual schools and filling them with community partnerships. This department would develop a strategic plan and focus on matching needs and partners.
- Seeking tight-knit business communities as partners, in particular, because it is easier to then attract more partners once you get a couple (e.g., one speculated that perhaps local photographers have a tight-knit community).
- Expanding current partnerships. For example, if a partnership offering exists at two schools, expand so that it exists at more schools.
- For internship-type programs, continuing to use processes—such as an application process—that help link only those students who are truly interested with employers. Being chosen to work in partners’ businesses is a privilege. All aspects of the process should highlight that fact and should help to “weed out” students who lack genuine interest and enthusiasm. The closer to a typical application process, the better.

I have asked, ‘How can I be more involved and helpful?’ I know Arlington staff don’t have a lot of time. There are probably things they’re having trouble implementing because they need manpower. Can we help? I assume the Career Center has a budget for this program. But, are there things not being done because funds are needed? Perhaps those of us involved could raise some funds or provide for a pilot program to make sure an approach would be effective before the county invests.—APS Auto Partner

Showcase what partners have done. And, provide a model. People typically don’t generate their own new ideas in a context like this. Potential partners need a model to look at, to work from, to imagine how this could work for them.—APS Non-Auto Partner

Conclusions

- **Business partners said they got involved to develop future employees (primarily auto industry), because of their altruism and sense of community (partners from all sectors), and to fill a specific need (partners from all sectors).**
- **In partners' view, they both provide *and* accrue benefits.** They very much view the partnership program as a win-win. In terms of providing benefits, they all see themselves as providing education. Auto-partners also provide a productive, professional alternative for students who will not attend college. Benefits partners accrue include: being able to “grow their own” talented, trained staff; getting the aid of helpful students; offering opportunities for staff to be mentors; and, enjoying the feeling of “giving back” to the community that supports the business.
- **Partners who host students as staff (e.g., internships) say that their challenges center on making sure they sign on committed students who really want to experience working in the partners' field.** They have had souring experiences in which students “no show” or quit in a very short time period.
- **Sometimes students show a lack of understanding about the workplace.** For example, they may not display a strong work ethic, may need better workplace communication skills (e.g., working with customers, accepting criticism), or may need to show more responsibility.
- **Partners had much praise for the strong one-on-one connections APS staff members maintain with them.** They regarded these connections as the central strength of the program. They said they know exactly who to contact with questions, ideas, or difficulties. They described communication as clear and open. One specifically noted that because APS adults clearly value what partners offer, the students follow their lead and value it, too.
- **Partners suggestions to strengthen the program include:**
 - Working with partners to identify how they can invest further in the program—by learning APS's needs and exploring whether they can contribute manpower or funding.
 - Publicizing the program more greatly. Specific suggestions include: noting well-known businesses that participate, which may suggest a “stamp of approval” to other businesses; providing print materials to help introduce the partnership to businesses; using social media; and reaching out to trade groups.
 - Identifying areas for growth such as technology and coding and taking steps to increase partnerships (e.g., offer more classes, pique interest among younger students). In choosing areas for growth, one suggested focusing on “tight-knit” local business sectors where word-of-mouth will help draw in more partners.

Appendix D6

- Tasking a department or committee with identifying key needs at each school and seeking partners to fill it.
- Maintaining processes for internship-type partnerships, such as job application procedures, that help ensure students who participate have genuine interest and feel committed.

DISCUSSION GUIDE ARLINGTON PUBLIC SCHOOLS (APS)²
Focus Group Research on Career, Technical, and Adult Education (CTAE)
Discussion Guide - CTAE Partners
May 2016

INTRODUCTIONS/WARM UP (10 minutes)

Welcome everyone. My name is _____. First, thank you for taking the time to join us. A word on our purpose today... Everyone here represents an organization that currently works in partnership with Arlington’s Career, Technical, and Adult Education (CTAE) program. Our purpose is to talk about your experiences in that role and learn from them in order to strengthen the partnerships of CTAE.

[NOTE: Two discussion groups will be held—one with partners in the automotive industry and one with all other partners. Questions for each group are the same. However, with deeper levels of involvement, automotive partners are expected to have more detailed perspectives on such topics as the benefits and challenges of participation.]

A. Disclosures

- Audio taping. With your permission, I would like to audiotape. The tape will only be available to me to help me write my report. Once my report is accepted in final, I will delete the tape. I will not share it with anyone else.
- Confidentiality.
 - This focus group is unusual in that you may know one another or know people in common. I hope that you will feel comfortable sharing your opinions. And, I ask that you keep what is said here in confidence. That said, obviously I cannot bind anyone here to keep what they hear confidential. Therefore, you may choose *not* to say some things. If that happens and you wish to share information with me later, please feel free to contact me by phone or e-mail.
 - When I write my report, it will not identify anyone by name. Rather, I will use phrases like, “Several partners expressed the opinion that _____.”
- I am a professional moderator, and not an expert on teaching, school administration, or business community partnerships. My job is to listen to you and convey your input to the Offices of Planning and Evaluation, and CTAE.

B. Participant introduction

- Your first name
- Your title, the organization you work for, and a few words to help us to be familiar with what your organization does.

CONTEXT (5 minutes)

² Partners were more readily available to telephone interviews than focus group meetings. So, this guide was verbally adapted for telephone interviews during the study.

Appendix D6

1. In what ways does your organization participate with APS today?

[If there is a wide range of involvement from little contact to close relationships, then.... Acknowledge the range of how partners work with Arlington—some are very involved and some just touch base with students at certain points. All the varieties of partnerships serve students and help to make sure there is good breadth, exposing students to many different types of organization. We need to hear both from partners that are less deeply involved and more so. And, all can comment on improvements and give ideas for the future.]

RELATIONSHIP WITH APS (20 minutes)

1. What was the impetus for getting the relationship started between your organization and APS?
 - a. What were your thoughts, motivations initially? Why get involved?
2. Let's talk about the benefits of your work with APS. First, what would you say are the benefits to APS students?
 - a. And, how about the benefits to your organization?
 - b. To you personally?
 - c. Any additional benefits to others—beyond those you see for students and for your organization?
3. Are there any drawbacks to participating with CTAE?
 - a. If yes, what are they/why?
4. Would you like more involvement, less, or is the amount just right?
 - a. If more or less, what aspects could or should be changed? (And, why?)
 - b. If just right, what makes it so?
5. How would you describe your relationship with APS in general?
 - a. What aspects have been positive?
 - b. What challenges have you experienced as a CTAE partner?
 - c. What suggestions would you make to strengthen or improve how APS works with partners?
6. All in all, is participating worth it? (And, why so?)
 - a. Would you suggest doing so to friends and acquaintances in your business community?
 - b. If yes, to whom would you suggest it? That is, what kinds of businesses or people seem well-suited to being in involved?
 - c. How would you describe this opportunity to them?

Appendix D6

7. [For automotive] I understand that Arlington’s partnerships with the automotive sector are among the most numerous and strongest of any sector. To what do you attribute that?
[For tech in mixed group] Technology, in particular, is a key sector of interest for Arlington to make connections. What, if any particular suggestions or insights do you have that might be helpful for fostering more and stronger ties?

MISSION OF CTAE (10 minutes)

1. Let me share a few words on the mission and goals of CTAE. Partnerships are a part of achieving these. [Describe—shown on final page of this guide.]
After you read, I’d like to hear...
 - a. Your top-of-mind thoughts.
 - b. Where does your work with APS fit into these goals?
 - c. As you look at the goals, are there other opportunities for your partnership that come to mind?

LOOKING AHEAD (10 minutes)

1. Thinking more broadly now, what ideas do you have for how the APS partnership program can be stronger?
 - a. What tips or advice would you give partnership staff about reaching more potential partners and establishing new relationships to grow the program?
 - b. How could APS spark additional interest among the business community?
2. One important aspect may be updating the image of career and technical education. It’s not the “old vo-tech.” What are your impressions of career and technical education and the students involved at Arlington today?
 - a. Would you say that image is an issue?
 - b. If so, what might change that?

CLOSING (5 minutes)

What advice would you give APS when it comes to strengthening the current partnership program?

**Arlington Public Schools
Career, Technical and Adult Education (CTAE)**

The philosophy of Career, Technical and Adult Education (CTAE) is to link education and career skills for the creation of lifelong learning opportunities. We serve the career and technical education needs of students of all ages residing in Arlington.

Goals for Service to Elementary and Middle School Students

- Coordinate and facilitate opportunities for **exposure to a wide range of vocations and careers** so that they may begin to explore applications of their own interests and talents to the future world of work.
- Coordinate and facilitate opportunities for middle school students to **discover potential career interests and aptitudes**.
- Develop materials and coordinate provision of **basic instruction in technical and career skills** through the linkage of academic skills with experimental applications.
- Facilitate the introduction of materials and academic experiences that begin to **prepare middle school students for responsible citizenship** through instructional methods that promote teamwork; communication skills; the ability to plan, execute and complete a project; and other skills that promote future learning.
- Coordinate and support the provision of a **seamless transition for middle school students to high school** through linked curricular sequences, opportunities for participation in service learning and community service, and other career awareness building opportunities that involve both middle and high school students.

Goals for Service to High School Students

- Coordinate and support instructional and experimental opportunities for specific career exploration and application for all high school students.
- Coordinate career decision-making services to assist students in discovering career interests and talents and in selection of secondary and post-secondary educational options.
- Coordinate and facilitate the provision of curricular pathways to career choices.
- Coordinate and facilitate the provision of instructional training in employability skills and provide opportunities for high school students to experience employment through cooperative education programs, internships and other school-to-work programs.
- Build linkages with local higher education institutions and with local employers to assure the most seamless transition possible to post-secondary education and to the world of work.