Lane ESD Credit Equivalency Pilot Project: Summary Report

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EXECUTIVE SUMMARY

The Educational Policy Improvement Center (EPIC) conducted an implementation study for a credit equivalency pilot project during the 2016–17 school year. Teacher teams from five Oregon high schools participated in the project, developing the frameworks for and providing Career Technical Education (CTE) classes within their schools that offer students the opportunity to earn content area credit. The purpose of the study was to begin to identify the policies and practices that need to exist to ensure integrity when enacting a course equivalency process, leading to positive college and career readiness outcomes for students. We gathered data throughout the year from project participants – including CTE teachers, content area teachers, administrators, students, and project technical assistance providers – to examine individual and common successes and challenges reported across schools in order to provide lessons learned and recommendations for moving forward in the process of establishing rigorous and equitable core academic course equivalency programs. Complete findings are described in later sections, but a few key findings are highlighted here:

- Schools that participated in the pilot project shared a number of common elements, including strong and involved administrator support and a well-established culture of career and technical programs designed to meet local workforce needs and student interest.
- All schools experienced successes in their implementation efforts, including offering at least one term of course equivalency credit in science, math, or ELA to students and developing curriculum maps aligned to content area standards through a collaboration between the CTE and content area teacher.
- Most students did not know that they would have the opportunity to earn content area credit until after they had signed up for the pilot class. However, students were able to verbalize how the possibility of earning content area credit within CTE classes may help to expand opportunities for all students in a variety of ways.
- Challenges to implementation included continued uncertainty about the administrative details involved for assigning course codes needed for appropriately transcripting the course equivalent credits, assigning credits using local student information systems, and varying degrees of internal communication within and between departments in participating schools.

PROJECT OVERVIEW

The need for high-quality career and technical education (CTE) programs that provide students with opportunities to learn skills that prepare them for successful careers in a global and competitive economy is becoming more recognized as a viable pathway for students, regardless of their postsecondary plans.[1] Increasingly, CTE coursework at the secondary level is strategic and sequenced, allowing for access to and practice with skills that are in high demand by today's employers. The applied and hands-on approach of many CTE classes offer students engaging and meaningful ways to explore the world of work and to make connections between new and previously learned content material and the "real world."[2] A small but growing body of research suggests that participation in secondary CTE can lead to better outcomes for students, particularly in relation to high school graduation and employability after high school.[3] This is particularly true for students who are CTE concentrators, meaning students who earn one or more credits in a technical skills course in an approved CTE program of study, of which there are currently six in Oregon. In the 2014–15 school year, more than 40,000 students in Oregon were considered CTE participants; of those, just over 18,000 students were CTE concentrators at the secondary level. The graduation rate for secondary CTE concentrators in Oregon in 2015 was 88%, nearly 14 percentage points higher than for students statewide.[4]

As states are moving forward in efforts to establish revised policy for and increase the visibility of career and technical education pathways in order to provide opportunities for students, equivalency options are being re-examined in many places. Credit equivalency provides flexibility for high schools and school districts to accept career and technical courses as meeting core requirements if the courses are recorded on the student's transcript using equivalent academic high school titles and course codes. Depending on the designation, the equivalent credits may be used to meet graduation and college admission requirements. Although concerns exist as to the best ways to ensure the academic rigor of the content area coverage in the CTE class, the benefits of offering more options for students has increased interest in expanding credit equivalency.

In 2015, the Oregon Legislature passed House Bill (HB) 3072 that included funding for a pilot program that would "increase students' exposure and access to career and technical education that can lead to high wage and high demand jobs." Under this pilot program, select school districts would

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[1] Symonds, Schwartz, & Ferguson, 2011

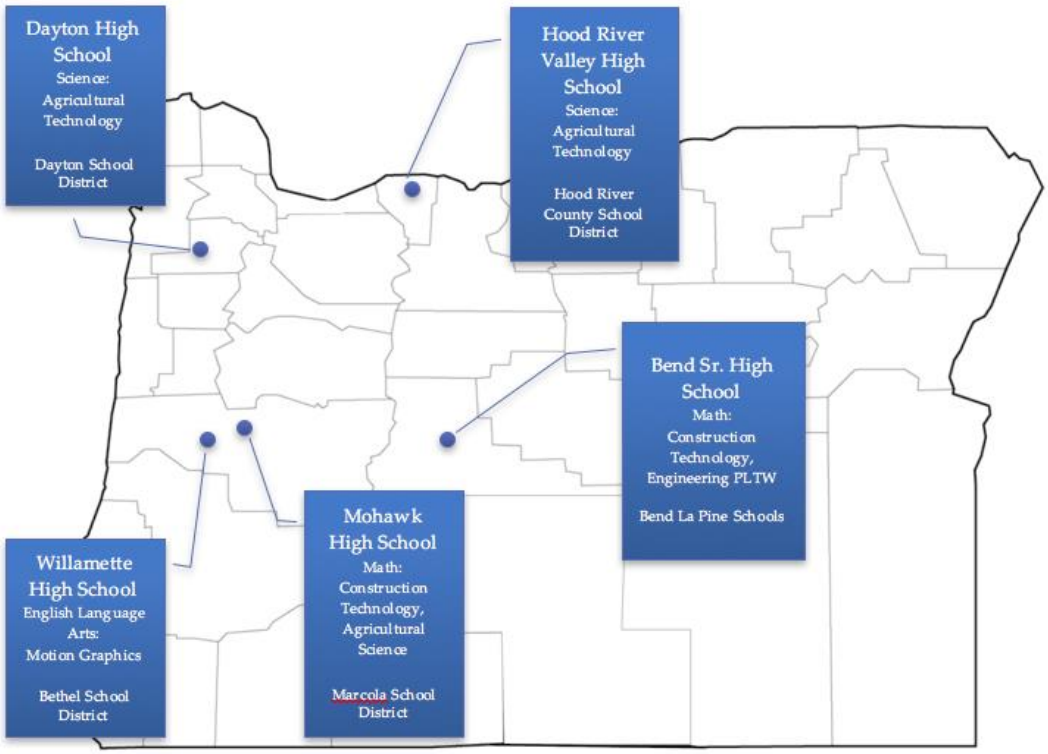
[2] Plank, 2001

[3] Doughtery, 2016

[4] ODE, 2015

- ensure that career and technical education (CTE) courses are developed to satisfy high school credit requirements in core academic subjects that meet admissions requirements for community colleges and public universities
- adopt full or partial course equivalencies for CTE courses
- develop a procedure for approving full or partial course equivalencies for CTE courses

In the spring of 2016, the Oregon Department of Education (ODE) posted a Request for Proposals for high school CTE/content area teaching teams to participate in the Course Equivalency Pilot Project. The project was administered through the Lane Education Service District (Lane ESD) in Eugene, Oregon. The Educational Policy Improvement Center (EPIC) contracted with Lane ESD to provide facilitation support and to conduct an implementation study during the 2016–17 academic year to ultimately provide documentation of successes, challenges, and lessons learned about the process of implementation of credit equivalency courses as the state moves forward in its efforts to fulfill HB 3072. This report presents a summary of the results of activities conducted during the pilot project year.



PILOT PROJECT

The course equivalency pilot project was structured in such a way as to provide resources and support to participants through scheduled workshop attendance at the beginning and end of the 2016–17 academic year, as well as technical assistance support throughout the project. Additionally, EPIC researchers traveled to each school in the spring of 2017 to conduct on site interviews with teachers, administrators, and students. This section provides more detail on these project activities.

PROJECT ACTIVITIES

At the outset of the project, a one-day project orientation meeting was held for project participants on April 28, 2016, to introduce the project requirements and provide teaching teams with work time to begin curriculum planning.

A Summer Institute was held June 28–30, 2016. The objectives for the Summer Institute included the following:

- Develop a shared understanding of the perceived barriers to implementing credit equivalency courses and policies within the represented schools and districts in Oregon.
- Provide participants with an overview of best practices around cocreating courses that meet the requirements for credit equivalency, including topics such as cognitive demand, rigor, teaching for equivalency, creating and using performance assessments, and aligning courses to standards.
- Provide teacher teams the time and support to work on curriculum mapping and assessment for their developing courses.

The three-day institute was designed to be an interactive session, with a mix of direct delivery of content from several presenters and some small-group activities using examples of performance assessment tasks to help build participants' awareness of the kinds of models that are available to them as they work to develop and refine their courses. Across the three days, participants spent most of the time working collaboratively with their teaching partner/team from their home school, incorporating the materials and resources provided by the institute facilitators and presenters into their developing curriculum.

A final group meeting was held on June 23, 2017. The one-day meeting was designed to wrap up project activities and to gather information from participants and stakeholders that will be used to continue to build on the lessons learned in the one-year pilot project. Teachers shared their experiences with the course equivalency project in their classroom/schools during the year, and a work session including all stakeholders at the meeting was facilitated by EPIC team

members with the intent of creating a framework for the development of a guide to course equivalency in Oregon.

PROJECT PARTICIPANTS

In total, 10 participants (5 CTE teachers, 5 content area teachers) representing five schools participated in the implementation study portion of the course equivalency project. Table 1 summarizes the participants in the pilot project by school and CTE/content area course alignment. In addition to the pilot project participants, facilitators and content experts from Lane ESD, EPIC, and ODE were on hand to present and to offer support and/or resources across the project institutes, and to provide technical assistance during the academic year.

Table 1. ***Pilot Project Participants by School and CTE/Content Area Course***

School	District	CTE Course Title	Equivalent Content Area
Bend Sr HS	Bend-La Pine SD	Woodworking	Math
Hood River Valley HS	Hood River SD	Animal Science	Science
Dayton HS	Dayton SD	Tissue Culture, Horticulture and Natural Resources	Science
Mohawk HS	Marcola SD	Construction Math	Math
Willamette HS	Bethel SD	Multimedia Arts	ELA

SITE VISIT METHODS

EPIC researchers visited schools where credit equivalency courses were launched in academic year 2016–17. The purpose of the visits was to collect information to help better understand the successes and challenges around the process of implementation of credit equivalency courses within individual schools from a variety of stakeholders.

TEACHER AND ADMINISTRATOR FOCUS GROUPS/INTERVIEWS

To gain a deeper understanding of the process of establishing credit equivalency classes at each school, focus groups/interviews were held with participating CTE and content area teachers, and administrators who could best address the pilot project goals. EPIC researchers developed an interview protocol designed to gather attitudes and perceptions around the successes with and challenges to implementation of the credit equivalency class at their school.

STUDENT FOCUS GROUPS

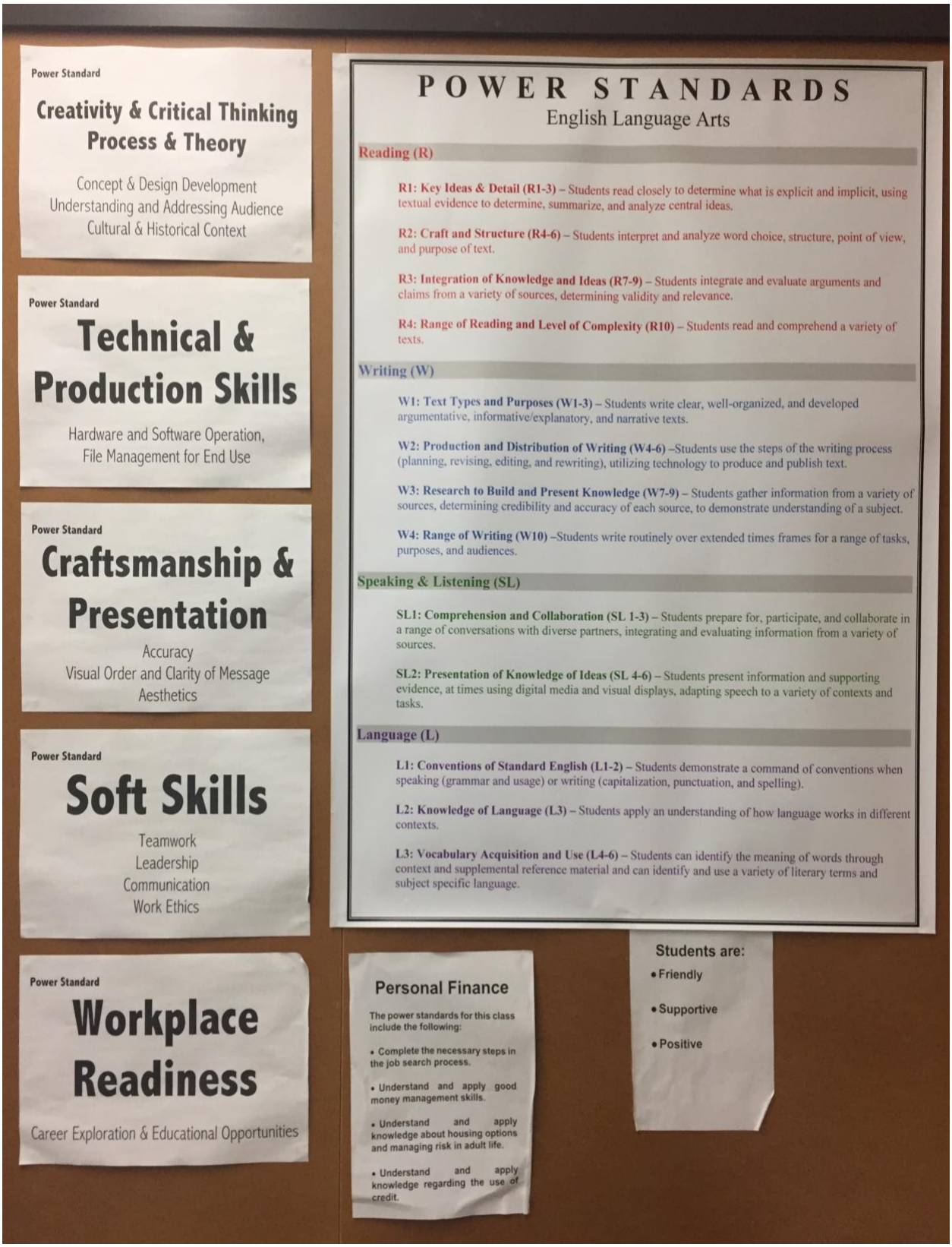
To gain a deeper understanding of the student attitudes and perceptions of CTE and credit equivalency, focus groups were held with students at the five pilot study schools. Student focus group participants were selected by the pilot class teachers to provide equitable representation, to the best of their ability, aligned with the school demographics. The following numbers of students participated in focus groups: Willamette High School (5), Mohawk High School (9), Hood River High School (3), Bend High School (6), and Dayton High School (6). EPIC researchers developed a focus group protocol designed to gather student perceptions around their experience with the credit equivalency class in which they were enrolled. Focus group sessions were audio recorded. All participants provided written and oral assent to participate and be recorded. Passive consent forms were distributed to parent/guardians of participating students prior to the focus groups.

DATA ANALYSIS

Focus groups/interviews were held during the site visits at each school and were conducted by EPIC team members. Audio recordings were transcribed, and responses were then organized and thematically analyzed using NVivo qualitative research software. Once themes were identified, data were summarized by category.

SCHOOL PROFILES

Context is an important factor that helps to explain successful implementation of an innovation. Each of the schools that participated in this pilot project were able to develop and offer a credit equivalency CTE course during the 2016–17 academic year, indicating the participating school teams had a facilitating set of contextual factors in place that the teams were able to use. However, these facilitating factors were varied and unique to each context. As one of the goals of this project was to gather and share lessons learned from the field, with the hopes of supporting other schools to construct their own course equivalency delivery systems, it is important to note that successful implementation does not usually fit into a one-size-fits-all container. We have constructed brief sketches of each school to provide context for the successes and challenges faced by the teams at the pilot project schools; these may serve as models for similar schools that want to implement course equivalency. The sketches are meant to highlight basic school characteristics and aspects of their approach to CTE. Data used to create the sketches include participant interviews, school document and website analysis, and the Oregon School Report Cards. See Appendix B for profiles of each participating school.


Power Standard
Creativity & Critical Thinking Process & Theory
Concept & Design Development
Understanding and Addressing Audience
Cultural & Historical Context
Power Standard
Technical & Production Skills
Hardware and Software Operation,
File Management for End Use
Power Standard
Craftsmanship & Presentation
Accuracy
Visual Order and Clarity of Message
Aesthetics
Power Standard
Soft Skills
Teamwork
Leadership
Communication
Work Ethics
Power Standard
Workplace Readiness
Career Exploration & Educational Opportunities
POWER STANDARDS
English Language Arts
Reading (R)
R1: Key Ideas & Detail (R1-3) – Students read closely to determine what is explicit and implicit, using textual evidence to determine, summarize, and analyze central ideas.
R2: Craft and Structure (R4-6) – Students interpret and analyze word choice, structure, point of view, and purpose of text.
R3: Integration of Knowledge and Ideas (R7-9) – Students integrate and evaluate arguments and claims from a variety of sources, determining validity and relevance.
R4: Range of Reading and Level of Complexity (R10) – Students read and comprehend a variety of texts.
Writing (W)
W1: Text Types and Purposes (W1-3) – Students write clear, well-organized, and developed argumentative, informative/explanatory, and narrative texts.
W2: Production and Distribution of Writing (W4-6) –Students use the steps of the writing process (planning, revising, editing, and rewriting), utilizing technology to produce and publish text.
W3: Research to Build and Present Knowledge (W7-9) – Students gather information from a variety of sources, determining credibility and accuracy of each source, to demonstrate understanding of a subject.
W4: Range of Writing (W10) –Students write routinely over extended times frames for a range of tasks, purposes, and audiences.
Speaking & Listening (SL)
SL1: Comprehension and Collaboration (SL 1-3) – Students prepare for, participate, and collaborate in a range of conversations with diverse partners, integrating and evaluating information from a variety of sources.
SL2: Presentation of Knowledge of Ideas (SL 4-6) – Students present information and supporting evidence, at times using digital media and visual displays, adapting speech to a variety of contexts and tasks.
Language (L)
L1: Conventions of Standard English (L1-2) – Students demonstrate a command of conventions when speaking (grammar and usage) or writing (capitalization, punctuation, and spelling).
L2: Knowledge of Language (L3) – Students apply an understanding of how language works in different contexts.
L3: Vocabulary Acquisition and Use (L4-6) – Students can identify the meaning of words through context and supplemental reference material and can identify and use a variety of literary terms and subject specific language.
Personal Finance
The power standards for this class include the following:
• Complete the necessary steps in the job search process.
• Understand and apply good money management skills.
• Understand and apply knowledge about housing options and managing risk in adult life.
• Understand and apply knowledge regarding the use of credit.
Students are:
• Friendly
• Supportive
• Positive

CROSS-TEAM ANALYSES

Data were synthesized from multiple sources across the year to develop a deep understanding of the process of implementing a course equivalency delivery system. Several reasons for offering content area credit through the CTE classes were identified through conversations with stakeholders across schools, including the following:

- Class for students not making connections between content area material and real-world applications
- Class that meets state requirements for content area rigor for students interested in trade careers but who may not receive third-year of math or science credit through traditional pathways
- Addressing credit deficiencies/credit recovery by combining content area credit with motivating and engaging CTE class
- Relieving potential overcrowding in content area classroom
- Providing room in student schedules for the exploration of other elective classes

All schools plan to continue offering the same credit equivalency class(es) in the next academic year, and several schools will offer new equivalency courses in addition to the pilot course. Table 2 summarizes course and enrollment details for the pilot equivalency classes.

Table 2. ***Pilot Project Course Details for the 2016 – 17 School Year***

School	CTE Pilot Course	Number of Content Area Credits Offered	Number of Students Enrolled	Number of Students Receiving Content Area Credit
Bend Sr. HS	Woodworking	0.5	93	91
Hood River Valley HS	Animal Science	1	60	46
Dayton HS	Tissue Culture, Horticulture, and Natural Resources	0.5	84	27
Mohawk HS	Construction Math	1	15	14
Willamette HS	Multimedia Arts	0.5	20	19

PARTICIPANT EXPERIENCE

Each participating school successfully offered course equivalent credit to students who met the requirements in the pilot classes, and themes emerged from the interview and feedback data that provide more context for understanding variation in aspects of implementation. In the next sections, we examine the participation experiences of teachers/administrators and students.

TEACHERS/ADMINISTRATORS

Four major themes emerged among the interviews with the participating teachers and the administrators at their schools.

SCHOOL CULTURE

> *I think that any time you do anything like this, your school culture is really important because you have to have an element of trust.* - Dayton Administrator

A similarity shared across the pilot project schools was a school culture that supported the implementation of course equivalency. Most of the schools already had strong CTE programs in place or were working intentionally to build new or restructured CTE programs. The schools have worked to identify career pathways that would best fit the students in their schools based on the local workforce needs, with programs like Agriculture in rural/farming communities of Dayton, Mohawk, and Hood River; Engineering and Transportation Technology in Bend, where recreation technology is a booming business; and Graphics and Design at Willamette, located in the middle of an up-and-coming technology hub. Additionally, in talking with teachers and students at all of these schools, the CTE classes and programs are seen as integrated components of the school, not limited to only students who do not plan to attend a 4-year university after high school.

One factor that may have an effect on implementation of course equivalency is the school size. Both CTE and content area teachers at smaller schools reported more of an overall positive reception to offering content area credit in CTE classes, with less of a need to work to achieve buy-in from the academic department. Given that the smaller schools typically had content area departments with only one or two teachers, this may have to do with increased communication between teachers or a recognition of a need to reduce class size burden on the core content classes. As the CTE teacher at Dayton noted,

> *Basically, the third year of science, our two teachers couldn't see all the kids. There's no way. So, for them, it's also a relief that now kids can do the same thing, and they're only going to see the kids . . . that are interested in anatomy and physiology, instead of, "Oh, I've got to take a third year of science. I'm going to have to take that, and I really don't want to be here."*

ADMINISTRATOR SUPPORT

Across the participating schools, there was a high degree of administrator support, both at the school and district levels, for the process of implementing course equivalent credit in the project schools. At some schools, the administrators were the ones who initiated the application to the pilot project, recognizing the need for their school to develop classes where the credit equivalency would work. For example, Dawn Delorifice, an administrator at Willamette High School, had been in the Motion Graphics class and noted how well the class material might align with ELA standards. At other schools, the CTE teacher initiated the process of responding to the grant proposal, knowing that the administrative support would be there. This support was noted and recognized as a critical feature in their success by the pilot project teachers. Most schools did not already have any districtwide policies in place that supported course equivalency, although some schools had offered credit equivalent classes in the past and so had familiarity with many of the features of implementation that needed to be addressed.

> *I would, from an administrative standpoint, like to see this potentially branch out into other areas too, or at least the possibility of that [happening]—whether that's through social studies, agricultural economics and agricultural policy, engineering policy, or even applied mathematics—so the opportunity [exists] to capture some of those kids who might have an interest in some of those areas.* – Hood River Administrator

CTE/CONTENT AREA TEAMS

School teams agreed the pairing of CTE teachers and a content area teacher in their school was critical to the success of the developed class. Teachers felt that this collaboration in the development of the curriculum map ensured that standard alignment was occurring that would ensure the rigor of the equivalent content area. Additionally, many teachers noted the content teacher acted as a resource and sounding board during the school year, and increased the visibility of the cross-curricular collaboration to other teachers and students.

> *I think the most important part is to share what is happening in the CTE classes so that the content teachers are able to see the alignment and connections with their own content. It is also important for the counseling and administration to experience what is happening in the*

> The most successful part of the implementation came in the form of the multimodal assignments' ability to meet both ELA and CTE standards in a meaningful way while coming up with some great final products. Some of the [students'] videos become much richer with the depth and complexity that the ELA portion added to the equation.
>
> - Willamette CTE Teacher

development of this process. Without the shared experience, it becomes a more serious hurdle for them to fully appreciate the conceptual work that takes place before the equivalency is determined. Everyone wants to make sure that the rigor is upheld because we care about the students, allowing all of the stakeholders to come together around their shared desire for student engagement will help drive the adoption of CTE Equivalency programs. - Dayton Content Area Teacher

One specific challenge to implementation of course equivalency experienced by schools occurred when the content area department linked to the credit equivalency class was more resistant to the idea of CTE teachers being able to offer content area credit. The departmental concerns were mainly around the rigor and standards alignment of the content area material, the amount and level of content material covered, and the potential for loss of content area FTE. At Willamette, the fact that the CTE teacher was also in the process of becoming a certified ELA teacher eased concerns about the level of rigor of the content in the class. At Bend, concerns from the math department were mitigated by making the content area credit offered to students only available for use in meeting graduation requirements.

What made it [implementation] easy was the fact that I'm already math endorsed and I am also the construction teacher. So it was a natural fit. Bill Watkins [the principal], when he originally said we can do the . . . [equivalent] credit, I was the biggest advocate of saying, no, we can't, because I don't do enough math in my construction class to warrant a math class. – Mohawk CTE Teacher

Another challenge noted by several teachers around the development of the credit equivalent class was the method used for determining content area proficiency. Different schools used different approaches to assessment. Some schools developed separate content area assessments that were used to determine student proficiency with the content, while others used proficiency rubrics and/or performance assessments. Teachers and administrators from schools where proficiency-based grading was already an established feature of the instruction and assessment pedagogy noted the implementation of credit equivalency was likely easier for them because they had recently gone through the process of developing proficiency-based practices and that students were familiar with the requirements for demonstrating proficiency as well. One school used a

Successful implementation occurred with **CTE/content teachers developing shared understanding** and **alignment of the CTE course to content standards**, **supportive and involved administrators**, and a school culture that emphasized the importance of **creating multiple pathways for student success**.

CTE curriculum that was already aligned to the Next Generation Science Standards, and thus used the assessments that accompanied the established curriculum. All CTE teacher participants noted they felt that the assessment piece of the course would continue to evolve as they moved forward, with several teachers specifying that assessment would be a good area for continued professional development in designing rigorous credit equivalent classes.

The largest reported challenge for the pilot project teams was time. Teachers reported that the structured time during the summer institute was very useful in planning, laying out the curriculum map as a team, and conducting a standards alignment. However, once the school year got started, there were fewer chances to meet in significant blocks of time to continue to develop and assess other aspects of the class implementation. All pilot project teachers, as well as several administrators, noted that more funded time to continue curriculum development, professional development specific to course equivalency, and planning would facilitate the transition to the implementation of higher quality programming. Additionally, several teachers noted they were approached by colleagues at other schools who were interested in learning more about course equivalency for their own schools.

STRUCTURAL CHALLENGES

For some schools, the ongoing availability of funding and facilities to best support their project needs was identified as a potential barrier to continuing to build out their programs. The CTE teacher at Hood River noted, "There's a lab I really want to do, but I got really overwhelmed because right after animal science, I teach a woodshop full of woodshop boys, and with my facilities, I'm not going to do it. I just can't. So that's huge."

Many CTE teacher participants were able to capitalize on their connections to industry and community by bringing in local business owners to assist in the completion of class projects and to demonstrate the kinds of skills needed to work in their field. Examples of guest industry sectors reported by teachers included, plumbing, construction, carpentry, lumber, hydroponics, forestry, veterinary services, and butchers. Not only do the industry representatives help to connect the students' coursework to real-world relevance, but often job and internship opportunities arise out of these partnerships. Some teachers, especially those at smaller, rural schools, noted one challenge that they face is in exhausting the supply of community partners that are able to volunteer and contribute to the classroom, given that they rely on the same pool of people several times per year, across years. Strengthening current partnerships while also developing new ones was identified as a continuing challenge.

One issue that arose at Bend High School was how to use their student information system (SIS) in such a way that teachers were able to enter credits for the same course in two different areas, one for the CTE portion and one for the content area. At the time that we conducted the site visits, the school had contacted its SIS platform managers to determine how to correctly

transcript the pilot class, but were informed that the enhancement needed to modify the SIS would be cost-prohibitive, especially as the district still had some concerns about the extent of the state's long-term commitment to course equivalency. At this time, the school has developed its own internal work around to solve the problem by entering grades manually. Another school using a different SIS solved the problem of grade transcripting by creating a zero period where teachers are able to enter the credit equivalent grade.

By and large the most commonly reported challenge with establishing course equivalency at the schools was an ongoing lack of understanding about how to properly name and transcript the CTE/content area credits with the appropriate class codes. This question was posed during the Summer Institute and was still causing confusion at the final project meeting. Some project teachers noted that part of the problem was in helping the school counselors understand how the credit equivalency process works. Suggestions from participants as to ways to address this issue include developing channels of communication with counseling staff at schools early in the process of establishing credit equivalent classes, increasing the visibility of course naming and code resources, and developing a manual that explicates the process in detail.

A final theme heard across teacher and administrator interviews was the degree to which Oregon has committed to provide guidance and support for the implementation of course equivalency in the state. Many teachers expressed the hope that the work would continue to go forward, but that their experiences in the current educational climate in the state leave them with reservations that they will put forth time and effort only to have the existing rules and policies change or end. A Mohawk stated that teachers did not want to get students' hopes up that they will be able to earn some of their content area credits through their CTE classes, and then have to remove that option for students. Participants agreed that having a resource that more clearly laid out guidelines, policies, and expectations would not only help to alleviate their concerns, but it would help to establish consistency and rigor across the state.

> *We've been in this airplane, this math and CTE airplane and we're sitting on the tarmac and we just haven't launched the airplane yet. It's been very frustrating. I've been in trainings for almost a decade now about how to extract math from our lessons, how to teach math, how to look at the standards. We just haven't started giving the credits . . . The main reason you guys caught me with your grant proposal last year, I thought, "Okay, this a pilot program, I want to give some credits this year. Let's figure this out." If we give [credits] to some of the kids this year, I'll consider this entire endeavor a success.*

STUDENTS

Across the project schools, a total of 29 students were interviewed in focus groups during the site visits. Because of the pilot nature of the project, most students did not know that they would have the opportunity to earn content area credit until after they had signed up for the

class. However, students were able to verbalize how the possibility of earning content area credit within CTE classes may help to expand opportunities for all students in a variety of ways, including credit recovery and options to take more electives based on student interest.

HANDS ON LEARNING

The hands-on, visual, and applied learning that takes place in CTE courses was consistently brought up across all schools as the most beneficial aspect for students. Numerous students interviewed shared that the hands-on learning allowed them to grasp the content more easily, fit well with their learning style and, in many cases, helped them to understand concepts with which they previously struggled: "If you don't know it, it helps to apply it." Students at Mohawk cited the visual and applied aspects of CTE as especially helpful when working with equations because it allows them to actually see real-world applications of the equations taught in their math classes. One student at Mohawk provides the example of a theorem that he had learned in math class, but had trouble grasping initially. His Construction Math class allowed him to comprehend the math much more easily:

> *Well, like for a while we were doing area and like all Pythagorean Theorems. Well, I didn't quite get it, the Pythagorean Theorem. But then once we built the trusses, and then used the method, then I kind of measured it out and looked at it, then I understood it.*

Students at Hood River commented that having the opportunity to work with animal parts while learning about the reproductive and digestive system made learning the science concepts much easier for students who had previously struggled with science classes. One student at Bend described the applied learning in his Woodworking class as helping to make the math "less abstract" and gave it "some sort of concrete physical aspect." All students interviewed at Bend agreed the hands-on approach was their favorite part of their Woodworking class.

Students across schools also mentioned that, at times, a traditional classroom setting would cause them frustration because they were not able to fully see the connections between what they were learning in the classroom and how it applied to real-world situations. The application and hands-on nature of CTE classes allowed them to better bridge the gap between theory and practice, making them more engaged and willing learners.

STUDENT MOTIVATION & ENGAGEMENT

Student motivation and engagement was a theme that emerged continuously across all the pilot study schools. Nearly all of the students interviewed spoke to the value of being able to work on hands-on projects and build and create things as central to pushing them to be more engaged in their classes. Many students acknowledged they were more present and involved in their CTE classes and that they enjoyed and looked forward to learning the class concepts and

completing the work and projects in these classes. Willamette CTE teacher Matt Symonds observed that in his Motion Graphics class, he gets buy in from students and the "What can I do next?" that is often missing from a traditional English class. One student at Willamette noted that her Motion Graphics class "encourages you and then you actually want to be engaged at all times since again, you're not reading a bunch of old books. You're actually making movies."

Students noted that their CTE classes were especially effective for those who were not inherently motivated and engaged in a traditional classroom setting. Several students stated that even if they did not want to come to school, they would motivate themselves to show up because they had a project to finish or they were looking forward to a concept or activity that was being taught in their CTE class. Ultimately, these classes pushed students to show up to school and to be engaged, and kept them occupied with projects in which they became personally invested. Moreover, due to the stimulating nature of these classes, many students acknowledged they felt they learned the most in their CTE courses and retained the learning as well. One student at Hood River speaks to this:

> *I'm never going to forget that I dissected a fetal pig. The things that have really stood out for me, I'm never going to forget and I'm going to take that on to college. I'll tell my kids about it . . . Overall, I'm never going to forget Animal Science . . . When I graduate and I think back to when, like, what was one of your favorite classes? It will definitely be Animal Science.*

Another student at Hood River mentioned that even as somebody who could zone out in his traditional science classes and still do well on exams, he enjoys coming to his Animal Science course and finds the content paired with the hands-on and visual learning much more interesting. Students at Dayton noted they often didn't notice the science and math concepts integrated into their CTE classes because they were engaged so the content learning came easily.

Furthermore, the engagement in these CTE classes often led students to get involved in clubs and organizations such as Future Farmers of America (FFA), a career and technical student organization mentioned at Mohawk, Hood River, and Dayton. At Willamette, one student had her film make it to regionals in the International Silent Film Festival.

OWNERSHIP OF LEARNING

A major theme that emerged from our conversations with students was that their CTE classes pushed them to take ownership of their learning. Due to the hands-on and individualized learning that takes place in these classes when teachers step back and let students take the lead on projects, many students across multiple schools spoke extensively about how their CTE classes allowed them to recognize that they have teachers and parents there to help guide them, but it is ultimately their responsibility to take ownership of their education and their post-high

school plans. One student at Mohawk shared how he initially was not engaged in school, but was able to get involved with hands-on and independent learning in the school's CTE program, which drastically changed his academic and career trajectory:

> *My freshman year I was very disorganized. I was kind of lazy with classes, just a little bit . . . I think my first CTE was my sophomore year, so after freshman year and once I started getting goals together, specific plans, and then I started getting these hands-on projects and to me hands-on projects are better than sitting in a computer typing out a presentation or what not. And that kind of helped me get to where I am now, where I already have more credits than I need to graduate at the moment.*

Several students also touched on the independence that their CTE classes affords them, with one student at Bend speaking to how he appreciated the freedom to take ownership of his learning in his Woodworking class:

> *So being able to work with these tools is definitely nice, and I also think it gives us a sense of independence, because . . . they're not constantly holding your hand. They teach you how to use it and then you use it. It's definitely not a, "Hey, I'm going to walk you through each step and then that's it.*

Similar stories were repeated at Willamette and Hood River, where one Willamette student shared, "Most of the times you are really stuck to a prompt that you don't agree with. And so it's very easy to make it your own [in this class]. You kind of feel better about it since this is entirely my creation." At Hood River, one student explained that in a traditional classroom setting, she felt that there was more hand-holding and she would sometimes be given the answers to problems without having a chance to attempt it herself. On the other hand, in her CTE classes, she would receive step-by-step instruction with opportunities to practice and apply the concepts which helped her learn the material much more easily.

Students at Hood River and Dayton also commented that their classes have encouraged them to take responsibility and initiative in the classroom, which they recognize as beneficial for life after high school. One student at Hood River noted that her CTE classes holds her accountable to meet deadlines and has made her more efficient with time management. Students at Willamette also agreed that a lot less procrastination happens within CTE classes and more work gets done as students are continuously working collaboratively and taking initiative to complete tasks. Students at Dayton added that the hands-on and individualized projects often give birth to new ideas among students about what they could build or create.

SOFT SKILLS AND REAL-WORLD SKILLS

Throughout our interviews and focus groups, students spoke extensively about the "soft" and real-world skills that their CTE classes were helping them to develop. Several skills have emerged thus far such as taking responsibility, taking initiative and time management. One other notable example came from Mohawk, where one student describes how the most challenging aspect of her CTE classes was having to practice real-world skills, but she recognized it as being useful for her in the future.

> *The only challenging thing, for me anyways, is when I'm doing my greenhouse and have to actually call people, and I get kind of nervous talking to other people. So, I have to talk to companies and get an estimate and all that, so it's like teaching me real stuff I'm going to be having to do that normally people do for me.*

Communication and public speaking skills were two other significant proficiencies that were mentioned across several of the schools. One student at Hood River explained that as someone who had traditionally struggled with communication and public speaking, having her CTE teacher encourage her helped her to develop the skills and confidence she had been lacking:

> *I gave a speech on FFA and the class before that I had an anxiety attack so I didn't actually give the speech. Ms. Bozarth had talked to me, and told me I could do it and I believe in you, and really amped me up to do the speech. And then I did it and I got a good grade on it, and I felt like getting a good grade and her talking to me and supporting me, that I could do it . . . helped a lot. Speeches and you have to go and be with random people you don't know and talk to and do projects and I'm not used to that or comfortable, but I've gotten a lot more comfortable doing that and not being so nervous when I have to do that.*

A similar story was repeated at Dayton where one student spoke about how her involvement in the school's CTE program and FFA has pushed her far outside her comfort zone and helped her to acquire the communication and public speaking skills that had provoked anxiety:

> *Not only like if it were a year ago I would not be able to . . . I was so in my comfort zone. I probably wouldn't even be able to talk to you today because I'd be too scared. But, after getting involved in FFA I was able to give a speech in front of 2,000 people. And I've done speaking and I have the goals of being a state officer and everything like that. So it's really opened up my communication skills, my public speaking skills, and just being able to interact with people and not be afraid to step out of my comfort zone. It's helped me in those areas.*

ROOM FOR ERROR

Nearly all students interviewed spoke at length about how they felt that there was more freedom to make mistakes in their CTE classes compared to a traditional classroom while

several CTE teachers also mentioned that making mistakes was celebrated and encouraged in their classes. At Willamette, one student explained how the culture and atmosphere of his Motion Graphics class enabled him to mess up and then bounce back from those errors:

> *It also makes you feel like there's more room for error in this class. If you mess up something, you think well it's kind of a film class, I can easily rebound back from this. While if you fail in English, you just, it doesn't feel the same.*

Don Carter, the Woodworking teacher at Bend Senior High School commented that a negative perception exists in our education culture around making mistakes, stating that, "The hardest thing in the world in this culture is to get people to admit the mistake, analyze it, and figure out what went wrong, [and] avoid that in the future." He illustrated this perception by noting that he often found projects stashed around the room and in the garbage can as students tried to hide their blunders. Students at Bend acknowledged they did not enjoy making mistakes and would work hard to try to avoid it. Don explained that in his Woodworking class, he attempts to break students out of the mindset that "if you make a mistake, that's going to forever mean that you can make mistakes and you can be blamed for something" by first acknowledging that they made an error and then analyzing what went wrong in the process so that it can be prevented in the future.

This process of learning from mistakes was echoed across all schools. At Mohawk, one student said that he felt comfortable messing up because he could then go back and evaluate those mistakes and understand how to fix it to avoid repeating those mistakes in the future. At Hood River, one student explained that when doing poorly on an exam, she has the opportunity to review the concepts, make test corrections and receive a few points back, whereas in a traditional class, she generally does not have opportunities to go back and review concepts that she does not understand. Students at Dayton also agreed that when one fails at something, "You get to restart. You keep on doing it until you get that skill and you get it down, then you become a master at it." One student at Dayton spoke to the value of making mistakes in facilitating her learning process and pushing her to consistently improve her skills:

> *We spent weeks learning about soils and he took us to the district competition. I did horrible, but after that day, I said okay, I looked at what next competition was coming up and I said okay now I'm going to have a growth mindset and I'm going to learn and I'm going to put all my work into this, and we ended up getting first. So you just have to think of the future.*

RECOMMENDATIONS

This report presents findings from a yearlong project designed to explore the process of implementation of core academic credit equivalencies for Career and Technical Education (CTE) courses. By focusing on the unique and common successes and challenges experienced by pilot project participants, the project has provided lessons learned for other schools wishing to initiate course equivalency and ways in which interested stakeholders can best support this process moving forward. Results of the pilot study revealed that while schools experienced success in their implementation efforts, challenges varied by schools, suggesting that differing models of implementation and support are needed to aid in future efforts.

One of my objectives was to implement this project without dramatically changing the CTE course. I would encourage teams to stick to the things that work in CTE and enhance them with these academic efforts.

~ Bend CTE Teacher

Recommendations gleaned from the implementation study include the following:

- Develop and provide teachers, administrators, counselors, school boards, and the community with effective documentation and appropriate language to communicate the intent and goals of course equivalency classes for all stakeholders.
- Guide teachers and counselors to resources that provide information about how to appropriately title and code credit equivalence.
- Provide models of options for how schools may decide to approach course equivalency implementation, including checklists and timelines for implementation activities and finding solutions to issues that may arise with student information systems.
- Continue to work with postsecondary institutions to determine the issues around and solutions to CTE course titles and higher education admissions.

One message that was consistently heard from project stakeholders was the need to develop and make available resources that describe models of implementation and specifically reference Oregon's current standing regarding rules and policy around course equivalency. Establishing criteria for evaluating course equivalency and ensuring consistency in course rigor in core academic equivalency programs across the state were also identified as critical next steps. To this end, and to capitalize on the lessons learned from this project, continuing work will involve building on the feedback from the pilot project participants by developing a guide to course equivalency in Oregon for districts and schools to use that will help to provide consistency and equity in the implementation of local course equivalency policies.

As the process of continuing to expand the availability and rigor of CTE programs and course equivalency delivery systems moves forward in Oregon, opportunities arise to gather data on the efficacy and feasibility of these programs, given research on the implementation and effects of course equivalency is lacking. Possible avenues of inquiry include examining the following:

- Effects of course-equivalent CTE participation on educational and employment outcomes, including graduation, postsecondary enrollment and degree/certificate attainment, employment status, etc.
- Effects of varying course equivalent delivery systems on student and school level outcomes

Project Technical Assistance

Participants reported accessing Lane ESD/ODE specialists for assistance from 0 to 4 times during the project year. When asked about the kinds of technical support they felt would be most useful to teachers/schools wanting to implement course equivalency classes, the following suggestions were noted:

- **Standard alignment review**
- **Classroom coaching**
- **Developing common assessments with core subject area classes**

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APPENDIX A: INTERVIEW PROTOCOLS

TEACHER/ADMIN INTERVIEW PROTOCOL

The goal of the teacher/administrator interviews is to gather perceptions around the implementation of the credit equivalency class in which they participated.

Welcome

Thank you for your willingness to participate in this interview.

The results of our talk will be used to give feedback to the state-level credit-equivalency program designers on what works well for schools, teachers, and students and what needs to be improved or changed.

Introductions

Please tell me your name and your role at this school and in the credit-equivalency pilot program.

Guidelines

I'm going to be asking you some questions to guide our discussion. There are no right or wrong answers, only differing points of view. Please feel free to share your point of view. Keep in mind that I'm just as interested in constructive suggestions for improvement as I am in positive comments, and at times the constructive comments are the most helpful.

I will be audio recording this discussion today so that I can focus on the conversation and not on note taking. I will be asking you for your assent to do so. *Say to the participant*: This is _____ (*Interviewer Name*) interviewing _____ (*participant*) on _____ (*date*). I am audio recording this interview. Is that ok with you? (*Wait for positive response*) Thank you.

Thematic Topics

1) Background

- Please tell me about the CTE class that was implemented at your school.
- What was the motivation behind participating in this project?
- How supportive of the process are other teacher/administrators in your school? Administrators in your school/district? Parents in your district?

2) Implementation

- What do you see as the pieces that need to be in place from an administrative perspective to overcome challenges? Were any of these pieces in place before this

project? If not, what did you have to get into place to secure project support? (i.e., Did nobody care or was there time spent building a message?
- Was there a board or school policy enacted as part of this undertaking? (Ask to collect documents if so)
- What makes it possible to accomplish this work in your district/school? (Probe to determine if there is emphasis on the technical aspects or attitude/drive)

3) Barriers/Supports

- Have you encountered any barriers that have hindered your progress with the course development process? Have you encountered any barriers that have affected course implementation plans?

- What have you learned? (*May want to probe responses here, depending on answers*: What have you learned about the course alignment process? What have you learned about working with your school/district in establishing course equivalency?)

- What kinds of supports would help you?

4) Instructional Practice

- Tell me about students' learning experiences in the CTE course.
- Was there anything that stood out to you about how students reacted to the learning opportunities in the CTE class? (specific examples and connections to personalized learning and learning of academic content)
- What would you do differently/add/take out next time the course was offered?

5) Course Details

- Has anything changed in the details of how course equivalency will operate in your school/for your course since the beginning of this project?
- Probe for specific details of any course decisions, including:
    - Will you offer a general math/science/ELA credit, or will your course be equivalent to a specific course? Which one?

    - How long is your course? (One/two semesters, terms, trimesters, etc.)

    - Will you offer a half- or full-credit of math/science/ELA?

STUDENT INTERVIEW PROTOCOL

The goal of the student focus groups is to gather student perceptions around their experience with the credit equivalency class in which they participated.

Welcome

Thank you for your willingness to participate in this focus group. My name is Tracy Bousselot and I'm a research associate at the Educational Policy Improvement Center. I am interested in hearing from you as student experts on the knowledge and skills that you are learning in your CTE class.

The results of our talk will be used to give feedback to the people who are working on designing credit equivalency classes on what works well for students and what things could be made better.

Introductions

Please tell us your name and what grade you are in (*maybe include more getting to know you type of talk here too*).

Guidelines

My role as facilitator will be to guide the discussion. There are no right or wrong answers, only differing points of view. Please feel free to share your point of view even if it differs from what others have said. Keep in mind that I'm just as interested in constructive suggestions for improvement as I am in positive comments, and at times the constructive comments are the most helpful. Also keep in mind that I want everyone to feel comfortable speaking so whatever is said in here should stay in here and not be shared with others once you leave.

I will be audio recording this discussion today so that I can focus on the conversation and not on note taking. I will be asking each one of you for your assent to do so. *Say to the participant*: This is _____ (*Interviewer Name*) interviewing _____ (*participant*) on _____ (*date*). I am audio recording this interview. Is that ok with you? (*Wait for positive response*) Thank you.

Thematic Topics

1) Please tell me about the [name of CTE class] you took/are taking.

- Why did you sign up for the class? How did you hear about it?

- Did you know that you would receive [content area] credit for the class? If so, was that part of the reason you took it? [probe here for answer to whether or not the class is perceived as a "lesser" option]
- Have you ever taken a career technical education, or CTE, class before?
- Would you take another CTE class if you knew that you could get content area credit?
- Does earning core academic content credit from this class help you reach your academic goals? How? [Probe here to better understand possible justifications for offering these types of classes to students, e.g., Is this something that gets them closer to graduation, something that opens up their schedule for other classes, etc.]

2) How has what you have learned in [name of CTE class] affected your learning of [name academic content area (math, science, ELA)]?

- Ask for specific examples of how learning is affected.

3) What do you like best/what is challenging about [name CTE class]?

- What is different about what/how you learn in this class than what/how you learn in your other classes?
- Has what you learned in this class affected how you do things in any of your other classes? If so, please provide an example.

APPENDIX B: SCHOOL PROFILES

BEND SENIOR HIGH SCHOOL

DAYTON HIGH SCHOOL

HOOD RIVER VALLEY HIGH SCHOOL

MOHAWK HIGH SCHOOL

WILLAMETTE HIGH SCHOOL


epic
educational policy improvement center
empowering students for college and career