

# Well Rounded Access Program Needs Assessment

A Report on Access to STEAM and the Arts  
for K-12 Students in Oregon

January 2022



TABLE OF CONTENTS

Table of Figures.....	2
Contacts .....	3
Acknowledgements.....	3
Executive Summary.....	4
Introduction.....	4
Methods.....	5
Key Findings.....	6
Recommendations.....	8
Definitions and Acronyms.....	10
Background .....	12
Needs Assessment Purpose .....	13
Methods.....	13
Statewide Analysis of Courses.....	13
Community and Education Partner Engagement Sessions .....	14
WRAP Engagement Survey .....	14
Additional Well-Rounded Education Data and Research .....	14
Objectives.....	14
Objective 1: Understanding the Current Landscape .....	15
Objective 2: Determine Existing Barriers/Needs in Access .....	22
Objective 3: Strategies, Practices, and Other Actionable Recommendations .....	40
Conclusion.....	45
Next Steps.....	45
References .....	47
Appendix A: Course Data Collected By ODE .....	49
Appendix B: Survey Questions and Descriptive Statistics.....	50
Survey Limitations .....	51
Additional Survey Question Analysis .....	52
Appendix C: Course Enrollment Disproportionality Analysis and Test Statistics .....	55

## Table of Figures

Figure 1: Top 10 Responses to: Outside of school, there are opportunities in our community for students to learn about .....	20
Figure 2: Well-Rounded Education at my school(s) is funded by.....	21
Figure 3: How would you describe the stability of funding for well-rounded education at your school(s)? .....	21
Figure 4: The percent of students attending school with courses in specific arts discipline by locality .....	23
Figure 5: The percent of students attending an elementary, middle, or high school without a standalone course in the arts by locale.....	23
Figure 6: Enrollment of public schools without a reported course in any arts discipline compared to the total enrollment of all schools by locale .....	24
Figure 7: Percent of students attending a public high school without a reported computer science course by locale.....	26
Figure 8: Enrollment of public high schools without a reported computer science course and total high school enrollment by locale .....	26
Figure 9: Percent of students attending a high school without a reported engineering and technology course by locale.....	27
Figure 10: Enrollment of high schools without a reported engineering and technology course and total high school enrollment by locale .....	28

## Contacts

Well-Rounded Access Program shared email address: [ODE.WRCoursesGrant@ode.state.or.us](mailto:ODE.WRCoursesGrant@ode.state.or.us)

For the most up-to-date information about the Well-Rounded Access Program, sign up to receive updates from the Well-Rounded Access Program newsletter.

Visit the [Expanding Access to Well-Rounded Education](#) webpage to view the Expanding Access to Well-Rounded Courses Demonstration Grant proposal documents and find additional documentation/updates.

## Acknowledgements

We would like to express our gratitude and thanks to the following organizations and individuals who volunteered their time, sharing their experiences with us and connecting us with others doing incredible work in Oregon.

American Indian/ Alaska Native Advisory Group	Oregon Latinx Leadership Network
Arts Center East	Oregon Long Term Care and Treatment Directors
Arts in Education of the Gorge	Oregon MESA
Asian Pacific American Network of Oregon	Oregon Music Education Association
English Learning Advisory Group	Oregon STEM Investment Council
FACT Oregon	Oregon Theatre Education Association
Lane Arts Council	Portland Art Museum
Marna Stalcup	Portland Public Schools Arts Department
Miller Foundation	Regional Arts and Culture Council
Nancy Carr	Regional STEM/STEAM Hubs
Oregon Alliance for Arts Education	Salem Art Association
Oregon Arts Commission	State Advisory Council for Special Education
Oregon ASK	Young Audiences Arts for Learning
Oregon Community Foundation	
Oregon Computer Science Teachers Association	

\*Many other individuals who also participated through survey responses to contribute to this work

## Executive Summary

### Introduction

In 2020, Oregon received a five-year, \$9.8 million grant from the U.S. Department of Education through the Expanding Access to Well-Rounded Courses Demonstration Grant program. This grant provided a unique opportunity to create an innovative program with the purpose of expanding access to well-rounded courses for Oregon's K-12 students with a focus on STEAM (science, technology, engineering, arts, and math) and arts-specific content. This particular focus recognizes the value of STEAM and arts education in bolstering student engagement and providing increased opportunities for students to develop cross-cutting skills, while also highlighting the benefits of increasing capacity for a robust arts education program across the state. In the initial grant proposal, the Oregon Department of Education (ODE) identified the goal of achieving increased access to well-rounded courses in STEAM and the arts which was accompanied by the following four primary strategies:

- ODE partnering with STEM/STEAM Hubs and higher education partners to develop STEAM-related course content and provide professional learning opportunities to educators;
- ODE hiring an Arts Education Specialist to build partnerships with the Oregon arts community, arts educators, and STEM/STEAM hubs to increase access to arts education and more fully realize STEAM education;
- ODE utilizing the Oregon Open Learning and Oregon Digital Learning programs to expand access to course content; and
- ODE engaging in a competitive procurement process to create new course content and access structures.

## STEAM

An approach to teaching and learning that emphasizes the natural interconnectedness between science, technology, engineering, arts, and mathematics. Although the acronym for STEAM stands for these particular content areas, the term refers to a cross-content instructional practice that includes but is not solely specific to these named content areas. Rather, the connections are made explicit through collaboration between educators resulting in real and appropriate context built into instruction, curriculum, and assessment. The common element of problem solving is emphasized across all STEAM disciplines allowing students to discover, explore, and apply critical thinking skills as they learn.

Throughout this document, STEAM is used to refer to this approach to teaching. However, names of organizations are referred to by their titles (STEM, STEAM, or STEM/STEAM).

The Well-Rounded Access Program (WRAP) is the ODE's approach to meeting this goal and creating opportunities for increased access to well-rounded courses through funding from the U.S. Department of Education's Expanding Access to Well-Rounded Courses Demonstration Grant. This grant allowed for a yearlong planning phase, which provided time to conduct a needs assessment to include both quantitative and qualitative analysis with a focus on community input. The intention is for this needs assessment to be used to guide the development of a long-term plan for the grant funds that effectively and equitably increases access to well-rounded educational opportunities for students across the state.

Between May – November 2021 the WRAP team conducted a needs assessment to:

- Examine the current landscape of funding, programs, and existing educational opportunities in STEAM and the arts for K-12 students in Oregon;
- Analyze statewide course enrollment data in order to identify possible disparities in course availability by location and course access for K-12 students attending public schools;
- Determine the existing barriers to course availability and access that cause any identified course disparities; and
- Introduce practices, strategies, and additional recommendations for the WRAP to pursue in the implementation of the program and deployment of grant funds.

The WRAP Needs Assessment identified three key findings: 1) awareness of STEAM and arts course availability is inconsistent throughout the state; 2) there is evidence of disparities in STEAM and arts course availability for rural students in Oregon; 3) there exist disparities in access to STEAM and arts courses for historically and systemically marginalized student groups.

Moreover, barriers were identified through engagement feedback and existing research regarding the observed disparities. In terms of the availability of courses, identified barriers included cost of course materials, limited staff capacity, and limited community resources. Where courses are available, further barriers identified as causing course access disparities for students included staff bias and gatekeeping, course scheduling, cost of courses, location and time, and students feeling unsafe or unwelcome in the course.

Given the key findings and identified barriers, the recommended areas of focus for the WRAP include coordinating communication and messaging around STEAM and the arts, increasing access to high quality curriculum, expanding curriculum for elementary and middle school students, and authentically partnering with established organizations and programs.

## Methods

The WRAP needs assessment included multiple methods of quantitative and qualitative analysis. Quantitative analysis data included information on statewide courses and staff, which were analyzed to identify course disparities for students in both availability and access. The gathering and analysis of qualitative data was based on the [WRAP engagement plan](#), which aimed to reach those individuals and organizations with whom ODE had not included in past engagement efforts, based on the likelihood that

they will be most impacted by this program. These data included input from community and education partners, gathered through virtual engagement sessions which took place between July – October 2021. Further, results were analyzed from a survey disseminated in September 2021 as an additional tool to gather feedback from community partners, as well as reach additional community members. The needs assessment also includes findings from related research conducted by [other researchers and organizations](#).

Quantitative data analysis drew on statewide datasets focused on STEAM and arts courses and the staffing of these courses with the following research questions guiding the analysis:

- Are there disparities in course access for students who are traditionally underrepresented (e.g., students identifying as female in computer science courses)?
- Are there disparities in course access for students who are historically and systemically marginalized within education (e.g., students of color, students experiencing disabilities, students who are emergent bilingual)?
- Are there disparities with regards to course access based on geographical location?

Qualitative data analysis included input and feedback gathered during the engagement sessions with community and education partners as well as survey data as represented in the WRAP Engagement Plan which aimed to reach individuals and organizations who had been unrepresented in past engagement efforts as analyzed. The following research questions guided the qualitative analysis:

- What systemic barriers to course access in STEAM courses and the arts exist within schools across Oregon?
- What opportunities exist to overcome the systemic barriers identified?

## Key Findings

Through engaging in multiple methods of data analysis, the WRAP team was able to examine the landscape of existing programs and funding structures for educational opportunities in STEAM and the arts in Oregon. This analysis, which will be discussed in depth through the remainder of the WRAP Needs Assessment, identified significant systemic disparities in both course availability for students in rural communities and course access for students from historically and systemically marginalized student groups. A total of three key findings were identified which are each supported by data that were gathered and analyzed as part of the process of completing the needs assessment.

1. [There are numerous sources of funding and programs that provide educational opportunities to students in STEAM and the arts both within and outside of school. However, knowledge and awareness of these opportunities may not be widespread among educators, students, or families.](#)

- Even though sustainable funding sources exist, most school and district administrators surveyed (55%) had negative perceptions about the stability of funding for well-rounded education.
- Additional survey results (35% of survey respondents) indicated uncertainty about the existence of available educational opportunities for students outside of the regular school day.

## 2. Students in rural communities experience disparate opportunities to engage in STEAM and arts courses when compared to their peers in more densely populated localities.

- Students in rural communities have significantly less access to arts courses in their public schools than other student groups, with 45% of elementary students in rural communities attending a school without a standalone course in any arts discipline compared to 26% in towns, 10% in suburbs, and 20% of elementary students in cities.
- Students in rural communities are more likely than students in more densely populated localities to attend a high school without any STEAM related courses. 17% of high school students in rural communities attend a school without computer science courses compared to 3% of high school students in cities. 39% of high school students in rural communities attend a school without an engineering and technology course compared to 10% of high school students in cities.

## 3. Even when STEAM and arts courses are available at their schools, many students experience disparate access to enrollment.

- In the arts, the following student groups are underrepresented in course enrollment: Latino/a/x students, Native American/Alaska Native students, students experiencing disabilities, Ever English language learners, and students identifying as male.
- In STEAM, the following student groups are underrepresented in high school course enrollment: Black/African American students, Latino/a/x students, students experiencing disabilities, Ever English language learners, and students identifying as female.

Further, specific barriers were identified as associated with key findings 2 and 3, which highlight opportunities for the WRAP grant in connection with the overall goal of achieving increased access to well-rounded courses in STEAM and the arts for students across the state of Oregon.

In connection with Key Finding 2, the needs assessment identified the following as barriers that currently limit the availability of STEAM and arts educational opportunities in which students can engage.



- **Material Resources** – The cost of material resources can be particularly high for STEAM and arts courses as there are often additional material costs associated with specific supplies and classroom equipment.
- **Staff Capacity** – Hiring credentialed teachers in specialized subject areas such as STEAM and the arts can be a challenge, particularly for schools in rural communities.
- **Community Resources** – In areas where there are few, if any, organizations able to provide additional educational opportunities outside of school, this can serve as a barrier to access.

In connection with Key Finding 3, the needs assessment identified the following as barriers that currently limit students' access to STEAM and arts educational opportunities.

- **Staff Bias and Gatekeeping** – Within some schools and districts, students are required to pass prerequisite courses or have teacher recommendations to enroll in STEAM and arts courses. This, along with the potential for counselors, teachers, and/or principals to discourage student enrollment can serve as a gatekeeper.
- **Course Scheduling** – Limited flexibility in course scheduling can be a hindrance for students wanting to take specific courses. This most acutely impacts students experiencing disability, students who are emergent bilingual, or students who receive support or interventions outside of the classroom and are thus excluded from taking elective courses.
- **Cost of Courses** – Specialized courses such as STEAM and arts courses often require higher costs. If students and families are required to pay for course materials, this can serve as a barrier for students navigating poverty.
- **Location and Time** – If educational opportunities are offered outside of school and/or outside of the regular school day and transportation or additional times are not offered, this has the potential to impact access for students without transportation options and students who provide childcare for siblings or have other work obligations.
- **Students Feeling Unsafe or Unwelcome in the Course** - Even if students are able to enroll in STEAM and arts courses, they may avoid doing so not for lack of interest in learning the course content, but because they do not feel safe or welcome within the learning environment.

In addition to the key findings above, the COVID-19 pandemic has impacted well-rounded educational opportunities for students. Although the specifics of this impact are not contained in this report, engagement partners did share how the pandemic has exacerbated existing barriers to equitable access as well as create conditions for new barriers, including COVID-19 safety mitigations and their impact on equipment use, physical distancing, and activities with high levels of aspiration. The implications and limitations presented for students vary widely by site and program.

## Recommendations

Recommendations were developed based on research as well as community engagement feedback with a focus on ways in which to disrupt systemic barriers impacts Oregon students in equitably accessing STEAM and arts courses. Recommended areas of focus for the implementation of WRAP include:

- **Communication and Messaging** – In an effort to respond to the needs regarding expanding awareness of STEAM and arts courses and opportunities, developing communication pathways and creating consistent and responsive messaging will be an important part of the WRAP work. This involves a two-prong approach including coordinating outreach and communication between school administrators, STEM Hubs, arts and other community organizations, as well as creating messaging around unified education concepts and definitions related to STEAM and the arts.
- **The Adoption and Implementation of High-Quality Curriculum** – In order to ensure that students experience deep learning and a sense of belonging within their courses, it is important that a high-quality curriculum is implemented. For the purposes of this work, high quality curriculum includes interdisciplinary/cross-curricular content, incorporates Essential Skills, is culturally responsive, and follows the guidelines of Universal Design for Learning (UDL).
- **Expanding Foundational Curriculum for Elementary and Middle School Students** – In connection with high quality curriculum, there should exist an assurance statewide regarding increased access to STEAM and arts courses for students of all ages. This involves expanding curriculum that introduces students to foundational concepts in STEAM, the arts, and career exploration during grades K-8 to prepare students for more in-depth learning during high school.
- **Authentically Partnering with Established Organizations and Programs** – Success in expanding access to well-rounded educational opportunities already exists for established organizations and programs in some Oregon communities. To build on currently operating organizations and existing programs, WRAP should seek to work alongside those who are already engaging in this work and deeply know the local community and its needs.

## Definitions<sup>1</sup> and Acronyms

**The Arts:** The arts include the five content areas of dance, theater, visual arts, music, and media arts. There are different approaches to standards-based arts instruction. Each arts content area has related [state standards](#) adopted by the Oregon Department of Education.

**Culturally Responsive Teaching:** Culturally responsive teaching empowers students intellectually, socially, emotionally, and politically by using cultural referents to impart knowledge, skills, and attitudes. It recognizes the diverse cultural characteristics of learners as assets.

**Disproportionality:** The over- or under-representation of students in areas that impact their access to educational opportunities.

**Educational Opportunities:** Educational opportunities refer to, and may be used interchangeably with, courses, classes, class/course lessons, or out-of-school-programs (etc.) at the elementary, middle, and high school level.

**STEAM Education:** An approach to teaching and learning that emphasizes the natural interconnectedness between science, technology, engineering, arts, and mathematics. The connections are made explicit through collaboration between educators resulting in real and appropriate context built into instruction, curriculum, and assessment. The common element of problem solving is emphasized across all STEAM disciplines allowing students to discover, explore, and apply critical thinking skills as they learn. Because this definition is focused on cross-content teaching practices, both “STEM” and “STEAM” are used throughout the state. ([Oregon STEM Education](#))

**Teaching Artist:** Teaching artists are professional artists who teach arts content in various settings including schools and community-based programs.

**Historically and Systemically Marginalized Students:** Students that the dominant educational system has historically and currently excluded, impacted, marginalized, underserved, and/or refused service because of their race, ethnicity, English language proficiency, socioeconomic status, gender, sexual orientation, abilities, and geographic location. Many students are not served well in our education system because of the conscious and unconscious bias, stereotyping, and racism that is embedded within our current inequitable education system.

**Well-Rounded Education:** While the Federal Every Student Succeeds Act (ESSA) defines a well-rounded education to include a wide variety of subjects and areas of study, Oregon believes a well-rounded education moves beyond the courses students take, and into the essential knowledge and skills students are learning in those courses. We know that a well-rounded education provides the knowledge and skills to live, learn, work, create, and contribute. It also ensures that each and every student is known, heard,

---

<sup>1</sup> These definitions were developed by the Oregon Department of Education and serve to provide context specifically to this Needs Assessment, unless otherwise cited.

and supported. The goal of this work is to establish and actualize a definition of well-rounded education that focuses on the whole student and their community, the learning experiences they are given, the knowledge and skills they learn, and the beliefs and attributes they develop. ([Oregon's Consolidated State Plan under the Every Student Succeeds Act](#): Definition for Well-Rounded)

**Acronyms:**

**CBO:** Community-Based Organization

**CTE:** Career and Technical Education

**ESEA:** Elementary and Secondary Education Act

**ESSA:** Every Student Succeeds Act

**ESSER:** Elementary and Secondary School Emergency Relief

**LEA:** Local Education Agency

**ODE:** Oregon Department of Education

**SEL:** Social Emotional Learning

**SIA:** Student Investment Account

**SSA:** Student Success Act

**STEAM:** Science, Technology, Engineering, Arts, Math<sup>2</sup>

**UDL:** Universal Design for Learning

**QEM:** Quality Education Model

**WRAP:** Well-Rounded Access Program



---

<sup>2</sup> Although the acronym for STEAM stands for particular content areas in science, technology, engineering, arts, and math, the term STEAM is a cross-content instructional practice that includes but is not solely specific to these named content areas.

## Background

Extending the promise of a well-rounded education is one pillar of Oregon's Consolidated State Plan under the Every Student Succeeds Act (ESSA). In 2020, Oregon received a five-year, \$9.8 million award from the U.S. Department of Education's Expanding Access to Well-Rounded Courses Demonstration Grants Program. The Well-Rounded Access Program (WRAP) is the Oregon Department of Education's (ODE) approach to increasing this access. ODE was awarded a planning year during the first year of the grant to conduct a needs assessment, gather community input, and develop the process for implementing this grant in the remaining four years of the grant period.

ODE is focusing its approach on developing, expanding, and implementing a course-access program by expanding access to STEAM-related courses. Specifically, ODE is proposing to expand Oregon's existing STEAM program in continued partnership with the Oregon STEM Council, regional STEM/STEAM Hubs, and higher education partners while building statewide capacity to provide students with access to high quality courses in the arts and more fully realize STEAM education in Oregon. This will include developing course options through the proposed grant will be accessible to students through a combination of in-person, hybrid, and remote learning formats to meet the diverse and evolving needs of Oregon's students and communities.

---

*The arts, which include dance, theater, visual arts, music, and media arts, are critically important to a well-rounded education. Through high quality education in the arts, students develop essential skills that prepare them for college and career in the 21<sup>st</sup> century. In creating, presenting, connecting, and responding to diverse artistic works, students' self-expression, identity, and ways of knowing have the potential to be honored and emphasized. The arts provide opportunities to bring meaning, joy, and deep learning to the educational experience of our students.*

---

Four strategies from the grant proposal guide this work:

1. Utilize Oregon's statewide system of regional STEM/STEAM Hubs and higher education partners to both expand development of STEAM-related course content and provide professional learning opportunities for educators at the local and regional levels to support high-quality instructional practices in delivering STEAM-related courses.
2. Increase ODE's internal staffing capacity to coordinate engagement of Oregon arts educators to identify and develop high-quality creative commons licensed arts-related course content.
3. Utilize existing state programs to provide educators with access to STEAM-related course content.
4. Engage in a competitive procurement process to identify additional partners to help ODE meet the needs of Oregon students in accessing well-rounded courses.

### WRAP Vision

The Vision of the Well-Rounded Access Program (WRAP) is for every child and youth in K-12 schools in Oregon to have access to well-rounded learning that broadens their experiences, leads to choice-filled lives, and equips them to learn, live, work, and contribute to their communities.

### WRAP Purpose

The purpose of the WRAP is to expand well-rounded opportunities for students in K-12 Oregon schools by creating a sustainable system that increases access and accessibility to these courses, prioritizing these opportunities for historically and systemically marginalized students.

### WRAP Goals

The WRAP aims to achieve the following goals:

1. Provide students with key cross-cutting knowledge and skills that apply to all subject areas central to a well-rounded education.
2. Increase access to well-rounded educational opportunities and resources with a focus on STEM/STEAM and arts education.
3. Develop and maintain an arts program across the state providing students with high quality courses in the arts to more fully realize STEAM education.

### Needs Assessment Purpose

The purpose of the WRAP needs assessment is to guide the implementation of WRAP in an equitable and effective manner through a systemic examination of well-rounded education in Oregon with the goal of identifying areas of promise and need with a focus on STEAM and the arts.

### Methods

Multiple methods of data collection and analysis were employed to create the WRAP needs assessment including analyzing systemic disparities in course availability and access, identifying barriers to courses for students, and giving voice to community and education engagement partners. The analyses and data used to inform the WRAP needs assessment are a primary quantitative statewide analysis of courses, qualitative analysis of engagement sessions, a mixed-methods analysis of the WRAP Engagement survey, and inclusion of additional relevant secondary analysis and data. Following is a summary of methods used.

### Statewide Analysis of Courses

The most recently available school year of ODE's existing administrative datasets on courses were analyzed to determine if there were disparities present in course availability and access. The analysis included: 1) examining differences by school locality in the courses available to students and; 2) examining the proportional enrollment of courses. The following research questions guided the analysis:

- Are there disparities in course access for students who are traditionally underrepresented (e.g., students identifying as female in computer science courses)?
- Are there disparities in course access for students who are historically and systemically marginalized within education (e.g., students of color, students experiencing disabilities, students who are emergent bilingual)?
- Are there disparities with regards to course access based on geographical location?

## Community and Education Partner Engagement Sessions

To ensure an accurate and comprehensive needs assessment for the WRAP, initial community and education partner engagement sessions were conducted virtually between July – October 2021. The intent of this engagement process was to include those individuals and organizations who have been omitted from past engagement and who will likely be most impacted by this program. ODE's [Student Investment Account Community Engagement Toolkit](#) was used as a model to determine partners in this work. A full list of engagement partners and additional information about the engagement sessions can be found in the [WRAP Engagement plan](#).

The following research questions guided the qualitative analysis:

- What systemic barriers to course access in STEAM courses and the arts exist within schools across Oregon?
- What opportunities exist to overcome the systemic barriers identified?

## WRAP Engagement Survey

A web survey was conducted during September 10-30, 2021 resulting in a sample of 222 respondents. A snowball sampling method was used to gather an increased depth and breadth of possible respondents. The survey was distributed to engagement partners and promoted in several ODE newsletters to target a broad range of respondents including community organization representatives, school and district staff, STEM/STEAM Hub staff, Education Service District (ESD) staff, parents/families of students, and other members of the K-12 education community. The survey asked respondents questions regarding current satisfaction with course access and availability and perceived barriers to a well-rounded education. The survey questions, descriptive statistics, and additional analysis are located in Appendix B.

## Additional Well-Rounded Education Data and Research

Informative research conducted previously by other organizations was also deemed important to paint a broader picture of STEAM and the arts and is therefore also included in the WRAP needs assessment. Additional research includes reports from community and non-profit organizations in Oregon, national reports and data, and academic articles.

## Objectives

The needs assessment is structured around three objectives:

1. Understand the current landscape of funding, programs, and educational opportunities in STEAM and the arts for K-12 Students across the State of Oregon.
2. Determine existing barriers in access to STEAM and arts courses for K-12 students across the state of Oregon, with a particular focus on barriers for historically and systemically marginalized students.
3. Determine strategies, practices, and other actionable recommendations that will support WRAP in achieving its vision, purpose, and goals.

## Objective 1: Understanding the Current Landscape

A specified requirement of the Expanding Access to Well-Rounded Courses grant is to avoid supplanting or duplicating existing courses. Through surveying existing programs and gaining an understanding of the landscape of opportunities for well-rounded education in STEAM and the arts, opportunities for funding and potential partners in the work should be identified. Identifying existing structures provides a starting point for analyzing what and where the needs and barriers are for providing well-rounded educational opportunities in STEAM and the arts.

### Well-Rounded Education Programs and Funding Sources

Well-Rounded educational opportunities are provided and funded by public, private, and non-profit providers, often in partnership with one another, both during the school day and outside of school. To better understand the opportunities that exist for K-12 students in Oregon to access learning in STEAM and the arts, an overview of the existing programs and funding sources is outlined in this section. This section is intended to be a high-level overview of programs and funding and is not an exhaustive list of all programs and funding sources for well-rounded education in the state.

### ODE Programs and Funding Sources

Presently, there are several different programs and funding sources for well-rounded education that originate from, or flow through, the Oregon Department of Education. This includes funding for education that is allocated by the Oregon state legislature and federal sources of funding that ODE manages and distributes to schools, districts, and other localized entities.

### Student Investment Account and Well-Rounded Education

In 2019, the Oregon State legislature passed the Student Success Act (SSA), which provides charter schools and districts with non-competitive grants through the Student Investment Account (SIA) to fund specific education initiatives in several specified areas, including Well-Rounded Education. The additional revenue generated from the Corporate Activity Tax associated with the SSA is projected to halve the funding gap between the Quality Education Model (QEM)<sup>3</sup> and the State School Fund in the 2021-23 biennium (9.1%) compared to what it was in the 2019-21 biennium (19.7%) (*Quality Education Model Final Report*, 2020).

Year one funding (October 2020 – March 2021) of the Well-Rounded Education SIA funds saw grantees spend \$14.7 million of the \$33.5 million budgeted. Well-Rounded Education expenditures accounted for approximately 21% of the \$69.3 million SIA expenditures in the period. Most of the funds were used to hire new teachers and purchase supplies and materials largely for Career and Technical Education (CTE), STEAM, and music/band. For the 2021-23 biennium, the state legislature has currently funded the SIA at \$892 million.

---

<sup>3</sup> The QEM is a research-based tool developed by the Quality Education Commission to determine the costs of providing the education programs necessary for Oregon's children to meet educational goals.



### Title IV-A Well-Rounded Education

An additional source of funding for well-rounded education from the U.S. Department of Education comes from Title IV-A. Under subpart 1 of Title IV, Part A of the ESEA, the Student Support and Academic Enrichment (SSAE) program, State educational agencies (SEAs), local educational agencies (LEAs), schools, and local communities can use program funds towards three areas including providing all students with access to well-rounded education. The [Title IV-A Allocations for 2019-20](#) totaled nearly \$10.25 million and distributed funds to 178 of 197 school districts in Oregon. On average, school districts receiving funds were allocated \$57,559.

### Title II-A Supporting Effective Instruction

The purpose of Title II, Part A is to improve teacher and leader quality with a focus on preparing, training, and recruiting high-quality teachers and principals. The Title II-A program is designed, among other things, to provide students from low-income families and historically and systemically marginalized students with greater access to effective educators. The adoption of the Every Student Succeeds Act (ESSA) widened the use of these funds to include STEAM and Career Technical Education (CTE) among others, signaling a shift away from siloed content area instruction toward a well-rounded education. Specifically, ESEA section 2101(c)(4)) (17) provides an allowance for SEA funding related to developing and providing professional development for educators in high-quality instruction and instructional leadership in science, technology, engineering, and mathematics subjects, including computer science. More information about Title II-A allocations for districts can be found on ODE's [Title II-A Supporting Effective Instruction website](#).

### Career and Technical Education

Major public funding for CTE include both the Federal Perkins V and state legislative investments. In the 2020-21 school year, Perkins V funds distributed about \$13.5 million to school districts, community colleges, and CTE Consortiums. This number will increase to about \$14 million for the 2021-22 school year. CTE Revitalization grants are available for qualifying schools and programs to provide funds for specific projects. Grant applicants can receive up to \$125,000 for their proposals. If the WRAP provides content areas specific to CTE or career pathways, there is potential to braid these funding sources with the WRAP funds. More information about CTE funding can be found on [ODE's CTE Funding](#) page.

### Elementary and Secondary School Relief (ESSER) Funds

Although [ESSER I, II, and III funds](#) are centered around addressing the impacts of COVID-19 specifically, safety measures such as universal masking, cohorting, and social distancing have created challenges to reinstating some well-rounded courses in a safe manner without additional funding support. This [side-by-side document](#) shows the differences between these three federal funding streams. There is potential for overlapping initiatives between the ESSER III set-aside and WRAP.

While there are available ESSER funds to use towards well-rounded education, there is some indication that past education relief funding has not been used as such. A national survey of arts educators found that most respondents (56%) indicated that, to their knowledge, their schools did not use any of

the previous approximately \$67 billion in federal K-12 education relief funding towards arts education (House, 2021).

### Summer Learning Grants

The pandemic has had an immense and disruptive impact on Oregon's children. Additionally, COVID-19 has disproportionately impacted Black, American Indian/Alaska Native, and Latino/a/x, Pacific Islander communities; students experiencing disabilities; and students and families navigating poverty. Students, families, and educators have been resilient in the face of the many challenges that have been presented by the pandemic. Nevertheless, many students have experienced interrupted learning and inconsistent connections with their peers due to systemic inequities that were both highlighted and exacerbated by the COVID-19 pandemic. Many students also continue to not have basic needs met such as food, shelter, and support for mental, social, and emotional health.

To address these needs, [House Bill 5042A](#) authorized the ODE to make available \$195.6 million General Fund and \$10 million Federal Funds in [grant funding](#) to participating school districts for academic summer school during summer 2021 to support high school students facing academic credit loss, summer enrichment programs, and wrap-around child care.

Specifically, the Summer Enrichment/Academic Program Grant provides grant funding to offer services for K-8 students for enrichment activities including robotics, dance, martial arts, art, music, outdoor programs, etc.

### 21st Century Community Learning Centers Competitive (CCLC) Grant

Courses for the WRAP may be created for in-school or out-of-school courses, and there is potential to braid funding sources for content created for out-of-school spaces, such as the 21st CCLC program, which is authorized under Title IV, Part B of the Elementary and Secondary Education Act, as amended by the Every Student Succeeds Act (ESSA). Grants are awarded through a competitive process to Local Education Agencies (LEAs), Community-Based Organizations (CBOs), Faith-Based Organizations, and other private or public entities, or a consortium of these entities, to provide comprehensive community learning center services.

The 21st CCLC grants support the creation of community learning centers that provide academic enrichment opportunities during non-school hours for children, particularly students who attend high-poverty and low-performing schools. The program helps students meet proficiency according to state and local standards in academic subjects, such as reading and math; offers students a broad array of enrichment activities that can complement their regular academic programs; and offers literacy and other educational services to the families of participating youth.

### Regional STEM Hub Network

Funding for Oregon's 13 regional STEM and STEAM Hubs are determined by the state legislature each biennium in the form of backbone funding and Innovation grants. The backbone funding provides the financial resources necessary for the Hubs to cover operational expenses and base-level programming. The Regional STEM Hub Network received about \$4.8 million in backbone funding during the 2019-21

biennium. The STEM Innovation Grants are designed to expand the implementation of effective programs related to STEAM education and to pilot innovative approaches or programs to STEAM education. In the 2019-20 biennium, the Oregon legislature allocated \$4.6 million for the STEM Innovation Grants (*2020 STEM Investment Council Legislative Report*, 2020). Funding for the Hubs is projected to increase in the 2021-23 biennium (SB 5513, 2021). The state legislature has allocated \$6.7 million for Hub backbone funding and \$5.3 million for innovation grant funding. Additional sources of funding for the Innovation grants for this biennium are \$0.9 million from Title II and Title IV funds.

STEM and STEAM Hubs were explicitly named in the grant proposal as a potential partner to implement the WRAP funded courses and instructional content. Hubs are collaborative, multi-sector partnerships of school district, post-secondary, business and industry, non-profit, and government entities. They operate in a defined geographic area providing professional development, small grants, lesson plans, and other curricular resources, and engaging learning opportunities to educators, students, and families in their regions.

### **Community Programs and Funding Sources of Well-Rounded Education**

Non-profit and other community organizations also provide and fund many of the well-rounded educational opportunities to students across the state, particularly for programs that run outside of the regular school day. A 2020 OregonASK report identified over 1,200 after school program sites across Oregon<sup>4</sup>, enrolling about 80,000 youth, or 16% of all children in the state. Because the offerings of community-based, well-rounded educational opportunities are often numerous and hyper-localized, this statewide analysis does not reflect all opportunities that exist across the state. The identified opportunities listed below have been highlighted to help paint a picture of the out-of-school landscape but are not meant to encompass all programs.

### **STEAM**

OregonASK conducted a survey of afterschool programs across Oregon in 2014 with a focus on the inclusion of learning opportunities in STEAM. The final survey sample included 84 programs, accounting for about 11% of all programs in the state at the time. Of the total programs surveyed, 66 reported providing STEAM learning opportunities. The surveyed programs predominately offered learning opportunities directly after school with many also offering summer programming. Further, there was at least one program that offered STEAM learning opportunities in out-of-school settings in each county. Many programs reported that they developed their own curriculum (47%) or used a combination of curricular materials developed by outside organizations and their own locally produced activities and lessons (40%). Surveyed programs reported that most of their funding came from private foundations (51%), business sponsorships (44%), parent fees (39%), and individual gifts (38%). Other noted sources of funding included fundraising events, state and local government, and local schools and districts (Coe, 2015).

---

<sup>4</sup> A map showing the locations of these after school programs can be found at the [OregonAsk website](#).

## The Arts

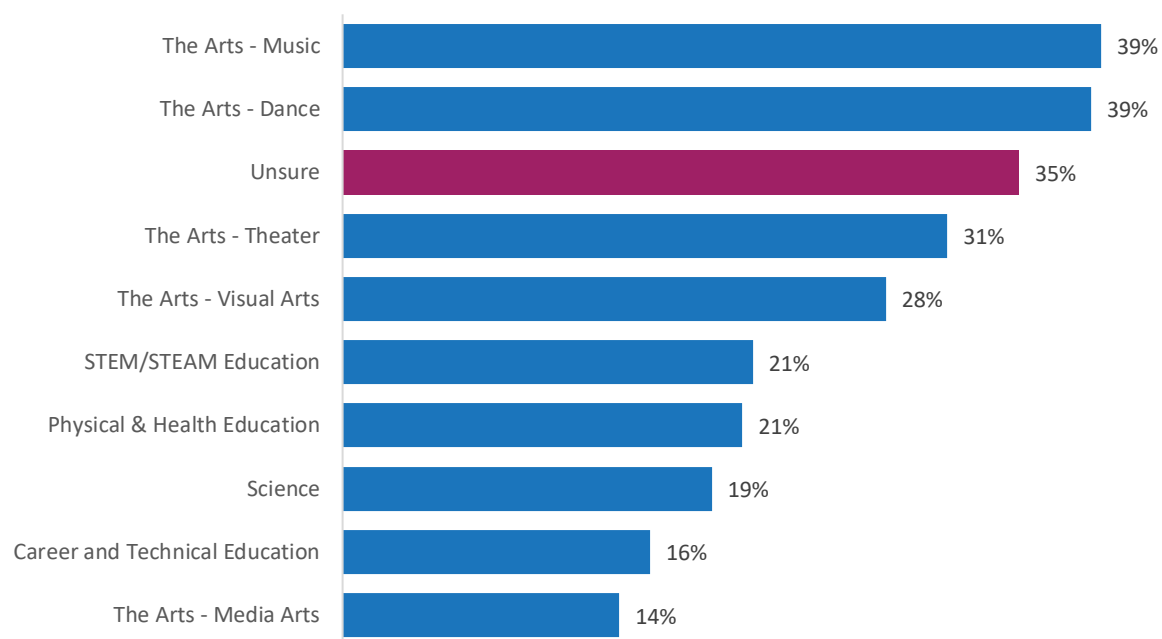
Arts organizations are key institutions in providing educational opportunities in the arts to Oregon students. The Oregon Community Foundation's 2019 [\*A Snapshot of K-12 Arts Education in Oregon\*](#) report contains illustrative examples of the successful partnership between local arts organizations and schools in providing arts education to students during the school day. The Oregon Community Foundation also recently completed a five-year grant program that invested \$6 million between 2014-2019 for 18 projects at schools across the state to expand and improve arts education (*Drawing Lessons from the Studio to School Initiative*, 2021).

Education in the arts is also available to Oregon students outside of the traditional school day. A survey from the *A Snapshot of K-12 Arts Education in Oregon* report, found that 120 of the 154 non-profit organizations that responded provided arts education programming to K-12 students during the 2017-18 school year, the majority of which served middle and high school students. The most common program types provided by the survey respondents were out-of-school and summer programming. Educational programming in music, theater, and visual arts were the top three most common disciplines offered. The arts organizations surveyed were primarily situated in Multnomah and Lane counties, but in total spread out across the state and with students being served in every county in Oregon (Leonard et al., 2019).

## Survey Results

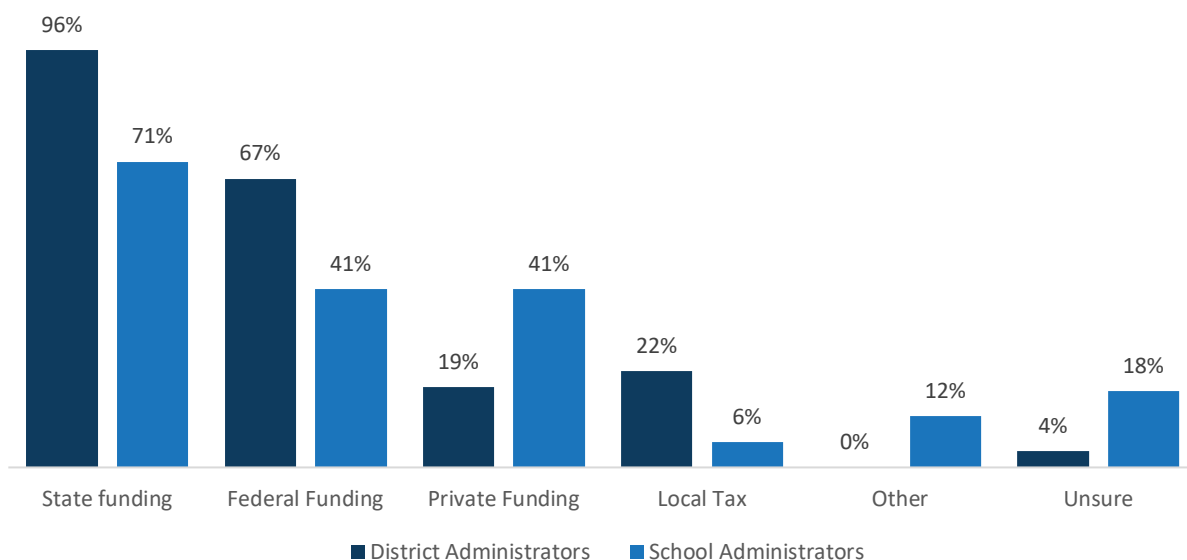
To provide additional insight into the current programs and funding for well-rounded education in Oregon, the WRAP engagement survey asked respondents about available out-of-school education programs by listing the possible subject areas that might be available to students outside of the school day. The top identified subject areas available to students by respondents are in Figure 1. All five of the categorized arts domains are identified in the top 10 subject areas. Notably however, the third highest response was "Unsure." Physical & Health Education may be in the top 10 subject areas due to some survey respondents choosing that subject area as a proxy for athletics.

Figure 1: Top 10 Responses to: Outside of school, there are opportunities in our community for students to learn about: (n = 189)



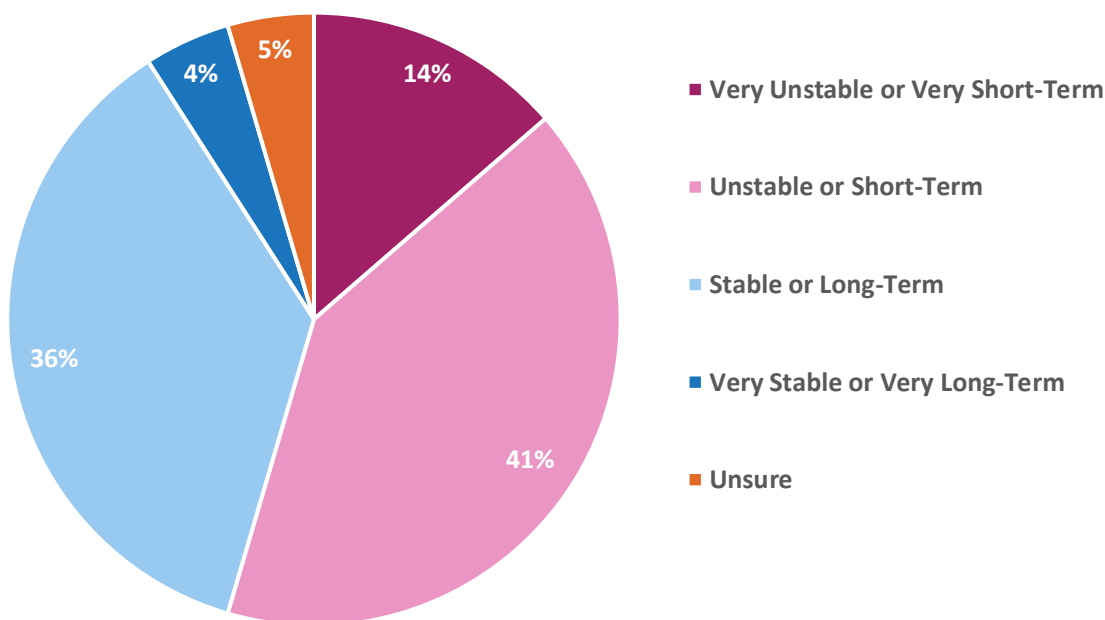
District and school administrators were asked several questions about funding for well-rounded education at their school or schools in their district. District administrators most frequently identified state funding (91%) as a funding source for well-rounded education followed by federal funding (67%), local tax (22%), and private funding (19%). School administrators also most frequently identified state funding (71%) as a funding source for well-rounded education, followed by federal funding and private funding (41%), other funding (12%), and local tax (6%). More school administrators (18%) indicated they were unsure about funding sources than district administrators (4%).

Figure 2: Well-Rounded Education at my school(s) is funded by: (School Administrators n = 17, District Administrators n = 27)



District and school administrators were also asked about their perception of the stability of the funding sources for well-rounded education. Most administrators had negative perceptions about the stability of funding for Well-Rounded Education with 55% of responses describing the funding as unstable or short-term to some degree compared to 40% of respondents describing the funding as stable and long-term to some degree.

Figure 3: How would you describe the stability of funding for well-rounded education at your school(s)? (n = 44)



## Objective 2: Determine Existing Barriers/Needs in Access

Analyses of the availability of courses and access to courses for students who have been historically and systemically marginalized by the education system were conducted using statewide data on K-12 courses. The purpose of these analyses is to determine whether or not there were disparities in course availability and access to courses for certain student groups and if so, to identify specifically which student groups are currently underrepresented in STEAM and arts courses. Information collected from the engagement sessions and survey focused on likely barriers that cause the identified disparities and are detailed below as well.

### Statewide Analysis of Courses

The Analyses of course availability and course enrollment disparities were conducted using administrative data that ODE collects from public schools and districts on an annual basis for students, teachers, and courses over the school year. This data analysis was done to better understand where courses in STEAM and the arts are available to students during the school day and which student groups have access to available courses. See Appendix A for a more detailed description of ODE's administrative data collections on courses, including the data collection process used in this analysis.

### Course Availability Disparity

This first section of the data analysis explores the course availability disparity of courses in the arts, computer science, and engineering and technology. The analysis<sup>5</sup> includes comparisons across geographic locales<sup>6</sup> to determine if there are differences between geographic locations in the availability for Oregon students to take courses in each subject area.

### The Arts

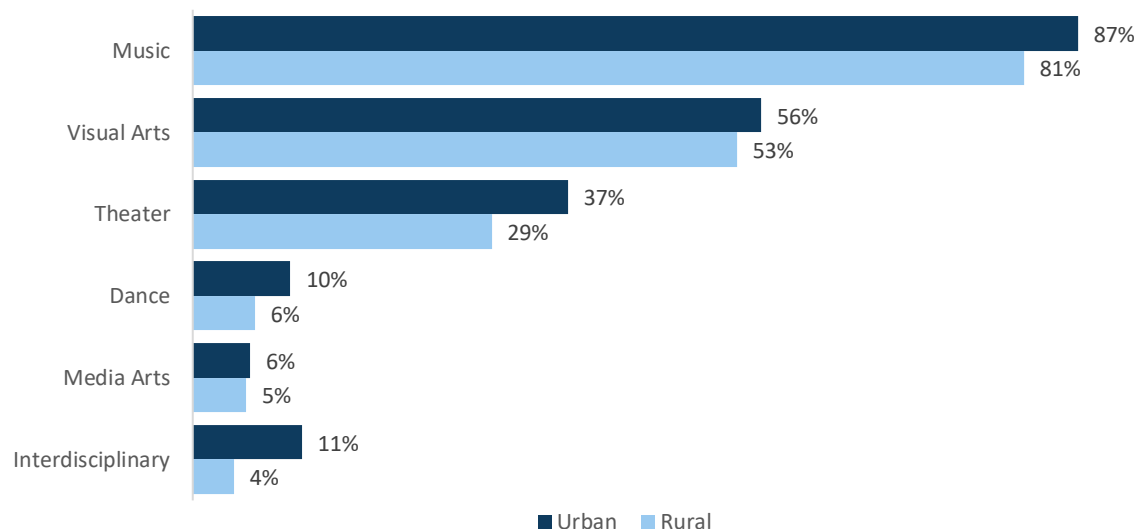
Courses in the arts are categorized into five domains: visual arts, music, theater, dance, and media arts. For the purposes of this report, interdisciplinary arts courses, which incorporate content from across at least two of the five domains, are also represented. Figure 4 describes the availability of courses in each arts domain for students by locality. Of these course subjects, music is the most widely available to students at school, followed by visual arts and theater. Dance, media arts, and interdisciplinary arts are available to 10% or less of students in both urban and rural communities.

---

<sup>5</sup> The analysis in this section uses data from the 2019-20 Staff Assignment data collection.

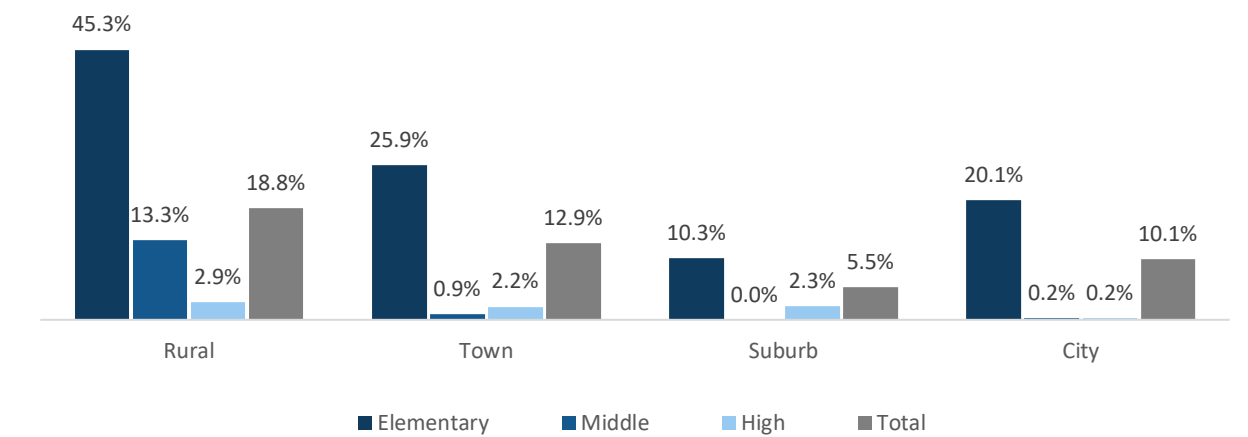
<sup>6</sup> Locale categories are geographic classifications based on the type of area in which schools and districts are located. The National Center for Education Statistics (NCES) classifies all territories in the U.S. into four types: rural, town, suburban, and city. For this analysis, when a rural/urban dichotomy is used, the rural and town locales have been combined into a single rural category, and the suburb and city locales have been combined into a single urban category. Data on school district locales can be found on the [NCES Education Demographic and Geographic Estimates webpage](#).

Figure 4: The percent of students attending school with courses in specific arts discipline by locality (Urban n = 363,105; Rural n = 198,904)



The analysis of arts courses reported at the district and school levels indicate that rural students have less access to opportunities to take a course in the arts at their school when compared to their peers in other localities, as shown in Figure 5. Specifically, about 45% of elementary students in rural communities attend schools without a standalone course in the arts, compared to 10% of elementary students attending school in the suburb locale, 20% of elementary students in the city locale, and 26% of elementary students in the town locale. At the middle school level, less than 2.5% of students in the city, suburb, and town locales attend schools without an arts course, compared to 13% of middle school students in rural communities. Nearly all high school students attend a school with an arts course, with only 0-3% of students across locales attending schools without an arts course.

Figure 5: The percent of students attending an elementary, middle, or high school without a standalone course in the arts by locale

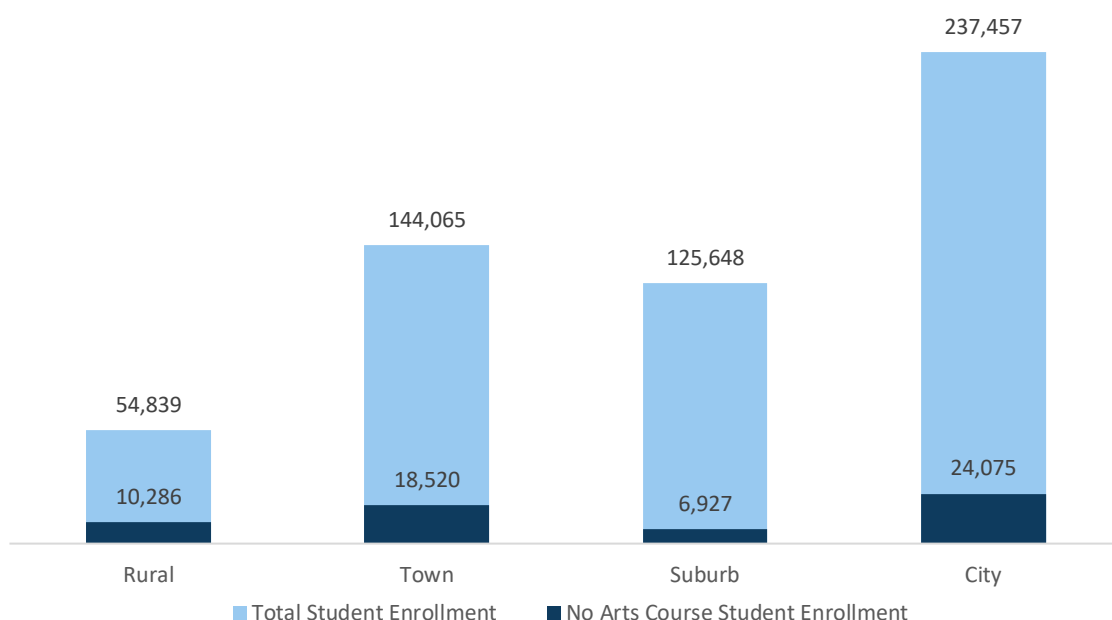




While Figure 5 shows a higher percentage of students in rural communities attend schools that do not offer courses in the arts, Figure 6 shows that by total enrollment, more students attending schools in the city and town locales do not have access to courses in the Arts at their school. A total of 10,286 students in the rural locale, 18,520 students in the town locale, 6,927 students in the suburb locale, and 24,075 students in the city locale attend public schools without courses in the arts.

By the time students are in middle and high school, the vast majority do have arts courses available to them. Over 97% of all high school students, and middle school students in towns, suburbs, and cities, attend a school that does offer a standalone course in the arts. Since most elementary schools have self-contained classes, arts education may be offered to students through integration with other content areas in their self-contained classes or by a teaching artist, rather than through a standalone course.

*Figure 6: Enrollment of public schools without a reported course in any arts discipline compared to the total enrollment of all schools by locale*



## STEAM

One of the defining characteristics of STEAM instruction is a course curricula integrated across content areas. While integrated courses may serve as a beneficial pedagogical approach to teaching students, courses with integrated content areas pose a challenge to analyzing course data collections built around a model of a single course containing a single content area. Despite this limitation, analyzing course offerings across the state in the single content areas that comprise STEAM (science, technology, engineering, arts, and mathematics) can still be informative, though the analysis here is limited to analyzing courses in engineering and technology.

Despite not having access to systematic data on STEAM courses taught in schools, there are at least 13 schools identified as “STEAM” schools and five schools identified as “STEM” schools, which each offer integrated content and project-based learning experiences to students. While most of these schools are located in the Portland Metro area<sup>7</sup>, the STEAM Leaders in Elementary Schools Innovation Grant has the potential to create expanded opportunities for additional STEAM schools beyond the Portland Metro. More information about the STEAM Leaders in Elementary Schools Innovation grant can be found on each of the participating STEM/STEAM Hubs’ websites: [Go STEM](#), [Umpqua Valley STEAM Hub](#), and [Columbia Gorge STEM Hub](#).

One soon-to-open STEAM school program outside of the Portland Metro area is the Amazon Web Services (AWS) Think Big Space public-private partnership, which is a new K-6 classroom and visitation program that will be located at the Port of Morrow’s Sustainable Agriculture and Energy (SAGE) Center in Boardman, Oregon. An instructional lead with Morrow County School District will oversee the space when it opens in late 2021 (Morrow County School District, 2021).

### Computer Science

The subject area of computer science was raised in multiple sessions with engagement participants as an opportunity to implement or expand STEAM courses in a content area with high workforce demand, high essential skills development, and with a high potential for arts integration with an emphasis on design.

Data shows that students attending schools in rural districts are less likely to have access to computer science courses. Figure 7 shows that 17% of rural high school students attend schools that do not offer computer science courses, compared to only 3% of students that attend a school in the city locale. While these data highlight the fact that nearly 83% of students attending public high schools in rural locales and 97% of students attending public high schools in city locales, there continues to be a geographical disparity regarding access. By student count, nearly 5,000 high school students in rural communities do not have access to computer science courses when compared to fewer than 2,000 high school students in cities, as shown in Figure 8.

---

<sup>7</sup> Visit the [Portland Metro STEM Partnership](#) website to learn more about these schools.

Figure 7: Percent of students attending a public high school without a reported computer science course by locale

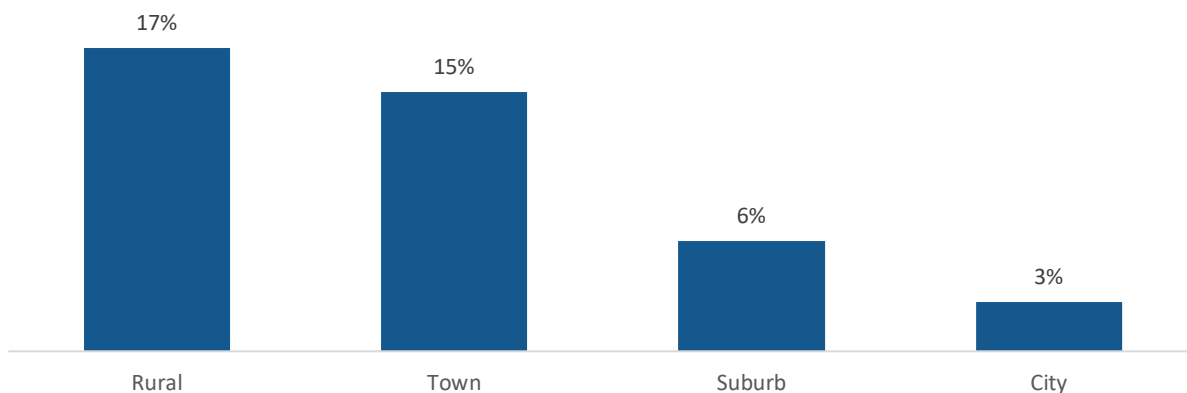
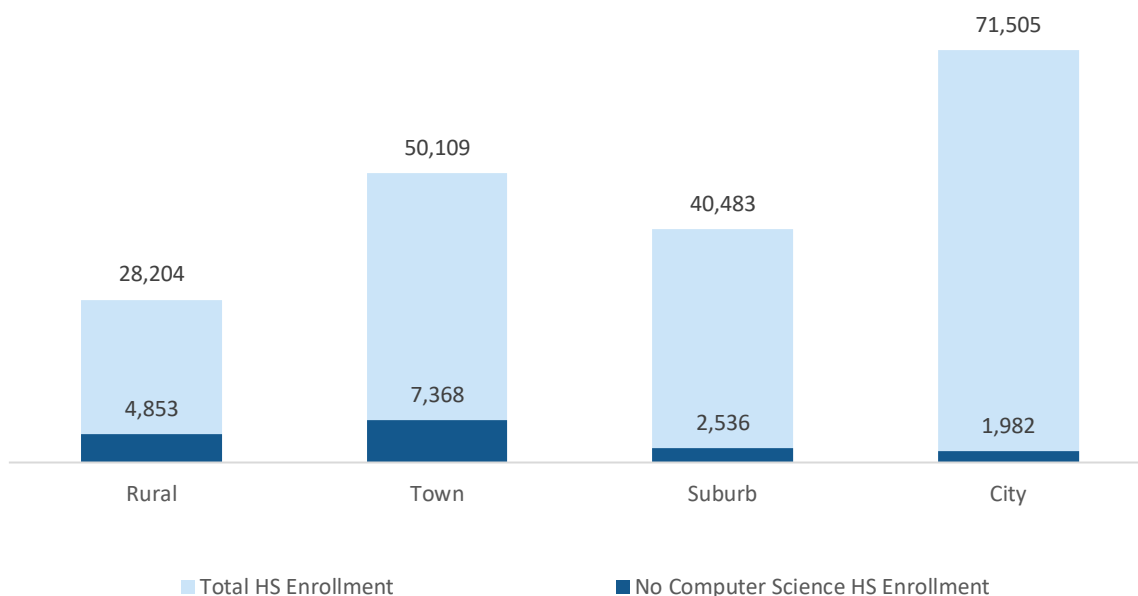


Figure 8: Enrollment of public high schools without a reported computer science course and total high school enrollment by locale

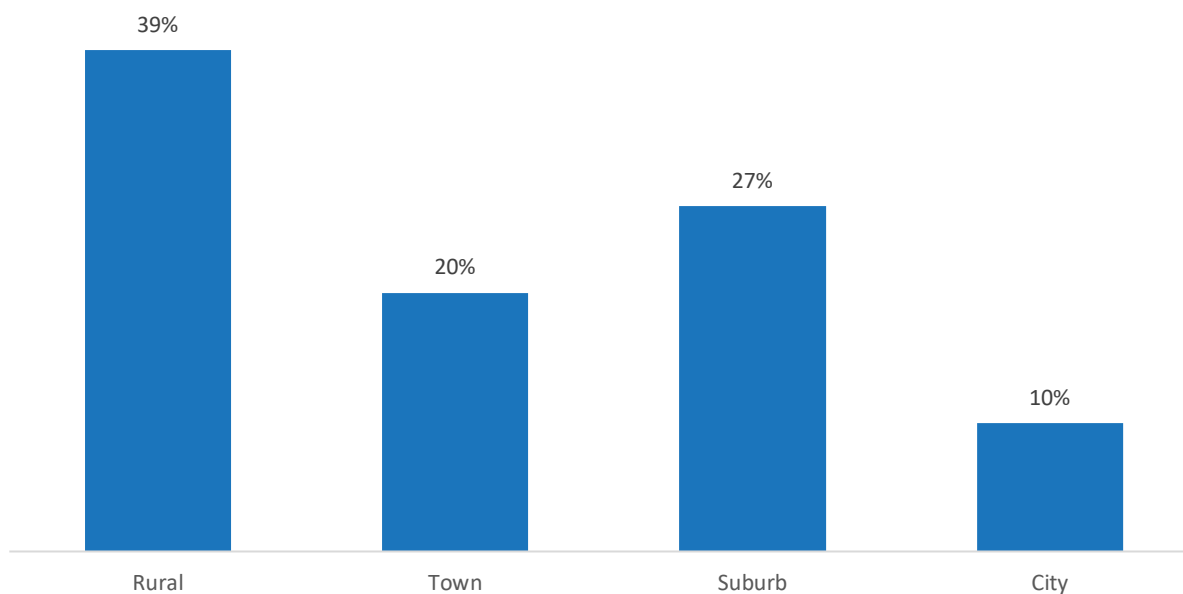


National data gathered during the 2020-2021 school year regarding on the availability of foundational computer science courses offered in high school shows that Oregon is slightly above the national average with 55% of high schools offering computer science courses compared to the national average of 51%. Compared to the percentage of high schools offering foundational computer science courses across all fifty states, Oregon ranks 25<sup>th</sup> (2021 State of Computer Science, 2021).

## Engineering and Technology

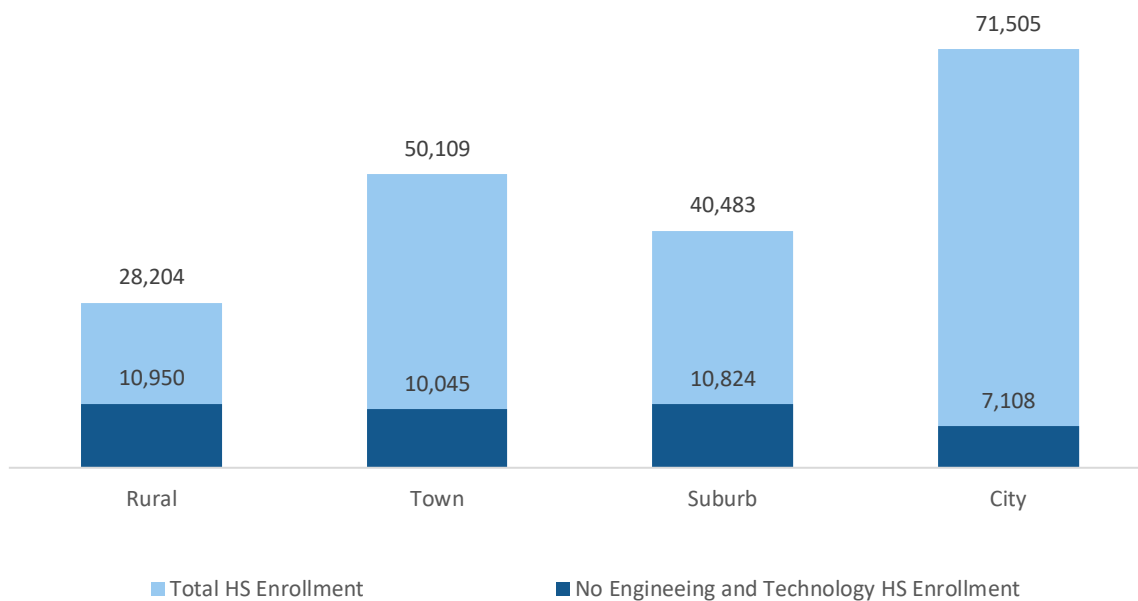
Analyzing the availability of engineering and technology courses is one way to approximate the availability of in-school STEAM educational opportunities at the high school level. Figure 9 shows that 39% of public high school students in rural communities attend a school without an engineering and technology course compared to 27% of students in suburbs, 20% of students in towns, and 10% of students located in cities.

*Figure 9: Percent of students attending a high school without a reported engineering and technology course by locale*



The total number of high school students in each locale that attend a school without an engineering and technology course are equivalent. Figure 10 shows almost 11,000 high school students in both rural and suburb locales attend a public school without Engineering and Technology courses compared to about 10,000 high school students in towns and 7,000 in cities.

Figure 10: Enrollment of high schools without a reported engineering and technology course and total high school enrollment by locale



### Course Access Disparity

To identify course access disparities for marginalized student groups, course enrollment data were analyzed to determine whether or not there exist disparities in the enrollment rates in the arts, computer science, and engineering and technology courses. The analysis compared the course enrollment rate to the school enrollment rate for each student group. A student group with a course enrollment rate that is smaller than the school enrollment rate indicates a potential course access disparity for that student group. Another way to present a potential course access disparity is by calculating the percentage point difference in enrollment (course enrollment percentage – school enrollment percentage) for each student group, which also gives a sense of the magnitude of the disparity. A positive percentage point difference between course and school enrollment represents a higher course enrollment rate compared to their school enrollment rate, while a negative percentage point difference represents a lower course enrollment rate compared to the student group’s school enrollment rate. These percentage point differences are presented in the data tables that follow.

A statistical analysis was used to determine if the observed enrollment disparities were statistically significant, an indication of robust evidence that the difference between the course enrollment and school enrollment percentages for a student group is not due to random chance. A further description of the statistical analysis and the relevant test statistics can be found in Appendix C.

### The Arts

Table 1 shows the percentage of arts course enrollment, the percentage of school enrollment, and the percentage point difference between course and school enrollment rates for each student group in the

analysis. The results of the analysis indicate that Latino/a/x students, Native American/Alaska Native students, students experiencing disabilities, Ever Emergent Bilingual students, and students identifying as male<sup>8</sup> have a statistically significant underrepresentation in enrollment in arts courses. While the rate of arts course enrollment was less than the rate of school enrollment for Native Hawaiian/Pacific Islander students and multiracial students, the difference was not statistically significant. Thus, the observed difference presented between course and school enrollment presented in Table 1 may be due to chance.

*Table 1: Disproportionality in arts enrollment by student group. \*indicates statistically significant difference between course and school enrollment*

<b>Student Group</b>	<b>% of Course Enrollment</b>	<b>% of School Enrollment</b>	<b>Percentage Point Difference Between Course and School Enrollment</b>
Asian*	3.29%	3.06%	0.23
Black/African American	2.44%	2.23%	0.21
Latino/a/x*	19.5%	20.6%	-1.05
Native American/Alaska Native*	1.92%	2.13%	-0.21
Multiracial	6.48%	6.06%	0.42
Native Hawaiian / Pacific Islander	0.81%	0.84%	-0.03
Students Identifying as Male*	45.0%	51.6%	-6.6
Students Navigating Poverty	51.9%	53.3%	-1.4
Students Experiencing Disabilities*	12.6%	14.8%	-2.2
Ever Emergent Bilingual Students*	13.0%	15.5%	-2.5

To help illustrate the percentages with numeric values, the course and school enrollment rates will be applied to an example of a single school for students identifying as male. If a school has a total student population of 1,000 students, then we would expect approximately 516 of the students at this school to identify as male. If 100 of the students at this school are enrolled in arts courses, and the students' school and course enrollment rates are equivalent, then there should be 52 students identifying as male enrolled in arts courses. However, based on the actual arts course enrollment rate for students identifying as male, there would actually only be about 45 students identifying as male enrolled in arts courses at this school.

---

<sup>8</sup> Students identifying as female were initially included in the arts course enrollment disparity analysis. However, results of the analysis showed that students identifying as female were not underrepresented in arts course enrollment relative to school enrollment, while students identifying as male were underrepresented in arts course enrollment relative to school enrollment. Since the analysis found that students identifying as male are underrepresented in arts course enrollment, they are included in the arts course analysis results.

## Computer Science

Table 2 shows the percentage of computer science course enrollment, the percentage of school enrollment, and the percentage point difference between course and school enrollment rates for each student group in the analysis. The results of the analysis indicate that Black/African American students, Latino/a/x students, students identifying as female, students experiencing disabilities, and Ever Emergent Bilingual students have a statistically significant underrepresentation in computer science course enrollment. While the rate of computer science course enrollment was lower than the rate of school enrollment for Native American/Alaska Native students, Native Hawaiian/Pacific Islander students, multiracial students, and students navigating poverty, the difference was not statistically significant. Thus, the observed difference presented between course and school enrollment presented in Table 2 may be due to chance.

*Table 2: Disproportionality in computer science enrollment by student group. \*indicates statistically significant difference between course and school enrollment*

<b>Student Groups</b>	<b>% of Course Enrollment</b>	<b>% of School Enrollment</b>	<b>Percentage Point Difference Between Course and School Enrollment</b>
Asian	3.61%	3.32%	0.29
Black/African American*	1.82%	2.09%	-0.27
Latino/a/x*	19.9%	21.7%	-1.80
Native American/Alaska Native	1.82%	1.95%	-0.13
Multiracial*	6.41%	5.95%	0.46
Native Hawaiian / Pacific Islander	0.73%	0.79%	-0.06
Students Identifying as Female*	36.0%	48.2%	-12.2
Students Navigating Poverty	51.1%	53.3%	-2.2
Students Experiencing Disabilities*	11.7%	14.5%	-2.8
Ever Emergent Bilingual Students*	14.5%	16.7%	-2.2

To help contextualize the percentages with numeric values, the course and school enrollment rates will be applied to an example of a single school for students identifying as female. If a school has a total student population of 1,000 students, then we would expect approximately 480 of the students at this school to identify as female. If 100 of the students at this school are enrolled in computer science courses, and the students' school and course enrollment rates are equivalent, then there should be 48 students identifying as female enrolled in computer science courses. However, based on the actual computer science course enrollment rate for students identifying as female, there would actually only be about 36 students identifying as female enrolled in computer science courses at this school.

These findings are further represented in the 2020 Oregon state profile on computer science access disparities produced by the Code.org Advocacy Coalition, Expanding Computer Science Pathways (ECEP), and the Computer Science Teacher Association (CSTA). This report found when compared to white and Asian students, Native American/Alaska Native students (1.7 times less likely), Latino/a/x students (2.4 times less likely), and Black/African American students (4 times less likely) are less likely to take an Advanced Placement (AP) Computer Science exam, even when they attend a school wherein this is offered (*2020 State of Computer Science Education: Illuminating Disparities*, 2020).

### Engineering and Technology

Table 3 shows the percentage of engineering and technology course enrollment, the percentage of school enrollment, and the percentage point difference between course and school enrollment rates for each student group in the analysis. The results of the analysis indicate that Black/African American students, Latino/a/x students, students identifying as female, students experiencing disabilities, and Ever Emergent Bilingual students have a statistically significant underrepresentation in engineering and technology course enrollment. While the rate of engineering and technology course enrollment was lower than the rate of school enrollment for Native American/Alaska Native students, Native Hawaiian/Pacific Islander students, and multiracial students, the difference was not statistically significant. Thus, the observed difference presented between course and school enrollment presented in Table 3 may be due to chance.

*Table 3: Disproportionality in engineering and technology enrollment by student group \*indicates statistically significant difference between course and school enrollment*

<b>Student Group</b>	<b>% of Course Enrollment</b>	<b>% of School Enrollment</b>	<b>Percentage Point Difference Between Course and School Enrollment</b>
Asian*	3.41%	3.02%	0.39
Black/African American*	1.65%	2.08%	-0.43
Latino/a/x*	18.5%	21.3%	-2.80
Native American/Alaska Native	1.83%	1.84%	-0.01
Multiracial	6.53%	6.03%	0.50
Native Hawaiian / Pacific Islander	0.76%	0.86%	-0.10
Students Identifying as Female*	26.7%	47.8%	-21.1
Students Navigating Poverty*	50.2%	53.1%	-2.9
Students Experiencing Disabilities*	11.8%	14.9%	-3.1
Ever Emergent Bilingual Students*	13.2%	16.3%	-3.2

Again, to add context, the course and school enrollment rates will be applied to an example of a single school for students identifying as female. If a school has a total student population of 1,000 students,



then we would expect approximately 480 of the students at this school to identify as female. If 100 of the students at this school are enrolled in engineering and technology courses, and the students' school and course enrollment rates are equivalent, then there should be 48 students identifying as female enrolled in engineering and technology courses. However, based on the actual engineering and technology course enrollment rate for students identifying as female, there would actually only be about 28 students identifying as female enrolled in computer science courses at this school.

### **Limitations**

Though the analysis of course availability and course access disparities provided some evidence that there are systemic disparities with regards to the rate at which students are able to take courses in STEAM and the arts, there are limitations to the analyses conducted. Computer science and engineering and technology courses represent only a small sliver of the breadth of STEAM course content that schools can offer. Further, looking primarily at high school courses for STEAM does not capture disparities that may or may not exist at the middle school and even elementary school level. Categorizing schools by broad geographic location also does not capture other regional differences that may exist.

For student groups that comprise a very small percentage of the overall student population in the course access disparity analysis, the disparities may be larger than an aggregate statewide analysis can show. While these student groups may represent a small population when compared to total enrollment, it is important that they are acknowledged, seen, and considered when thinking about course access and the impact access, or a lack thereof, can have on their educational experiences.

Non-binary students were not included in the course access disparity analysis for this first analysis as the data used in the analysis are from the 2018-19 reporting year, which was the inaugural year of student and staff gender data collections that included a non-binary option. As ODE is committed to equity and ensuring that all students feel seen throughout their educational experiences, ODE implemented a new gender code in 2018-19 student and staff data collections that provides non-binary, intersex, and gender-fluid individuals with an option to identify their gender as non-binary. Future analysis of access to well-rounded courses will include data for non-binary students. For ODE's most recent analysis regarding gender diversity and continued work to include non-binary students in future data collection, please see the [2018-19 Statewide Report Card](#).

### **Course Access Barriers**

While the course access disparity data analysis shows that there are systemic disproportionalities in accessing courses, the analysis does not provide an answer to the question of "why" those disparities exist. However, the results of the engagement sessions and survey can transcend some of the limitations in the statewide course analysis and provide insights into why these disparities exist in both the availability of and access to well-rounded educational opportunities.

### **Survey Results**

Survey respondents were asked to identify challenges to providing well-rounded educational opportunities to students in STEAM and the arts. Table 4 lists challenges named by respondents in rank-

order. Respondents identified sustainable funding and availability of teachers as the top challenges, indicating a significant obstacle to offering such courses. Sustainable funding and availability of teachers<sup>9</sup> remained the greatest challenges even when respondents indicated that STEAM and arts courses were available in their schools.

*Table 4: What are the challenges to providing education in STEAM and the arts?*

<b>Course Barriers</b>	<b># of Responses for STEAM</b>	<b># of Responses for the Arts</b>
Sustainable Funding	103	99
Availability of Teachers	101	99
Flexibility in Course Schedule (Class Scheduling Conflicts)	74	80
School-Wide Understanding of the Importance of Content Area	57	59
Classroom Space	56	58
Physical Resources (Hardware, Equipment, Supplies)	58	50
Curricular Resources	49	45
Teacher Planning Time	47	32
Unsure	43	35
Class Space Available for Interested Students	41	36
Teacher Subject Knowledge	37	37
Ongoing Professional Development Opportunities for Teachers	41	25
Students Not Having Prior Experience with Content Area	29	28
Students Required to Take Other Prerequisite Class	24	28
Students Pulled Out of Class for Other Services	22	29
Other Reason	20	22
Student Interest/Enrollment	16	23
Pedagogical Resources	17	14
None	6	8

Survey respondents were also asked about strategies they felt would increase well-rounded educational opportunities. Survey respondents most frequently identified strategies to increase well-rounded education opportunities that mirrored the identified challenges, as shown in Table 5.

<sup>9</sup> The WRAP survey corresponded with the beginning of the 2021-22 school year, which was perhaps one of the most difficult staffing periods for schools in a generation. This may have been a strong factor in the availability of teachers being a top priority for respondents.

*Table 5: Which of the following do you think would help increase students' ability to access well-rounded educational opportunities at your school(s)?*

<b>Ways to Increase Access to Well-Rounded Educational Opportunities</b>	<b># of Responses</b>
Sustainable Funding	116
Availability of Teachers	108
Course Scheduling	90
Physical Resources (Hardware, Equipment, Supplies)	79
School-wide Understanding of the Importance of Well-Rounded Education	76
Teacher Planning Time	67
Ongoing Professional Development Opportunities for Teachers	64
Classroom Space	55
Class Space Available for Interested Students	54
Curricular Resources	47
Teacher Subject Knowledge	43
Availability of Online Courses	39
Student Subject Knowledge (Prior experience with STEAM, the arts, other content Areas, etc.)	38
Student Interest/Enrollment	30
Pedagogical Resources	24
Other Method	18
Unsure	18
None	1

## **Qualitative Results**

Although the statewide data analysis may have had indeterminate results on course access disparity for some historically and systemically marginalized student groups, the qualitative data gathered from the engagement sessions and survey indicate there are course access disparities impacting these students. These findings are a synthesis of the beliefs and experiences shared by engagement participants, and do not necessarily represent the views of ODE.

## **Barriers Limiting the Availability of STEAM and Arts Educational Opportunities**

Participants in the engagement sessions as well as survey respondents conveyed concerns regarding the sustainability of funding and adequate access to resources. A variety of specific concerns were shared including the reality that implementing new programming can be costly, especially if it requires additional staff, professional development for staff, and materials that may already be in short supply. The types of resources that were mentioned multiple times included: material resources, staff capacity, and community resources.

**Material Resources:** Access to material resources was presented as a large concern for providing education in STEAM and the arts. The materials and equipment needed for STEAM and arts education include consumable resources. Even material resources that can be used repeatedly can represent significant costs. Well-rounded educational opportunities that are dependent upon technology such as computers, machinery, lab equipment, or other physical materials that require a large upfront investment become cost inhibitive to programs, schools, and districts with limited financial resources, especially when coupled with competing demands.

**Staff Capacity:** Employing qualified staff to teach instructional content in STEAM and the arts was discussed as a challenge, especially for small and rural schools. Hiring qualified teachers in these subject areas can be a challenge due to scarce and/or unaffordable housing as well as not having the level of student enrollment sufficient to hire teachers in these subject areas. Participants and respondents shared that even if teachers can be hired, a small teaching staff has the potential to lead to limited flexibility in the school course schedule, particularly if there is only one teacher available for a single subject area. In these given scenarios, only a small percentage of students can take courses in that specific subject area, and the enrollment process is often inequitable. An example shared on the survey within the subject of music highlights this scenario. Given funding and allocations, some districts may be able to hire only one music teacher for the entire district (K-12), which limits their availability in the high school to only one class period per day. Students may be required to take a different course during this same time, which is also limited to one period per day, and are therefore unable to participate in music.

*“This is a smaller school, and the schedule doesn’t allow for a wide variety of options outside of core classes. We have students who would like to take STEM, or speech, or second language classes, but we cannot offer a class with a capable instructor to a small group of students. There is not space and we just don’t have enough available staff. In other words all staff are assigned, or choosing, to teach a class and there needs to be a full group of students enrolled.”*

- Survey Participant

Additionally, participants shared about challenges around capacity existing for teachers with roles at multiple school sites and for teachers with obligations both during and outside of regular school hours. Participants also stated that teacher capacity becomes a challenge for those required to teach in multiple specialized areas. One scenario shared in an engagement session was an example of theater teachers who are often required to teach both theater arts and theater technology, two related but differentiated content areas.

**Community Resources:** Access to community resources was brought up throughout engagement sessions as creating disparities in well-rounded education for students. For example, some communities have the ability, time, and funding to provide supplemental educational opportunities outside of school more readily than others. Yet, given systemic inequities, this is often due to the community income level

and proximity to dense population centers, rather than interest. Further, some communities have non-profit or other community organizations to provide grant funding or can provide their own educational opportunities for students while others do not. An example that was shared by participants included after school programs and arts education programs which were noted as being dependent upon grant funding, which can create disparate opportunities for students.

*“As a rural, coastal community, opportunities to engage with diverse audiences is extremely limited. Many of the schools are reliant upon local community collaborators, such as nonprofit organizations to garner funds to support cultural, artistic and additional well-rounded educational opportunities and deliver those achieved to area schools both during and after school. Throughout COVID we have seen an increased level of competition for dwindling economic resources from private donors and traditional event based income streams available to these organizations which has severely impacted the level of youth focused programmatic offerings available to students. Schools are growing increasingly reliant on supplemental education support, and nonprofits are growing increasingly reliant upon foundation funding to meet this need.”*

- Survey Participant

Barriers related to the remote nature of rural communities were frequently mentioned by both participants in the engagement sessions as well as survey respondents. Notably, internet connectivity and related infrastructure were mentioned most often as barriers to receiving a well-rounded education for students in rural communities. While internet connectivity is improving in rural communities with new cell towers and infrastructure projects, it was shared that some communities are still forced to rely on costly hotspots to connect to the internet. Transportation was also noted as a barrier that acutely affects rural students. Traveling to out-of-school and off-site locations for opportunities to receive well-rounded education is difficult in rural areas due to increased distance, reliance on personal vehicles due to a lack of public transportation options, and lack of safe biking and walking infrastructure along roadways.

*“In a small community it feels impossible for children to get a well rounded education.”*

- Survey Participant

Many of the resource constraints to providing well-rounded education discussed within the engagement sessions and by survey respondents for students in rural communities, as highlighted above, can also affect students across the state that are navigating poverty. One engagement partner stressed that urban poverty is “severely under talked about in Oregon.”

### **Barriers Creating Disparate Course Access for Students across Content Areas**

Across the education system both nationally and in Oregon, students who are historically and systemically marginalized experience profound inequities. During the engagement sessions as well as on

the surveys, participants shared that these inequities can be seen in the disparate access to courses across content areas stemming from staff bias and gatekeeping, course scheduling, cost of courses, the location and time of courses, and feeling unsafe or unwelcome in certain courses. Further, participants shared their concerns regarding this disparate access as being fundamental to ensuring equity for all students as these barriers have the potential to be present even when there are resources available to provide students with a well-rounded education.

**Staff Bias and Gatekeeping:** Teachers and counselors were noted as having the greatest influence over the courses in which a student enrolls, second only to students' friends. Engagement participants told of their experiences with counselors discouraging students from taking courses that they are interested in. Further, STEAM and other types of elective courses may be perceived and presented by administrators and teachers as a privilege and thus reserved for only the highest-achieving students. School staff may also create unnecessary prerequisites for certain courses. These concerns can be found across literature with regards to course access. For example, past Civil Rights site visits to schools<sup>10</sup> have found unnecessary and prohibitive prerequisites to course enrollment including: proficiency in math not needed in the course, good behavior, a teacher recommendation, or writing essays stating their interest in taking the class.

**Course Scheduling:** There are several ways that scheduling inhibits access to courses, particularly for students experiencing disability and students who are emergent bilingual. One example shared by engagement participants focused on the ways in which scheduling pull-out interventions or required classes at the same time as electives can be inhibitive. This practice often directly impacts students experiencing disability, students who are emergent bilingual, and students who need to retake a required course. This barrier in scheduling can lead to exclusionary tracking as students are excluded from being able to take any course within a particular content area. Research has shown that exclusionary tracking prevents students from accessing core content which can impact students' ability to graduate and impacts students who are emergent bilingual at higher rates than their peers (Umansky, 2016).

Additionally, students and their families may not know that a particular course is available if there is inadequate communication and promotion of the course. Students with families that speak a language other than English at home may also not know about available courses if course catalogs and other communication artifacts are only provided to students and their families in English.

*"The way in which our school schedule is designed does not allow for students with special needs to easily access elective courses. Many student support periods for IEP students take place of an elective. Because we have a limited number of periods in a day and a trimester schedule, our schedule design does not support connections with teachers. Students switch teachers often times each trimester at the high school level,*

---

<sup>10</sup> More information about these Civil Rights visits can be found at the [ODE Civil Rights and Equity](#) webpage.

*leaving a big missing piece in SEL education, and also causing limited access to elective classes.”*

- Survey Participant

**Cost of Courses:** Participants and survey respondents shared that the cost of courses and related materials can also prove to be a barrier to students navigating poverty if the incidence of the cost is pushed on to students and their families.

*“While our school offers a wide range of subjects and would appear to be very well-rounded, I continue to be concerned about potential barriers to access for some of the opportunities. For instance, students who are required to take interventions often miss out on the opportunity to pursue an elective choice. Or in some cases, costs associated with a subject area can be a barrier, and school budgets are insufficient to provide quality materials to students (e.g. band class and quality instruments and related consumables).”*

- Survey Participant

**Location and Time:** Educational opportunities outside of school can be prohibitive to students without transportation options. Throughout the engagement sessions and survey findings, participants shared concerns regarding the ability to access these opportunities, particularly for students that need to provide childcare for siblings or engage in other work obligations. This was furthered by concerns regarding the time of day that courses are offered, as timing can prohibit students who have work or family obligations outside of school from being able to access learning opportunities that exist outside of the regular school day.

**Feeling Unsafe or Unwelcome:** Even if students can enroll in STEAM and arts courses, it was shared that they may avoid doing so not for lack of interest in learning the course content, but because they do not feel safe or welcome in the current learning environment for those subjects. This affects students of color, students identifying as female, students experiencing disability, and students who are emergent bilingual. Students feeling unwelcome or unsafe in the course environment was noted by participants and respondents as a byproduct of staff bias and gatekeeping. Some of the most illustrative examples of this come directly from student testimony obtained from a web publication produced by the youth-led nonprofit organization Oregon Student Voice:

*“There is a severe lack of nonwhite STEM role models for young students of color to look up to. The common core curriculum is often extremely whitewashed, focusing around famous white scientists, researchers, mathematicians, etc. STEM courses and extracurriculars are often overwhelmingly made up of white, male-identifying students, making students of color feel uncomfortable in those spaces.”*

- Oregon Student Voice

*“Female-identifying students felt out of place in their STEM classes, despite being just as qualified and interested in the subject. There was a significant lack of girls in STEM classes and extracurriculars. Oftentimes, female-identifying students felt like they weren’t taken seriously by their teachers. They were told to step back to watch their male counterparts, saw inequities in grading and opportunities, and felt disrespected. The sexism extends far past the classroom. In STEM based extracurriculars, girls felt even more out of place, often being underestimated and dismissed by their fellow (male) members and advisors.”*

*-Oregon Student Voice*

As noted by the above students regarding their experience in STEM, students of color are often not reflected in the content of their arts courses either. For students experiencing disability and students who are emergent bilingual, engagement participants and survey respondents noted that terminology used in the arts and science serve as a barrier to participation if students cannot understand the instruction or directions<sup>11</sup>.

*“Students that are best served tend to be of the dominate culture whereas kids of color, kids navigating poverty and girls in STEM are very much less served or have fewer opportunities. The Well-Rounded Educational Opportunities should really target those student/youth groups. If we improve access for them, then we actually improve access for all. Without a focus on marginalized students, we will continue to only serve the dominate culture.”*

*- Survey Participant*

### **Additional Research**

Reports produced by other education providers in Oregon found both similar challenges as were brought forth by engagement participants and survey respondents while also identifying additional challenges to providing content area education. Research around course access disparities within CTE in Oregon has found that the largest disparities in course access impact students who are emergent bilingual and students experiencing disability, though students navigating poverty also experience a disparity in course access on a smaller scale (Arneson et al., 2020).

Non-profit arts organizations surveyed in 2018 by the Oregon Community Foundation listed their top 10 challenges as: 1) Lack of Funding, 2) Other Curriculum Priorities in Schools, 3) Lack of Space and/or Time in Schools, 4) Scheduling Difficulties, 5) Lack of Qualified Staff, 6) Lack of Qualified Arts Educators in Schools, 7) Difficulty Communicating with Schools, 8) Transportation, 9) Lack of Volunteers, and 10) Lack of Family Engagement. These challenges notably are linked to limiting existing programming and/or

---

<sup>11</sup>Another perspective from the engagement sessions noted that it is a misconception that students do not have the ability to learn and understand vocabulary used in the courses.



services and limiting equitable access to arts education for historically and systemically marginalized communities (Leonard et al., 2019).

The 2014, the OregonASK survey found not having qualified staff, deep knowledge about STEAM curriculum, and adequate funding can serve as barriers to providing STEAM learning opportunities for students. The top-ranking methods identified to increase access to STEAM learning opportunities included: more time to discuss STEAM with colleagues, better access to STEAM experts, more STEAM professional development opportunities, increased understanding of the importance of STEAM, more support from supervisors and education partners, and more funding, both in general and for STEAM curricula (Coe, 2015).

Subsequent research produced by the OregonASK research initiative found that cost, cultural barriers, and program capacity are the top identified barriers to participation in any afterschool program. Specific findings included Spanish-speakers identifying cultural barriers as a top-ranked barrier and rural and urban communities identifying lack of availability of after school programs as a barrier, noting that rural communities have fewer nearby programs, while urban communities are more likely to face waitlists (*State of Access and Equity of After School in Oregon*, 2020).

The topic of the challenges associated with the remoteness of Oregon's rural communities has been highlighted in research as well. The remoteness of rural communities can also affect student self-efficacy. Career exploration may be limited to the opportunities in the local economy which are not equitable across communities. For example, rural students live 3-4 times as far from post-secondary campuses than their metro area counterparts, which is a factor in the lower rate of post-secondary enrollment for rural students (*Rural Education in Oregon*, 2016).

### **Objective 3: Strategies, Practices, and Other Actionable Recommendations**

Several themes from the WRAP engagement sessions and survey emerged regarding ways in which WRAP should be implemented. These themes include providing leadership around communication and messaging, prioritizing essential skills in curriculum development, introducing certain course content at the elementary and middle school level, and working with and amplifying already established local organizations and programs in the community. These recommendations are described broadly in the needs assessment but will be described in more detail in the WRAP four-year plan.

#### **Communication and Messaging**

Coordination around communication and outreach between school administrators, STEM/STEAM Hubs, and arts and other community organizations emerged as an area of opportunity for WRAP to make an impact through leveraging the wide-reaching position of a state agency program. Another identified area of opportunity and need discussed was around the creation, utilization, and messaging of unified education concepts and definitions to create a shared understanding of the importance of education in STEAM and the arts.

## **Fostering Partnerships and Connections**

Through engagement with education partners, it became clear that well-rounded programs are often implemented with the help of community organizations, with respondents discussing the notion that connections between arts organizations and schools could be strengthened. During engagement sessions and in survey data, many organizations expressed a desire for connection and buy-in from school administrators for well-rounded programs, which was coupled with a need for broadening awareness of STEM/STEAM hubs and their work. Changing relationships, regulations, and logistics at school were noted as challenges to sustainable program implementation.

In some cases, the interest in implementing new courses at schools exists. However, participants and respondents noted that there is often a lack of sufficient leadership or coordination to actualize course implementation. It was further discussed that communication of available opportunities for implementation support could be improved and that outreach and coordination with administrators, including providing potential incentives for implementing well-rounded programs, could be impactful. Suggestions regarding how to actualize deeper levels of communication included developing and sharing a communication platform to make known what is available for families.

## **Develop a Shared Understanding**

According to engagement partners, there is work to do in shifting mindsets across the state in understanding the importance and benefits of education in the arts, STEAM education, and well-rounded education in general. An area of growth includes developing a collective understanding of what constitutes a well-rounded student and what programs would be necessary to foster the conditions needed for students to develop the Essential Skills required for graduation.<sup>12</sup>

## **STEAM**

In the area of STEAM education, engagement partners identified a need for a shared understanding of the definition and benefits of STEAM education and the importance for every student to engage in learning STEAM content and skills from an early age. Identifying and communicating criteria for high quality STEAM programs could be beneficial in developing a wider understanding of its approach and benefits. Along with this, partners named that developing a deeper understanding statewide of the tenets and benefits of project-based learning would be beneficial as it could help familiarize communities with the qualities of STEAM education that promote development of inquiry and problem-solving skills, collaboration, communication skills, and career-connected, authentic learning opportunities.

---

<sup>12</sup> The Essential Skills are: 1) Read and comprehend a variety of text; 2) Write clearly and accurately; 3) Apply mathematics in a variety of settings; 4) Listen actively and speak clearly and coherently; 5) Think critically and analytically; 6) Use technology to learn, live, and work; 7) Demonstrate civic and community engagement; 8) Demonstrate global literacy; and 9) Demonstrate personal management and teamwork skills.

## Arts

Partners identified similar themes that could be addressed through better communication of the definition and benefits of high-quality arts education programs. Respondents identified the need to develop a common vision for what high quality arts education looks like and discussed the need for a shared understanding of its role in providing authentic learning opportunities for students. Respondents also identified opportunities to better understand and communicate the different forms that art education can take and the benefits of each.

*“There is a real difference between arts education and arts integration that is not well understood. Using the arts to teach other subjects is awesome, but it is not an arts education with a sustained progressive learning process geared to mastering a skill. Too often we are settling for arts integration and neglecting arts education.”*

- Survey Participant

## Access to Data and Research

Multiple engagement sessions with arts organizations pointed to the need for data and research within arts education as a starting point. This desire was shared by additional engagement partners across all content areas and was noted in recent research within the Oregon Community Foundation report (Leonard et al., 2019). Although ODE collects some data on courses and course enrollment patterns, these data are limited in scope and purpose and do not provide a full picture of education in the arts and other content areas in Oregon schools, particularly in the elementary grades.

## Mapping Programs

Prior to applying for the Expanding Access to Well-Rounded Courses Demonstration grant, several organizations presented this opportunity to ODE as a method to fund a mapping program in the state for arts education. The grant application evolved into a broader scope than this initial intent, but the need for a mapping system in the state remains a conversation amongst arts organizations. Through engagement with these organizations, two needs arose: 1) A need to connect schools and districts with teaching artists and arts organizations to further their arts programs; 2) A need for state policymakers, families, and administrators at the district and school levels to gain access to high quality data, to make informed decisions about arts education programs and drive strategic investment in arts education at a school-level across the state.

## Adoption and Implementation of High-Quality Curriculum

In both the engagement sessions and survey responses, there was a noted desire for less reliance and emphasis on single-discipline focused courses and more emphasis on inclusion of [Oregon’s 9 Essential Skills](#) that are required for graduation and culturally responsive curriculum for student learning. Other desired qualities of high-quality curriculum include curricula being interdisciplinary/cross-curricular, culturally responsive, trauma-informed, and follows the guidelines of Universal Design for Learning (UDL).

One content area with intrinsic interdisciplinary characteristics that emerged early in the engagement process was computer science. The arts were also noted as having important intrinsic interdisciplinary characteristics such as creativity and design. Other desired content integration areas included ethnic studies with math and data literacy, racial equity and social justice, and Native knowledge and ways of being across content areas, but especially within the arts. Even with a strong desire for more integrated subject area content, there exists a challenge with student enrollment in interdisciplinary courses given that high school credits and graduation requirements are structured on a single-discipline focus. For students struggling to obtain those necessary credits, integrated-content courses can become inaccessible.

The WRAP engagement partners also identified inclusive and culturally responsive curriculum as an integral part of any curriculum that the WRAP makes available. Culturally responsive curriculum reflects the stories of students that are often underrepresented in curriculum, with a focus on providing students who are historically and systemically marginalized windows that reflect their life experience (Bishop, 1990) and recognize the diverse cultural characteristics of learners as assets. Culturally responsive teaching empowers students intellectually, socially, emotionally, and politically by using cultural referents to impart knowledge, skills, and attitudes. Utilizing culturally responsive curricula has the potential to support a sense of belonging and safety for historically and systemically marginalized students.

Trauma-informed practices were also noted as beneficial to pursue. A trauma-informed approach to education is designed to support students and families that have been impacted by traumatic experiences by creating safe and supportive environments where students have positive connections and can focus on skills necessary to improve learning. Trauma informed practices include recognizing the physical signs and symptoms of trauma, promoting resiliency and wellness among students, their families, and staff, and reducing re-traumatization. To learn more about trauma-informed practices, see the [Trauma-Informed Practices in Schools](#) brief.

The UDL curriculum guidelines are an educational framework designed to support each individual student. The UDL guidelines are meant to develop flexible learning environments that can accommodate different types of learners, so that course curricula be used and understood by each student. The UDL guidelines contain three central principles: provide multiple means of engagement, provide multiple means of representation, and provide multiple means of action and expression (*Universal Design for Learning Guidelines*, 2018).

Additionally, both in the engagement sessions and the survey responses, there was a strong connective thread to increased emphasis on essential skills being taught as a critical component of well-rounded education. The skills mentioned align with Oregon's 9 Essential Skills, [21st Century Skills](#), and [Social Emotional Learning](#) (SEL). Ensuring that curricula contain an emphasis on essential skills also aligns with the Oregon Workforce Talent and Development Board 2020 report on essential employability skills. The report noted that STEAM education provides great technical skills leading to high-demand career

pathways and acknowledged a need to further embed and integrate essential skills into Oregon's K-12 curriculum to complement the already embedded technical skills (*WTDB Report: Essential Employability Skills, Needed Now More Than Ever*, 2020).

### **Expanding Foundational Curriculum for Elementary and Middle School Students**

This theme emerged with multiple engagement partners and across content areas spanning STEAM, the arts, science, and career exploration. Shared in these sessions was a focus on the importance of exposing students to these content areas sooner as it can help create an understanding of foundational concepts, to better prepare them for more in-depth learning in high school.

Several respondents to the WRAP survey indicated that there was insufficient class time, especially at the elementary and middle school levels, for students to have sufficient opportunities to learn deeply about other subjects outside of reading and math. Even if an elementary school offers music and visual art, it may only be once a week, and for less than half an hour.

*“There is an unbalanced emphasis on core subjects (math and language arts), and in many schools arts, social sciences, and sciences are deemphasized in elementary classrooms. Many students may feel that only certain skills are valued, and a struggling writer who excels in creativity may not recognize their strengths as a student. I strongly feel this needs to be reevaluated in our education system.”*

- Survey Participant

Inadequate class time for these subject areas at the elementary and middle school levels has led to a substantial number of students not being exposed to certain content until high school, creating a disparity in the level of preparedness of students entering high school. Engagement participants and survey respondents noted that this disparity is rooted in which students have specific educational opportunities in elementary and middle school and which students were denied this opportunity. This distinction was noted to exist at both the school and district level. For example, within a single school district, elementary and middle school students attending schools in town had opportunities for educational experiences in the arts, while students attending rural schools in the district did not have those same opportunities. Further, many students in Oregon lack the opportunity to take discrete arts courses until they reach high school. Engagement partners also noted that providing interdisciplinary/cross-curricular content at the elementary and middle school level in STEAM can help increase learning time in multiple subjects and in subjects students may not otherwise have the opportunity to learn.

*“There are a lot of standards and testing for elementary students. Not much additional time exists during structured classes. More availability for space and time exists for after school programs. The only after school programs currently available at our school or in vicinity are sports oriented. It would be a win-win for working parents to provide after-school programs and enrichment in STEAM.”*

- Survey Participant

### **Authentically Partnering with Established Organizations and Programs**

Existing partnerships were lauded as a strength and an area of success. Given the positive outcome of these partnerships, fostering similar partnerships could be beneficial to WRAP. Several different programs and partnerships were described in the engagement sessions as being potential opportunities for partnership with WRAP and other well-rounded education providers. These included partnerships between community organizations which were noted as helping to support schools and students when teachers don't have the capacity to provide educational opportunities during the school day, as well as locally created content/programs which have the potential to be more appealing to educators, students, and their families.

Existing community organizations and programs were noted as having an established presence in and understanding of the local community and its needs. Support of these programs were described explicitly by Latinx communities. Engagement partners shared that the strengths of existing community organizations and programs included having existing cultural and linguistic affinity with the Latinx community, and these organizations and programs should be supported in the work that they are already doing to increase access to well-rounded educational opportunities. Further, offering courses/programs at tribal buildings/locations was discussed as a strategy to increase access to well-rounded educational opportunities for tribal students. Other local organizations with strong community ties, such as libraries, were also mentioned as a partnership to increase equitable access.

### **Conclusion**

With the Expanding Access to Well-Rounded Courses Demonstration Grant, ODE and partners across the state have a critical opportunity to build on the state's current investments in well-rounded educational opportunities and attend to the needs and barriers highlighted in this report through providing high quality, culturally responsive, and authentic courses to students. The work here builds on the work of countless others who make up the well-rounded education landscape across Oregon and make the expansion and addition of courses in these programs possible.

### **Next Steps**

The key findings in the needs assessment will inform the next stage of the WRAP planning process. Findings from the needs assessment will be used to develop a four-year plan, which will highlight strategic investments aimed to increase access to well-rounded education experiences in the state for students across the state. Both the results of the needs assessment and the four-year plan will be presented to engagement partners for additional review and refinement, based on the [engagement plan](#).

### **Future Engagement**

While the WRAP was successful in the endeavor of engaging with groups representing students that had not been a part of past ODE engagement, there are remaining student interest groups that were not a

part of the initial engagement process that the WRAP will work to include in future engagement. This includes groups representing the interests of migrant students, houseless students, LGBTQ2SIA+ students, and in particular non-binary and gender non-conforming students, students in foster care, and additional racial/ethnic affinity groups. WRAP will also seek additional individual student and parent/family perspectives throughout the duration of the program.

## References

- 2020 State of Computer Science Education: Illuminating Disparities.* (2020). Code.org, CSTA, & ECEP Alliance. <https://advocacy.code.org/stateofcs>
- 2020 STEM Investment Council Legislative Report.* (2020). STEM Investment Council. <https://www.oregon.gov/highered/research/Documents/Reports/2020-STEM-Investment-Council-Legislative-Report-FINAL.pdf>
- 2021 State of Computer Science: Accelerating action through advocacy.* (2021). Code.org, CSTA, & ECEP Alliance.
- Arneson, A., Hondara, M., & Klein, S. (2020). *Career and Technical Education in Oregon Exploring Who Participates in High School and Outcomes They Achieve.* REL Northwest. <https://files.eric.ed.gov/fulltext/ED607349.pdf>
- Bishop, R. S. (1990). *Mirrors, windows, and sliding glass doors. Perspectives: Choosing and Using Books for the Classroom.* 6(3).
- CAST (2018). *Universal Design for Learning Guidelines* version 2.2. <http://udlguidelines.cast.org>
- Drawing Lessons from the Studio to School Initiative.* (2021). Oregon Community Foundation. <https://oregoncf.org/community-impact/research/studio-to-school/studio-to-school/>
- House, E. (2021, July 28). *ARE Survey: The Results Are In.* Arts ARE Education. <https://www.artsareeducation.org/post/are-survey-the-results-are-in>
- Leonard, K., Flanagan, Z., & Kennedy, E. C. (2019). *A Snapshot of K-12 Arts Education in Oregon.* Oregon Community Foundation. [https://oregoncf.org/assets/PDFs-and-Docs/PDFs/oregon\\_arts\\_education\\_snapshot2019.pdf](https://oregoncf.org/assets/PDFs-and-Docs/PDFs/oregon_arts_education_snapshot2019.pdf)
- Morrow County School District. (2021, July 12). *Think Big Space* [Press release]. Retrieved from <https://www.morrow.k12.or.us/o/sbe/article/492302>
- Quality Education Model Final Report.* (2020). Quality Education Commission. [https://www.oregon.gov/ode/reports-and-data/taskcomm/Documents/66421\\_ODE\\_Quality%20Education%20Model%20Report\\_2020%20v7.pdf](https://www.oregon.gov/ode/reports-and-data/taskcomm/Documents/66421_ODE_Quality%20Education%20Model%20Report_2020%20v7.pdf)
- Rural Education in Oregon.* (2016). ECONorthwest. [https://www.betteroregon.org/assets/2016/01/Rural-Education-Report-FINAL\\_0.pdf](https://www.betteroregon.org/assets/2016/01/Rural-Education-Report-FINAL_0.pdf)
- SB 5513, 2021-23 Biennium, 2021 Reg. Sess. (Ore. 2021). <https://olis.oregonlegislature.gov/liz/2021R1/Downloads/MeasureDocument/SB5513>



*State of Access and Equity of After School in Oregon.* (2020). OregonASK. [https://oregonask.org/wp-content/uploads/2020/10/Access- -Equity-Report-Final.pdf](https://oregonask.org/wp-content/uploads/2020/10/Access--Equity-Report-Final.pdf)

Umansky, I. M. (2016). Leveled and Exclusionary Tracking: English Learners' Access to Academic Content in Middle School. *American Educational Research Journal*, 53(6), 1792–1833.  
<https://doi.org/10.3102/0002831216675404>

*WTDB Report: Essential Employability skills, Needed Now More Than Ever.* (2020). Oregon Workforce and Talent Development Board. <https://www.oregon.gov/workforceboard/data-and-reports/Documents/WTDB-Essential-Employability-Skills-Report-FINAL.pdf>

*WTDB Report: Talent Development for Artificial Intelligence in a Post-Pandemic World.* (2020). Oregon Workforce Talent Development Board. <https://www.oregon.gov/workforceboard/data-and-reports/Documents/AI-Task-Force-Report-FINAL-Nov-2020.pdf>

Zou, E. (n.d.). Oregon Student Voice. *The Inequities of the STEM Education System*.  
<https://www.oregonstudentvoice.org/single-post/the-inequities-of-the-stem-education-system>

## Appendix A: Course Data Collected By ODE

There are three administrative data collections at ODE that gather data on courses taught in Oregon K-12 public schools: Class Roster, Staff Assignment, and CTE Courses. Each data collection has a distinct purpose and captures a slightly different universe of courses. Table A1 below provides a description of each data collection, and what data are not included in the collection.

*Table A1: ODE course level data collections*

<b>Data Collection</b>	<b>Description</b>	<b>Excluded Data</b>
Class Roster	The Class Roster Data collection links student, teacher, and instructional course data.	Compartmentalized elementary schools only report homeroom classes. Music, art, PE, and other specialist lead classes are not required to be reported to the collection, and often are not.
CTE Course	The CTE course collection links CTE students, teachers, and CTE course data.	The universe of this collection is limited to students, teachers, and courses in CTE programs of study.
Staff Assignment	The Staff Assignment collection links instructional course, teacher, and teacher licensure data.	Student data are not a part of Staff Assignment. There is not a funding incentive to submitting Staff Assignment, so there may be a higher propensity for missing institutions or inaccurate data from the collection.

Initial analysis of the needs assessment utilized data from the 2019-20 Staff Assignment data collection. Staff Assignment includes standalone art, music, computer science, and other courses at the elementary level that may not be captured in the other two data collections. Additionally, Class Roster was cancelled for the 2019-20 reporting year. Data from Class Roster collected in the 2018-19 reporting year were used to analyze the enrollment of courses to assess course access disparities between student groups, particularly historically and systemically marginalized students. While the CTE Course data collection is listed as one of ODE's course data collections, data from this collection was not used in the analysis presented in this needs assessment.

## Appendix B: Survey Questions and Descriptive Statistics

The WRAP survey included 15 questions/prompts about well-rounded education. The full list of question/prompt stems can be found in Table B1. Respondents saw differently phrased questions based on the role in which they self-identified at the beginning of the survey, but the stem of the question/prompt remained the same for all respondents except for two of the questions that were specifically for school and district administrators. The survey questions/prompts included predetermined options to choose from which were followed by open response questions.

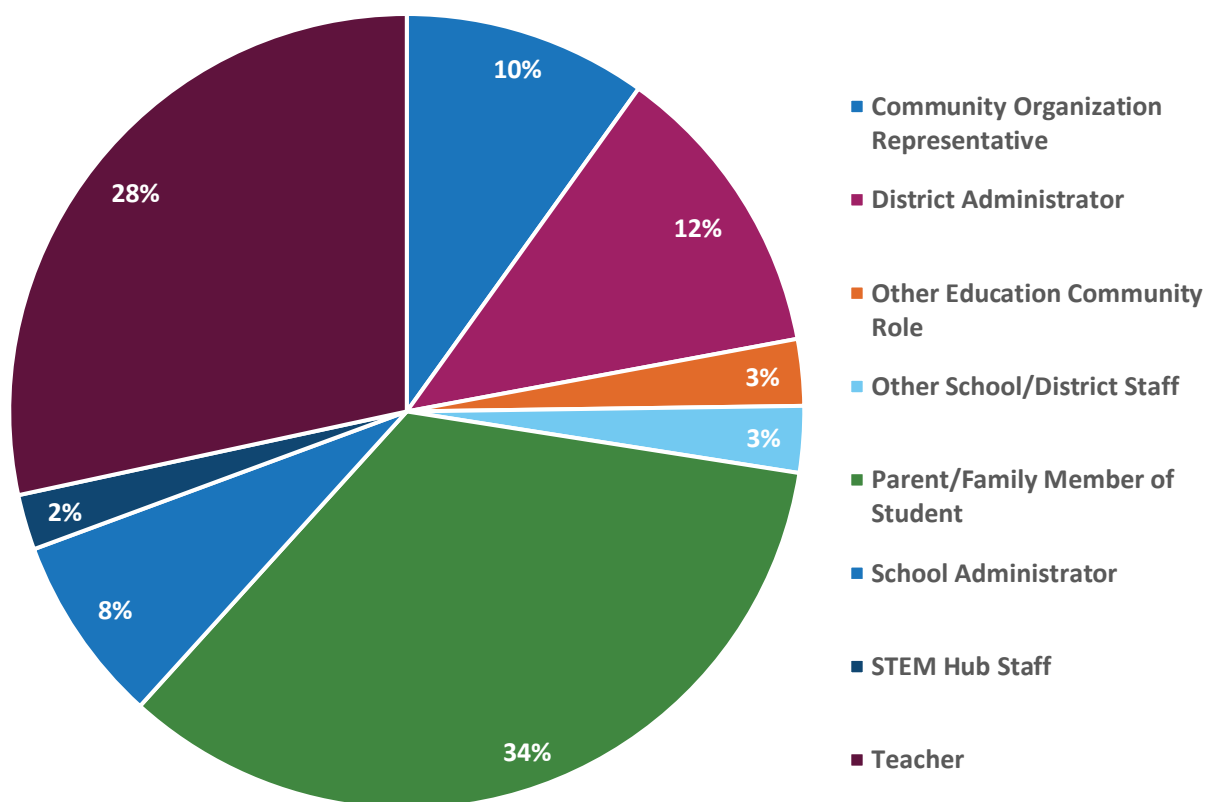
*Table B1: List of WRAP Survey Questions/Prompts*

<b>Survey Question/Prompt Number</b>	<b>Survey Question/Prompt Stem</b>
1	My school(s) offer educational opportunities during the school day in the following areas:
2	There are groups or clubs that meet in your school(s) where students learn about the following:
3	Outside of school, there are opportunities in our community for students to learn about:
4	Well-rounded educational opportunities at my school(s) are funded by the following sources:
5	How would you describe the stability of the funding for well-rounded educational opportunities at your school(s)?
6	How would you describe your satisfaction with well-rounded educational opportunities in your school(s) and community?
7	Is there anything else you would like to share about currently available well-rounded educational opportunities?
8	Which of the following challenges to providing educational opportunities in STEM/STEAM exist at your school(s)?
9	Which of the following challenges to providing educational opportunities in the Arts at your school(s)?
10	Is there anything else you would like to share about challenges to accessing well-rounded educational opportunities?
11	What kinds of additional educational opportunities provided during the school day would students and their families like to see in your school(s)?
12	What delivery methods would you like to see used to deliver new well-rounded educational opportunities to your students?
13	Is there anything else you would like to share about new and additional well-rounded educational opportunities?
14	Which of the following do you think would help increase students' ability to access well-rounded education opportunities at your school(s)?
15	Is there anything else you would like to share about increasing well-rounded educational opportunities?

In total, the WRAP survey had 222 responses (2 of these responses were to the Spanish version of the survey). A visual breakdown of the survey respondents by role can be seen in Figure 7. The majority of

respondents (34%) identified as a parent/family member of student, 28% of respondents identified as a teacher, 12% of respondents identified as a district administrator, 10% of respondents identified as a community organization representative, 8% of respondents identified as a school administrator, 3% of respondents identified as other type of school/district staff, 3% identified as some other education community role, and 2% of identified as STEM Hub staff.

Figure B1: What is your role in the education community? (n=222)



## Survey Limitations

Due to the snowball survey sampling method used for the WRAP survey, the survey sample and descriptive statistics from the survey should not be interpreted as a representative sample. Snowball sampling describes the process by which survey participants recruited other participants to take the survey. The purpose of the survey was to gather additional information from engagement partners, their constituents, and other interested individuals. By using snowball sampling, this resulted in a larger number of respondents to the survey than there likely would have been using a different sampling method. The survey analysis did not include weighting responses to make the results more representative.

While this sampling method has the advantages of a short planning process, shorter sampling completion time, potential to recruit hidden populations, and cost-effectiveness, there are also

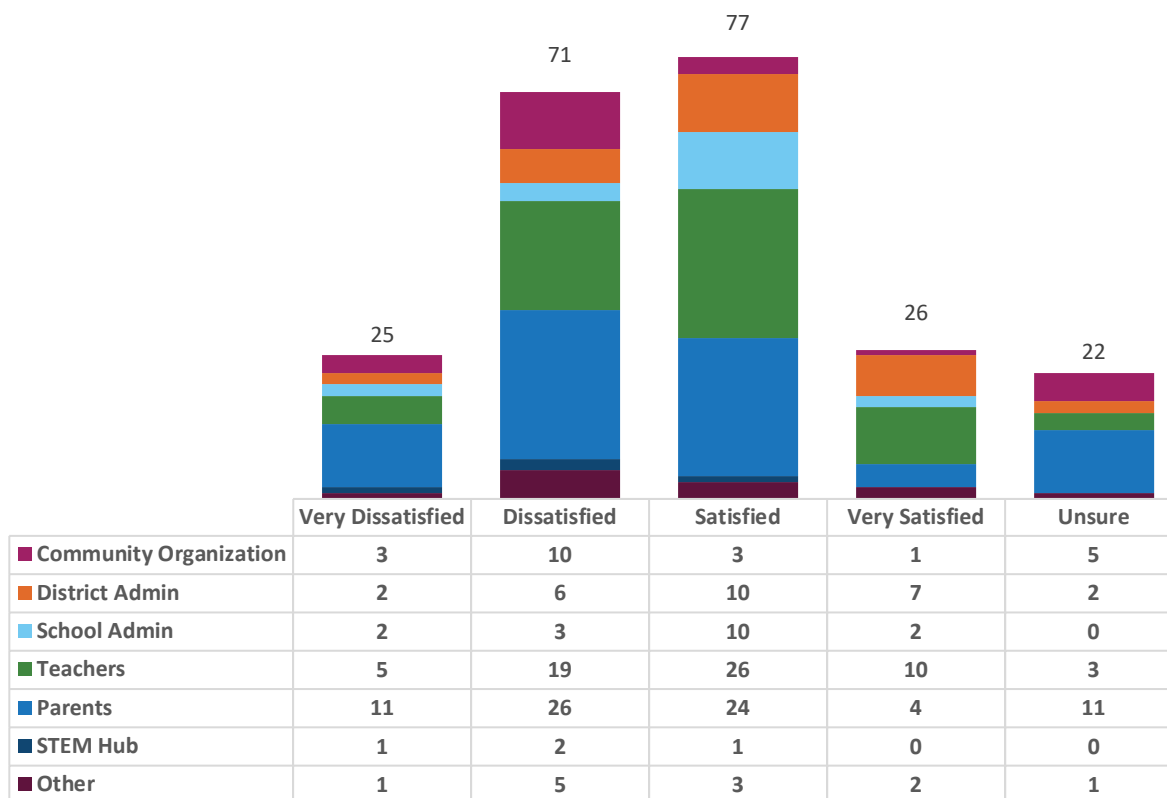
disadvantages which include a potential to oversample a particular network of peers causing bias, and no guarantee about the representativeness of samples leading to an inability to make statistical inferences. One major example of the limitations of this approach with regards to oversampling particular communities is that 67 (89%) of the 76 parent/family member of student respondents were all from one single school district. There is, however, some evidence for statewide representation from survey respondents. Nine respondents indicated a statewide service area, and almost every county in Oregon (not including Klamath and Wheeler counties) were represented by survey respondents. Other survey limitations include the fact that the survey was only distributed in two languages, with access only through the internet and during a busy time of year for educators. Despite these limitations, the survey provided insightful perspectives on well-rounded education in Oregon.

### **Additional Survey Question Analysis**

All survey respondents were asked about their satisfaction with the current well-rounded education opportunities in their schools and community. Overall, respondents were fairly evenly split between being some level of dissatisfied and some level of satisfied with the available well-rounded education opportunities.

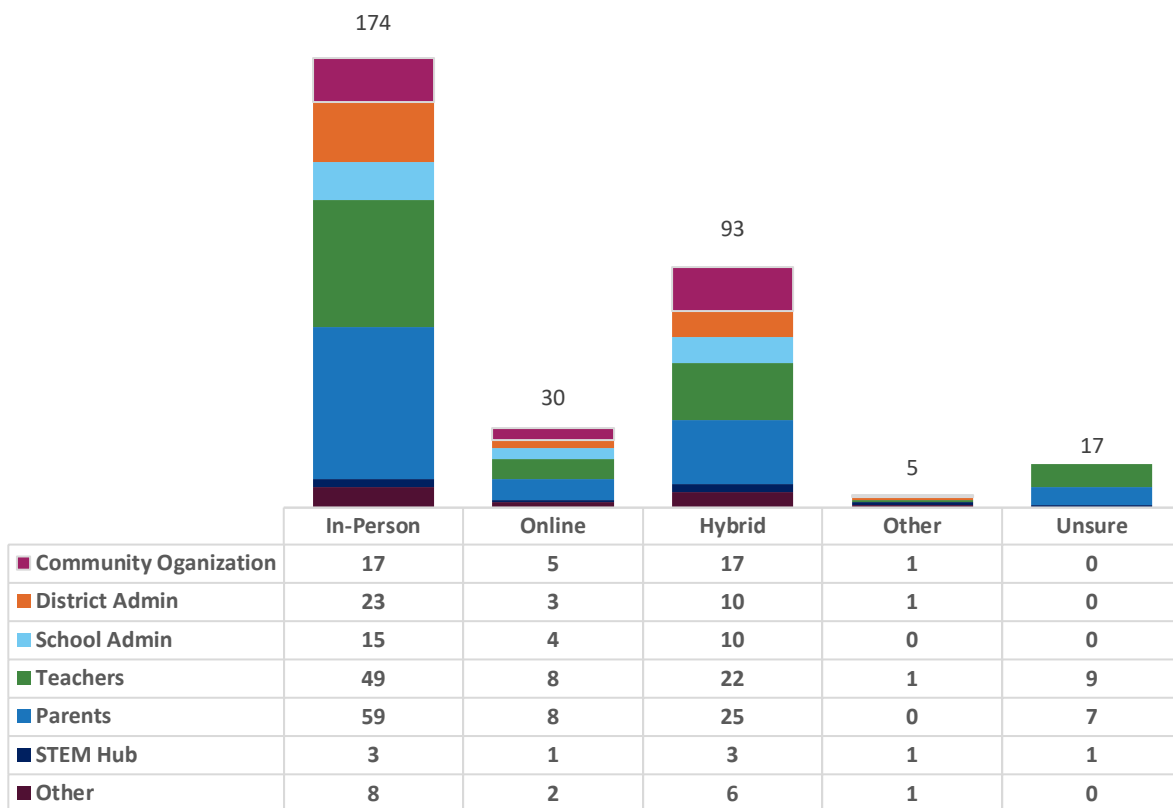
Notably, 66% of school and district administrators responded as satisfied or very satisfied with the available well-rounded education opportunities, compared to only 18% of community organization representatives. A full breakdown of responses is in figure B2.

Figure B2: How would you describe your satisfaction with the well-rounded education opportunities in your school(s) and community?



Survey respondents were also asked about their preferred course delivery method. The preferred delivery method was In-Person (174 responses) followed by Hybrid (93 responses), Online (30 responses), Unsure (17 responses), and Other (5 responses). Answers to open response questions indicated that comprehensive distance learning due to the pandemic created a strong desire for in-person courses among survey respondents.

Figure B3: What delivery methods would you like to see used to deliver new well-rounded educational opportunities?



## Appendix C: Course Enrollment Disproportionality Analysis and Test Statistics

The statistical test used in the course enrollment disproportionality analysis was a paired sample t-test, which was conducted to compare the average percentage of course enrollment and the average percentage of school enrollment for each student group and in each subject area. The data used in the analysis are from the 2018-19 Class Roster data collection. The null hypothesis of each t-test was that for each student group, the difference in their percentage of course enrollment and percentage of school enrollment would be zero. The Alternate hypothesis of each t-test was that for each student group, the difference between their percentage of course enrollment and their percentage of school enrollment would not be zero. The degrees of freedom vary for each t-test because the number of schools that offer courses in each subject area and enroll students in each student group varies.

The tables in this appendix contain the means, standard deviations, t-statistic, p-value, and degrees of freedom (df) for each student group t-test conducted. Table C1 contains the statistics for arts courses, Table C2 contains the statistics for computer science courses, and Table C3 contains the statistics for engineering and technology courses.

*Table C1: Arts courses disproportionality analyses t-test Statistics for each student group (\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ )*

Student Group	% Course Mean	% School Mean	% Course SD	% School SD	t Stat	p-value (two-tail)	df
Asian	0.0329	0.0306	0.0563	0.0474	2.0827	0.03789**	411
Black/African American	0.0244	0.0223	0.0677	0.0422	0.9170	0.35972	375
Latino/a/x	0.1950	0.2055	0.1553	0.1644	-4.3266	0.00002***	485
Native American/ Alaska Native	0.0192	0.0213	0.0501	0.0532	-2.3439	0.01953*	438
Multiracial	0.0648	0.0606	0.0373	0.0321	4.1221	0.00004***	476
Native Hawaiian / Pacific Islander	0.0081	0.0084	0.0115	0.0093	-0.7262	0.46826	314
Students Identifying as Male	0.4496	0.5158	0.0966	0.00617	-17.005	0.00000***	490
Students Navigating Poverty	0.5189	0.5326	0.2830	0.2600	-1.5172	0.12987	487
Students Experiencing Disability	0.1258	0.1484	0.0737	0.0523	-7.9678	0.00000***	489
Ever Emergent Bilingual Students	0.1298	0.1550	0.1410	0.1599	-12.3098	0.00000***	450



Table C2: Computer Science Courses Disproportionality Analyses t-test Statistics for each Student Group (\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ )

Student Group	% Course Mean	% School Mean	% Course SD	% School SD	t Stat	p-value (two-tail)	df
Asian	0.0361	0.0332	0.0651	0.0514	1.7791	0.07625	297
Black/African American	0.0182	0.0209	0.0388	0.0387	-2.6304	0.00901**	274
Latino/a/x	0.1987	0.2174	0.1710	0.1696	-5.3762	0.00000***	345
Native American/ Alaska Native	0.0182	0.0195	0.0567	0.0506	-0.8720	0.38387	311
Multiracial	0.0641	0.0596	0.0641	0.0596	2.1896	0.02923*	342
Native Hawaiian / Pacific Islander	0.0073	0.0079	0.0118	0.0086	-1.1217	1.96986	241
Students Identifying as Female	0.3600	0.4800	0.1541	0.0560	-15.013	0.00000***	347
Students Navigating Poverty	0.5106	0.53320	0.3111	0.2607	-1.8680	0.06262	344
Students Experiencing Disability	0.117157061	0.14479	0.0808	0.0475	-6.8194	0.00000***	346
Ever Emergent Bilingual Students	0.1445	0.1665	0.1532	0.1649	-7.6724	0.00000***	323

Table C3 Engineering and Technology Courses Disproportionality Analyses t-test Statistics for each Student Group (\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ )

Student Group	% Course Mean	% School Mean	% Course SD	% School SD	t Stat	p-value (two-tail)	df
Asian	0.0341	0.0302	0.0552	0.0438	2.3042	0.02205*	243
Black/African American	0.0165	0.0208	0.0388	0.0392	-3.5665	0.00044***	222
Latino/a/x	0.1845	0.2126	0.1669	0.1644	-5.5608	0.00000***	272
Native American/ Alaska Native	0.0184	0.0184	0.0443	0.0313	-0.0296	0.97637	248
Multiracial	0.0653	0.0603	0.0778	0.0302	1.1491	0.25154	267
Native Hawaiian / Pacific Islander	0.0076	0.0086	0.0129	0.0091	-1.2972	0.19613	189
Students Identifying as Female	0.2673	0.4781	0.1636	0.0691	-21.8337	0.00000***	274
Students Navigating Poverty	0.5017	0.5305	0.3188	0.2634	-2.1791	0.03018	272
Students Experiencing Disability	0.1179	0.1485	0.0976	0.0565	-5.8140	0.00000***	273
Ever Emergent Bilingual Students	0.1317	0.1633	0.1484	0.1641	-7.2132	0.00000***	254