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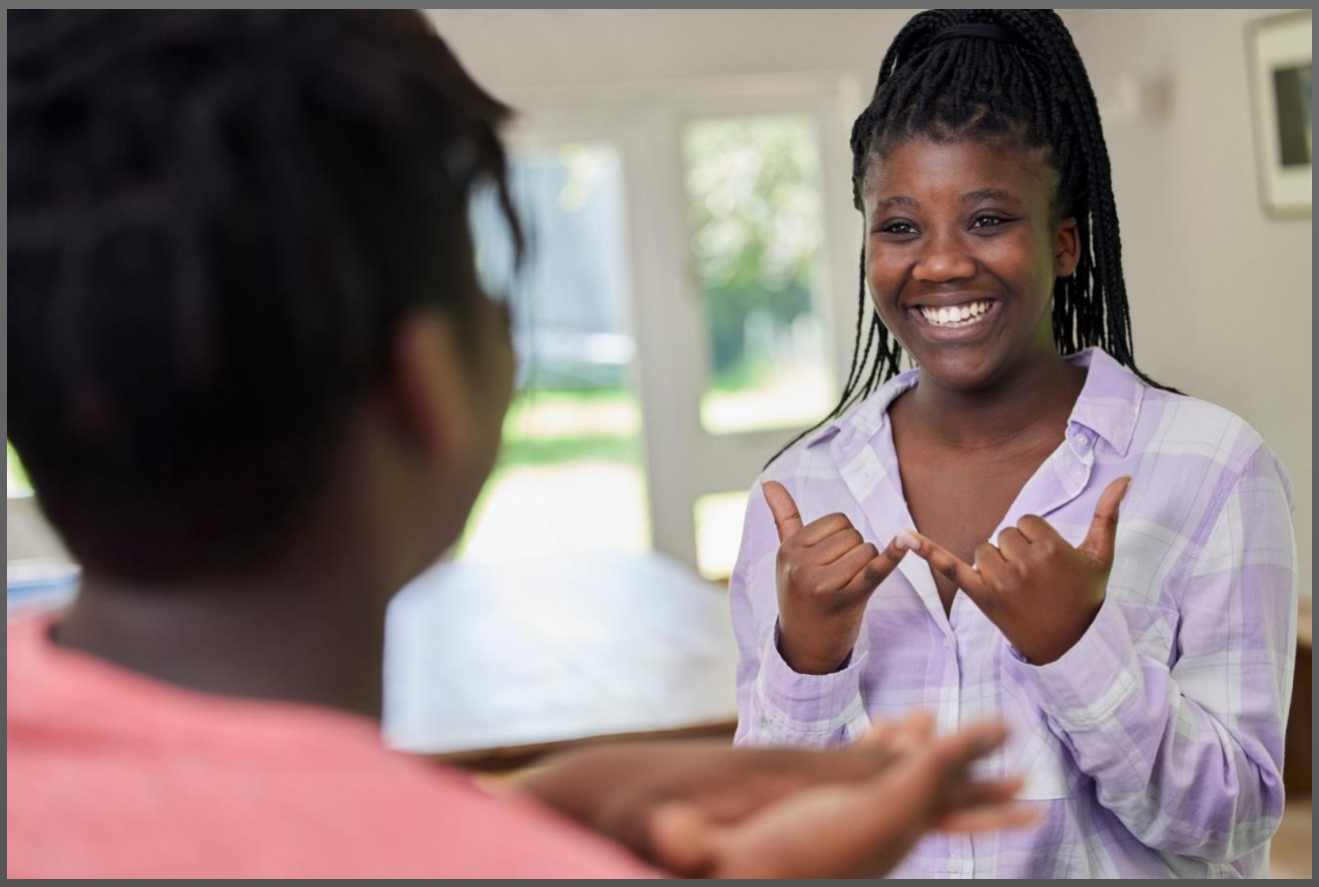

A Foundation for Success: High School Experiences that Supported Post-Secondary Education and Employment for Students with Disabilities in Utah

Prepared by the
Utah Education Policy Center
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THE UNIVERSITY OF UTAH
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Executive Summary

Research suggests that various in-school experiences, such as participation in career and technical education coursework, goal setting, and inclusion in general education classrooms, can contribute to outcomes related to employment, education, and/or quality of life for students with disabilities after they exit the school system (Mazzotti et al., 2021). In an effort to further identify practices that can support the experiences of youth with disabilities to meet their post-secondary goals, the Utah State Board of Education (USBE) partnered with the Utah Education Policy Center (UEPC) to study responses to an open-ended item from the Post School Outcome (PSO) Survey.

The USBE annually administers the Utah Indicator 14 Post School Outcome Survey Questionnaire as part of their reporting to the public and to the Office of Special Education Programs. The PSO survey is administered to students who had an Individualized Education Plan and who are no longer in school. While the overall survey has approximately 24 questions, this study addressed one of those questions: "Thinking about the things you are doing now, what is something positive that happened while you were in high school to **help you** reach your goals?" This study analyzed five years of PSO survey responses to this question (approximately 7,500 responses). Specifically, the UEPC conducted a mixed methods study to understand which high school experiences students with disabilities and their caregivers perceived as beneficial or supportive as they look back after exiting the school system. The results of this analysis helped to identify in-school experiences that supported post school goal attainment and outcomes.

Key Findings

1. **Taking College Level Classes in High School Helped Students Discover Their Unique Talents in a Supportive Environment and Increased their Confidence in Pursuing Education and Employment Opportunities Post-High School.** When students received the assistance they needed to overcome academic struggles in reading and math, or were encouraged to take advanced classes or participate in vocational training, their motivation, interest in, and confidence in pursuing education or employment after high school increased.
2. **Extracurricular Activities Inspired Student's Academic Achievement and Future Goals.** Although not required for graduation, extracurricular activities were often described by students as spaces where they could be themselves, forget about their academic struggles or different abilities, and focus on their personal interests while exploring their talents outside the classroom.
3. **Supportive School Personnel Worked with Students and Their Families to Leverage Connections and Resources for Student Success.** Supportive school personnel were often described by students as instrumental to their ability to succeed academically and professionally.

4. **Negative Experiences that Challenged Students with Disabilities in Achieving Post-High School Success.** In some ways, facing challenges and struggles during our formative years helps us build the skills necessary for success. However, it is also important to consider the impact of negative experiences on student's post school success, especially because these experiences were associated with increased probabilities that students would drop out or never engage in education or employment opportunities.

Considerations

1. **Provide students with disabilities additional opportunities to explore their post-secondary interests early and often.** Students with disabilities currently have opportunities in school to engage in activities that may create awareness of and support these individuals in building skills for future careers. Being intentional about supporting students with disabilities in learning about their strengths and talents and promoting professional opportunities that align with their talents in high school is critical to their postsecondary success. Students' confidence that they will excel in their future academic or professional career may increase through participating in Career and Technical Education or taking college-level classes while in high school where they continue to receive special education supports and assistance from supportive high school personnel.
2. **Expand support networks for students with severe disabilities.** Several statistically significant variations in positive high school experiences across disability labels were noted, including differences in positive high school experiences that were associated with postsecondary education and employment. While it was clear from exploring survey comments that most students and their parents or guardians were happy with the in-school supports they received, it may be the case that some students have additional needs that at times require more intensive support from school personnel than is being provided with the level of support at their high school. Providing a more holistic intervention with students with more severe disabilities may go a long way to setting these students up for success upon exiting the school system.
3. **Promote participation in extracurricular activities that meet the diverse interests of students.** Differences among racial and ethnic groups in the types of supportive high school experiences mentioned in survey comments were noted. Participation in extracurricular activities tended to be described as spaces where students were able to socialize with their peers, build physical and mental strength, and excel at something they're passionate about in school. Promoting participation in a variety of extracurricular options that meet the unique interests of students may help students feel a sense of belonging or connection at their school while helping them cultivate their interests early so they have a clearer understanding of their future path upon graduation.

4. **Implement an early warning system and reach out to students facing challenges.** Identify negative experiences early and communicate with students and parents about potential interventions to support student success before students exit high school. This may help facilitate a positive transition to post-secondary education or employment through working with parents and their families to identify strategies that align with the student's goals and ensure students are receiving the in-school supports they need and are aware of supports beyond high school.
5. **Revisit the data collection and storage of the Post School Outcomes Survey.** Several challenges were encountered in the data analysis process. Providing information about who responded to the survey may have facilitated comparisons between how parents or guardians and students described positive high school experiences. Improving consistency in how survey responses were recorded through recording verbatim responses consistently may have further supported the amplification of participant voice in this study. Furthermore, retaining survey data in its disaggregate form rather than combining data for Indicator 14 may help identify relationships between specific high school experiences and attending higher education or competitive employment after exiting high school.

Introduction

The U.S. Department of Education Office of Special Education Programs (OSEP), in accordance with the Individuals with Disabilities Education Act (IDEA 2004), requires the collection of outcome data for youth with disabilities following their exit from their secondary placement. To address this requirement and further serve youth with disabilities, the Utah State Board of Education (USBE) deploys an interview questionnaire annually to inform the USBE's annual reporting about Post School Outcomes (Indicator 14)[1] and compliance with reporting requirements to OSEP. This study, which was conducted as part of a research practice partnership between USBE Special Education and the Utah Education Policy Center (UEPC), provides a supplement to USBE's annual reporting.[2]

The overall PSO survey, which is administered by the USBE as an interview, has approximately 24 questions. Participation in the Indicator 14 interview is based on information available from the USBE's Exiter database. This study addressed one of those questions: "Thinking about the things you are doing now, what is something positive that happened while you were in high school to help you reach your goals?" Analyzing five years of PSO survey responses to this question (approximately 7,500 responses), the UEPC sought to understand which high school experiences students with disabilities and their caregivers perceived as beneficial or supportive as they look back after exiting the school system.

Specifically, the researchers employed qualitative and quantitative methods, which included the approved use of a large language model, to answer the following research questions.[3]

Research Questions

1. What positive high school experiences supported individuals with disabilities in reaching their goals after exiting the school system?
    a. What positive high school experiences were associated with students reaching their goals of some postsecondary education or employment after exiting high school?
2. How did students' experiences support their transition from high school?
    a. In what ways did students' high school experiences support their transition into postsecondary education or employment?

[1] See information regarding reporting of Indicator 14: Post School Outcomes in the Special Education Annual Performance Report Indicators at https://schools.utah.gov/specialeducation/programs/aprindicators.
[2] To date, this research practice partnership has explored issues regarding the educator preparation, educator working conditions, and educator pipeline (Acree et al., 2023; Auletto et al., 2020; Ni et al., 2017a; Ni et al., 2017b; Ni & Rorrer, 2018; Rorrer et al., 2020), and schools that created inclusive environments for students with disabilities and have been effective at producing positive outcomes (Acree et al., 2023).
[3] See methods section for a discussion of use of the Large Language Model for this study.

Postsecondary education and employment are important post-high school outcomes for students receiving special education services to gain independence and fulfill their life goals. Unfortunately, these students are less likely to enroll in or complete postsecondary education, earn less, and are less likely to live independently than their peers without disabilities (Newman et al., 2011; Sanford et al., 2011). Students who received special education services in high school enroll in higher education (National Center for Education Statistics, 2019), earn a bachelor's degree (U.S. Census Bureau, 2016), and obtain gainful employment post-baccalaureate (U.S. Bureau of Labor Statistics, 2018) at lower rates despite transition services being added to IDEA in 1990 to provide services that support students with disabilities in achieving their postsecondary goals for education, employment, and/or independent living. This study will contribute to broadening our understanding of the types of supports in high school that facilitate students with disabilities in Utah achieving postsecondary education and employment goals.

Background Research

In-school Predictors of Post School Success for Students with Disabilities

Correlational research using various datasets (Educational Longitudinal Study of 2002, National Longitudinal Transition Studies (NLTS), and state-level databases) have tracked several cohorts of students with disabilities during and after they graduated high school to identify promising predictors for successful outcomes for students with disabilities post-high school in education, employment, independent living, and quality of life. For instance, Haber and colleagues (2016) completed a meta-analysis of the research to date using the NLTS dataset to assess the strength of previous findings (e.g., Test et al., 2009). Their study highlighted five predictors associated with postsecondary education and employment for students with disabilities: 1) career and technical education, 2) interagency collaboration, 3) inclusion in general education, 4) paid employment or work experiences, and 5) self-determination. Building on previous work to establish in-school predictors of postschool success, Mazzotti and colleagues (2021) examined 22 studies that met their criteria for inclusion, coding research to categorize previous findings as 1) evidence-based, 2) research-based, and 3) promising predictors based on the National Technical Assistance Center on Transition's (NTACT, 2017) quality indicator checklist. Using NTACT's criteria for levels of evidence (NTACT, 2018), only one predictor — Career and Technical Education (CTE) — reached the level of "evidence-based" for positive post school outcomes (i.e., employment) for students with disabilities. Other predictors, including CTE, goal setting, inclusion in general education, paid employment/work experience, parent expectations, program of study, self-determination/self-advocacy, student support, transition programs, work study, and youth autonomy and decision-making were identified as "research-based" predictors for education and/or employment, signaling a sufficient rather than strong record of success for improving post school outcomes[4].

[4] "Evidence-based" and "research-based" predictors are supported by at least two methodologically sound *a priori* studies using a quasi-experimental correlational design. "Evidence-based" predictors must meet all three of the

In addition to the challenges most young adults face with making decisions about their post high-school goals, students with disabilities must also navigate acquiring the learning accommodations they need to participate in postsecondary education and employment opportunities. Protections under IDEA end as students exit high school. Students with disabilities can be covered, though, under Section 504 of the Rehabilitation Act of 1973 when they attend colleges or universities that receive federal funding or the Americans with Disabilities Act of 1990 if students are engaged in postsecondary education or employment settings. Accommodations are required under these acts and support these students in completing coursework at rates competitive with their peers (Ascherman & Shaftel, 2017). However, only 28% of students with disabilities disclosed their receipt of special education services in high school to their postsecondary institutions, only 19% of which received accommodations (Newman et al., 2011). Out of the 81% that requested but did not receive accommodations, almost half (43%) reported these accommodations would have helped them complete their schoolwork (Newman et al., 2011).

Thus, despite previous research about the in-school supports that facilitated positive postsecondary employment and education outcomes for students with disabilities, qualitative research focused on the individual perceptions and experiences with these in-school supports is needed to understand the nuanced ways in which high school services supported the achievement of postsecondary goals. Exploring commonalities as well as differences among and between student groups may shed light on the ways in which these services met the unique needs of students with varying postsecondary goals.

Variations in Post School Success and In-School Support Needs

Newman and colleagues (2011) reported a multitude of differences in post-high school outcomes for youth with disabilities by disability categories. In their study, rates of participation in postsecondary education and employment differed markedly between students with different disabilities, especially between students with language or visual impairments, emotional disturbance, intellectual disabilities, or those with multiple disability labels. Importantly, receiving accommodations in postsecondary education settings also differed markedly between students with visual or hearing impairments and students with speech or language impairments, learning disabilities, emotional disturbances, or other health impairments, which may explain to some extent these students' increased rates of participation in postsecondary education and employment. On the other hand, students with emotional disturbances were more likely to be stopped by police, arrested, on probation, or otherwise involved with the criminal justice system. Students with multiple disabilities were less likely to attend postsecondary education but more likely to receive accommodations when they did as compared to students with language, speech, or other health impairments. These students also tended to work fewer hours per week and

following criteria 1) demonstrate consistent statistically significant positive correlations between predictor and outcome variables, 2) included a calculated effect size or reported data that allowed for effect size to be calculated, and 3) included no evidence from a sound *a priori* study demonstrating negative correlations between predictor and outcome variables. "Research-based" predictors only have to meet two of the three criteria and may include studies with statistically significant negative correlations.

were less likely to be independent or married than students with learning disabilities, emotional disturbances, speech or language impairments.

Furthermore, differences within disability categories have also been noted. For example, while students with speech or language impairments are often grouped in a single disability category, students diagnosed with speech impairments at age 5 did not differ significantly in academic performance from their non-disabled peers at age 19, while students with language impairments at age 5 significantly underperformed in all areas of academic achievement as compared to their non-disabled peers (Young et al., 2002). At times, these differences may also be influenced by additional underlying conditions. For example, comorbidity of language impairments is common between emotional behavioral disorders (Benner et al., 2009; Hollo et al., 2014) and learning disabilities (Benner et al., 2009), although these comorbidities often go undiagnosed.

Comorbidities between emotional disturbance or learning disabilities and ADHD have also been studied and their complexities documented (Del'Homme et al., 2007; Smith & Adams, 2006; Wei et al., 2014). In a nationally representative sample, Wei and colleagues (2014) found that students diagnosed with both learning disabilities (LD) and attention deficit hyperactivity disorder (ADHD) experienced poorer academic and social skill acquisition. Those diagnosed with both emotional disturbance and ADHD experienced poorer social skill acquisition and increased behavioral issues in the classroom than those diagnosed with only a learning disability or emotional behavioral disorder (Wei et al., 2014). This aligned with Smith and Adams' (2006) results that comorbidity between ADHD and LD led to poorer academic outcomes and increased behavioral problems in school, although behavioral outcomes were not significant when comparing students with ADHD and LD to students with ADHD only or when comparing academic performance between students with ADHD and LD to students with LD only.

Method

This study employed qualitative and quantitative methods as well as used a Large Language Model to answer the following research questions.

Research Questions
1. What positive high school experiences supported individuals with disabilities in reaching their goals after exiting the school system? a. What positive high school experiences were associated with students reaching their goals of some postsecondary education or employment after exiting high school? 2. How did students' experiences support their transition from high school? a. In what ways did students' high school experiences support their transition into postsecondary education or employment?

To complete this research, the Utah State Board of Education (USBE) provided access to data from the Post School Outcomes (PSO) survey to the Utah Education Policy Center (UEPC).[5]

Post School Outcomes Survey

The Indicator 14 PSO Survey, which is administered by the USBE as an interview, has approximately 24 core questions. (See Appendix A for a copy of the survey.) The PSO survey was designed to elicit additional information about these students' engagement with postsecondary education, employment, adult living, and involvement with agency services or assistance post-high school. According to the USBE, former students, parents, guardians or adult service providers, or "anyone else" reached through contacting the phone number on file for the former students' legal guardian in high school were invited to complete interviews over the phone with USBE staff. Participation in the Indicator 14 interview is based on information available from the USBE's Exiter database. According to the USBE methodology, participation in the interview includes those students who are over the age of 14 and who had an Individualized Education Plan (IEP) at the time of their departure from their secondary placement and who received either a regular diploma, certificate, alternate diploma, reached the maximum age of eligibility of services, or were designated as dropping out.[6][7]

The focus of analysis for this study were answers to the following question (Question 23) from the PSO Survey: "Thinking about the things you are doing now, what is something positive that happened while you were in high school to **help you** reach your goals?" This study utilized data from PSO surveys completed during a five-year period (2018-2022) for students with disabilities who exited during the 2017-2021 academic school years. Only survey respondents who answered Question 23 (n = 7319 or 61.84% of the 11,835 responses received) were included in the analyses for this study.

Sample

The UEPC research team employed simple random sampling (Moore & McCabe, 2006) to select a portion of PSO survey respondents' answers to Question 23. This simple random sample was manually coded by the UEPC research team. This allowed the research team to select a sample of responses (n = 300, or 4.1% of total survey responses) to represent the overall population of responses; thus, reducing bias. However, because simple random sampling was employed to select a sample of a sample from the population under study who had responded, it may not be an unbiased representation of the population of special education students that exited high schools in Utah from 2017 to 2021.

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[5] The USBE has a Master Data Sharing Agreement with the UEPC. The UEPC follows all federal and state protocols for data privacy, security, and reporting in research and evaluation studies.

[6] See information regarding "About the Utah Indicator 14 Survey" at https://www.utahposthighsurvey.org/documents/2023/About%20the%20Survey%203April2023.pdf.

[7] Students who had not yet graduated or were no longer receiving special education services were ineligible to participate and interviews were deemed unsuccessful if the respondent declined to answer, unresolved language barriers prevented the interview from being conducted, or the former student or their parent, guardian, or caregiver could not be reached via telephone.

Data Analysis

In this section, we provide an overview of the data analysis procedures for the study. This study employed both qualitative and quantitative methods to better understand the positive high school experiences that supported students with disabilities in reaching their goals post-high school as well as what experiences were most closely associated with positive post-high school outcomes of education and employment.

Qualitative Coding

To understand how high school experiences were associated with postsecondary outcomes, all PSO survey responses to question 23 were coded. As part of the UEPC's analysis of the data, permission was also obtained from the USBE to employ a responsible and ethical, secure, and methodologically rigorous process for coding all survey responses utilizing a large language model (LLM). The UEPC used the LLM Claude 3.5 Sonnet developed by Anthropic for this purpose. The UEPC has a paid subscription to the Anthropic's LLM, Claude. Importantly, this LLM does not train Claude on user input data or the model's responses. Note that the data used for this project only includes de-identified survey responses in Claude conversations, which further protects student information.

Initial Coding and Codebook Development

First, the research team identified a random sample of 100 survey responses (1.37% of total responses). Then, two members of the research team open coded (Saldaña, 2016) each response independently. Open coding these responses allowed for the amplification of participant voice by using the language and experiences shared by respondents in the identification and generation of key themes to address this study's research questions (Saldaña, 2016).

Next, the researchers worked together to develop a codebook with definitions of codes that were based on the categories of types of positive experiences described in survey responses. Codebook definitions included an option to apply a subcode when appropriate to identify more information about the support described. For example, if a respondent identified a teacher's dedication to their learning and one-on-one support as beneficial, then this comment may be coded as 'supportive school personnel (teacher)' and 'personalized learning (one-on-one support),' which indicates 'teacher' as a sub-code of supportive school personnel and 'one-on-one support' the sub-code of personalized learning. Coding in this way allowed for retention of some of the nuance from the original comments while also organizing supports under high-level categories for future quantitative analyses. Subcodes were not strictly defined, and Claude was allowed to apply any words or phrases deemed appropriate, while using the human-coded samples as a guide. This approach yielded a wide range of subcodes, which were condensed for analysis, as described later in the methods section.

Given that a small sample of survey responses were used to develop the codebook, an "other" code was also included in the codebook, which specified that the code 'other' be applied by the LLM to any comment that expressed a positive experience but did not fit with the codes already defined in the codebook. The research team then examined these 'other' comments to determine if they indicated either that a new code was necessary or that existing code definitions could be improved. Claude applied the 'other' code less than 3% of the time and comments coded as 'other' described general positive high-school experiences (e.g., "Learned a lot with experiences in high school"), specific positive experiences not described by a code from the codebook (i.e., personal life events like having a baby or meeting one's partner in high school, after-school programs, etc.), and at other times identifying positive post-high school experiences (i.e., in college, employment, community activities post-high school). The frequency of specific positive high school experiences coded as 'other' that could not be described by a code from the codebook were low (less than 1%) and did not justify an additional code.

Code Application and Prompt Engineering

After the codebook was drafted, the research team employed an iterative process that included the following steps: independently coding a random sample of comments, using prompt engineering to guide Claude to code comments using the codebook, comparing results, discussing disagreements, and revising the codebook to clarify definitions and extend the mutual exclusivity of categories. When comments aligned with previously reported in-school predictors (e.g., earning a high school diploma; see Mazzotti et al., 2023), codes were retained in the codebook so the research teams could test for associations between these in-school predictors and positive post school outcomes. However, at times these experiences were synthesized into one category (e.g., personal growth was an overarching category for self-advocacy, self-realization, self-determination, psychological empowerment, etc.). At other times, challenges prevented certain predictors from being represented by codes. For instance, how courses were described at times prevented the research team from distinguishing CTE from academic courses. This led the research team to have one code for all coursework with sub-coding to identify CTE coursework where possible (e.g., welding, woodworking, cooking, etc.).

The researchers could apply up to three codes from the codebook to each response, which permitted the analysis to highlight where applicable the top three experiences that supported the student's post-high school success. After three iterations of revising the codebook, the research team applied that codebook in their coding of the survey responses sampled (n = 300, or 4.1% of total responses). As noted above, code definitions included an option to provide a sub-code to further describe the content of survey respondent comments about the positive high school experiences that supported student's goal attainment.

Consistent with general use of LLMs, the research team employed prompt engineering to improve the LLM's performance for the coding task. That is, the research team provided the LLM, Claude, a "system role" (a more specific perspective to adopt) and provided additional context to help Claude understand

the task being performed and how it fits into the larger analysis task.[8] To this end, the research team tested three different prompts to better understand how to improve Claude's coding performance through prompt engineering. The first prompt provided a system role (i.e., researcher role). The second prompt provided additional context (i.e., information about Section 504 federal law, special education supports such as IEPs, accommodations, and transition planning, the career development credential, alternative high schools in Utah, postsecondary education programs for students with disabilities in Utah, predictors of post school success, and information about the post school outcomes surveys). Finally, the third prompt provided both the system role (i.e., researcher role) and additional context along with the basic prompt. Please see the "Inter-Rater Reliability" section of this report for details regarding the inter-rater reliability and decision to proceed with coding all comments using the LLM.

Research Team Use of An LLM to Code Comments and Verify Codes as Themes

After establishing inter-rater reliability between the human coders and use of the LLM, Claude, the research team employed the LLM to code the full sample of comments. As of summer 2024, Claude was limited to processing 200,000 language "tokens" (where a single word can require more than one token) within an 8-hour work session. Due to the number of survey responses to be coded (n =7,319) and the amount of information provided to Claude to code these responses (i.e., prompts, codebook with definitions, researcher role, and additional context), coding all responses required six sessions. The research team noted that at times Claude did not follow the instructions and applied more than three codes to comments. These tended to be long comments rich with information about the student's experiences in high school. When Claude applied more than three codes, a member of the research team evaluated the codes and determined which three codes should be applied. Note that this does not affect the reliability estimates reported in Table 2 because it was applied only to the full set of stimuli, where the goal is not estimating reliability but rather having the best possible coding for each comment.

To better understand the context of experiences described by each code, the research team also examined the subcodes generated by using the LLM, Claude. Claude generated 1,608 unique subcodes, which included a wide range of subcodes for each code. To analyze subcodes, similar words or phrases were condensed into categories such as teachers (including, e.g., special education teachers, math teachers, science teachers, etc.) or sports (e.g., soccer, football, wrestling, basketball, etc.). Percentages of subcodes within each code were often concentrated among a small number of categories, and percentages of subcodes are shown in the findings for the most common codes. As an example, teachers represented 81% of the subcodes used within the code "supportive school personnel." Similarly, IEP subcodes represented 52% of the subcodes used within the code "Special Education support."

Following the coding of all responses using the LLM, the research team utilized Claude to verify whether the codes identified by the research team using the random sample of 300 codes adequately represented the full set of 7,319 survey responses. Specifically, the research team used the LLM to identify the central themes of the responses using mutually exclusive categories. Results of this analysis

[8] This process is also recommended by Anthropic, who developed Claude.

led to the identification of the following central themes by the LLM: academic support; career/vocational training; extracurricular activities; supportive relationships; personal growth; life skills development; alternative education options; academic achievement; transition support; and negative or no positive experiences. Notably, all these themes were represented in the codebook and no new codes were identified, although categories differed slightly. The researchers prompted Claude to provide example comments that represented the themes identified by the LLM, which assisted in the interpretation of the themes. The final version of the codebook with definitions developed by the research team, who utilized the LLM to code all comments included in the final analysis, can be found in Appendix B.

Exploration of Beneficial Use through Human-AI Collaboration

To maximize the benefits of using the LLM, the team prompted Claude to identify any concerning comments that indicated risk of danger or harm to the student in both the positive as well as negative survey responses. These responses were reported to the Utah State Board of Education and more information about the range of responses with a few examples can be found in Appendix D. This practice is consistent with the ethical responsibilities of the UEPC and the ethical and responsible use of LLMs in content coding. Additionally, an automated process may overlook evidence of harm or risk to students if the procedure does not include a step to explore these potential dangers. Given the potential for LLMs to process large amounts of open-ended data that may have previously been neglected (O'Cathain & Thomas, 2004), this risk screening process could, if widely adopted, result in improved student welfare that goes beyond the application of new knowledge gained through research.

Additionally, it is important to note that all comments with more than 150 characters were reviewed by a member of the research team to further explore the rich descriptions of comments that were coded by Claude to analyze how the presence of themes in the data related to post school outcomes. This process helped support the further identification of key themes to address the second research question.

Inter-Rater Reliability

After two human coders established a common set of codes and then independently coded the sample responses, the research team also coded the responses using the LLM on the same comments. Using codes from the codebook, coding results were compared to the human coder's codes for the sample. Inter-rater reliability was calculated for coding between the human coders and the LLM. The inter-rater reliability was calculated using a version of Krippendorff's alpha that is modified for multi-valued nominal-scale data (Krippendorff & Craggs, 2016) to determine the reliability of the team's qualitative coding process and enhance the dependability of qualitative findings (Lincoln & Guba, 1985; McAlister et al., 2017). Krippendorff's multi-value alpha ("mv-alpha") was selected as the criterion for inter-rater reliability because this measure 1) allows for calculating agreement between raters when multiple codes can be applied to the same stimulus and 2) factors in chance agreement between raters.

As shown in Table 1, results indicated that when Claude was provided additional context about the task and assigned a researcher role, its inter-rater reliability with each of the human coders (0.753 and 0.785) was equal to or greater than the inter-rater reliability between the two human coders (0.742). These results provided evidence to suggest that use of the LLM Claude's coding of comments using the codebook was as reliable as human qualitative researchers applying the same codebook with definitions to code the sample comments. While the reliability is above the common threshold of 0.7 (Cortina, 1993), it is below the typical target of 0.8 (McHugh, 2012) due in part to the complexity of the task (i.e., the large number of coding categories and a degree of conceptual overlap among them, see Tong et al., 2023). After establishing that inter-rater reliability among human coders and the LLM exceeded the established threshold (see Table 1), the LLM Claude was utilized by the research team to code all responses to Question 23.

Table 1. Reliability Between Claude and Human Researchers Using Krippendorff's alpha

	Human 2	Claude - Context	Claude – Researcher Role	Claude – Context + Role
Human 1	**0.742**	0.722	0.757	**0.753**
Human 2		0.753	0.774	**0.785**
Claude – Context			0.788	0.830
Claude – Researcher Role				0.871

Regression Analysis

All coded comments were then joined with the PSO survey data, which included information regarding students' demographic information, special education disability labels, post-secondary education, and employment outcomes. Coding all comments and joining the data allowed us to examine associations between specific post school outcomes (i.e., education and employment) with the positive high school experiences students and their parents described. Regression analyses were then used to examine the relationships between positive high school experiences, student demographics, special education disability labels, post-high school employment, and education outcomes for students with disabilities. To better understand distributions within the dataset as well as patterns or trends in the data, descriptive statistics were calculated to examine the distribution of responses across the five years students were surveyed and across student demographic characteristics such as disability label, gender, and race or ethnicity. The UEPC research team compared findings across demographic groups (i.e., by race, gender, and disability categories) to better understand the ways in which positive high school experiences supported students with different disabilities, backgrounds, and post-secondary outcomes in reaching their postsecondary goals.

Limitations

Although care was taken to ensure the rigor and reliability of the study's findings, several limitations to the application of these findings should be noted. First, qualitative findings are not generalizable beyond the context within which they were collected. These findings may accurately represent the key themes and experiences PSO survey respondents shared about the positive-high school experiences that supported students' postsecondary transition for the cohorts included in this study period. However, only 62% of survey respondents answered this question. It is possible that those who answered the question had qualitatively different experiences than those who chose not to answer this question or chose not to participate at all in the survey.

Second, the analysis depends on the assumption that answers to the question are valid and authentic. Inspection of the comments indicates they are a combination of both former students and parents or guardians, whose perspectives may differ. In future data collection, it may be useful for surveyors to record the identity of the person to whom they are speaking so that research can examine how the answers vary by source and attempt to de-bias results by compensating for the different sources.

Third, the format of the Indicator 14 outcome variables does not permit the disaggregation of employment from higher education. Although the Indicator 14A outcome is focused on higher education, students are placed in this category regardless of their participation in employment or other postsecondary education or training. Furthermore, Indicator 14B is defined as higher education *or* competitive employment. If Indicator 14A is subtracted from Indicator 14B to distinguish competitive employment from higher education, any students engaged in both employment and higher education would be excluded from the estimate for competitive employment. If the original survey contains separate questions about higher education and competitive employment, these could be shared in future research so that higher education and competitive employment could be analyzed separately.

Finally, it is important to note as well that the ethical and responsible use of artificial intelligence and an LLM to code qualitative data is a new and emerging technology and methodology. Although we employed a rigorous process for evaluating the LLM's ability to reliably code the data, the process is an imperfect science that likely requires further refinement to improve accuracy.

Findings

In the following four sections, we organize the findings from our analyses by 1) themes in positive experiences, with descriptions of what positive high school experiences supported goal attainment, 2) relationships between student demographic variables and positive high school experiences that supported goal attainment, 3) relationships between positive high school experiences and post school outcomes such as education and employment, and 4) how positive experiences in high school supported goal attainment and post-secondary transition for students with disabilities upon exiting high school. The first three sections address the first research question about what positive high school

experiences supported students' goal attainment, while the fourth section specifically addresses the second research question about how these experiences supported goal attainment.

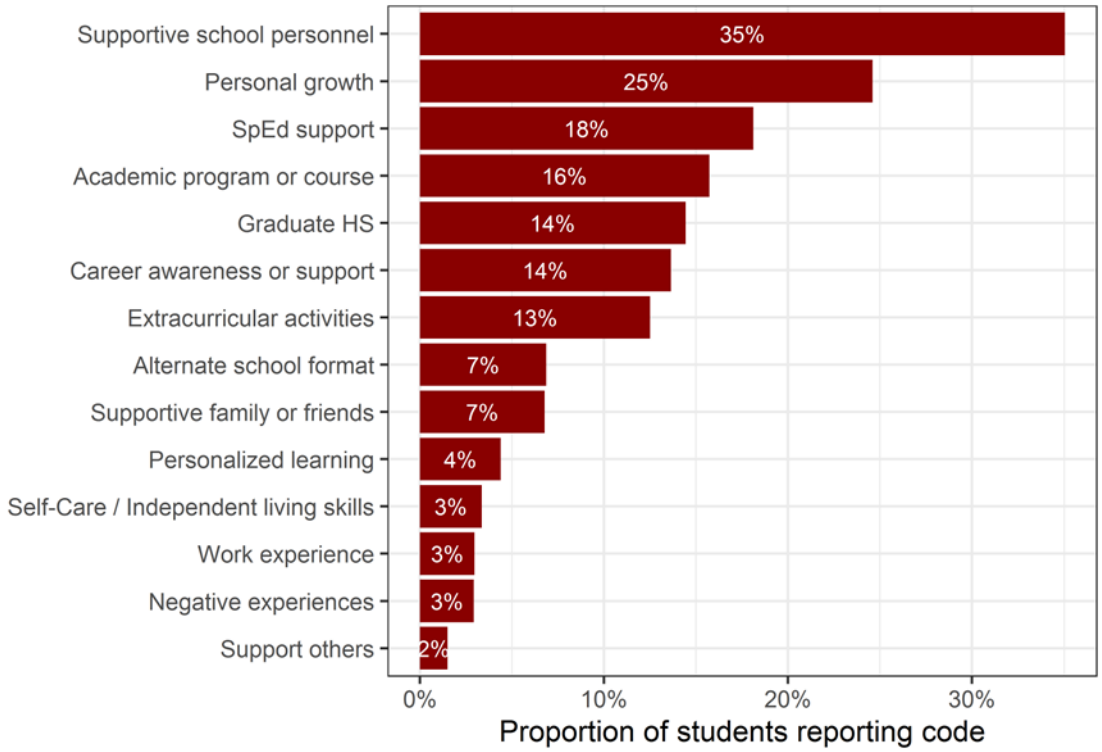
Positive High School Experiences that Supported Goal Attainment

In this section of the report, we identify the frequency of the presence of codes in survey respondent comments about the positive experiences in high school that supported their goal attainment and organize them by themes. For the eight most frequently applied codes, we provide an overview of the most commonly applied sub-codes and additional details about the range of experiences that emerged from the analysis in the following sections.

Frequency of Codes in Positive Experiences

Figure 1 shows the percentage of comments that were classified for each code. The most common code was "Supportive School Personnel," with 35% of survey respondents reporting that this was a support the student received that helped them achieve their goals. The least common code was "Support Others," with only 2% of respondents reporting it.

Figure 1. Proportion of Comments Categorized with each code



Supportive Relationships

Having relationships with individuals who took a vested interest in the student or provided care, affection, attention, or assistance that supported the student's success were frequently described by survey respondents as positive experiences that helped students achieve their goals. These supportive relationships were often with school personnel such as teachers, but also included family members and the student's peers.

Supportive School Personnel

The "supportive school personnel" code was applied to about 35% of comments. Table 2 provides information on the subcodes generated when respondents described "supportive school personnel" instrumental to the student's success in achieving their goals. When students or their caregivers talked about supportive school personnel, they primarily mentioned teachers (81%), including subcodes referring to special education and general education teachers (e.g., math, science, social studies). Separately, subcodes referring to special education teachers comprised 14% of all supportive school personnel subcodes. Counselors (9%), and other school personnel (e.g., case managers, principals, aides, coaches) were also mentioned.

Table 2. Subcodes Generated for Supportive School Personnel, with Percent Greater than 5(%)

Code	Subcode	Percentage
Supportive school personnel	Teacher(s)	81%
	Counselor	9%
	Others	< 5%

Note: The use of Claude generated 87 other subcodes used in less than 5% of supportive school personnel codes.

Survey respondents perceived these individuals as supportive because they demonstrated care towards the student and took an interest in and helped the student succeed. As one respondent put it, "having good assistance from aides and teachers helped form a foundation of success." Students described ways they built academic, communication, and independent living skills and grew personally through their interactions with supportive school personnel, at times gaining self-confidence, motivation, skills for self-advocacy and discovering their career interests in the process.

- *Real people like the SpEd department got me through high school, [by] giving me hope and having good examples like the SpEd people and the teacher. Genuine real people that have made it so I was motivated to do what I need to do be something and get up in the morning and go to work. There is no excuse for me to not do it if all my teachers were able to get through life with love and kindness.*
- *Teachers at [charter high school] were patient and accommodating, making it possible [for him] to be successful. [He] gained confidence and was comfortable in his surroundings at school.*
- *Teachers taught behaviors like hygiene, friendship, [and] living skills, which helped [the] student a lot. They also took students to different job sites, which was great.*

- *Coaches and the staff were very helpful for [the student, as they made sure she had] what she needed and advocated for her [needs]. The staff was amazing … [and] the structure of the SpEd program to push her is what helped her be successful while in school. Also, the help she received from [her therapist] in therapy sessions helped her with [acquiring] the skills she needed exactly when she was struggling.*
- *Something that was very helpful was working with the counselors and figuring out how to get accommodations that she is now using in her adult life to advocate for herself.*
- *My case manager in high school - without [him] being there for me, I would have been suspended from high school or just dropped out ... I thank him for not giving up on me and for making sure I did graduate.*

Several challenges and negative experiences with school personnel were also found. Some parents or guardians thought staff were too supportive of unrealistic expectations for their child. Some students and their parents also commented that teachers did not support the student's post-secondary education or employment goals. While some parents/guardians reported removing their children from receiving services from individuals they perceived to be a negative influence, some others described how their student had to endure working with an unsupportive teacher setting low expectations or overlooking the need to provide services to their child.

- *The school did nothing to help our son. They told him things like you can be a doctor if you want to be one knowing he can't read past the second-grade level and has severe autism and can't function on his own.*
- *[Teacher] was horrible, she told my son he was stupid and would not become a [veterinarian] and would not help him with his classes in animal sciences.*
- *Had some great teachers that supported him and accommodated him to help him graduate. His [American Sign Language] teacher was a really negative influence in his hearing loss journey. Parent pulled him out of ASL.*
- *She had a great special education teacher [at her previous school] that worked well with her and really seemed to care about the students. When [she] moved to [another large school] district … [the] special education [teacher] she had seemed like he did not really care about her and he did not really help [her].*
- *She did not enjoy high school. She felt like because she was quiet she often didn't get noticed as someone who needed help. She did not advocate for herself. She felt she needed to be taught those skills to advocate for herself so she didn't have to wait for her [Individualized Education Plan meetings] for teachers to realize she needed assistance and had accommodations that needed to be provided to her.*
- *Mother stated that she felt that the student's special education teachers were too easy on her and did not prod her hard enough to achieve more academically. She also stated that the regular classroom teachers did not read the IEP assessments about her daughter's issues and were not prepared.*
- *[Student] was disappointed with her high school teacher. She was told she didn't have enough credits to graduate a few weeks before [and was] told there was not enough time to complete it. [The student] proved them wrong and finished her work and credits and graduated with the rope and accomplishments she wanted … In the future your staff should encourage, not discourage someone from succeeding!*

Supportive Family or Friends

The "supportive family or friends" code was applied to only about 7% of comments. Table 3 provides information on the subcodes generated when respondents described supportive family or friends. Friends (44%) was the most frequently reported sub-code, followed by peers (19%), parents (9%), mother (8%), and family members generally (8%).

Table 3. Subcodes Generated for Supportive Family or Friends, with Percent Greater than 5(%)

Code	Subcode	Percentage
Supportive family or friends	Friends	44%
	Peers	19%
	Parents	9%
	Mother	8%
	Family	8%
	Others*	< 5%

Note: The use of Claude generated 13 other subcodes used in less than 5% of supportive family or friends codes.

Often, the importance of making friends at school was reported as helping students succeed academically, feel a sense of belonging at the school and position them to achieve their goals. Finding a positive support network at times helped students connect their high school experiences to positive post-secondary opportunities like education and employment.

- *The small group of learning-disabled kids the teachers taught separately. They were able to succeed in that group and become good friends. That motivated the student.*
- *The school was excellent. They gave her the most normal high school experience, had the full support of the special education team, and helped her find friends ... [S]he felt [like] she belonged [in school] for the first time.*
- *The biggest benefit of high school was the encouragement of teachers and family to attend school and graduate. I have realized that my life now isn't very different from school. You still need to wake up and go to work just like school.*
- *He became more social in high school, and this helped push him to go to college. He had older friends that were good examples that he looked up to.*

Academics and Academic Supports

Many survey respondents described ways students built skills through taking academic courses as well as accessing services or programs that helped them overcome their academic struggles and succeed in their academic endeavors. Receiving academic supports and succeeding in academic courses were perceived as important positive high school experiences that helped students achieve their goals. Within this theme, we describe the types of academic program or courses most frequently mentioned by survey respondents, along with the special education supports, alternate learning formats, and other types of personalized learning supports described as integral to student's achieving their goals. Graduating high

school is also included in this section because this achievement was frequently described as important to the student achieving their goals after high school and was often aligned with references to in-school supports as reasons students were able to graduate high school.

Academic Program or Course Supports

The "academic program or course" code was applied to about 16% of comments in the dataset. Table 4 provides information on the subcodes generated when respondents described positive experiences with academic programs or courses in high school. Career and Technical Education courses (e.g., agriculture, CNA, computers, construction, culinary arts, welding, woodworking), were the most frequently mentioned academic courses (35%), followed by art (10% and included photography, video, ceramics, etc.) and math (9%). Sorting coursework by whether it was academic or vocational was clear for a few disciplines (e.g., welding) but more challenging for others (e.g., art, finance) and therefore could not be readily distinguished in the data.

Table 4. Subcodes Generated for Academic Program or Course, with Percent Greater than 5(%)

Code	Subcode	Percentage
Academic Program or Course	CTE	35%
	Art	10%
	Math	9%
	Others* (n=256)	< 5%

Note: The use of Claude generated 256 other subcodes used in less than 5% of academic program or course codes.

When academic programs or course supports were discussed, often it was in reference to overcoming academic struggles, meeting student's learning needs or preferences, and cultivating a student's professional and academic passions. Some students talked about ways taking CTE courses like welding, diesel mechanics, and nursing helped them secure employment after high school. And while some students described their art classes as therapeutic, others indicated that taking art classes led to greater cultivation of their talents and skills, which they intend to pursue professionally. In general, negative experiences about academic programs or courses were not discussed by survey respondents as most academic concerns were described as issues with unsupportive school personnel or challenges with receiving special education supports.

- *Student had [participated in] co-taught classes which helped him get over the hump on some subjects he was struggling with [like] math. One teacher was teaching [while] the other teacher would help students one-on-one. [He] had math class/lab every other day; [the lab] helped what [the] student learned [in class] stick a bit more.*
- *In high school, the hands-on instruction for trade school classes kept him engaged. Hands-on [instruction] works better for [the] student. Student liked welding but was not able to follow through on his own when allowed to come early and stay late … [W]ith [an] understanding teacher he was able to do it. Welding gave him confidence, [and] he enjoyed it. [He] loved the physical piece [he] completed after [his] welding project [was] done. [He] loved closing up shop, winding up cords, and sweeping [up the] shop. [He is] very detail-oriented as long as he can stay focused.*

- *[I] participated in … Diesel Mechanics while going to high school. Currently [I] have a great job and appreciate all those who helped me get my education and obtain a great job.*
- *She got her certified nursing assistant license and her medical assistant certificate while in high school. She now has a job working in the hospital and has benefits as well.*
- *Art classes in high school helped relieve my anxiety issues and took away the stresses of dealing with having to go to high school and dealing with having a mental health issue. I could just be me in art class and not worry what others or the teacher was thinking.*
- *[What helped me was] teachers that helped me to know that I can do or be whatever I want to be [and gave] me encouragement, especially with my art work. That is why I want to become an artist and use my talent to pursue my career.*

Special Education Specific Supports

The "special education support" code was applied to about 18% of comments. Table 5 provides information on the subcodes generated when respondents described the special education supports that were instrumental to the student's success. When Special Education Supports were discussed, most (52%) respondents talked about the value of their individualized education plans (IEPs) and the accommodations (19%) received. Less than 5% of respondents mentioned other special education supports like postsecondary transition services, aides and paraprofessionals, interpreters, assistive technology, co-teaching practices, and various therapies.

Table 5. Subcodes Generated for Special Education Support, with Percent Greater than 5(%)

Code	Subcode	Percentage
Special Education Support	IEP	52%
	Accommodations	19%
	Others*	< 5%

Note: The use of Claude generated 87 other subcodes used in less than 5% of Special Education support codes.

Survey respondents described how having an IEP and support from the special education department helped students reach their goals. Support included ensuring the student's individualized education plan (IEP) was being followed, providing accommodations, centering the student's interests and needs, and tracking student's progress to support their success. For some students, these special education supports credited as the primary reason students were able to graduate high school and influenced their consideration of future training or education after high school.

- *I had a lot of support in high school. All of my teachers were very accommodating and wanted me to be successful. My sped teacher was always helping me and making sure my IEP was being met. I felt like everyone had my best interest at heart.*
- *The Transition Specialist was great. She always focused on real options for his future … like what he is doing [now] - working with his dad and becoming an electrician.*
- *The IEP teacher really stepped in and helped her reach her potential - she won [a] student of the year award. Without the IEP teacher she would have been lost in the system.*

- *Special education teachers kept track of student's progress. They reported to parents when [the] student was struggling so [the] parents could work on those areas with [the] student [at home].*
- *She didn't even anticipate graduating from school as her prior experiences had been so negative. Getting an IEP and subsequent accommodations made all the difference in helping her access the curriculum. She's beginning to consider future training/education as a possibility.*

While many respondents indicated the value of the special education supports such as the IEPs, for some students and parents, special education supports were reported as not provided early, often, or in a holistic way that facilitated the student reaching their full potential. At times, special education supports were described as challenges that prevented students from getting the help they needed to complete their coursework and graduate high school.

- *[He] needed more aggressive SpEd services. [He] has [oppositional defiance disorder] and [attention deficit disorder], which made him more difficult to work with … [T]he services he received only helped minimally.*
- *I do think that the district therapists at the schools need to be regularly available more often to offer the support the students need to be successful. I know that the therapist cannot be at all the schools all the time. However, the skills that are taught in therapy sessions could be beneficial to students … and especially for SpEd students. Is there anyway that the district could hire more social workers/psychologists?*
- *Having the one-on-one and routine at school helped [the] student a lot. Parent feels the state needs to increase the ability to get waiver to be signed sooner. There [were] tons of support at school but not at home so structures were not consistent, which was very difficult for the student. [It] seemed there was never enough home programs to show parents what was being done at school and how to do that same thing at home. More training on how to deal with aggressive individuals [at] home would have been helpful.*
- *Parent and student relayed that IEP's were sometimes followed … There was [a] racial disparity [and the student] had a very hard time due to the attitude of some of the teachers.*
- *[The] student struggles to read. The special education teachers would not work with him one-on-one. One of the special education teachers would take pictures of him not being able to do what the other students were doing. [The] parent believes [the] student would have graduated if he had different resource teachers. [The] student was [only] 2 or 3 credits shy of graduating.*

High School Graduation

The "graduate high school" code was applied to about 14% of comments in the dataset. High school graduation was one of the eight most frequently mentioned high school experiences that helped students in achieving their post school goals. Although the research team prompted the AI to subcode when appropriate, no subcodes were generated consistently for high school graduation. Survey respondents described ways that students were proud of themselves for graduating high school, how various in-school supports facilitated the student's graduation, and at times the challenges students faced upon graduating and losing the supports they had come to rely on in high school.

- *School was hard for me, but I did it. I am proud I finished. Being in special ed was a great benefit as I got the help I needed to get through my classes and graduate.*
- *His resource teacher helped him get caught up and make up the credits he was behind in [a]nd talked him into going to summer school so he could graduate on time with his class. She was always there for him and*

helped him see that there was a light at the end of the tunnel [a]nd [that] with a little hard work and help anything is possible.

- *Through the years student made it with the help of teachers he respected. At the district office a person helped the student schedule classes so he could graduate.*
- *I think that [my] son['s] graduation is a positive thing that happened. I am very grateful to his teachers and the [English Language] person that helped him while at [his] high school. The only thing that I saw as a negative thing was that he was not able to graduate with [classmates at his high school], but instead with a specialty school because of his credits. There were other things that happened during his last year of school that I feel should have been taken into consideration, not just his credits.*
- *If she didn't graduate, [then] she would've had a lot [of resources and support] available to her. It would've been nice if she didn't graduate. [She is] 19 and doesn't have a job and has minimal help.*

Alternate School Format

The "alternate school format" code was applied to only about 7% of comments. Table 6 provides information on the subcodes generated when respondents described alternate school formats, which were primarily sub coded as online (16%). Other types of alternate school formats included alternative high schools, charter high schools, home school, and attending college while in high school.[9]

Table 6. Subcodes Generated for Alternate School Format, with Percent Greater than 5(%)

Code	Subcode	Percentage
Alternate school format	Online	16%
	Others	< 5%

Note: The use of Claude generated 135 other subcodes used in less than 5% of alternate school format codes.

Often, students or their parents/caregivers described positive experiences at these alternate schools, either because they were avoiding negative experiences (e.g., bullying) from their previous high school settings or because they gained additional opportunities for personalized (e.g., one-on-one) learning, social connections, or college credit. Survey respondents described ways students grew personally from alternate high school experiences and succeeded because of the supportive school personnel, peers, and experiences in those settings.

- *The online schooling helped her. She has [attention deficit hyperactivity disorder] and traditional high school was not working for her.*
- *He liked homeschool because he was getting bullied at his public school. He did have some good teachers that were there to help them with his schoolwork, but [he] struggled with some teachers that he felt like did not support him.*
- *Because the school was so small, [I] had options to have real connection[s] with students and [that] has had big effects on my motivation and outlook on the world and how I can have a positive effect.*

[9] Respondents often mentioned schools by name, which are included among the other subcodes in Table 12. UEPC did not categorize specific mentions of school names as online, charter, etc.

- *I learned to be more social. (From student, then Mom explained) … I moved him 7th grade year to [a charter school]. [He] spent 5 years there and [then] came to [another charter school]. Both [charter schools] taught him that it was okay to be different, to be himself, and to be friends with others. His friends in our other school were few and far between, and he thought his bullies were his friends. At [the charter schools], his friends were really his friends, and the culture allowed him to be himself. He started to embrace his self-identity and become himself. I am so very grateful to you all!*
- *The change to [alternative high school] was a better fit for him and the one-on-one teaching rebuilt his self-esteem. [He] was able to finish high school [and] there was less of a fight to get him to go to school.*
- *At every other school that he was at, he was bullied. He stopped believing people were good … He said he started believing people could be good again when he came to [the charter school]. He said he felt safe at [the charter school].*
- *[He said] having the chance to attend [a technical college in high school] and the responsibilities that came with that … held him to a higher standard.*
- *Taking college courses while in high school [allowed me to] … get further [sic] in school and get a job.*

Personalized Learning

The "personalized learning" code was applied to only about 4% of comments. Although not one of the most frequently discussed high school experiences that supported students' pursuit of their postsecondary goals, personalized learning opportunities such as small class sizes and one-on-one support from teachers, aides, and peer tutors, were identified as an important element to student's success post high school. It was important to distinguish personalized learning from special education specific supports because while all special education specific supports may be types of personalized learning, not all personalized learning was specific to the supports received through the special education department. These supports were not always directly related to the student's IEP or accommodations. Instead, these supports reflected the value of inclusion in general education classrooms where small classes or one-on-one help were provided. Some respondents described negative high school experiences when the one-on-one support students needed was not received, which suggested the importance of personalized learning as an in-school support for student success.

- *School was fantastic. They had small classroom sizes and all the teachers knew about the depression and anxiety the student dealt with. The school took every effort to take care and help her. It was not just one teacher that helped but all teachers in all subject areas. Also, the other assistants the teachers had were [sic] all informed and knew about her conditions and needs. The teachers worked with her self-esteem issues that come along with her disabilities. Teachers connected with the student on a personal level. The school made her successful.*
- *The teachers helped me a lot, they wanted me to succeed [sic]. If I was struggling or behind, the teachers would ask … if I wanted help. They also offered help before and after school for academic support.*
- *It was helpful for the student to be in school and a classroom with other students. The student really enjoyed the social aspect of that and the teacher's one-on-one help when needed.*
- *High school was very hard for him, [which was] a negative experience for [the] student and parents. He went through 4 different high schools. He was just trying to make it through. … [The] student needed more one-on-one [support]. [He] did not get [the help he needed] … in a group. If [the] student had gotten one-on-one [support], it would have made a huge difference for him academically and emotionally.*

Student Personal Growth and Development Opportunities

Students and their parents/guardians described ways that students grew personally from their experiences in high school and developed self-care or independent living skills while in school as important experiences that supported them in achieving their goals after exiting high school. At times, student's personal growth and development of their own skills provided them with the foundation they needed to be able to support others in cultivating similar skills.

Personal Growth

The "personal growth" code was applied to about 25% of comments. Table 7 provides information on the subcodes generated when respondents described ways students grew personally from their high school experiences. When aspects of personal growth were mentioned by respondents, building social skills (14%), developing a strong work ethic (7%), and increasing the student's self-confidence (6%) and motivation (6%) were the most common ways students grew personally from their experiences in high school.

Table 7. Subcodes Generated for Personal Growth, with Percent Greater than 5(%)

Code	Subcode	Percentage
Personal growth	Social skills	14%
	Work ethic	7%
	Confidence	6%
	Motivation	6%
	Others (n=207)	< 5%

Note: The use of Claude generated 207 other codes, which were used in less than 5% of personal growth codes.

These personal growth experiences were often described in tandem with other experiences (i.e., with academic courses or programs, working with supportive school personnel, accessing special education supports, engaging in extracurricular activities, etc.), with respondents identifying a myriad of ways supports in high school helped the students overcome personal struggles. From these positive experiences, students developed important skills like communication, coping, critical thinking, emotional regulation, goal-setting, and time management. Students also learned how to be accountable, responsible, resilient, work in a team environment and persevere despite challenges or setbacks, as well as how to express and advocate for themselves when needed.

- *The reading program that he participated in helped boost his confidence and reading level even though it is still an area where he continues to struggle.*
- *School was great for the student, especially the social aspect. He was taught braille and other ways to communicate. Post high was [a] fantastic [program] for real job situation skills such as mock interviews, job portfolios, [and] filling out job applications.*

- *Finally learning that she did have a disability and the memory games [helped her in high school]. Learning that her short-term memory is not always there and learning how to cope with it [was helpful to her]. She had a great experience through that program. They really did help her a ton.*
- *[The charter school] model to read, think on … your own, and discuss topics with critical thinking was awesome. The student actually said she misses that part of school. High school gave her the tools to do things on her own. They listened to her needs.*
- *When having panic attacks her teachers would remove her from the problem and have her go to another room to relax and calm down and not allow other students to make fun of her for having panic issues.*
- *Making transition goals to become a nurse helped [the student] start thinking about her future and get her started toward her goal. Although she is not currently a nurse or enrolled in nursing school, [the student] has gotten her CNA and phlebotomy licenses. She now is wondering if she wants to work in education. She has many options.*
- *High school was great and teacher[s] were great. Teachers provided resources [and] confidence for him. They believed in him [and] that he could accomplish his goals. At home we also had expectations, [and the] consistency and boundaries for him .. push[ed] him to be a productive member of society.*
- *Having people come in from the state and support him with his mobility really helped him while in school. [They] … helped advocate for him and his needs. It really helped him learn how to advocate for himself after high school.*

Self-Care or Independent Living Skills

The "self-care of independent living skills" code was applied to about 3% of comments in the dataset. Like personalized learning, developing independent living skills was not among the most frequently applied codes but still described a variety of skills students built while in high school that helped prepare them for living independently upon graduation. Survey respondents provided examples of ways students learned how to cook and prepare meals, complete household chores, budget their resources and pay bills, navigate public transportation, and seek employment opportunities. These were some of the more frequently reported independent living skills acquired that helped students achieve their goals post-high school. For a few survey respondents who did not learn these types of independent living skills in high school, they perceived that school was not relevant to their life upon exiting the school system.

- *[The community-based services provided by a government] program … was great and helped him throughout school. [The staff member] was patient and helped him … She helped him learn how to clean and cook. At home he helps with cleaning, which he would not do before. He will sometimes cook his own food now and he is willing to try new foods also, something that [staff at the program] had [him] do every week for a new experience. The program has done so much for him. Thank you.*
- *The life skills program taught him things in the community and helped him to be independent like cooking and counting money. They brought the students to job sites, and he really enjoyed that.*
- *Trained on public transit [helped him] … understand enough that now he can ride public transit on his own and feels more independent that way.*
- *He learned basic living skills and can do things now like make basic foods and help around the house. [He] can do some grocery shopping, count out change, and pay for things he buys at the store.*
- *[He] really appreciated [the] financial literacy course and learning about budgeting. He is doing well with saving and budgeting while living on his own.*
- *Everything you learn in school is non-applicable. The skills needed would be regarding money. How do you count money back to people. [I wanted to learn how to manage a] bank account, [learn math for] everyday life … situations.*

Support Others

The "support others" code was applied to about 2% of comments in the dataset. Like self-care and independent living skills, this code was not frequently mentioned by survey respondents but when it was it provided examples of how the student had mastered a skill to the point that they were able to share their gifts and talents with their peers to help them succeed. Students described ways they provided support to their peers, volunteered to help kids and others in their community, and gained skills and experiences that times led to employment opportunities after exiting high school.

- *[Alternative charter high school] is a different school. He was able to apply his counseling ability. [It was] very good to be able to help someone when they needed [sic] it. He was able to be an example, a friend, and a leader to his peers. [He is] planning to go into the air force and go to college after that.*
- *She likes music, especially the violin and string program … and chorus. She still talks about wanting to do it and … has volunteered with the music program with the elementary and middle school.*
- *He was motivating other students to do well in high school and also helping at the animal shelter.*
- *The student took the class that helped other students with disabilities. She also took a class that helped her become an activist helping other people and animals. She opened up and learned how to communicate better after taking those classes.*
- *[A positive experience for her was working] as a student helping the handicap students at school. She is now working with disabled people.*

Career Awareness or Support Efforts

Survey respondents provided examples of ways that students became aware of career opportunities and the supports they received in high school to help them pursue these opportunities. Primarily, these supports were classified as "career awareness or support" generally but where appropriate were specifically classified as "work experiences" when supports described work-related opportunities in high school that helped students achieve their goals upon exiting high school.

Career Awareness or Support

The "career awareness or support" code was applied to about 14% of comments in the dataset. Table 8 provides information on the subcodes generated when respondents described career awareness or support experiences in high school. Through discovering their unique talents and career interests in high school, students were better able to make decisions to pursue college (14%) or employment (6%) opportunities after exiting the school system. Although the code was defined in the codebook to highlight counseling and career exploration activities, upon examining the comments coded with career awareness or support, it was clear that other types of high school activities (e.g., academic program or courses, supportive school personnel, personal growth, etc.) co-occurred with student's discoveries of their talents and professional pursuits.

Table 8. Subcodes Generated for Career Awareness or Support, with Percent Greater than 5(%)

Code	Subcode	Percentage
Career awareness or support	College	14%
	Employment	6%
	Others*	< 5%

Note: The use of Claude generated 262 other subcodes used in less than 5% of career awareness or support codes.

While at times survey respondents described career awareness and supports through taking courses and working closely with teachers and other supportive school personnel, what distinguishes this code from others in the codebook were the opportunities to explore career and postsecondary educational options while in high school. Survey respondents described several opportunities for students to explore their career interests through working with job coaches and service providers, taking field trips to different job and school sites in community, and building skills for future career and employment opportunities as experiences that supported them in achieving their goals.

- *[He] was able to see what other kinds of jobs he could have in the community. [He] would go on field trips to see different sites or schools and [he went to] the community college to use their gym for physical education.*
- *The school helped her become more social and tolerate sounds and [get] used to going out in the community. The school prepared the family by talking about her transition so we could be prepared [after she exited high school].*
- *[The] school to work program – [the] student really liked that program. Also, once her teacher brought in Vocational Rehabilitation and the job coaches and explained what they did and how that worked. This was very helpful to the student.*
- *[The] Life design program [that] was offered in school [helped her]. She learned to do her resume, got her first job with the program, [and she] learned [how] to [navigate] public transportation. This program was a great success for her.*
- *It was very helpful to have the in-school job training. The in-school job training made it much easier for the student to adapt when he started working.*
- *The career fairs they did in high school were very helpful, although it would have been nice to have more information and examples on certificate programs.*

Work Experiences

The "work experiences" code was applied to only about 3% of comments in the dataset. Work experiences were rarely reported by survey respondents when asked to identify the positive high school experiences that helped students achieve their goals post-high school. However, for those respondents who did talk about the importance of work experiences in high school, these experiences helped students gain employability skills and understand better what to expect when working post-high school. At times, students were also able to discover the professional passions from these high school work experiences.

- *[The] student was able to do [an] apprenticeship for [a] restaurant where they took part in doing daily attendance, working in a small cafe, and interacting with others ... She also got to work at a pretend grocery store making a list of items needed while staying within budget as she calculated expenses. She really enjoyed both of those activities.*
- *[The] student loved working in the front office of [her high school]. Mom said it helped her daughter learn appropriate social skills [by] being around adults. She learned to communicate better and what appropriate behavior in an adult setting looked like.*
- *The support was great in high school. It helped [the] student graduate. [The] student also had the opportunity to work as a special education buddy. She really enjoyed that. She is interest[ed] in helping those who have special needs.*

Extracurricular Activities

The "extracurricular activities" code was applied to about 13% of comments in the dataset and stood out as its own code due to its differentiation between all other experiences described by survey respondents as experiences that helped students achieve their goals. Table 9 provides information on the subcodes generated when respondents described positive experiences with extracurricular activities in high school. Various athletic activities and participating on sports teams (57%) were the primary focus of extracurricular activities discussed by survey respondents. Other types of extracurricular activities mentioned included artistic activities like participating in theater, musical groups through marching band, student leadership groups (e.g., student council), and cultural clubs (e.g., Polynesian Club).

Table 9. Subcodes Generated for Extracurricular Activities, with Percent Greater than 5(%)

Code	Subcode	Percentage
Extracurricular activities	Sports	57%
	Others*	< 5%

Note: The use of Claude generated 180 other subcodes used in less than 5% of extracurricular activity codes.

Through participating in sports and other group activities like marching band, students learned how to effectively communicate with others, were inspired by positive role models, and built skills that helped them succeed independently as well as within a group. Students also talked about the value of participating in cultural clubs or having leadership positions that helped them develop a sense of belonging and voice. Finding ways to build physical and mental strength as they persevered through the challenges of excelling at something other than academics proved valuable for many students to pursue their goals. However, at times students were unable to continue their participation because of the stresses of competition or other barriers such as school attendance.

- *[The] student played Goalball for the blind. This helped her have an opportunity to build her confidence in trying new things and building relationship with other students that were visually impaired.*
- *Involvement in sports in high school was the most positive thing [for the student] … Learning the social skills, accomplishing goals, and traveling with the team independently meant a lot [to the student].*
- *[The student was] on the Swim Team and [the] coach was awesome. The coach instilled good values in the student, such as time management.*

- *The student really liked the marching band. It was positive and encouraged the student to work hard as a group. It was active and social, which he enjoyed.*
- *School was a positive experience overall. She was student body officer for diversity. [The] school created a seat for her to be in the inclusion leadership classes, which was helpful in her developing a voice and learning how to speak for herself.*
- *The student joined the Polynesian Club/Group. [He] became very culturally involved, and really enjoyed the group. He started performing with the group in the community, performing dances, and more.*
- *Being in sports was a big positive for [the student]. The counselors and school wanted to pull him out of his [physical education] classes and put him in reading groups but we wouldn't let them. We are so glad we didn't because it was his wrestling and his football that taught him how to not give up, how to stick with something even when it's hard, and how to keep going. He was dedicated to something despite the fact that school (especially reading) was difficult for him. He kept going in sports even though he got yelled at!*
- *[He] loved golf and that help[ed]. [He] was sad that the school didn't let him play on the team because of his bad attendance due to the depression and doctor's visits.*
- *[He was] 3rd best on [the] track team. [He] dropped out because of [the] pressure and stress but in the beginning it helped that he could do something like everyone else.*

'Other' Comments

The use of Claude in identifying "other" codes occurred less than 3% of the time (317 out of 12565 codes applied). Some positive experiences were identified as "other" that were not described by a code from the codebook (e.g., personal life events like having a baby or meeting one's partner in high school, after-school programs, etc.) and some responses identified positive post-high school experiences (i.e., in college, employment, community activities or programs after exiting high school, etc.). However, most of the comments coded as "other" were general comments about positive experiences in high school (e.g., "Learned a lot with experiences in high school," or "I appreciate that many people cared and helped me."). These responses did not provide any greater insight into what high school experiences were beneficial or how these experiences supported the student's transition post-high school, or helped the student meet their goals. A few exceptions were noted and included other supportive individuals (e.g., tribe), programs (e.g., daycare, Growth Mindset, Easter Seals, Jones, etc.), as well as environments conducive to student learning, which at times were outside of the high school environment. The frequency of these supports being described by survey respondents were low and therefore did not warrant additional codes to be added to the codebook.

Some comments also alluded to the impact of the COVID-19 pandemic on the student, which at times supported the student in reaching their goals and at other times precluded the student from receiving the supports necessary to graduate or impeded their progress post-high school. For students who continued to receive needed supports from their school or caregivers, they were successfully able to navigate the challenges of COVID-19. However, some students could not adjust to the changing expectations or demands the COVID-19 pandemic introduced into their educational setting, which set the student back as they tried to pursue their post-high school interests.

- *During COVID while in high school they gave [the] student a student advocate. The advocate called every day and told [the] student what to do daily. That helped her graduate*
- *[He] was able to finish high school at home due to the pandemic. He did not have to deal with other people anymore and could be left alone in his room to do his classroom work.*
- *School was painful enough for the student that when COVID hit and school was at home she applied herself to get done with it.*
- *The student's junior and senior years were awful due to COVID. She did not get support services.*
- *[The] student worked very hard in 11th and 12th grade and to not have a graduation because of Covid was very disappointing.*
- *COVID was the deal breaker. It happened at the end of the student's 9th grade. He had to transfer to high school but could not due to masking. The student has an interest in welding but needs [a] GED to pursue it.*

Relationships between Participant Demographic Variables and Positive Experiences

In this section, we present the findings from the quantitative analysis of associations between demographic variables and the high school experiences (i.e., codes) identified in earlier sections of this report. Significant trends in the frequency of positive high school experiences mentioned by survey respondents as well as significant differences in the prevalence of these codes by disability label and by race or ethnic groups are noted. Five of the six codes that showed statistically significant changes declined over time. Differences in six codes by disability label and three codes by racial or ethnic group are described in this section.

Significant Trends in Prevalence of Codes by School Year

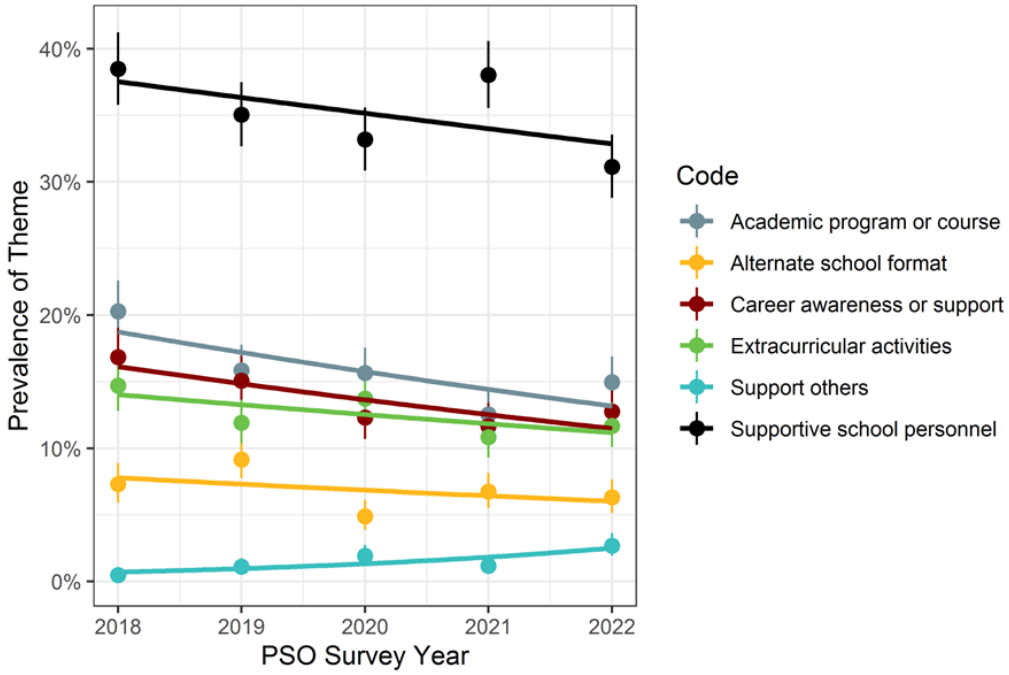
Historical events (e.g., COVID-19 pandemic) can at times have profound effects on students' lives. Having an approximately equal proportion of students across the various academic cohorts helps ensure that one cohort's experiences are not over-represented in the data and allows for analysis of trends in survey responses by exit year to determine if there were differences in the types of experiences students may have encountered. As shown in Table 10, the distribution of survey responses over the five years was roughly equal (i.e., each around 20% of the total).

Table 10. Response Counts with Percent by Year

Year	Count (%)
2018	1258 (17.2%)
2019	1552 (21.2%)
2020	1552 (21.2%)
2021	1467 (20%)
2022	1490 (20.4%)
Total	7319 (100%)

Figure 2 shows trends that were statistically significant at $p < .05$ between 2018 and 2022. The circles with vertical whiskers are the percentage of students who reported a given code along with the 95% confidence interval for that rate. The lines are the best-fitting regression lines for each code.

Figure 2. Significant Trends in Positive Experiences by PSO Survey Year



Note: The error bars (or vertical "whiskers") above and below the circles represent the 95% confidence intervals for each rate, and the lines connecting the circles represent the best-fit regression line for each code.

Five of the six codes (i.e., supportive school personnel, alternate school format, career awareness and support, academic program or course, and extracurricular activities) that showed statistically significant changes declined over time. The percentage of students who reported supportive school personnel fell from 38% in 2018 to 31% in 2022. The percentage who reported "Academic Program or Course" fell from 20% in 2018 to 15% in 2022. Career awareness or support fell from 17% in 2018 to 13% in 2022. Extracurricular activities fell from 15% in 2018 to 12% in 2022. And mentions of alternate school format fell just slightly from 7% in 2018 to 6% in 2022. The one significant trend in a positive direction was for "Support by Others", which changed from 0.5% in 2018 to 2.7% in 2022.

Differences in Prevalence of Codes by Disability Label

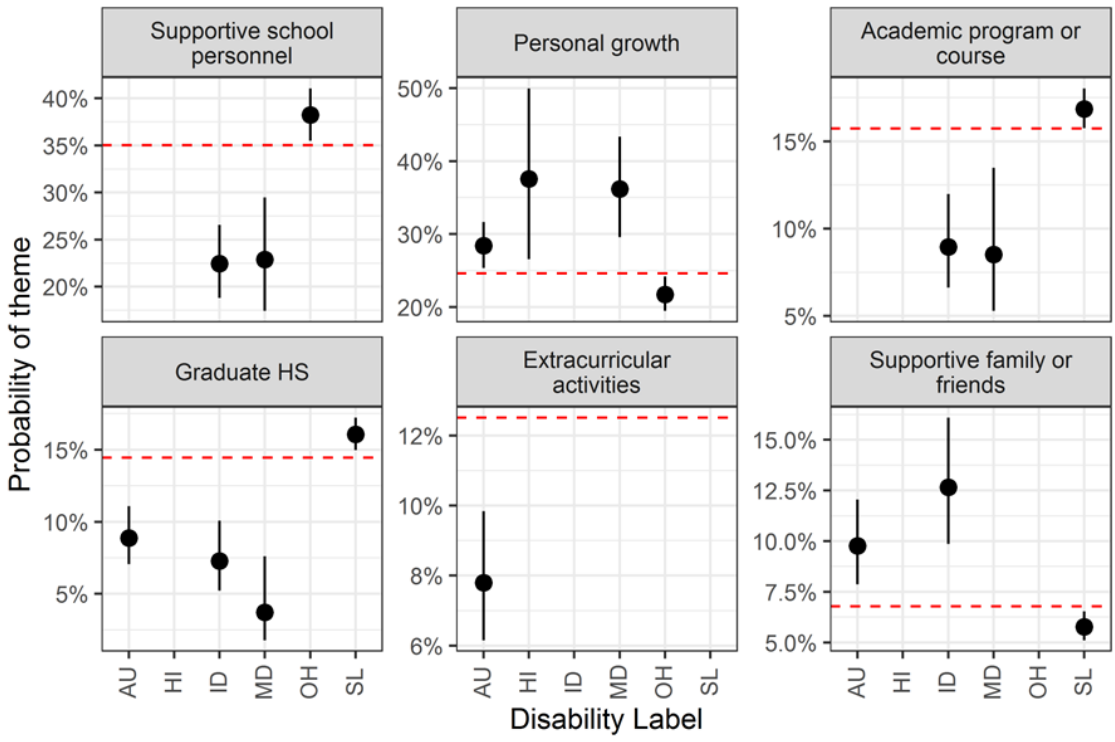
Table 11 shows the percentage of the respondents disaggregated by disability label, by PSO survey year. Almost half of student responses in the sample each year were students with a specific learning disability, while over 10% were students with autism and 15% were students with other health impairments. Less than 1% of responses in the sample each year were students with deafblindness, a hearing impairment, orthopedic impairment, traumatic brain injury, or visual impairment.

Table 11. Disability Label Profile of Survey Respondents by PSO Survey Year

Disability Label	2018	2019	2020	2021	2022
AU	11%	11%	11%	12%	10%
BD	4%	3%	2%	2%	2%
CD	2%	2%	1%	2%	2%
DB	0%	0%	0%	0%	0%
HI	0%	1%	1%	1%	1%
ID	6%	6%	6%	6%	6%
MD	3%	3%	3%	2%	2%
OH	14%	16%	16%	17%	18%
OI	0%	0%	0%	0%	0%
SL	59%	58%	58%	57%	57%
TB	0%	1%	1%	1%	1%
VI	0%	0%	1%	0%	1%

Figure 3 illustrates the prevalence of specific codes across disability labels with their associated 95% confidence intervals. The value was omitted in instances where the width of a confidence interval exceeded 50 percentage points because it indicates excessive uncertainty in the prevalence estimate. The red dashed line indicates the population mean prevalence for that code (aggregating across all disability labels). Only the disability labels whose confidence intervals were outside of the population mean, and thus can be considered significantly different from that mean at $p < .05$, are shown.

Figure 3. Estimated Probability of Experience Codes by Disability Label



Significant variation across disability label in the prevalence of a code was observed for six codes:

1. **Supportive school personnel**. This code was less common among students with disability labels of Intellectual Disability (ID) or Multiple Disabilities (MD) and more common among students with the Other Health (OH) disability label.
2. **Personal growth**. This code was more common among students with Autism (AU), Hearing Impairment (HI), and Multiple Disabilities (MD) and less common among students with an Other Health (OH) disability label.
3. **Academic program or course.** This code was less likely to be mentioned by students with an Intellectual Disability (ID) or Multiple Disabilities (MD) label and more likely to be mentioned by students with a Specific Learning Disability (SL) label.
4. **Graduate HS**. This code was less likely to be mentioned by students with an Autism (AU), Intellectual Disability (ID), or Multiple Disabilities (MD) label and more likely to be mentioned by students with a Specific Learning Disability (SL) label.
5. **Extracurricular activities**. This code was less likely to be mentioned by students with an Autism (AU) disability label.
6. **Supportive family or friends**. This code was more likely to be mentioned by students with an Autism (AU) or Intellectual Disability (ID) label, and slightly less likely to be mentioned by students with a Specific Learning Disability (SL) label.

Differences *in Prevalence of Codes by Racial or Ethnic Groups*

Table 12 shows the percentage of the respondents disaggregated by federal race or ethnicity categories, by PSO survey year. Almost three-quarters of student responses in the sample each year were White, while less than 1% of responses in the sample each year were for students who identified as Asian, Native American, or Pacific Islander.

Table 12. Racial/Ethnic Profile of Survey Respondents by PSO Survey Year

Race	2018	2019	2020	2021	2022
Asian	0.6%	0.8%	0.7%	0.9%	0.7%
Black	2.5%	2.1%	2.2%	2.2%	2.3%
Hispanic	14.5%	18.6%	19.3%	18.7%	21.3%
Multi-racial	2.1%	2.6%	2.1%	2.5%	2.4%
Native American	1.7%	1.1%	0.5%	1.2%	1.5%
Pacific Islander	0.9%	0.8%	1.0%	0.7%	1.2%
White	77.6%	74.0%	74.1%	73.8%	70.5%

Figure 4 shows where student race/ethnicity was significantly related to the prevalence of a code. Rather than comparing each racial/ethnic group to a population average, as was the case in Figure 3, Figure 4 focuses on the contrast between students identified as White and students of color. Unlike in Figure 3,

the dashed red line in Figure 4 is the mean for students identified as White rather than the population average. The choice to use one group (White students) as a reference rather than the population average was made because 1) comparisons of one group to a population of which it is a part can lead to underestimates of group differences (Fish, 2019) and 2) there are longstanding differences between White students and members of other racial groups in special education identification and placement that are recognized in the federally mandated reporting for the Individuals with Disabilities Education Act (IDEA). To be identified in Figure 4, the prevalence of a code had to show a significant main effect of race (in a logistic regression with race as a predictor) at $p < .05$, the confidence interval for the estimated probability of the code had to be less than 0.5 in width (to screen out spurious differences due to small observations), and the contrast for the difference in the estimated marginal means between White and students of color group designations (holding gender and disability constant at their population mean values) had to be significant at $p < .05$.

Figure 4. Estimated Probability of Positive Experience Codes by Student Race or Ethnicity

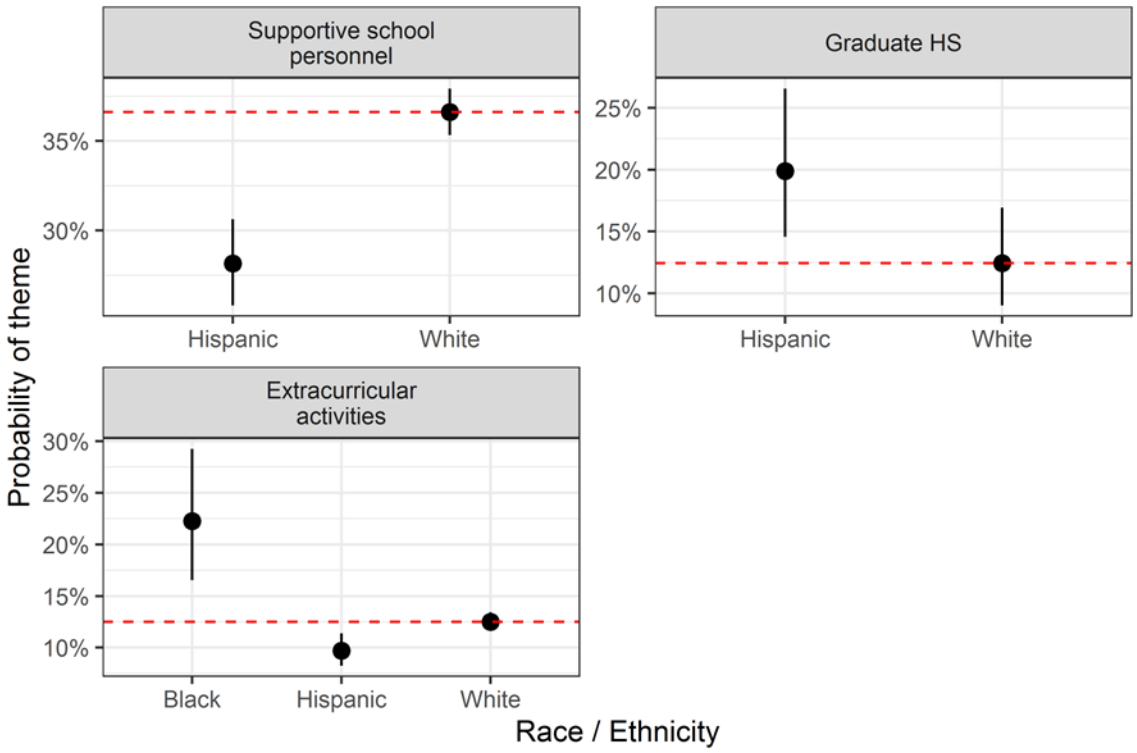


Figure 4 indicates that students who are identified as Hispanic were less likely than students identified as White to mention "Supportive school personnel" or "Extracurricular activities" in their positive experiences, but more likely than White students to mention graduation from high school. Students identified as Black or African American were more likely than students identified as White to mention extracurricular activities in their positive experiences. The probabilities reported in Figure 4 have been adjusted to remove the effects of any differences across student racial or ethnic groups in the rate of disability labels.

Differences in *Prevalence of Codes* by Gender

Table 13 shows the percentage of the respondents identified as male or female, by PSO survey year. Over 60% of student responses in the sample each year were male, while less than 40% of student responses in the sample each year were female.

Table 13. Gender Profile of Survey Respondents by PSO Survey Year

Gender	2018	2019	2020	2021	2022
Female	35%	37%	39%	38%	36%
Male	65%	63%	61%	62%	64%

None of the codes met the criteria of showing a significant main effect for gender in code prevalence and having a confidence interval narrower than 0.5. Thus, there were no significant gender differences in the prevalence of codes in positive experiences.

Relationships between Reported Positive Experiences and Reported Outcomes

In this section, we present the findings from the quantitative analysis of the associations between positive high school experiences by exit codes (school records indicating the reason for a student's exit from high school, such as graduation, aging out, or dropping out) and post school outcomes (post-secondary education and employment). Significant differences in the prevalence of positive high school experiences mentioned by survey respondents by exit code and post school outcomes were noted. To simplify the discussion, we report positive high school experiences by their thematic name. The analysis tested whether the presence or absence of a particular code was significantly associated with a higher probability of a given exit code or outcome. The presence of four codes (graduate high school, supportive school personnel, special education support, and career awareness or support) and the absence of two codes (self-care / independent living skills and negative experiences) was associated with a higher probability of earning a regular diploma, and the presence of two codes (negative experiences and personalized learning) and the absence of three codes (graduate high school, career awareness or support, and personal growth) were associated with a higher probability of dropping out.

Several codes (career awareness or support, academic program or course, and extracurricular activities) were associated with increased likelihood that students with disabilities would complete at least one term of higher education or 90 days of employment. Mention of other experiences (negative experiences, self-care or independent living skills, and supportive family or friends) was associated with lower probabilities of participating in higher education or employment one year after exiting high school. However, it is important to note that these findings are based on whether survey respondents mentioned having supportive family or friends when interviewed and do not indicate to what extent students may have had supportive family or friends or built skills for self-care or independent living while in high school. Several other codes (alternate school format, special education support, supportive

school personnel) were associated with increased likelihood of completing higher education or 90 days of employment, but these relationships were not uniform across the different Indicator 14 outcomes (A = Higher education; B = Higher education or competitive employment; C = higher education or any employment), offering insight into the nuance that may exist among the relationships between positive high school experiences and post school outcomes.

Exit Codes

There were five exit codes that described a student's status upon exiting high school: Alternate Diploma, Regular Diploma, Certificate of Completion, Maximum Age of Eligibility, and Dropped Out. Table 14 shows the percentage of respondents with each exit code by PSO survey year. Over 83% of respondents earned a regular diploma in each sample year, and between 8.6 and 9.2% of respondents dropped out in each sample year. Less than 2% of students each year earned an alternate diploma, while less than 3% earned a certificate of completion, and less than 5% reached the maximum age of eligibility.

Table 14. Exit Codes for Survey Respondents by PSO Survey Year

Exit Code	2018	2019	2020	2021	2022
Alternate Diploma	0.0%	0.1%	0.3%	1.6%	1.5%
Regular Diploma	85.1%	85.8%	84.8%	84.3%	83.1%
Certificate of Completion	1.2%	2.3%	1.4%	1.6%	2.6%
Maximum Age of Eligibility	4.8%	3.2%	4.3%	3.5%	3.8%
Dropped Out	8.9%	8.6%	9.2%	9.1%	9.0%

The relationship between the presence of positive experience codes in responses and an exit code was explored by examining whether the presence of a positive experience code was associated with a higher or lower probability of a given exit code. Because exit codes were also associated with specific disability labels, the relationship between disability labels and exit codes was included in the analysis and subtracted from the effects described in Table 15. Thus, the percentages reported in Table 15 under the "present" and "absent" column headings represent the predicted probability of a given exit code occurring when a given experience code was present, after controlling for the effects of disability label on exit code by setting each disability label to its population average[10]. In Table 15, only experience codes that showed a significant ($p < .05$) association with an exit code and that resulted in a difference in expected probabilities of 3% or more are presented. Given the low probability of exiting with an

[10] The practice of controlling for the effects of one variable to more clearly see the effects of another variable is commonplace in research using regression models and is recommended by the What Works Clearinghouse (2022). By setting each disability label to its population average, we are able to estimate the predicted rate of an exit code under the assumption that the students in each line of Table 13 have the same distribution of disability labels and that this distribution matches the overall sample (58% Specific Learning Disability, 16% Other Health Disability, 11% Autism, 6% Intellectual Disability, 3% Multiple Disabilities, 2% Emotional/Behavioral Disability, 2% Speech/Language Disability. 2% a combination of Traumatic Brain Injury, Visual, Hearing Disabilities).

alternate diploma, certificate of completion, or reaching the maximum age of eligibility, exiting with a regular diploma or dropping out were the only exit codes that met these criteria.

Table 15. Significant Differences in Exit Codes by Absence or Presence of Experience Codes, Controlling for Disability Label

EXIT CODE	EXPERIENCE CODE	ABSENT	PRESENT	DIFF
Regular Diploma	Supportive School Personnel	85%	90%	5%
	Special Education Supports	86%	91%	4%
	Graduate HS	86%	95%	9%
	Career Awareness or Support	87%	90%	3%
	Self-Care / Independent Living Skills	87%	82%	-5%
	Negative Experiences	88%	51%	-37%
Dropped Out	Personal Growth	10%	6%	-3%
	Graduate HS	9%	5%	-5%
	Career Awareness or Support	9%	6%	-4%
	Personalized Learning	9%	13%	4%
	Negative Experiences	8%	40%	33%

Exiting with a regular diploma was related to several experience codes. Survey respondents who mentioned graduating high school were 9 percentage points more likely to exit high school with a regular diploma. Students who mentioned supportive school personnel, special education supports, or career awareness or support were 3-5% more likely to graduate with a regular diploma. Interestingly, the presence of the self-care or independent living code was associated with a lower probability of exiting with a regular diploma. This unexpected result may be due to the fact that describing gains in self-care or independent living skills as a significant accomplishment may be more likely when it doesn't reflect a student's expectation or goal. In these cases, the student may be less likely to obtain a regular diploma. It is not surprising that the presence of negative experiences when prompted to describe positive high school support was associated with a lower probability of exiting with a regular diploma.

Survey respondents who mentioned negative high school experiences were 33 percentage points more likely to drop out of high school. It is surprising that students who mentioned personalized learning were 4 percentage points more likely to drop out. This may be due to the fact that having personalized learning outside of the special education supports provided by the school may be indicative of additional supports needed for the student to successfully graduate high school with a regular diploma. Students who mentioned graduating high school or personal growth experiences in high school were 3 to 5 percentage points less likely to drop out of high school.

Post School Outcomes (Indicator 14)

According to the US Code title 20, section 1416 (a)(3)(B), states must monitor activities designed to improve the transition of students with disabilities from high school to post school activities such as

post-secondary education, vocational education, and employment. The part of the Utah State Performance Plan (SPP)/Annual Performance Report, Part B for State Formula Grant Programs under the Individuals Disabilities Education Act satisfies this requirement is Indicator 14: Post School Outcomes. The 2024 SPP[11] defines Indicator 14 as the percent of youth who are no longer in secondary school, had IEPs in effect at the time they left school, and within one year of exiting the school system were engaged in one of the following:

- **A. *Higher Education***: Completion of at least one term at a two-year or four-year college, technical college, or university regardless of participation in employment or other postsecondary education or training.
- **B. *A or Competitive Employment*:** Participation in "Higher Education" as defined above or 90 days of employment in a community setting, working 20 hours or more per week and earning minimum wage or greater.
- **C. B or *Other Education* or *Other Employment*:** Participation in "Higher Education," "Competitive Employment," "Other Education," or "Other Employment."

These three outcomes (A, B, and C) are not independent of one another, but rather are nested such that all the cases that satisfy "A" are in "B" and all the cases that satisfy "B" are in "C." As the outcomes progress from A to B to C, the number of cases (i.e., students) increases because the inclusion criteria broaden. This nesting presented challenges with identifying specific relationships between codes and participating in employment post-high school. In addition to these three outcomes, the survey data shared with UEPC included four more outcomes related to these three. These outcomes are not formally associated with letters like A, B, and C above, but we are continuing the lettering convention here for ease of reference, communication and interpretation.

- **D. *Other Postsecondary Education or Training:*** Completion of at least one term at any other short-term education or training program, humanitarian program, or high school completion program AND not counted in Higher Education OR Competitive Employment and regardless of participation in Other Employment.
- **E. *Other Employment:*** 90 days of employment in any setting. Note that this is the same as the definition in C but does not include Higher Education, Competitive Employment, or Other Education as C does.
- **F. *Under Engaged:*** Worked but fewer than 90 days OR participated in post-secondary education or training but did not complete at least one full term OR had missing data criteria elements.
- **G. *Never Engaged*:** Never participated in any post-secondary education employment.

Table 16 shows the percent of respondents who reported meeting each of these outcomes by PSO survey year. As indicated by the row for Outcome "C", over 80% of the sample each year included

[11] The 2024 Utah State Performance Plan (SPP) for Federal Fiscal Year 2022 is available online at: https://schools.utah.gov/specialeducation/_specialeducation/_datareporting/_apr-spp-ssip/_ffyspp-apr/Data2022UtahPartB.pdf

students who completed at least one term of higher education or 90 days of employment, while between 9-13% of the sample each year included students who reported they never engaged in education or employment opportunities one year after exiting high school (Outcome "G").

Table 16. Percent of Respondents with each Post School Outcome

OUTCOME	2018	2019	2020	2021	2022
A . Higher Ed	23%	24%	21%	24%	22%
B . A or Competitively Employed	72%	68%	69%	73%	70%
C . A, B, or Other Employed	87%	85%	83%	86%	84%
D . Other Education	7%	9%	6%	5%	6%
E . Other Employed	8%	9%	8%	7%	8%
F . Under-Engaged	4%	4%	4%	3%	5%
G . Never Engaged	9%	10%	13%	11%	11%

Outcome A: Higher Education

Table 17 shows the estimated probability of the Indicator 14 A outcome by the presence or absence of a code, controlling for disability label. The "diff" column shows the difference in the estimated probability of the outcome when the code is present versus when it is absent. Only codes that showed a significant ($p < .05$) association with an outcome and that resulted in a difference in expected probabilities of 3% or more are presented.

Table 17. Significant Differences in Indicator 14 Outcome A, Higher Education, by Absence or Presence of an Experience Code, Controlling for Disability Label

EXPERIENCE CODE	ABSENT	PRESENT	DIFF
Career awareness or support	21%	35%	14%
Alternate school format	22%	29%	6%
Extracurricular activities	22%	28%	5%
Academic program or course	22%	26%	4%
Special Education support	22%	25%	3%
Negative experiences	23%	10%	-13%
Self-Care / Independent living skills	23%	11%	-13%
Supportive family or friends	23%	16%	-7%
Graduate High School	23%	19%	-4%

Completing at least one term in higher education was related to several codes. The strongest effect was observed for students who mentioned career awareness or support. Those students were 14 percentage points more likely to complete at least one term than students who did not mention it. Students who mentioned academic programs or courses, an alternate school format, or extracurricular activities were 4-6 percentage points more likely to complete at least one term.

The presence of a "Graduate High School" or "Self-Care/Independent Living Skills" code in school was associated with a lower probability of higher education. This may be because describing graduation from high school or gains in independent living skills as a significant accomplishment occurs when these experiences are unexpected or go against survey respondent expectations. In these cases, the student may be less likely to pursue higher education. It is less surprising that negative experiences would be associated with a decreased likelihood of pursuing higher education.

Outcome B: Higher Education or Competitive Employment

Table 18 shows the estimated probability of the Indicator 14 B outcome by the presence or absence of an experience code, controlling for disability label. The "diff" column shows the difference in the estimated probability of the outcome when the code is present versus when it is absent. Only codes that showed a significant ($p < .05$) association with an outcome and that resulted in a difference in expected probabilities of 3% or more are presented.

Table 18. Significant Differences in indicator 14 Outcome B, Higher Education or Competitive Employment, by Absence or Presence of Experience Code, Controlling for Disability Label

EXPERIENCE CODE	ABSENT	PRESENT	DIFF
Academic program or course	69%	78%	9%
Career awareness or support	69%	78%	9%
Extracurricular activities	70%	76%	7%
Graduate HS	69%	76%	6%
Supportive school personnel	69%	74%	5%
Self-Care / Independent living skills	71%	54%	-17%
Negative experiences	71%	57%	-14%
Supportive family or friends	71%	63%	-8%
Work experience	71%	63%	-7%
Personalized learning	71%	65%	-5%

Completing at least one term in higher education or 90 days of employment in a community setting, working 20 hours or more per week and earning minimum wage or greater was related to several codes. The strongest positive effect was observed for students who mentioned career awareness or support or an academic program or course. Those students were 9 percentage points more likely to complete at least one term in higher education or 90 days of competitive employment than students who did not mention it. Students who mentioned extracurricular activities, graduating high school, or supportive school personnel were 5-7 percentage points more likely to complete at least one term of higher education or 90 days of competitive employment.

Similar to analyses with Outcome A, the presence of a "Self-Care/Independent Living Skills" code in positive experiences was associated with a lower probability of higher education or competitive employment. This may be because describing gains in independent living skills as a significant accomplishment occurs when it is unexpected and goes against the survey respondent's expectations.

In these cases, the student may be less likely to pursue higher education or competitive employment. Like analyses with Outcome A, negative experiences were also associated with a decreased likelihood of pursuing higher education or competitive employment. However, unlike analyses with Outcome A, graduating high school was positively associated with Outcome B, which suggests that graduating high school may be helpful for students engaged in competitive employment post-high school.

A few other differences in the relationships between positive experience codes and postsecondary outcomes between outcomes A and B were notable. For instance, the presence of "alternate school format" or "special education supports" was positively associated with Outcome A ("higher education"), while those relationships were not present with respect to Outcome B. Furthermore, the presence of "personalized learning" was negatively associated with Outcome B. These differences suggest that these types of supports may be more useful for students with disabilities engaged in postsecondary education. It was surprising that mentioning "work experience" as a positive high school experience was negatively associated with Outcome B, especially given that this outcome includes engagement in either higher education or competitive employment. Due to the nesting of outcomes A-C it was challenging to identify specific relationships between codes and participating in competitive employment post-high school.

Outcome C: Higher Education, Other Postsecondary Employment, Competitive Employment, or Other Employment

Table 19 shows the estimated probability of the Indicator 14 C outcome by the presence or absence of an experience code, controlling for disability label. The "diff" column shows the difference in the estimated probability of the outcome when the code is present versus when it is absent. Only codes that showed a significant ($p < .05$) association with an Outcome and that resulted in a difference in expected probabilities of 3% or more are presented.

Table 19. Significant Differences in Indicator 14 Outcome C, Higher Education, Other Postsecondary Education, Competitive Employment, or Other Employment, by Absence of Presence of an Experience Code, Controlling for Disability Label

EXPERIENCE CODE	ABSENT	PRESENT	DIFF
Career awareness or support	84%	92%	8%
Extracurricular activities	84%	91%	6%
Academic program or course	84%	89%	4%
Supportive school personnel	84%	88%	4%
Special Education support	84%	88%	3%
Self-Care / Independent living skills	85%	73%	-12%
Negative experiences	85%	76%	-10%
Supportive family or friends	85%	81%	-5%

Completing at least one term in postsecondary education or 90 days of employment in any setting was related to several codes. The strongest effect was observed when survey respondents mentioned career

awareness or support, as those students were 9 percentage points more likely to have completed at least one term in higher education or 90 days of employment than students when these experiences were not mentioned. Extracurricular activities, academic programs or courses, supportive school personnel, or special education supports were also positively associated with completing at least one term in higher education or 90 days of employment. Three codes (career awareness or support, extracurricular activities, and academic programs or courses) were also associated with Outcomes A and B, while one (special education supports) was also associated with Outcome A and the other (supportive school personnel) with Outcome B.

Similar to analyses with Outcomes A and B, mentioning "self-care / independent living skills," "negative experiences," or "supportive family or friends" was associated with a lower probability of higher education or employment. Due to the nesting of outcomes A-C it was challenging to identify specific relationships between codes and participating in competitive or other employment post-high school.

Outcome D: Other Education

Table 20 shows the estimated probability of the Indicator 14 D outcome by the presence or absence of a code, controlling for disability label. The "diff" column shows the difference in the estimated probability of the outcome when the code is present versus when it is absent. Only codes that showed a significant ($p < .05$) association with an Outcome and that resulted in a difference in expected probabilities of 3% or more are presented.

Table 20. Significant Differences in Indicator 14 Outcome D, Other Education, by Absence or Presence of an Experience Code, Controlling for Disability Label

EXPERIENCE CODE	ABSENT	PRESENT	DIFF
Academic program or course	7%	4%	-3%
Self-Care / Independent living skills	6%	10%	3%

Completing at least one term at a short-term education or training program, humanitarian program, or high school completion program was related to self-care/independent living skills. Those students who mentioned these skills were 3 percentage points more likely to complete at least one term at a short-term education or training program.

It's surprising that the presence of an "academic program or course" code in positive experiences was associated with a lower probability of completing at least one term at a short-term education or training program. This may be due to the fact that describing gains in academic program or course was associated with Outcomes A-C, indicating that students who make significant gains and overcome struggles in academic programs or courses are more likely to complete at least one-term in higher education or 90 days of employment.

Outcome E: Other Employment

Table 21 shows the estimated probability of the Indicator 14 E outcome by the presence or absence of a code, controlling for disability label. The "diff" column shows the difference in the estimated probability of the outcome when the code is present versus when it is absent. Only codes that showed a significant ($p < .05$) association with an Outcome and that resulted in a difference in expected probabilities of 3% or more are presented.

Table 21. Significant Differences in Indicator 14 Outcome E, Other Employment, by Absence or Presence of an Experience Code, Controlling for Disability Label

EXPERIENCE CODE	ABSENT	PRESENT	DIFF
Support others	8%	16%	8%
Work experience	8%	12%	4%

Being employed less than 90 days was related to two codes – support others and work experience. Those students who mentioned supporting others were 8 percentage points more likely to be employed less than 90 days, while those mentioning work experiences were 4 percentage points more likely to be employed less than 90 days.

Outcome G: Never Engaged

Table 22 shows the estimated probability of the Indicator 14 G outcome by the presence or absence of a code, controlling for disability label. The "diff" column shows the difference in the estimated probability of the outcome when the code is present versus when it is absent. Only codes that showed a significant ($p < .05$) association with an Outcome and that resulted in a difference in expected probabilities of 3% or more are presented.

Table 22. Significant Differences in Indicator 14 Outcome G, Never Engaged, by Absence or Presence of an Experience Code, Controlling for Disability Label

EXPERIENCE CODE	ABSENT	PRESENT	DIFF
Self-Care / Independent living skills	11%	21%	11%
Negative experiences	11%	18%	7%
Supportive family or friends	11%	14%	3%
Career awareness or support	12%	5%	-7%
Extracurricular activities	12%	6%	-6%
Academic program or course	12%	8%	-4%
Supportive school personnel	12%	8%	-4%

Never participating in education or employment post-high school was related to several codes. The strongest effect was observed for students who mentioned self-care or independent living skills, followed by those who mentioned negative experiences when prompted to reflect on positive

experiences in high school. Students who mentioned self-care or independent living skills were 11 percentage points more likely to never engage than students who did not mention it, while students who mentioned negative experiences were 7 percentage points more likely to never engage than students who did not mention them. Mentioning self-care or independent living skills, negative experiences, or supportive family or friends was also associated with a lower probability of post-secondary education or employment, which resonates with this finding. High school experiences that had the strongest positive associations with postsecondary education and employment (i.e., career awareness or support, extracurricular activities, academic program or course) were negatively associated with Outcome G, "never engaged."

How Positive Experiences Supported Outcomes

In the previous findings' sections, we reported the positive experiences of students by themes and codes along with the frequencies and statistically significant trends or differences observed in the mentioning of experience codes by survey respondents to address the first research question about what positive experiences supported students in achieving their goals, which included post-secondary education and employment. In this section, we explore how these experiences supported students' transition from high school into post-secondary education or employment opportunities to better understand the ways in which these experiences supported students' post-secondary transition. In our analysis of the open-ended responses provided by students with disabilities and their parents or guardians, we identified how positive high school experiences supported students with disabilities in achieving their goals.

Taking College Level Classes in High School Helped Students Discover Their Unique Talents in a Supportive Environment and Increased their Confidence in Pursuing Education and Employment Opportunities Post-High School

For students who experience academic struggles, continuing their education beyond high school may be perceived as daunting, especially when low expectations are set for their achievement. Several comments from students indicated that when students received the assistance they needed to overcome academic struggles in reading and math or were encouraged to take advanced classes or participate in vocational training, their motivation, interest in, and confidence in pursuing education or employment after high school increased. For some students, the opportunity to take college level courses in high school helped them know what college would be like and provided extra comfort to them as they continued to receive the special education supports they had come to rely on in high school while taking these college courses. Earning college credits in high school for required courses also allowed students more time to focus on the courses related to their future careers in college.

- *[Student's] individual IEP counselor insisted that he take several advanced placement courses that he received passing grades in and were instrumental in raising his confidence to do well in college.*
- *Attending [a technical college] to earn credits in cosmetology and get experience in college type classes while in high school where my IEP team could help me if needed [was helpful to the student].*
- *Having taken classes through technical college in high school really helped the student know what technical college was like. This prepared her for post-secondary school.*

- *The college prep classes helped me get ahead in my college credits. [It] also allows me more time to focus on the college classes that will be my career and spend less time on classes that are a requirement but not beneficial to me [while attending college].*

With respect to employment, students talked about how taking college credits in high school helped them to focus on pursuing employment in various ways. Learning skills using technologies common to their discipline in high school helped students transition into their employment upon graduation. Taking vocational courses at the local technical college increased student's confidence that they would be employable even if they chose not to continue their education.

- *It's a curious thing actually, but in high school, we were limited to using old-school programs like JavaScript and one or two others. It prepared me to have to use the programs and software my employers use, because, as a Junior Software Developer, I don't get to choose what programs/software I use in my job.*
- *I got my CNA license in high school. [I] was able to start working as a CNA. [I] was then able to start taking college courses in nursing, allowing me to get a head start in my advanced education.*
- *[I] took 3 years of welding in high school and [I am] currently employed with an awesome company where I am a welder … [I am] enjoying my job and [I] also got married. Life is good.*

Extracurricular Activities Helped Students Build Life Skills and at Times Inspired Student's Academic Achievement and Future Goals

Although not required for graduation, extracurricular activities were often described by students or their parents/guardians as spaces where students could be themselves, forget about their academic struggles or different abilities, and focus on their personal interests. Because participation in these activities at times included academic requirements (e.g., maintaining a grade point average), student's interests in these activities often inspired them to work harder in their courses to remain in the program. Students also described a variety of skills (e.g., leadership skill, organization, public speaking, social skills, time management, working with a team, etc.) they built through their involvement with extracurricular activities and how these activities helped them have more confidence and belief in their own abilities.

- *[The] student really liked the high school Rodeo Program. He had to have good grades or he could not participate. That helped motivate him.*
- *[The] student tried out for [a] play/musical his Junior year that helped him break out of his shell and be more outgoing with other people. It helped him with a lot of stuff like being able to better interact with people. Being in the play/musical helped him do great in all [his] classes because he had a reason or something to talk about to other classmates.*
- *She was in the military club for families who have parents away serving overseas. This club helped her deal with family being gone for long periods of time.*
- *Definitely being on [the] cheer team [and] being part of a club [that] helps you be more responsible, learn to be on time, practice, and participate [was beneficial to the student].*
- *FFA [Future Farmers of America] was very helpful to the student. Being part of this group gave the student leadership skills, public speaking skills, and overall confidence.*
- *The student enjoyed being on the football team. It taught him how to work with a team, … cooperate, support other people, work together, listen to directions, [and] work hard together for a goal. [He valued]*

learning [how] to be disciplined, and organized, and prepared. [He had] good attendance and [would] keep [his] grades up. All of that kept him in school.

Some survey respondents more directly connected the skills students built (e.g., confidence, interviewing skills, social skills, etc.) participating in extracurricular activities with their future postsecondary education and employment opportunities. Upon graduation, students described ways they planned to continue to participate in the extracurricular activities they enjoyed in high school while in college. For other students, these extracurricular activities became the focus of their educational and/or professional pursuits, although at times these students also acknowledged challenges they faced in making their dreams a reality and the need to make practical decisions about their future.

- *Being on the swim team helped the student socialize with others. The parent thinks that helped the student with her job and being able to work with and help the customers.*
- *The band teacher changed his life. [He] pushed [the] student and helped him gain confidence. [The] student is still doing music now [and is] playing in a jazz band. [His] choir teacher was [a good] influence on [the] student in music [as well].*
- *I felt more confident in high school and being myself. [I] had the necessary support from teachers [and] friends. My experiences with theater and performing helped me know that I love that and wanted to go to college for it.*
- *[The] student was a member of student council [and] this opened her up to being more outgoing. Because of this newfound confidence, she also participated in a couple of pageants. Through student council she learned the life-long skills of interviewing.*
- *Pole vaulting classes - he has been recruited by three colleges that want him to go to their school and be on the pole vaulting team and possibly [go to] the Olympics.*
- *When I got out of high school, I knew what I wanted to do - I wanted to be a pro mountain bike rider … I wanted to go pro but I didn't really stick with it … I started a little business working on cars and trucks and then I transferred to leather working. I still do a little [mountain biking] but it all comes [back] to reality stuff. It [comes] down to getting a full-time job and providing and these things [are] a hobby. I have the full-time job with Fed-Ex.*

Supportive School Personnel Worked with Students and Their Families to Leverage Connections and Resources for Student Success

Supportive school personnel were often described by students as instrumental to their ability to succeed academically and professionally. Receiving additional supports to assist with daily learning, reach IEP goals, and plan for their post-secondary transition provided students and their parents with the resources they needed to succeed. Respondents described ways that teachers instructed students using a variety of learning styles, provided extra supports and services that helped students achieve academically, and acknowledged their talents as well as believed in their abilities to succeed should they decide to continue their education, open their own business, or work after high school. At times, this entailed helping students get involved in extracurricular activities, apply for college or a job, or identify scholarships for postsecondary educational pursuits. Several examples of how supportive school personnel leveraged their connections and resources for student success are described below.

- *The teachers at [public high school] were very good. [The] student was taught in many different ways - all senses and learning styles were involved. [The] student did very well with that type of teaching. [The] student also needed extra time to process. Math was a struggle for [the] student [and] now it is a strong point. He wants to be an engineer. [His] parent is very impressed with [the public high school]. She had five kids go through the school and many went on to college and were very successful.*
- *The resource teacher was the key to him finally getting the help and service he needed. His grades improved greatly. This has allowed him to enter into college.*
- *The two high school resource teachers the student had rocked. They got [the] mother involved 1 year prior to [the] student leaving school [and helped] in getting the student set up in the [community college] Design program.*
- *The teacher in high school recognized [the] student's gift of rhythm and got him on the drums and in the high school band. Also, that same teacher connected [the] student to [a local] university drum team and marching band. The Science teacher was amazing too. He helped the student get a couple scholarships.*
- *I went on a school lead field trip to the culinary arts program in May of my senior year. I met with [a chef] from [a local] community college and he set me up to go into his program. I have enjoy[ed] great success.*
- *I think having help to graduate [and] being supported with my IEP goals … has helped me to be successful in post-high life. I have been able to open my own soda shop business in [another state] thanks to being able to graduate and having my teachers believe in me.*
- *He was given the opportunity to find a job and the coach that went with him helped to convince an employer to hire him.*
- *Working closely with teachers and having them available to assist in learning [was helpful to the student]. [He built] social skills for day-to-day interactions … [and] self-reliance skills, [which he] learned in high school to help him be in charge of and manage his college classes and employment.*

Negative Experiences that Challenged Students with Disabilities in Achieving Post-High School Success

In some ways, facing challenges and struggles during our formative years helps us build the skills necessary for success. However, it is also important to consider the impact of negative experiences on student's post school success, especially because these experiences were associated with increased probabilities that students would drop out or never engage in education or employment opportunities.

Several types of experiences were described by survey respondents as challenges students faced, but these challenges did not appear to limit their ability to pursue post-secondary education and employment. For example, receiving services earlier and more frequently, placing students in an alternate school format without coordinating with the family, discouraging students from pursuing their academic or professional interests, or inadequately providing supports for transition were seen as challenges students faced, but these challenges did not appear to prevent these students from pursuing education and employment post-high school.

- *[There was] nothing positive about school because [the] student was passive. He fell through the cracks because he just sat there and did not cause problems. He is at a 3rd grade reading level, 1st grade math level. [He] has been in programs to finish high school for several years but quit now 7 credits short. [It's] too much for him. [The] student has always had an amazingly kind heart but now has given up on life.*

- *[There was] not much that helped him, sorry. The thing that would have helped him the most is if his phone was taken away or [he was] not given the option to have it. He has no motivation and [he] needed that direction in school. We fought him to do [his school] work until he walked across the stage. He was told graduation morning he was not walking, so he had to work extra that day to finish a class to walk. He really should have had an IEP in junior high but [he] was told he did not qualify. I feel it had taken too long [for him to qualify] and I had to fight to get him to receive services that it [ultimately] did more harm than help in the long run. Please help others sooner so this doesn't happen to any other students.*
- *[Attending] the program at [a deaf blind school] for students using ASL [and] removing the students from [their public high school] to be on campus … was completed without input from the parents or students. … [It] severely limits students' participation in general education or association with typical peers. This change was handled very poorly [and ended up] hurting students' opportunities.*
- *Nothing. School didn't help me. When I went to jail, I fell behind and wasn't allowed to make it up. Then I turned 18 and left. Later, I finished my GED through Adult Ed. in jail.*
- *When transitioning to secondary school, it would have been helpful to have [an] aide to help to complete a smoother transition as college is run very differently.*
- *[The] student was very angry during high school because the teachers would not help him. [The] student wanted to take [the] diesel and auto mechanic class but the teacher would not allow him in the class. [The] student is still interested in pursuing diesel and auto mechanic classes but still struggles with reading.*
- *She was happy that she never has to go back to high school again. [She] said to me [that] if she could survive the living nightmare of high school day in and day out that she can do anything in life.*
- *During school he participated in the training at the tech college. He was set on being a welder. However, things didn't work out. Maybe helping him (and others) to be open to trying new things so there isn't any disappointment in the future when things don't work out [would be beneficial].*

For other students, a lack of career awareness, in-school support, broad exploration of career opportunities, or transition planning were challenges that left students without direction after exiting high school. While some of these challenges were also faced and ultimately overcome by other students, differences in the pervasiveness of these challenges or the gap between supports needed and received seemed more profound for students who ultimately never engaged in postsecondary education or employment after high school. Obtaining needed supports for these students to thrive upon exiting was a key issue, along with motivating or interesting students in pursuits upon exiting the school system.

- *If she didn't graduate, [then] she would've had a lot [of resources and support] available to her. It would've been nice if she didn't graduate. [She is] 19 and doesn't have a job and has minimal help.*
- *Having the one-on-one and routine at school helped [the] student a lot. Parent feels the state needs to increase the ability to get waiver to be signed sooner. There [were] tons of support at school but not at home so structures were not consistent, which was very difficult for the student. [It] seemed there was never enough home programs to show parents what was being done at school and how to do that same thing at home. More training on how to deal with aggressive individuals [at] home would have been helpful.*
- *The parents moved to another district and at the new school they were treated very badly by the receptionist and told to leave because of [the] student's condition.*
- *Nothing. The school did not prepare him for the real world. Even the group home he now lives in said the same thing. [The school] did not even teach him basic life skills.*
- *[He] needed more aggressive SpEd services. [He] has [oppositional defiance disorder] and [attention deficit disorder], which made him more difficult to work with … [T]he services he received only helped minimally.*

- *It would be nice for some students who have a certain level of disabilities to be able to get their certificate of completion after they turn 18. It is hard to make a larger student who is now an adult do something they do not want to do.*
- *[The] father stated that the student had a keen interest in the aviation classes that she had while attending the military academy. The father is trying to motivate her to pursue that career further.*
- *It really depends on the person and she did not really have insight into her future or what she wants to do. [The mother's] other daughter is successfully employed and going to go to college.*
- *[He] doesn't really have any goals or motivation to do anything but play video games.*
- *Nothing. The school did not help me with preparation for life after high school or provide me with job skills or where to go for help after high school.*

A few other codes (self-care/independent living skills and supportive family or friends) were consistently associated negatively with positive postsecondary education outcomes such as education and employment and positively associated with negative outcomes like never engaging. While self-care and independent living skills are crucial skills for students to live independently upon exiting the school system, and supportive family and friends are important positive influences for students, it may be the case that these supports on their own are not enough for students with disabilities to engage in postsecondary education or employment upon exiting high school.

- *In school he was much better. He would be a little more independent after school. He would buy things at the store. The school routine helped him function better.*
- *[Physical therapy] and [occupational therapy] were very effective in helping [the] student with life skills. [He] made progress with feeding himself and [the therapist was helpful in] teaching [the] student how to walk.*
- *Learning some household skills helped the student gain confidence. She learned about the news, which helped her understand what was going on in the world.*
- *Interactions with her peers [were valued by the student.] [She participated in] cheerleading, [and] feels [she was] a part of the cheerleading family. [She] wears [her] class ring, which she shows everyone she meets. [She] really enjoyed the opportunities that were offered to her [and] that made her feel a part of the school.*
- *[The] student really liked the Role-Playing Club and the social interacting [aspect] of that. He still meets with those people and does those interactions to this day.*
- *[She] had friends. The social aspect was great, but now she doesn't have it. [Her] parent wishes she put [the] student in the [alternative] program. [It was] sending the students off to work at different places in a rotation.*

For students whose postsecondary goals do not include postsecondary education or employment, it may be particularly important for these students to enhance their self-care and independent living skills and have expanded strong support networks prior to exiting the school system.

Conclusion

This study identified several significant trends related to the types of positive high school experiences reported by students with disabilities and their parents or guardians upon the student exiting the school system and the ways those experiences supported students' post school outcomes. Among these trends, findings include meaningful shifts across time and differences between groups based on disability labels and race or ethnic identification. Findings and limitations with respect to student characteristics and post school outcomes are discussed in the following section with key considerations to support students with disabilities in achieving post-high school success.

Provide students with disabilities additional opportunities to explore their post-secondary interests early and often.

Students with disabilities currently have opportunities in school to engage in activities that may create awareness of and support these individuals in building skills for future careers. Being intentional about supporting students with disabilities in learning about their strengths and talents while promoting professional opportunities that align with their talents in high school is critical to their postsecondary success. Students' confidence that they will excel in their future academic or professional career may increase through participating in Career and Technical Education or taking college-level classes while in high school where they continue to receive special education supports and assistance. Through supportive relationships with school personnel (especially with teachers), students were often encouraged to push themselves to attempt coursework or participate in extracurricular activities that they may not have known about or considered without the gentle nudge from individuals whom they know have their best interests at heart. Encouraging students to explore a broad array of options with opportunities to explore more deeply fields and industries of interest while in high school may also help students identify alternatives for their postsecondary transition plan and increase students' success upon exiting the school system.

With respect to post school outcomes by year, it was notable that the mention of several in-school experiences (supportive school personnel, academic program or course, career awareness or support, and extracurricular activities) trended downward between 2018 to 2022. Given the relationships between respondents mentioning supportive school personnel and the student's likelihood for graduating with a regular diploma or achieving post-secondary education or employment opportunities, it is particularly concerning that there is a downward trend in the presence of this code. Previous research has noted several challenges in recruiting and retaining schoolteachers, especially special education teachers (see Billingsley & Bettini, 2019). Given that most references to supportive school personnel were in relation to teachers, overcoming these challenges will be critical to supporting students with disabilities in achieving post-high school success. It is not surprising that CTE courses were frequently described by respondents as positive high school experiences given that it has also been described as an evidence-based predictor for post school success (Mazzotti et al., 2021). Continuing to

find ways to encourage students with disabilities to engage in CTE courses early may increase their opportunities for exploring and ultimately discovering their passion through hands-on learning.

Expand support networks for students with severe disabilities

Several significant variations across disability labels were noted. For example, mentioning supportive school personnel was more common with students with other health (OH) disability labels than students with intellectual disability (ID) or multiple disability (MD) labels. Students with specific learning (SL) disability labels more often mentioned academic program or courses than students with ID or MD labels, and more often mentioned graduation from high school than students with ID, MD, or autism (AU) disability labels. Extracurricular activities were also less likely to be mentioned by students with AU disability labels. Given that all three of these codes were also related to positive post school outcomes (i.e., participation in higher education or employment), these differences are concerning. It may be the case that students with ID, MD, or AU have additional needs that at times require more intensive support from school personnel to overcome than is being provided with the level of support at their high school. In exploring survey respondent comments, it was clear that while most students and their parents or guardians were happy with and noted positive in-school supports that helped students achieve success, more support was desired than what was received, especially with respect to students with more severe disabilities. Coordinating with parents or guardians for in-home supports, after-school programs, and/or services in community, checking in more frequently with students and their parents when students are facing challenges or negative experiences in high school, and coordinating communications between special education and general education departments may provide more holistic interventions for students while in school, which may help set them up for success upon exiting the school system.

Promote participation in a variety of extracurricular activities that meet the diverse interests of students

Differences among racial and ethnic groups in supportive experiences were noted. Hispanic students were less likely than White students to mention supportive school personnel or extracurricular activities as positive experiences, but more likely than White students to mention graduation from high school. Black students were more likely than White students to mention extracurricular activities when describing their positive high school experiences. There may be underlying cultural differences perpetuated at home or in the school environment driving these findings. For example, racially marginalized students are more likely to experience a chilly school climate (Parris et al., 2018) or racial discrimination (Hope et al., 2014), which may explain why White students more frequently mentioned supportive school personnel than other racial groups. Additionally, participation in extracurricular activities tended to be described as spaces where students were able to socialize with their peers, build physical and mental strength, and excel at something they're passionate about in school. While most students described their extracurricular interests as sports, several other types of experiences (i.e., in art, music, student leadership, and cultural clubs) were also noted. Promoting participation in a variety of extracurricular options that meet the unique interests of students and encouraging them to

participate in extracurricular activities may go a long way in helping students feel a sense of belonging or connection at their school as well as help them discover and cultivate their interests early so they have a clearer understanding of their future path upon graduation.

Implement an early warning system and reach out to students facing challenges

Not surprisingly, negative experiences in high school were associated with a low probability that students with disabilities complete at least one term of postsecondary education or 90 days of employment and increase the likelihood that students will never engage with education or employment post-high school. Often, negative experiences in high school were described in ways that indicated students were discouraged from considering post-secondary education or gaining experiences in high school that would facilitate their employment upon graduation. Based on some survey responses, at times it appeared that school administrators, teachers, or other school staff were aware of the challenges these students faced but did not adequately support the student. When issues at the school were perceived as unaddressed by the student's parents, their response often was to move the student to another (alternate) school format or find ways for the student to avoid the situation where possible.

It is important to consider appropriate ways to identify negative experiences in schools early and communicate with students and parents about potential interventions to support student success before these students exit high school. Ultimately, working with students and their families to identify strategies to support the student's success may help facilitate a positive transition to post-secondary education or employment through alignment with the student's goals and ensure students are receiving the in-school supports they need and are aware of supports beyond high school.

Revisit the data collection and storage of the Post School Outcomes Survey

Several limitations were noted in the quantitative analyses, especially with identifying relationships between positive high school experiences and specific post school outcomes. For example, nesting outcomes related to higher education, competitive employment, and other education or employment to align with the indicators prevented the research team from disaggregating the relationships between the positive high school experiences mentioned by survey respondents by education or employment. If indicators were disaggregated and represented only one variable (e.g., A = Higher Education, B = competitive employment, C = other employment) then future analyses could examine more directly the relationships between the presence of specific high school supports and post-high school outcomes.

Similarly, if information about who (e.g., student, parent, guardian) completed the survey was provided, then analyses between responses by respondent type may have yielded further understanding of how students or parents emphasized the importance of certain types of high school experiences. And lastly, at times the comments recorded for question 23 appeared to be transcribed summaries of what survey respondents said (e.g., the student/parent reported) rather than the actual language or description

provided. While these summaries might be accurate interpretations of what was shared by survey respondents, the original wording and language used by respondents are lost. Encouraging those administering the survey to record comments in the respondents' own words may improve the amplification of student and parent voices in future analyses.

Future research and next steps to better understand how in-school supports shape postsecondary outcomes.

With respect to a lack of significant trends among some of the demographic characteristics examined, it is important to note that the sample did not include enough individuals with a particular characteristic (e.g., Asian, American Indian, and Pacific Islander for race; deaf blind (DB), visually impaired (VI), orthopedic impairment (OI), and traumatic brain Injury (TBI)) to detect trends for these groups. Similarly, few students exited high school with alternate diplomas, certificates of completion, or reached the maximum age of eligibility for trends in these groups to be detected. To better understand the associations between specific in-school supports, exiting behaviors, and/or post-school experiences, examining these relationships utilizing a more representative (e.g., national) dataset may provide additional insights into how these experiences and outcomes vary across diverse groups.

Additionally, it is important to note that the codes identified in comments only reflected the top three topics survey respondents discussed when describing the positive experiences in high school that helped them reach their goals. It does not necessarily indicate that certain supports were received or not received, or the degree to which students engaged in specific supports (e.g., the number of CTE credits taken, hours spent receiving special education supports or engaged in extracurricular activities, etc.). Furthermore, we do not know what goals each student set for themselves upon exiting high school (e.g., we do not know what's in their IEP) and our assumption in this study was that students have goals for education and employment after high school. It may not be the case that all students with disabilities have set goals for post-secondary education and employment. Future research could consider replicating aspects of this study while also including additional metrics to gauge the extent to which these supports were accessed by students to better understand their relationship to positive post-school outcomes that include education and employment as well as other goals like independent living.

Several group differences were noted (i.e., by disability label, race/ethnicity) and future research could examine the intersections of these relationships. For example, mentioning supportive school personnel was more common among students with the other health (OH) disability label as well as among White students. In examining the counts and percentages in the sample, 82.97% of students with the OH disability label are White. By examining the intersectional nature of students' experiences, we may better understand the extent to which these significant differences in the prevalence of supports explain the lived experiences of these students.

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Appendix A: Post School Outcomes Survey Questions

Utah Post School Outcomes
Developed under contract with the Utah State Board of Education

Utah 2023 Indicator 14 Post School Outcomes Survey Questions

Respondents

Q.1 Who **responded** to the interview questions **or** check why the interview was not completed?

- ❑ **Successfully Completed Interviews** - phone answered by:
  - ❑ **Former student**
  - ❑ **Parent** (natural parent, step-parent, parent who is guardian ad litem)
  - ❑ **Guardian or Adult Service Provider** (legal guardian other than the student's parent, foster care parent, custodial group home worker)
  - ❑ **Anyone else**

- ❑ **Unsuccessfully Completed Interviews** - reason interview was not completed
  - ❑ **Contacted:** Declined to answer interview questions
  - ❑ **Contacted:** Unresolved language or comprehension barrier
  - ❑ **Contacted:** Former student was unavailable and no other responder was available (e.g. jail, military, work)
  - ❑ No Contact: Unable to find # / Lost # / No phone # / Moved and no forwarding #
  - ❑ No Contact: No answer (5 or more attempts)
  - ❑ Other

- ❑ **Ineligible** to participate because former student:
  - ❑ No longer receiving special ed services / Exited from special education / Exited the district
  - ❑ Did not yet graduate / Still in High School
  - ❑ Wrong exiting class (exited more than two years ago)
  - ❑ Deceased

Postsecondary Education and Training

Q.2 Since leaving high school, have you participated **in any** type of college, courses, or job training? This can be things like college, adult or community education, a **Mission**, vocational school, job training, or an on-line course, keeping in mind that **military service is considered employment**.

- ❑ Yes, I am or **have participated in some type** of continuing education or humanitarian program (Go to Q.4)
- ❑ I have participated in continuing education since leaving high school **but discontinued** before completing the program (Go to Q.3)
- ❑ I have **not participated** in any further educational or training program (Go to Q.12)
- ❑ Don't Know / Prefer Not to Answer (Go to Q.13)

Q.3 What is the **main reason** you discontinued your postsecondary education or training program?

- ❑ My program was interrupted or stopped **due to the corona virus shut-down/stay-at-home order**.

  (prompt and record response)

  I'm sorry to hear that, and know it may be difficult for you to know your future plans at this time, but once the stay-at-home is lifted, do you think you will:

  - ❑ **Continue** your current program of study or another one
  - ❑ **Discontinue** your post secondary program or training
  - ❑ **Unsure** or at this time / Don't know / Prefer Not to Answer
- ❑ Got a Job / Working / Did not want to continue my education / Doing something else
- ❑ Can't afford to continue my education / Not enough financial aid to continue
- ❑ Plan to go in the future / Plan to return after earning enough money to go
- ❑ No post secondary opportunities / None close to home
- ❑ Don't have the necessary skills / qualifications to continue postsecondary education
- ❑ Unable to find transportation to school / No car / Can't get to campus
- ❑ Have not received necessary services from community agencies / On waiting list for service
- ❑ Homemaker / Family obligations
- ❑ Health or disability-related problems prevent me from continuing my education
- ❑ Other (prompt and record response if reason is other than listed above)
- ❑ Don't know / Prefer Not to Answer

Higher Education

Q.4 Have you enrolled in a **2-year college or community college**, such as Salt Lake Community College or Utah Career College since leaving high school?

- ❑ Yes, and I **completed** at least one term
- ❑ Yes, but I **did not** complete at least one term
- ❑ No, I have not attended this type of program
- ❑ Don't know / Prefer not to answer

Q.5 Have you enrolled in a **4-year college or university** such as the University of Utah, Brigham Young University or Southern Utah University?

- ❑ Yes, and I **completed** at least one term
- ❑ Yes, but I **did not** complete at least one term
- ❑ No, I have not attended this type of program
- ❑ Don't know / Prefer not to answer

Q.6 Have you enrolled in a 2 year degree program at a **Technical College**, such as the Utah System of Technical Colleges (UTECH)?

- ❑ Yes, and I **completed** at least one term
- ❑ Yes, but I **did not** complete at least one term
- ❑ No, I have not attended this type of program
- ❑ Don't know / Prefer not to answer

Other Postsecondary Education or Training

Q.7 Have you enrolled in a program to earn your **High School Completion document or certificate** such as General Education Development (GED), taken an **on-line course(s)**,or participated in **adult basic education? If the exiter responds that they participated in a post high program ask if this was a "post high special education program with a school district." If they answer yes then they are ineligible for this survey.**

- ❑ Yes, and I **completed** at least one term
- ❑ Yes, but I **did not** complete at least one term
- ❑ No, I have not attended this type of program
- ❑ Don't know / Prefer not to answer

Q.8 Have you attended a public or private **Vocational School or short-term education program** that is less than two years, like truck-driving school, barber, or cosmetology?

- ❑ Yes, and I **completed** at least one term
- ❑ Yes, but I **did not** complete at least one term
- ❑ No, I have not attended this type of program
- ❑ Don't know / Prefer not to answer

Q.9 Have you participated in **a job training program, on-the-job training or apprenticeship program** like Job Corps, Workforce Investment Act (WIA), Job Center, or workforce development program?

- ❑ Yes, and I **completed** at least one term
- ❑ Yes, but I **did not** complete at least one term
- ❑ No, I have not attended this type of program
- ❑ Don't know / Prefer not to answer

Q.10 Have you participated in a **Church Mission** or a **formal Humanitarian Program** such as the Peace Corps, Vista or AmeriCorps?

- ❑ Yes, and I **completed** at least one term
- ❑ Yes, but I **did not** complete at least one term
- ❑ No, I have not attended this type of program
- ❑ Don't know / Prefer not to answer

Q.11 Have you participated in any **other type** of postsecondary school or program since leaving high school not listed above?

- ❑ Yes, and I **completed** at least one term *(prompt and record response)*
- ❑ Yes, but I **did not** complete at least one term
- ❑ No, I have not attended this type of program
- ❑ Don't know / Prefer not to answer

Q.12 What is the main reason you have not attended a postsecondary education or training program?

- ❑ My program was interrupted or stopped **due to the corona virus shut-down/stay-at-home order**.

  (prompt and record response)

  I'm sorry to hear that, and know it may be difficult for you to know your future plans at this time, but once the stay-at-home is lifted, do you think you will:

  - ❑ **Continue** your current program of study or another one
  - ❑ **Discontinue** your post secondary program or training
  - ❑ **Unsure** or at this time / Don't know / Prefer Not to Answer
- ❑ Got a Job /Working / Did not want to continue my education / Doing something else
- ❑ Can't afford to continue my education / Not enough financial aid to continue
- ❑ Plan to go in the future / Plan to return after earning enough money to go
- ❑ No post secondary opportunities / None close to home
- ❑ Don't have the necessary skills / qualifications to continue postsecondary education
- ❑ Unable to find transportation to school / No car / Can't get to campus
- ❑ Have not received necessary services from community agencies / On waiting list for services
- ❑ Homemaker / Family obligations
- ❑ Health or disability-related problems prevent me from continuing my education
- ❑ Other (prompt and record response if reason is other than listed above)
- ❑ Don't know / Prefer Not to Answer

EMPLOYMENT

Q.13 Which of these best describes your **employment** since leaving high school? Count **all of the days for all the jobs** you have had since high school include days on for things like vacation, sick days, and being on your employer's payroll even if you are not currently working.

- ❑ I have been employed for at least 3 months, about 90 days total, since leaving high school. *(Go to Q.15)*
- ❑ I have worked since leaving high school, but it has been for less than 90 days total. *(Go to Q.14)*
- ❑ I am not currently employed and I have not worked for pay since leaving high school. *(Go to Q.19)*
- ❑ Don't know / Prefer not to answer *(Go to Q.20)*

Q.14 What is the **primary** reason you <u>have worked less than 90 days</u> since leaving high school?

- ❑ I was laid off or am not working currently because of the **corona virus shut-down/stay-at-home order**. *(prompt and record response)*
  I'm sorry to hear that, and know it may be difficult for you to know your future plans at this time, but once the stay-at-home is lifted, do you think you will:
  - ❑ **Continue** your most recent job
  - ❑ Look for a **new job**
  - ❑ **Discontinue** working
  - ❑ **Unsure** or at this time / Don't know / Prefer not to answer
- ❑ Not looking / Don't want to work at this time
- ❑ **On a Mission** / Doing something else first / Going to school
- ❑ Unable to find work / Lack of employment opportunities
- ❑ Don't have the necessary skills or qualifications to work / Disability prevents working
- ❑ Unable to find transportation to work / No car / Can't get to work
- ❑ Homemaker / Family obligations
- ❑ Health or disability-related problems prevent me from working more or working as much as I would like
- ❑ Would lose Social Security (SSI) benefits if I worked more or as much as I would like
- ❑ Laid off / Recently dismissed / Fired
- ❑ Other *(prompt and record response if reason is other than listed above)*
- ❑ Don't know / Prefer not to answer

Q.15 Which of these describes your present or previous **job setting or location**?

- ❑ **Community** company, service, or business, like a grocery store or restaurant, where there are employees with and without disabilities
- ❑ **Military** / Service
- ❑ **Supported Employment** setting (paid work in the community, but can also include on-the-job training or assistance at work)
- ❑ **Self-employment** or working in a **Family Business**. This includes being a homemaker or day care provider, or a business such as a farm, store, fishing, ranching, or catering service
- ❑ **Institutional or Residential** setting, such as a medical, correctional / jail, convalescent, or mental health facility
- ❑ **Sheltered Employment** (a setting where most workers have disabilities)
- ❑ **Other** *(prompt and record response if reason is other than listed above)*
- ❑ Don't know / Prefer not to answer

Q.16 On average, how many hours do you or did you work per week?

- ❑ 35 or more hours per week
- ❑ 20 - 34 hours per week
- ❑ 16 - 19 hours per week
- ❑ Less than 16 hours per week
- ❑ Don't know / Prefer not to answer

Q.17 Which of the following best describes your usual **hourly wage, including tips**?

- ❑ Less than the current minimum wage (prompt and record response)
  "Please describe your current employment and wage / how much you make"
- ❑ Current minimum wage ($7.25 per hour OR a lower hourly wage for opportunity employee, OR $2.13 per hour for wait or tipped employee, a wage that equal minimum wage when tips are included)
- ❑ More than the current minimum wage but less than $10.00
- ❑ Between $10.00 and $15.00
- ❑ Above $15.00
- ❑ Don't know / Prefer not to answer

Q.18 Do you or did you receive **benefits** from your employer such as sick leave, paid vacation, health insurance, or retirement? (Ask this question if the interviewer is unfamiliar with the company described in Q.6; otherwise consider this to be YES)

- ❑ Yes
- ❑ No
- ❑ Don't know / Prefer not to answer

Q.19 What is the **primary** reason you have not worked since leaving high school?

- ❑ I got a job but could not begin working because of **the corona virus shut-down/stay-at-home order**.
  (prompt and record response)
  I'm sorry to hear that, and know it may be difficult for you to know your future plans at this time, but once the stay-at-home is lifted, do you think you will:
  - ❑ **Continue** at the job you planned to start
  - ❑ Look for a **new job**
  - ❑ **Discontinue** working
  - ❑ **Unsure** or at this time / Don't know / Prefer Not to Answer
- ❑ Did not plan to go to work after high school / Not looking / Don't' want to work at this time
- ❑ **On a mission** / Doing something else first / Student / Going to school
- ❑ Unable to find work / Lack of employment opportunities
- ❑ Don't have the necessary skills or qualifications to work / Disability prevents working
- ❑ Unable to find transportation to work / No car / Can't get to work
- ❑ Have not received necessary services from community agencies / On waiting list for services
- ❑ Homemaker / Family obligations
- ❑ Health or disability-related problems prevent me from working
- ❑ Would lose Social Security (SSI) benefits if I worked
- ❑ Laid off / Recently dismissed / Fired
- ❑ Other (prompt and record response if reason is other than listed above)
- ❑ Don't know / Prefer Not to Answer

Adult Living

Q.20 Which of these best describes your **current living arrangement**?

- ❑ With **parent** or **custodial guardian**
- ❑ With **other family member** such as a grandparent, aunt or uncle, cousin, brother or sister
- ❑ With a **spouse or roommate** in a home, apartment, college dorm, sorority or fraternity housing or other campus housing
- ❑ **Alone** in an apartment or a home
- ❑ **Military** housing / Barracks
- ❑ Institutional or residential, such as **jail** / correctional, medical, convalescent, mental health
- ❑ Supervised living residences such as assisted living center, group home, adult foster care
- ❑ Other *(prompt and record response if reason is other than listed above)*
- ❑ Don't know / Prefer not to answer

Agency Involvement

Q.21 Since leaving high school, have you **received services or assistance** or talked with anyone from any of the **following agencies**? (Choose all that apply)

- ❑ Rehabilitation Services for the Blind and Visually Impaired
- ❑ Rehabilitation Services for the Deaf and Hard of Hearing
- ❑ Vocational Rehabilitation (VR)
- ❑ Division of Services for Persons with Disabilities (DSPD)
- ❑ Department of Workforce Services (DWS)
- ❑ Social Security Administration
- ❑ College or university student assistance center
- ❑ Disability Law Center
- ❑ Other *(prompt and record response)*
  "Please describe the agency and services you are receiving or have received"
- ❑ No / None
- ❑ Don't know / Prefer not to answer

Q.22 What **difficulties**, if any, have you had being employed or attending postsecondary school as you would like?

- ❑ Comment *(Record comments)*
- ❑ No / None

Q.23 Thinking about the things you are doing now, what is something positive that happened while you were in high school to **help you** reach your goals?

- ❑ Comment *(Record comments)*
- ❑ No / None

Appendix B: Codebook with Definition

Code	Definition
Academic program or course	Apply this code when a comment refers to ways in which a student was able to build skills through taking a specific course or participating in a school program for credit. For this code, apply an appropriate sub-code to describe the knowledge or skill acquired or the type of course (e.g., writing, communication, organization, math, reading, art, music, independent study, etc.). If a program or course helped a student gain independent living skills (such as personal hygiene, communication, money management, transportation, meal preparation, financial literacy, shopping, etc.) then also apply the self-care/independent living skills code along with the academic program or couse code. Apply this code whenever a comment indicates any type of academic program or course in high school that benefitted the student. This differs from alternative school format insomuch as the course rather than the school is identified as beneficial.
Alternate school format	Apply this code when a comment indicates that a different format (e.g., taking courses online, attending an alternative high school, homeschooling, dual enrollment, attending college or a technical school in high school, international baccalaureate) was beneficial to the student's ability to complete high school education requirements or helped prepare them for education or employment after high school.
Career Awareness or Support	Apply this code when a comment mentions high school activities that helped the student discover career interests or opportunities. Examples include discovering a student's professional passion, taking career tests or assessments, career counseling, talking with a guidance counselor about education/skills needed for work, learning about career opportunities through school experiences, attending career fairs, etc.
Extracurricular activities	Apply this code when a comment identifies positive high school experiences that are non-academic activities the student participated in not for credit. Examples include: sports, band, theater, student council or student government, etc. For this code, apply a sub-code that identifies the activity described (e.g., sports, band, theater, student council, student government, etc.).
Supportive family or friends	Apply this code when a comment identifies a family member (parent, mother, father, step-mother, step-father, grandparent, aunt, uncle, cousin, sister, brother, spouse, etc.) or friends (including boyfriends or girlfriends) that provided assistance (whether academic, social, emotional, or personal) that supported the student's success.
Graduate HS	Apply this code when a comment indicates a student completed the exit exam requirements or that a student earned their high-school diploma or GED. If the comment indicates a post-secondary outcome that resulted from graduation, you can create a sub-code to identify the relationship (e.g., 'Graduate HS (attending college),' 'Graduate HS (employed)'.
None	Apply this code when a comment does not identify any positive or negative experiences in high school. Comments like 'nothing was positive' or 'I had no positive experiences in high school' would be examples of a comment to be coded 'none.'
Negative Experiences	Appy this code when a comment indicates a negative experience in high school the student had to face. For this code, apply a sub-code to describe the negative experience (e.g., racism, sexism, did not get the help they needed, etc.).
Other	Apply this code when a comment indicates a positive high school experience that is not described or identified by any of the other codes in this codebook. In the subcategory column, apply up to a few words to describe the key concept in the comment. Comments that indicate positive experiences occurred in high school but are unspecific would be classified as 'other.' Examples of unspecific positive comments to be coded with 'other' include 'everything was

	great' or 'all of it' and could be coded as 'other (everything in HS)' or 'other (all of HS),' respectively.
Personal Growth	Apply this code when a comment indicates ways in which a student has grown personally from their high school experiences. Examples include increased self-advocacy, self-esteem, self-confidence, overcoming challenges, etc. Apply a sub-code when appropriate to identify the type of personal growth the student experienced (e.g., self-esteem, self-confidence, self-determination, self-realization, psychological empowerment, overcoming challenges, etc.). Only apply this code when the personal growth is not the result of Self-Care / Independent Living skills acquired (see Self-Care / Independent Living Skills code definition).
Personalized Learning	Apply this code when a comment identifies ways that learning was individualized to support the student's success. Where appropriate, apply a sub-code to describe the type of personalized learning (one-on-one support, small class sizes, individualized instruction, peer tutoring, extra help on assignments, etc.). Only apply this code when the personalized learning is not the result of special education support (see Special Education support code definition).
Self-Care / Independent Living Skills	Apply this code when a comment identifies skills the student developed that are necessary for managing their personal self-care or daily independent living, which includes personal management skills needed to interact with others, daily living skills, financial management skills, and the self-management of healthcare/wellness needs. Examples include financial literacy, cooking and general references to "life skills." For this code, apply a sub-code when appropriate to describe the life skill acquired (e.g., personal hygiene, communication, living independently, living with others who are not relatives, social skills, financial literacy, money management, cooking, cleaning, transportation, etc.)
Special Education Support	Apply this code when a comment includes aspects of special education support. Examples include: accommodations, assistive technology, speech or occupational therapy, assessments provided by case managers or the student's transition team, individualized education plans (IEPs), postsecondary transition support, co-teaching, special education teacher support, resource teacher support, extra help on assignments from resource or special education (SpEd) teachers, Utah Multi-tiered system of supports (UMTSS), etc. There are also courses for students with disabilities (e.g., Directive studies, homework class, support class, etc.) specifically designed to provide time during the school day for the student to receive extra help with homework and assignments. For this code, apply an appropriate sub-code to describe the support provided where applicable (e.g., accommodations, assistive technology, special education assessments, IEPs, goal setting, postsecondary transition services, schoolwide approach to expectations and supports, teacher, co-teaching, etc.)
Support Others	Apply this code when a comment identifies the ways in which a student was able to provide assistance to other individuals in high school. Examples include helping other students or teaching others about something the student is knowledgeable or passionate about. For this code, apply a sub-code to describe how the other students were supported (e.g., taught Korean, taught card game, helped academically, etc.).
Supportive school personnel	Apply this code when a comment identifies staff at the school provided assistance that was important for the student's success in high school. For this code, apply an appropriate sub-code to describe the type of school personnel where applicable (e.g., teacher, counselor, principal, coach, etc.)
Work experience	Apply this code when a comment identifies a job, internship, work study, work-based learning, or other professional employment experience the student participated in during high school. For purposes of this definition, work experience could either be paid or unpaid but must have occurred during high school and be an employment experience to be counted. Using the term 'work' is insufficient for the comment being about work. Where appropriate, describe the work experience with a sub-code (e.g., internship, work-based learning, work study, job, etc.).

Appendix C: Prompts Engineered to Utilize Claude

Prompt Type	Example Text
Basic Prompt, with instructions for coding comments	Here are some open-ended responses from a post-high school outcomes survey that asked students who received special education services in high school, "In thinking about the things you are doing now, what is something positive that happened while you were in high school to help you reach your goals?" This survey was conducted one year after these students exited high school, and the survey was sometimes completed by a student and other times by a parent or guardian. We are analyzing these responses to answer the following research questions: What positive high school experiences supported individuals with disabilities in reaching their goals after exiting the school system? How did students' experiences in high school support their transition from high school into postsecondary education, employment, or independent living? We plan to code all responses we received from students and their caregivers and then use quantitative methods (e.g., correlations) to examine relationships or associations between high school experiences and post school outcomes like education and employment and how those relationships may vary by race, gender, a student's category of disability, or their school District. [input sample of Q23 responses] The codebook includes a list of codes with definitions as well as instructions to identify codes and sub-codes to classify these comments. Using the attached codebook and definitions as a guide, classify each of the comments provided above with at least one and up to three codes, identifying sub-codes when appropriate to further describe the comment. For example, "had a social life is high school" would be coded "supportive family or friends" as the code is to be applied when family or friends provide social, emotional, academic, or personal assistance to the student. If you believe more than three codes could apply to one comment, prioritize the key elements of the comment to identify which codes to apply. As the definitions indicate, you can apply a descriptive sub-code to each code as appropriate. Put these sub-codes in parentheses, and separate multiple sub-codes with a comma. Give the original comment, followed by two hyphens, and then give the category you would assign. You can assign more than one code if it seems appropriate and separate these codes with a semicolon. For example, "Going out to see the different job sites, this is how he got the job he is at now." could be coded -- Career Awareness or Support (job sites, identifying interests). This task is considered successful and complete when all the comments provided to you are accurately coded with one to three codes from the codebook. [copy/paste codes and definitions from FINAL codebook].
Additional Context	I am also including some additional information to help you understand some of the codes in the codebook. [attach 'additional context for Special Education in UT' doc]
Researcher Role	You are a researcher interested in better understanding the ways in which we can support students with disabilities in high school so that they can realize their post high school goals of education and employment.
Key Themes	Identify the central themes of these responses with categories that are both distinct and mutually exclusive. Responses follow: [input all 7319 responses to Q23] Thank you. Can you please identify the ten comments you would classify as most relevant for each of the themes you've identified above?

Appendix D: Concerning Responses

The benefits of using an LLM such as Claude was the ability to surface responses that indicated harm or danger to the student. Through the use of Claude, the research team identified 15 comments that indicated instances of physical attacks, suicidal thoughts or attempts, severe mental and physical health issues, and difficulties accessing needed support services. Further exploration of the data by the research team uncovered additional comments not initially identified by Claude as concerning. These comments were identified by Claude as 'negative experiences' when applying codes from the codebook. Subsequently, a research team member reviewed all of the comments coded as negative experiences and included responses below when they indicated harm or danger to the student. Comments about difficulties accessing needed support services are included in another section of the report that describes challenges students faced achieving post-secondary success.

- *Her graduating was a huge goal, [alternate school] staff was amazing. [Previous high school] was not helping, for years she asked for help with bullying and [staff] just told her to ignore the bully. She tried to self-harm and [administrators] ignored the problem. When they took her out [of her previous high school] she was better. [Alternate school] was so helpful and took the time to help her, meeting the counselor and the teacher we knew things would get better. She went from not wanting to go to school to wanting to go early.*
- *She was sexual[ly] abused and she had [a] very hard time studying.*
- *Was attacked and is in private counseling services and therapy. Will not leave the house these days.*
- *Talks about wanting to kill himself, had him in seeing someone, but with COVID that has stopped. Numerous welfare checks with the local police dept for the safety of the family since his behavior is a serious issue.*
- *Is off his meds and tried to kill himself this April. Do not know where to go for help.*
- *Has had a mental breakdown and is now getting help at this time. Until there is any improvement in her mental health she will not be working or going to school.*
- *Has major health issues with his stomach and needs major surgery. Has been written off from working till further notice.*

These comments indicated several ways in which students with disabilities were struggling at the time at which they were surveyed. Following up with these individuals and their families to ensure they are receiving appropriate care and support along with considering how to strengthen supports for students with disabilities in high school to navigate these challenges are recommended.