Montana K-12 Educator Needs Assessment Survey Report 2024

MONTANA STATE UNIVERSITY | Science Math Resource Center

MONTANA NSF EPSCoR

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Data Analysis

Montana State University Social Data Collection and Analysis Services

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Table of Contents

Executive Summary **5**

Introduction 7

- Primary Goals 7
- Secondary Goals 7

Methodology 8

- Sample 8
- Instrument 8
- Missing Data and Survey Completion 8
- Survey Modifications 8
- Data Analysis 8

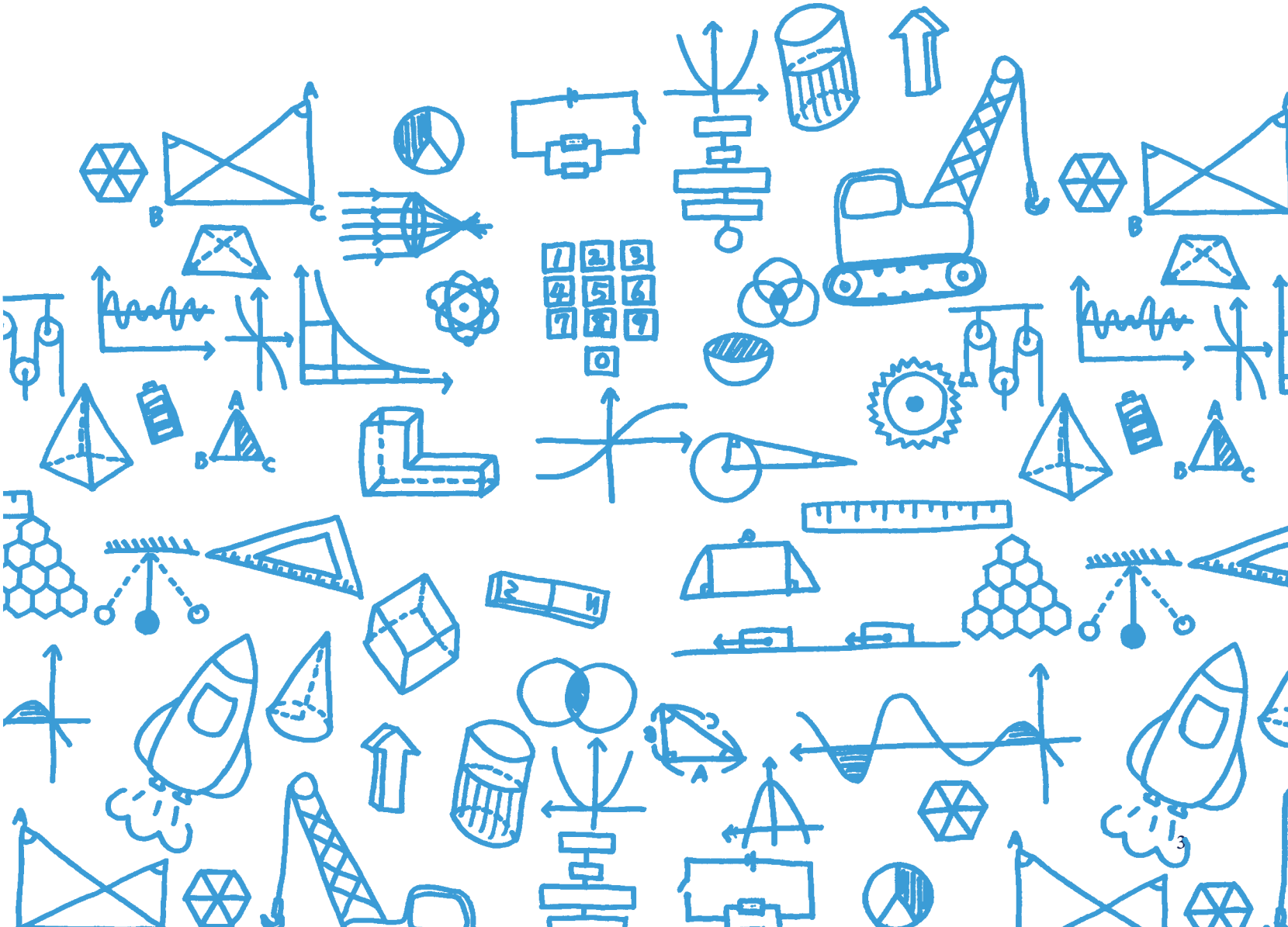
Findings 9

- Descriptive Statistics 9
  - Educator and School District Characteristics 9
  - Grade Levels Taught and Years of Experience 10
  - Community Size 10
  - Geographic Region and Distance from a College or University 11
- Professional Development 12
  - Total Professional Development Hours 12
  - Online Professional Development Hours 12
  - Professional Development Hours Required by Schools 12
  - Hours of STEM Professional Development 12
  - School/district strengths and weaknesses that impact PD implementation 13
  - Barriers to Professional Development 14
  - Access to High-speed Internet 14
    - Digital Gatekeeping: Network Filters in K–12 Schools 14
  - Attitudes Toward STEM Professional Development 15
  - Access to STEM professional development 15
    - 'Central' for Whom? 16
  - Professional Development Location and Delivery Method Preferences 16
  - Professional Development Timing and Duration Preferences 18
  - Interest in Professional Development Topics 19
- Emerging Research Topics 20
  - Interest in Resources Related to University Research 22
  - Usefulness of and Interest in Data Sets and Associated Resources 22
  - Usefulness of Data Sets 22

Discussion and Implications 23

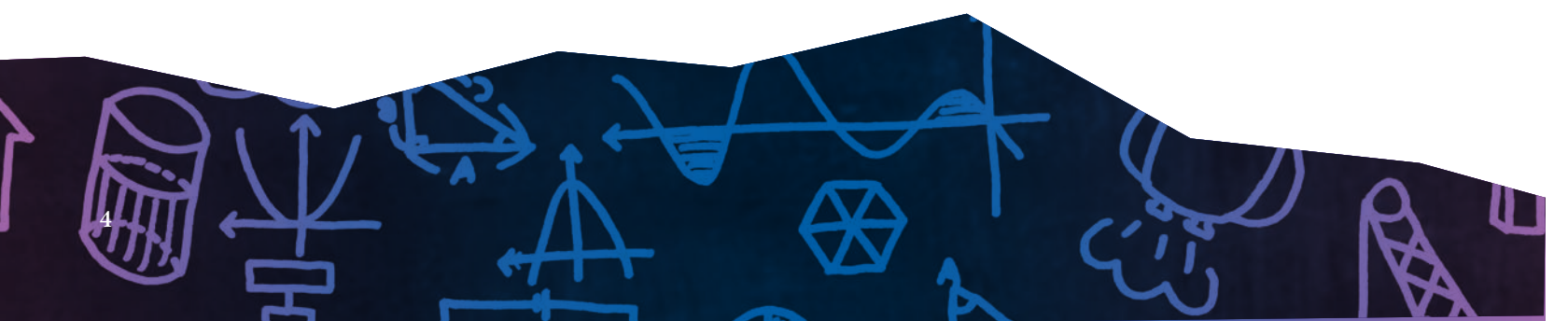
- Access to Professional Development 23
- Technology Access and Online Delivery 23
- STEM Interest Across All Subjects 23
- PD Format and Timing Preferences 23
- Emerging Research Topics and Data Resources 23
- Connecting Educators with University Research 23

Implications for Stakeholders 23
Conclusion and Recommendations 24
Key Challenges 24
Educator Preferences 24
Interest in University Research 24
Recommendations 24
Final Thoughts 25
References 25
Appendix A - Relevant Elements of Montana NSF EPSCoR Strategic Plan 26
Appendix B - NSF Key Emerging Technology Areas 27
Appendix C - Survey Questions 28
Appendix D – Strengths & Weaknesses Select Open-Ended Question Responses 33
Appendix E – BARRIERS Select Open-Ended Responses 35
Appendix F – PD FORMAT Select Open-Ended Responses 36
Appendix G – PD TIMING Select Open-Ended Responses 37
Appendix H – Additional Comments About PD Preferences 38



List of Tables and Figures

Table 1. Subjects taught and STEM classification. 9
Figure 1. Subjects taught 9
Table 2. Grade levels taught. 10
Table 3. Years taught at the K-12 level, including the current year. 10
Table 4. Community size, based on school location. 10
Figure 2. Montana's Comprehensive System of Personnel Development (CSPD) regional council areas. 11
Table 5. Distance from school district to nearest college/university. 12
Table 6. Total PD hours completed in the past year. 12
Table 7. Proportion of total PD hours completed online. 12
Table 8. Proportion of total PD hours required by respondents' schools. 12
Table 9. Proportion of total PD hours emphasizing STEM. 12
Table 10. Perceptions of school/district factors as strengths or weaknesses in supporting high-quality PD. 13
Figure 3. Perceptions of school/district factors as strengths or weaknesses in supporting high-quality PD. 13
Table 11. How often respondents have high-speed internet access, by community size. 14
Table 12. Perceived value and feasibility of STEM PD in teaching practice. 15
Figure 4. Perceived value and feasibility of STEM PD in teaching practice. 15
Table 13. Interest in various formats for participating in PD. 16
Figure 5. Interest in various formats for participating in PD. 17
Table 14. Interest in timing and duration of PD. 18
Figure 6. Interest in timing and duration of PD. 18
Table 15. Interest in 20 PD topics. 19
Table 16. Familiarity with educational resources or PD for five research topics for which the Montana University System receives federal funding. 20
Figure 7. Familiarity with educational resources or PD for five research topics for which the Montana University System receives federal funding. 20
Table 17. Interest in educational resources or PD for five research topics for which the Montana University System receives federal funding. 21
Figure 8. Interest in educational resources or PD for five research topics for which the Montana University System receives federal funding. 21
Table 18. Interest in accessing datasets currently used by university researchers. 22
Table 19. Perceived usefulness of four resources related to research datasets. 22
Table 20. Interest in four resources or PD opportunities regarding university research. 22



Executive Summary

The Science Math Resource Center (SMRC) in the Montana State University Department of Education is devoted to the advancement of STEM teaching and learning. The Center provides professional development for K-12 educators of rural, tribal and urban communities; conducts educational research; and offers STEM programming opportunities for youth of all ages. As part of the Education and Workforce Development team for Montana NSF EPSCoR, SMRC seeks to advance EPSCoR's mission of strengthening STEM capacity and capability within the state of Montana.

This report is an encapsulation of the professional development needs and interests of Montana K-12 educators, with a particular emphasis on teachers of STEM subjects (science, technology, engineering and mathematics). We believe these findings provide a unique opportunity for Montana University System researchers and others with access to STEM resources to strategize on how those resources can be shared with the K-12 education community, thus advancing the broader impacts of our research. Findings in this report can also offer insights to school administrators, other professional development providers and agencies that support classroom teachers.

This report shows that:

- Montana teachers of all subjects and grade levels are interested in and eager to expand their skills through professional development (PD).
- In particular, PD on STEM topics ranks highly in interest level and its perceived value to students—even among non-STEM teachers. However, access to high-quality STEM PD varies greatly, with many factors enhancing or inhibiting teachers' capacity to take part.
- School district factors that positively affect teachers' access to PD include supportive colleagues and administrators, school climate, school size and facilities/equipment, including technology (these remain largely unchanged from similar SMRC surveys in 2013 and 2020).
- Factors that adversely affect teachers' access to high-quality PD include the school's geographic location; availability of substitute teachers; and lack of funding, time to participate, and awareness of PD opportunities.
- Rural and small-school teachers often face unique barriers than do educators in larger communities, including the need to "wear many hats," such as coaching or teaching driver's ed. However, teachers in small schools and those with smaller class sizes often report more flexibility in how they schedule their time and curriculum.

In the Conclusion and Recommendations section, the authors suggest some ways these challenges can be addressed, including through budget and strategy in the research proposal development process.

The report also provides detail on STEM-related PD topics that rank highly in interest by teachers. These should be strongly considered for future programming opportunities:

- Montana computer science standards
- Educational technologies
- Place-based learning
- Local STEM industry/organization connections
- Linking classroom instruction to college and careers
- Integrating topics within STEM
- Integrating literacy practices with STEM learning
- Designing inquiry-based lab activities
- Engineering design practices
- Montana science and mathematics standards

Of particular interest to the research enterprise is that a large majority of K-12 teachers are interested in connecting with researchers (especially when researchers can visit their classrooms), better understanding research instruments and processes, and using authentic research datasets in their curricula.

A few intriguing issues arose that deserve future examination, such as the impacts of a four-day week (31.5% of Montana schools in the 2023-24 school year offered a four-day school week, the vast majority of them in rural areas); and how Montana's schools will weather a statewide and national shortage of classroom teachers, substitute teachers and education support professionals.

Overall, the process of investigating Montana educators' needs, interests and barriers offers useful data to guide our education and workforce development efforts, and we are grateful to the Montana educators who contributed their ideas and insights to this project.

Introduction

This needs assessment survey of Montana K-12 educators was developed by the Montana State University (MSU) Science Math Resource Center and Montana's National Science Foundation (NSF) Established Program to Stimulate Competitive Research (EPSCoR) program to better serve educators' needs for professional development (PD) opportunities and STEM-related resources.

Primary Goals

- Understand the professional development landscape for Montana K-12 educators: Do they have adequate access to high-quality professional development? Are some geographic areas in greater need than others? Are some grade bands or subjects better served than others? Are educators taking advantage of available PD offerings?
- Discover what general PD topics are of interest to educators, particularly in the context of science, technology, engineering, and mathematics (STEM).
- Explore Montana K-12 educators' preferences for PD, including time, duration, location, and delivery method (i.e., online, hybrid, in-person).

Secondary Goals

- Discover how to better connect the K-12 education community with the research findings of Montana NSF EPSCoR, a statewide research infrastructure-building effort with a current research focus on prescribed fire, including fire and smoke science; smart optical sensors for data gathering; artificial intelligence and machine learning to make sense of the large data sets gathered; and a social psychology, economics, and ethics thrust that examines how trust in information sources about prescribed fire and smoke can increase resilience and lead to better decision-making capacity.
- Gauge educators' interest in other STEM topics of priority to the Montana State University research enterprise.
- Specifically, probe educators' interests in using authentic research data sets from NSF EPSCoR and other ongoing research projects within the Montana University System.

This report builds on the 2020 Educator Needs Assessment (Meyerink & Taylor, 2021), which was based on survey data collected between March 9 and April 17, just as the COVID-19 pandemic began disrupting the education system. As researchers, we were curious to explore how Montana's K-12 educational landscape has changed since then; however, since our primary goal is to provide useful resources and training in the "here and now," these observations are more minimal and anecdotal than would be a comparative research report.

The administration of this survey and its potential to inform the future development of both classroom resources and professional development materials aligns with the Montana NSF EPSCoR commitment to serving the entire state (see Appendix A). While the secondary goals are aimed toward specific NSF EPSCoR interests, we believe the data from both the primary and secondary goals will add value to the Montana University System research enterprise in general, as researchers often strive to share the broader impacts of their work with the education community.

The 2024 and 2020 needs assessments built upon previous work of the MSU Science Math Resource Center (Grimberg & Hendrikx, 2013). The 2024 survey was administered online via MSU's Qualtrics platform, launching on June 10 and closing on July 13, 2024. The survey was advertised widely via partners including School Services of Montana, the Science Math Resource Center, the Montana Girls STEM Collaborative, Montana Science Teachers Association, Montana Office of Public Instruction, the MSU Department of Education, and other statewide venues through newsletters, social media, and other channels.

Methodology

Sample

The population examined in this survey included all K-12 educators in Montana and yielded a final sample size of 208 Montana K-12 educators who had greater than 25% completion rate. Since our sample contains missing responses, sample sizes for each subset of survey questions range from 174 to 208. Based on 2023–2024 data from U.S. public schools, Montana had a total of 10,829 teachers (National Education Association, 2025). Therefore, the current survey respondents offer perspectives from approximately 1.6% to 1.9% of Montana's teaching workforce.

Instrument

The survey contained 87 questions (see Appendix C), including topics related to: (a) educator characteristics, (b) school/district characteristics, (c) school/district strengths and weaknesses, (d) STEM professional development (PD) preferences, (e) barriers to PD, (f) interest in various PD topics, (g) interest in and familiarity with five key research topics of interest; (i) usefulness of data set resources from researchers, and (j) interest in other resources related to university research. Multiple survey questions were presented as Check-All-That-Apply (CATA), which is why those percentage totals exceed 100%.

Missing Data and Survey Completion

Some missing data were expected, as survey questions were optional. Of the 208 responses, two had less than 50% completion and six were partially completed. Most responses were complete, except for the question about preferred data types. This question was skipped by design if respondents indicated no interest in accessing university research data sets.

Survey Modifications

Educators were asked to report the grade levels and subjects they teach. Due to small subgroup sizes, responses were split into two variables: subject and grade level. For analysis, subjects were grouped into STEM (101 responses) and non-STEM (107 responses), and rural/urban status was classified in two ways:

- Driving distance to nearest college: 87 (<20 miles), 72 (21–50 miles), 35 (51–100 miles), 13 (>100 miles)
- District size: 62 (<1,000 people), 31 (1,001–2,500), 44 (2,501–10,000), 19 (10,001–50,000), 49 (>50,000), 3 unsure

These categories were kept as originally asked and not collapsed.

Data Analysis

Analyses for this survey focused on descriptive tables and graphics. In addition, relationships between the various survey questions and STEM/non-STEM teachers, grade levels taught, distance from the nearest college/university, and community size were explored. For questions regarding strengths/weaknesses, barriers to participation, and topics of interest for sub-groups of teachers, the mean value of the Likert scales were used to rank question items. After the items were ranked, the top three and bottom four items were compared to draw conclusions about the strengths, weaknesses, and topics.

Findings

Descriptive Statistics

Educator and School District Characteristics

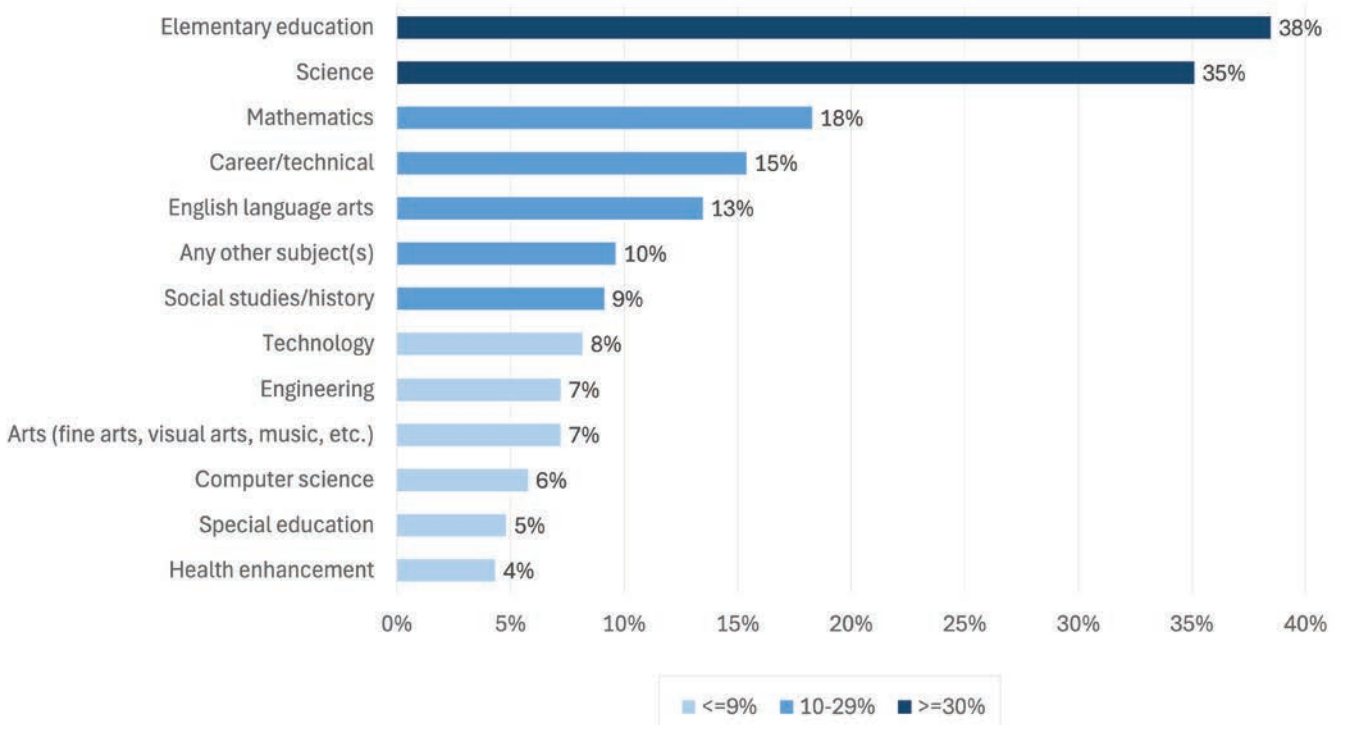
Survey respondents were asked what subjects and grade levels they teach, with options to choose as many as apply. Many respondents reported teaching elementary education or science, while the fewest indicated teaching health enhancement, computer science, arts or engineering (Table 1 & Figure 1). For the purposes of this report, STEM educators—defined as those teaching science, technology, engineering, math or computer science* —totaled 101, making up just under half of all respondents.

TABLE 1. Subjects taught and STEM classification. Total percentage of responses exceeds 100%, since educators may teach multiple subjects. (n = 208)

STEM	Subjects	Percent
	Elementary education*	38%
X	**Science**	**35%**
X	**Mathematics**	**18%**
	Career/Technical Education (CTE)*	15%
	English language arts	13%
	Any other subject(s)	10%
	Social studies/history	9%
X	**Technology**	**8%**
X	**Engineering**	**7%**
	Arts (fine arts, visual arts, music, etc.)	7%
X	**Computer science**	**6%**
	Special education	5%
	Health enhancement	4%

**Note.* *For purposes of this survey, Career/Technical Education teachers were not classified as STEM teachers; however, we will revisit this in future iterations of this survey, as many CTE courses could be considered STEM.*
Most elementary teachers also teach math and science.

FIGURE 1. Distribution of subjects taught. Total percentage exceeds 100%, since educators may teach multiple subjects. Darker colors indicate greater percentages of respondents.



Grade Levels Taught and Years of Experience

Respondents were split across grade ranges (Table 2). Regarding teaching experience, the majority of respondents reported having either more than 20 years, 11–15 years, or 6–10 years of experience (Table 3).

TABLE 2. Grade levels taught. Total percentage of responses exceeds 100%, since educators may teach multiple at multiple grade levels. (n = 208)

Grades	Percent
K-2	23%
3-5	30%
6-8	41%
9-12	40%

TABLE 3. Years taught at the K-12 level, including the current year. (n = 208)

Years	Percent
0-2	9%
3-5	14%
6-10	19%
11-15	19%
16-20	13%
> 20	25%

Community Size

Nearly half of survey respondents teach in communities with populations of 2,500 or fewer, while about one quarter teach in cities with populations over 50,000 (Table 4). (According to the 2023 U.S. census, only four cities in Montana meet this threshold: Billings (120,864), Missoula (77,757), Great Falls (60,422), and Bozeman (57,305) (U.S. Census Bureau, Population Division, 2024).

TABLE 4. Community size, based on school location. (n = 208)

Community population	Percent
0 - 1,000	30%
1,001 - 2,500	15%
2,501 - 10,000	21%
10,001 - 50,000	9%
More than 50,000	24%

Geographic Region and Distance from a College or University

Educators were asked to indicate the region of Montana in which they work, according to the Montana Comprehensive System of Personnel Development (CSPD) five regional council areas (Figure 2). Most respondents reported working in school districts located in either Southwest Montana (34.6%) or South-Central Montana (28.4%). Additionally, 42% of respondents indicated that their school districts are located less than 20 miles from a college or university of any type, with 35% reporting distances of 50 miles or greater (Table 5).

FIGURE 2. Montana's Comprehensive System of Personnel Development (CSPD) regional council areas. This map was adapted from the Montana Office of Public Instruction's CSPD Web Map (https://opi.mt.gov/Educators/Teaching-Learning/Special-Education/CSPD).

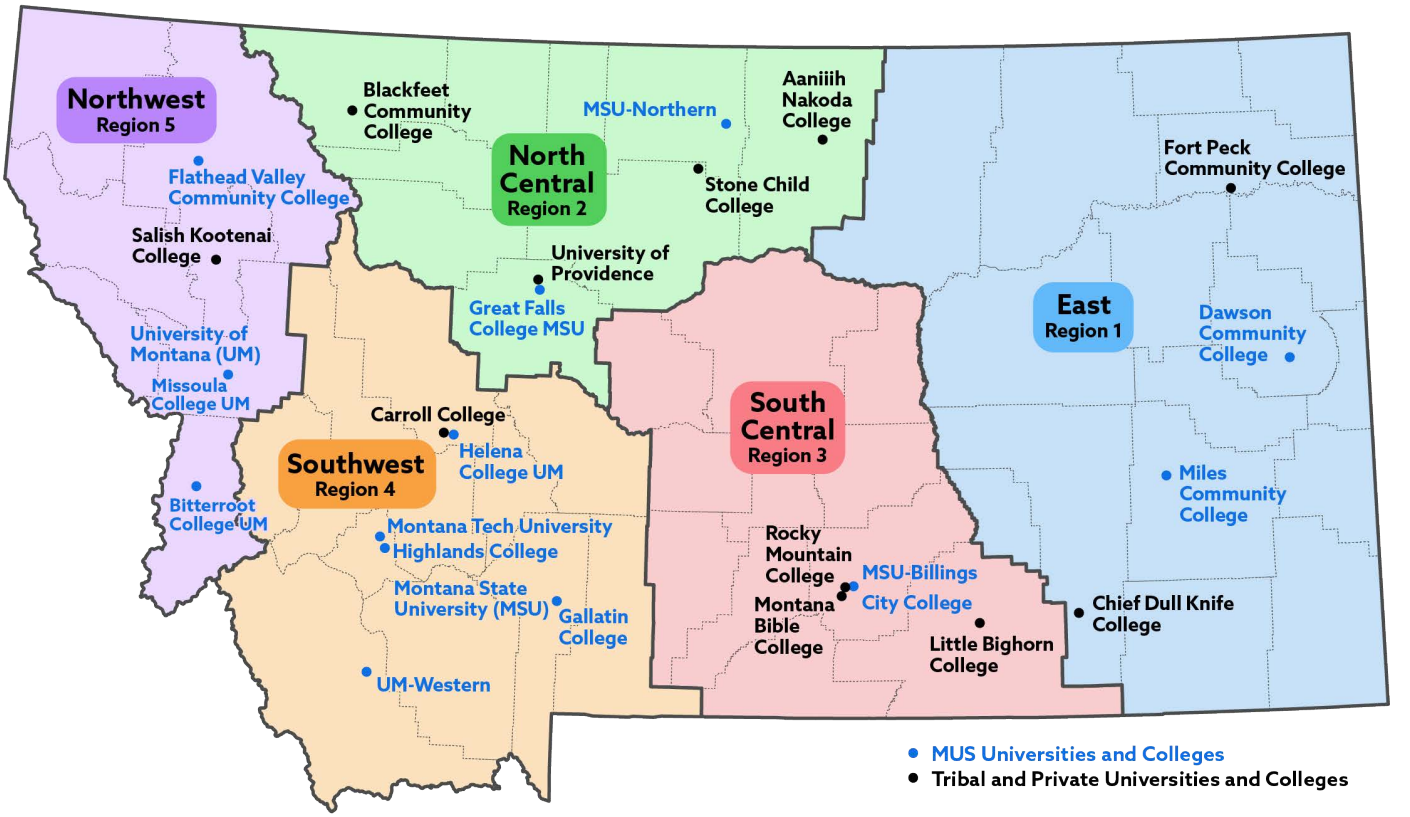


TABLE 5. Distance from school district to nearest college/university. (n = 208)

Distance (miles)	Percent
<20	42%
21-50	35%
51-100	17%
>100	6%

Professional Development

Total Professional Development Hours

Montana teachers must complete 60 units (hours) of professional development every five years (Montana Secretary of State, n.d.) —an average of 12 hours/year—to renew their teaching licenses. In this survey, most educators reported participating in at least 10 hours of professional development in the past year, with nearly one-third reporting more than 40 hours.

TABLE 6. Total PD hours completed in the past year. (n = 208)

Number of hours	Percent
1-2	1%
3-10	8%
11-20	32%
21-40	25%
>40	32%
>40	32%

Online Professional Development Hours

Educators were asked to estimate the proportion of their professional development hours completed online. The largest group said about half of their PD hours were online. Nearly half of respondents reported that one-quarter or fewer of their hours were online, while fewer than one in six completed nearly all their hours online.

TABLE 7. Proportion of total PD hours completed online. (n = 207)

Response Option	Percent
None or almost none	23%
About one-quarter	23%
About half	25%
About three-quarters	15%
All or almost all	14%

Professional Development Hours Required by Schools

Educators were also asked what percentage of the PD hours in which they participated were required by their school. The majority indicated that no more than half of their PD hours were required—suggesting that teachers have high degree of autonomy in their selection of learning opportunities.

TABLE 8. Proportion of total PD hours required by respondents' schools. (n = 207)

Response Option	Percent
None or almost none	18%
About one-quarter	27%
About half	24%
About three-quarters	9%
All or almost all	22%

Hours of STEM Professional Development

Lastly, we wondered what percentage of teachers' PD hours emphasized STEM (science, technology, engineering, and mathematics). Although only about half of respondents teach STEM classes (Table 1), about two-thirds of respondents have participated in STEM professional development. About 42% said that half or more of their hours focused on STEM.

TABLE 9. Proportion of total PD hours emphasizing STEM. (n = 207)

Response Option	Percent
None or almost none	34%
About one-quarter	25%
About half	20%
About three-quarters	10%
All or almost all	12%

School/district strengths and weaknesses that impact PD implementation

Educators rated 11 variables as either strengths or weaknesses of their school or district in terms of impact on their participation in professional development. Descriptive statistics regarding school/district strengths and weaknesses are presented in Table 10 and Figure 3.

Educators overall expressed a strong need for more relevant, accessible and subject-specific PD. Key challenges include limited teacher choice in PD offerings, lack of support for science, math, and career/technical subjects, and barriers to access due to rural isolation, travel costs, and insufficient funding. Teachers also highlighted the importance of hands-on, practical learning experiences and collaborative opportunities to share and implement PD insights. Some respondents provided open-ended responses, listed in Appendix D.

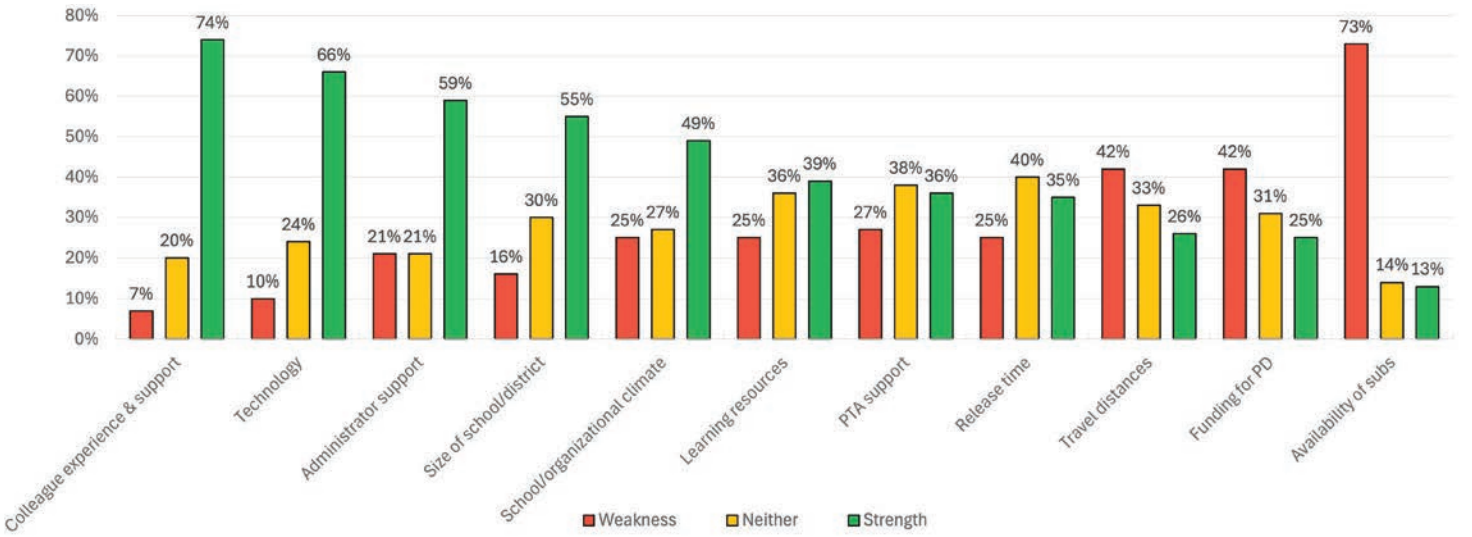
A new strength/weakness variable was added to the 2024 survey: availability of substitute teachers. This factor emerged as the top weakness contributing to challenges with accessing high-quality professional development. In 2020, funding for professional development was the most frequently cited weakness; in 2024, it ranked second, following the lack of substitute teachers.

TABLE 10. Perceptions of school/district factors as strengths or weaknesses in supporting high-quality PD, arranged in descending order by strength. (n = 206-208)

ITEM	WEAKNESS	NEITHER	STRENGTH
Colleague experience & support	7%	20%	74%
Technology	10%	24%	66%
Administrator support	21%	21%	59%
Size of school/district	16%	30%	55%
School/organizational climate	25%	27%	49%
Learning resources	25%	36%	39%
PTA support	27%	38%	36%
Release time	25%	40%	35%
Below are variables that ranked higher as weaknesses than as strengths			
Travel distances	42%	33%	26%
Funding for PD	42%	31%	25%
Availability of subs	73%	14%	13%

Factors that influence access to high-quality STEM professional development have remained largely unchanged since 2020, with one notable exception: technology. In 2020, about 26% of teachers considered technology to be a weakness; that number dropped significantly to only 10% in 2024. Also in 2024, nearly two thirds of educators (66%) listed technology as a strength, up from 59% four years earlier.

FIGURE 3. Perceptions of school/district factors as strengths or weaknesses in supporting high-quality PD, arranged in descending order by strength. (n = 206-208)



Barriers to Professional Development

In addition to ranking strengths and weaknesses of their school or district, educators weighed in on three additional potential barriers to their participation in high-quality professional development. All three barriers listed in the survey ranked highly:

- Having to pay out of pocket to attend – 86% agreement
- Not having enough time off from work – 68% agreement
- Family obligations – 62% agreement

In open-ended comments (listed in Appendix E), survey respondents identified a range of additional challenges that hinder their participation in high-quality professional development. These include limited awareness of opportunities, burdensome approval processes, and difficulties securing credit for PD outside district offerings. Logistics such as the need to prepare substitute plans and conflicting schedules were also noted. Educators in rural areas cited geographic isolation, lack of virtual options, and limited subject-specific offerings as obstacles. Other barriers included low motivation due to burnout or compensation concerns, lack of relevance or alignment with their roles, absence of incentives or follow-up support, health limitations, childcare needs, and conflicting job responsibilities.

Access to High-speed Internet

Lastly, we investigated whether access to high-speed internet is a barrier for Montana teachers. In the current survey, 81% of educators reported always having access to high-speed internet, while 19% said they only sometimes do. No respondents in either this or the 2020 survey reported never having access. However, improvement in access over the past four years has been minimal: in 2020, 77% of surveyed educators reported always having access, and 23% said they sometimes did.

Access did not vary widely based on size of community; however, it is notable that the educators most likely to report that they always have high-speed Internet access are located in the largest communities as well as the smallest communities while those in the mid-sized communities were less likely to report that they always have access (Table 11 and Figure 4). This pattern may reflect a recent statewide initiative to expand broadband infrastructure in unserved, underserved, and frontier areas. For example, 61 broadband projects were approved in late 2022, extending service to 61,887 such locations across the state. (State of Montana, n.d.).

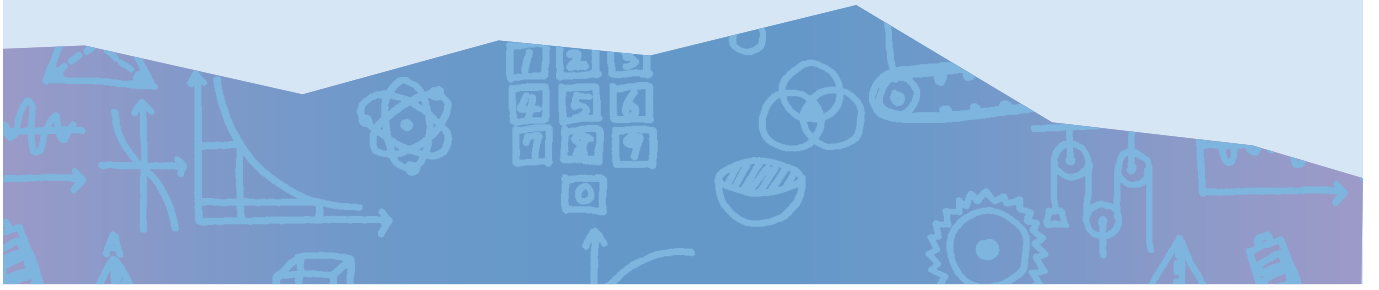
TABLE 11. How often respondents have high-speed internet access, by community size. (n = 208)

Community size	Sometimes	Always
up to 1,000	15%	85%
1,001-2,500	29%	71%
2,501-10,000	23%	77%
10,001-50,000	26%	74%
50,000+	12%	88%

No educators reported never having access to high-speed Internet. However, nearly one in five (19%) indicated that they only sometimes have access, a slight improvement from 2020, when 23% reported the same. In contrast, 88% now report always having access, up from 77% in 2020.

Digital Gatekeeping: Network Filters in K–12 Schools

Through external interactions (unrelated to this survey) with Montana educators, we have also received reports that K-12 schools frequently use network content filters that block certain online content and even entire platforms like social media (e.g., educator-focused Facebook groups). These filters may be applied both to the school network and to district-owned devices, regardless of location, in compliance with federal requirements and district policy (Federal Communications Commission, n.d.). This is an important consideration when offering online educator PD, networking opportunities, and other support.



Attitudes Toward STEM Professional Development

Descriptive statistics regarding educators' attitudes toward STEM PD are presented in Figure 4. Just under half of the respondents (49%) would be considered STEM teachers, based on their answers to the survey question about the subjects they teach. Although survey participants include any type of K-12 educators—not just those who teach STEM subjects, respondents expressed very positive attitudes toward STEM PD. Most educators either 'strongly agree' or 'agree' to the three survey questions on their attitudes toward STEM PD.

Access to STEM professional development

Educators were asked whether quality PD programs for STEM teaching, learning, and STEM integration are readily available to them. Overall, 56% agreed, while 44% disagreed or strongly disagreed. This is an increase from the 2020 survey, when only 35% of educators indicated that high-quality STEM PD was readily available.

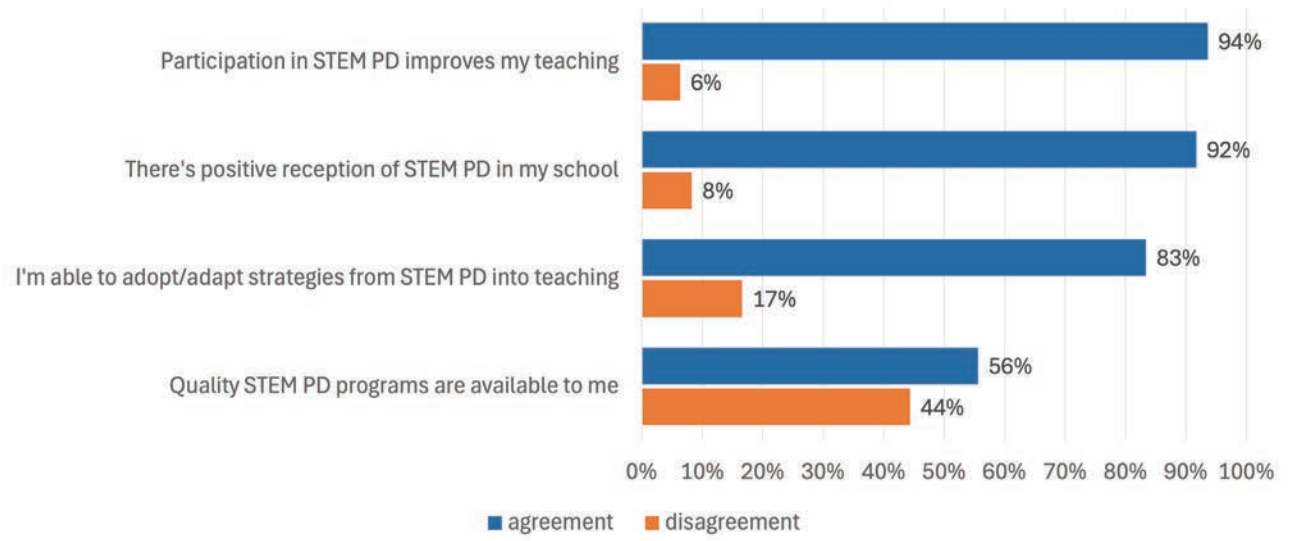
2020/2024

As noted above, while this report indicates that access to STEM PD increased by 60% compared to 2020, responses to this question highlight that there is still a gap between the positive views of such topics relative to their availability: While 94% of all educators taking the survey (not just STEM educators) agree that participation in STEM or STEM integration PD would help to improve their teaching, only 56% of educators agree or strongly agree that they have access to such PD.

TABLE 12. Perceived value and feasibility of STEM PD in teaching practice, arranged in descending order by combined 'agree' and 'strongly agree' responses. (n = 204-205)

STEM integration factor	Combined: strongly agree + agree	Strongly agree	Agree	Disagree	Strongly disagree	Combined disagree + strongly disagree
Participation in STEM PD improves my teaching	94%	46%	48%	6%	0%	6%
There's positive reception of STEM PD in my school	92%	29%	62%	8%	0%	8%
I'm able to adopt/adapt strategies from STEM PD into teaching	83%	25%	58%	14%	2%	17%
Quality STEM PD programs are available to me	56%	7%	49%	40%	4%	44%

FIGURE 4. Survey respondents' agreement with four statements regarding STEM and its integration in professional development. Blue bars represent the combined percentages of respondents who selected 'agree' or 'strongly agree' for each statement. Red bars represent the combined percentages of respondents who selected 'strongly disagree' or 'disagree' for each statement. Items are sorted in descending order by the level of agreement. Responses marked "don't know" were excluded from the analysis.



Professional Development Location and Delivery Method Preferences

Educators were asked to rate their interest in various formats for participating in PD—whether offered in person, online, or through a combination of both—assuming the content was relevant to their subject area. Descriptive statistics are provided in Table 13 and Figure 5, which indicate preferences for in-person and collaborative learning formats. The most popular modes—based on the combined percentage of respondents who were 'possibly' or 'definitely interested'—include:

- Face-to-face PD at their school
- Collaborating with other teachers in a professional learning community
- Face-to-face PD at a central location such as Billings, Bozeman, or Missoula (*See box.*)
- Participating in a hybrid model that incorporates some face-to-face time along with online follow up opportunities.

Open-ended responses indicated a preference for face-to-face interaction, hands-on learning, and peer collaboration. However, cost, travel constraints, and time limitations—especially for those in rural or remote areas—make online or hybrid formats more accessible and practical. While several educators expressed preferences for online PD (live or self-paced), one indicated the challenge with staying focused during lengthy virtual PD sessions. A few others emphasized the benefits of hybrid models, short and applicable sessions, or mentorship-based approaches.

No professional development formats received a majority of 'not interested' responses, but formats with the highest levels of disinterest were:

- Online communities and forums
- Online conferences lasting a half day or more
- Receiving mentorship from an expert teacher in their subject area*
- Self-paced online modules

*Despite nearly 40% of respondents having over 16 years of teaching experience, a significant majority of all respondents remained open to mentorship opportunities. This high level of interest suggests that even seasoned educators value continued growth through peer mentorship.

TABLE 13. Interest in various formats for participating in PD. Arranged in descending order by combined 'possibly interested' and 'definitely interested' responses. (n = 206)

Rank	PD format	Combined: possibly + definitely interested	Definitely interested	Possibly interested	Not interested
1	On-site face-to-face PD	99%	70%	29%	1%
2	Professional Learning Community	96%	61%	34%	4%
3	Travel to central PD site	92%	40%	52%	8%
4	Hybrid PD (in-person + online)	92%	35%	58%	8%
5	Short online webinars	89%	37%	52%	11%
6	Self-paced online modules	85%	45%	40%	15%
7	Subject-area mentorship	82%	45%	37%	18%
8	Online conferences	75%	27%	48%	25%
9	Online communities & forums	66%	17%	50%	34%

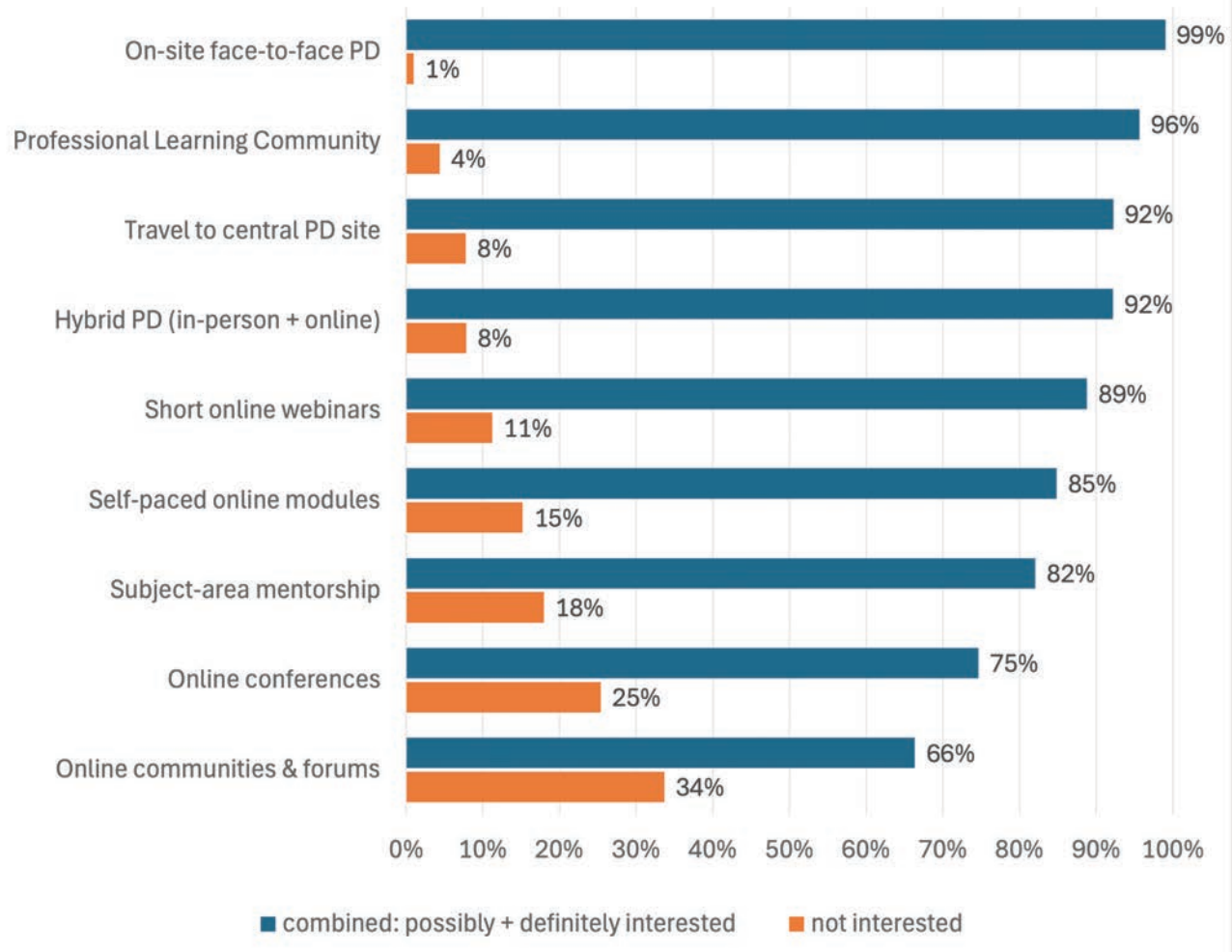
'Central' for Whom?

One participant expressed frustration with the term 'central locations' in the survey question, noting that the examples listed (Billings, Bozeman, Missoula) were distant from their area.

Another participant suggested two strategies that could alleviate such challenges:

- The Superintendent should organize and host high-quality professional development events specifically for small rural schools.
- Rural districts should be informed of and invited to participate in PD opportunities that are being hosted by larger, possibly better-resourced schools that are closer than the 'central' locations listed in the survey.

FIGURE 5. Interest in various formats for participating in PD. Arranged in descending order by combined 'possibly interested' and 'definitely interested' responses. (n = 206)



Professional Development Timing and Duration Preferences

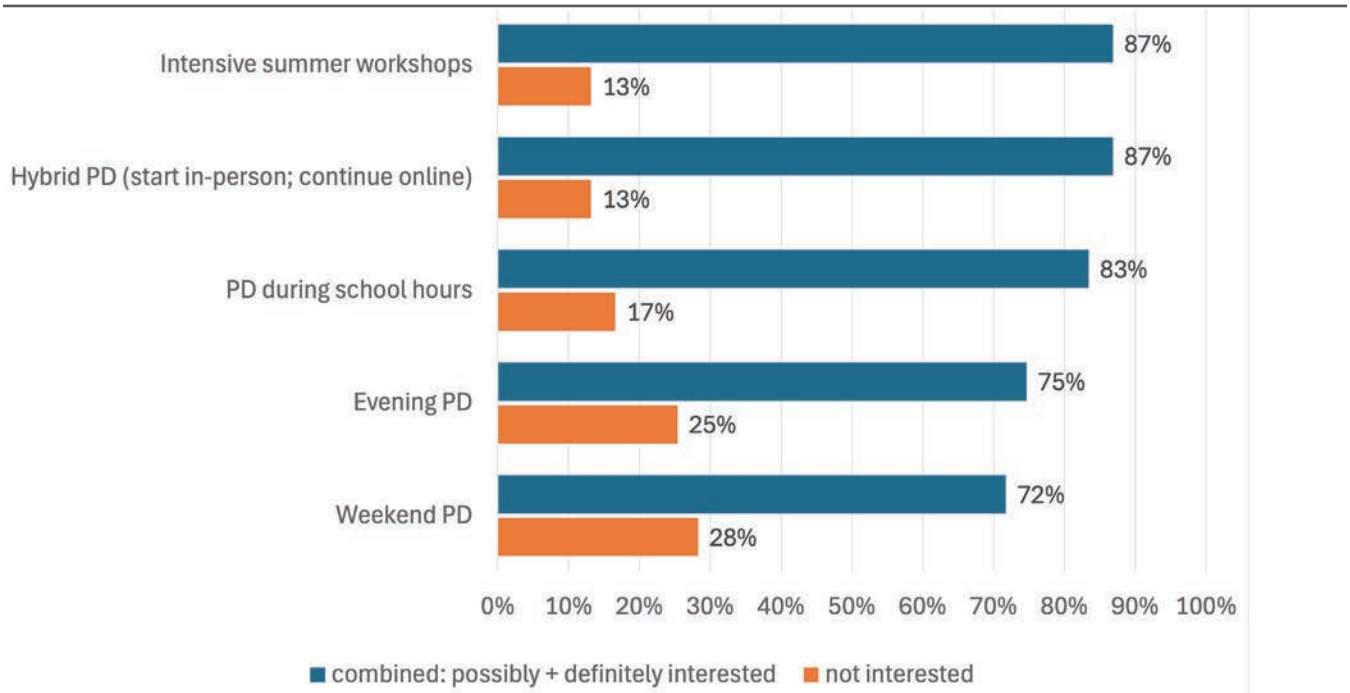
Descriptive statistics regarding PD time and duration preferences are presented in Table 14 and Figure 6. Overall, educators are most interested in intensive summer workshops of three or more days as well as initial face-to-face trainings with ongoing online meetings. The types of PD sessions that received the most 'not interested' ratings were those that occur on weekends or in the evenings, yet some said they were 'definitely interested' in weekend and/or evening trainings.

Educators provided additional comments about PD preferences that were not explicitly listed in the survey, which can be found in Appendix G. Some open-ended responses suggested that Fridays could be a viable option for schools operating on a four-day week. This model has been growing in popularity, and 31.5% of Montana schools had adopted a four-day schedule during the 2023–24 academic year (Arntzen, E. (n.d.). While attending PD sessions on Fridays would currently be impractical for most educators, this could be an avenue to explore in future surveys.

TABLE 14. Interest in timing and duration of PD. Arranged in descending order by combined 'possibly interested' and 'definitely interested' responses. 'Intensive summer workshops' was ranked higher than 'hybrid PD,' because of a higher percentage of 'definitely interested' responses. (n = 206)

Rank	PD timing option	Combined: possibly + definitely interested	Definitely interested	Possibly interested	Not interested
1	Intensive summer workshops	87%	43%	43%	13%
2	Hybrid PD (start in-person; continue online)	87%	25%	62%	13%
3	PD during school hours	83%	38%	46%	17%
4	Evening PD	75%	18%	57%	25%
5	Weekend PD	72%	19%	53%	28%

FIGURE 6. Interest in timing and duration of PD. Arranged in descending order by combined 'possibly interested' and 'definitely interested' responses. 'Intensive summer workshops' was ranked higher than 'hybrid PD,' because of a higher percentage of 'definitely interested' responses. (n = 206)



Interest in Professional Development Topics

Educators were asked to rate their interest levels in various professional development topics, and descriptive statistics are presented in Table 15.

The 2020 survey contained 26 topics, which were refined to 20 topics in 2024. In general, subject-specific topics such as 'standards for math' or 'Career and Technical Education (CTE)' tended to rank lower than more universal topics that could apply to any classroom.

A significant change reflected in the more recent survey results is the ranking of 'Montana computer science standards,' which rose from last place in 2020 (26th out of 26) to first place in 2024. This is likely due to the implementation of new Computer Science Standards, approved by the Board of Public Education (BPE) and put into effect in July 2021 (Montana Office of Public Instruction, 2021).

In open-ended responses (Appendix H), educators expressed a wide range of PD interests, emphasizing the need for flexible, relevant, and teacher-driven opportunities. Common themes included the effective use of educational technology, hands-on and inquiry-based learning, culturally responsive teaching, and support for social-emotional and trauma-informed practices. Many requested funding and time for conferences, advanced degrees, and collaborative PD formats such as peer-led sessions, coaching, and cross-grade sharing. There was an interest in microcredentialing, self-paced modules, and PD aligned with personal passions, state standards, and innovative instructional strategies.

TABLE 15. Interest in 20 PD topics, arranged in descending order by the combined 'possibly interested' and 'definitely interested' responses. (n = 197-203)

Rank	Topic	Combined: possibly + definitely interested	Definitely interested	Possibly interested	Not interested
1	Montana computer science standards	100%	55%	45%	0%
2	Place-based instructional opportunities	97%	63%	34%	3%
3	Supporting learning with ed tech	97%	61%	36%	3%
4	Instructional strategies for diverse learners	97%	61%	36%	3%
5	Local STEM industry/organization connections	96%	64%	32%	4%
6	Classroom discourse and effective collaboration	96%	51%	44%	4%
7	Integrating literacy practices with STEM learning	93%	59%	34%	7%
8	Integrating concepts within STEM	93%	57%	36%	7%
9	Linking classroom instruction to college and careers	93%	57%	36%	7%
10	Designing inquiry-based laboratory activities	90%	49%	41%	10%
11	Integrating Indian Education for All	89%	60%	29%	11%
12	Engineering design practices	88%	50%	38%	12%
13	Culturally responsive instruction	87%	49%	39%	13%
14	Montana technology integration standards	86%	39%	47%	14%
15	Developing formative assessments	86%	44%	41%	14%
16	Montana science standards	86%	52%	34%	14%
17	Social and emotional learning	85%	52%	33%	15%
18	Integrating STEM concepts in a non-STEM classroom	84%	48%	36%	16%
19	Montana career and technical education standards	83%	44%	39%	18%
20	Montana math standards	77%	43%	33%	23%

Emerging Research Topics

As this survey was conducted by a National Science Foundation-funded research project, we were curious about educators' familiarity with and interest in receiving additional resources on five research topics for which the Montana University System (MUS) research enterprise receives federal funding:

- Prescribed burning and air quality
- Artificial Intelligence and machine learning
- Quantum technologies and quantum computing
- Precision agriculture
- Geospatial skills

Note that several of these topics are listed as among the key technology focus areas of the National Science Foundation's Technology, Innovation and Partnerships (TIP) Directorate, created by the 2022 Chips and Science Act. See Appendix B.]

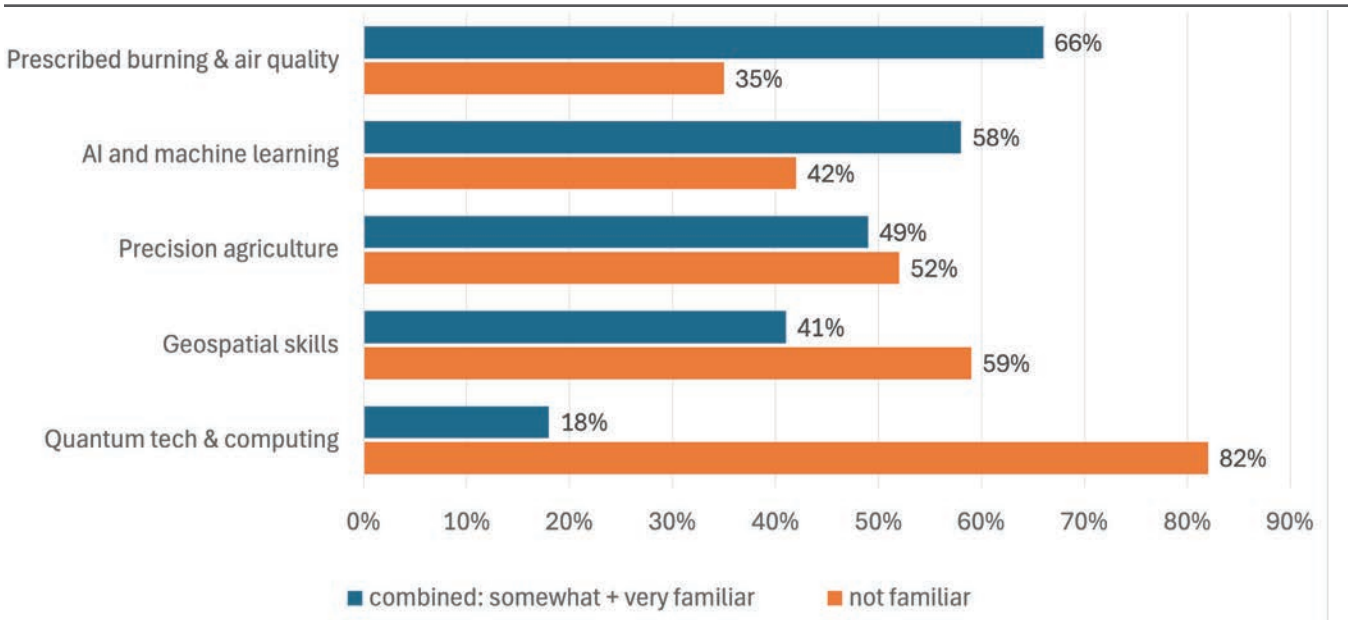
When about asked their level of familiarity with the five topics, few educators were 'very familiar' with any of the topics. 'Prescribed burning and air quality' had the most overall familiarity (65.5% 'somewhat' and 'very familiar' combined). Of these, 9.5% indicated they were 'very familiar' with the topic (Table 16 and Figure 7).

Educators were least familiar with quantum technologies and computing, with 82% reporting they were 'not familiar' with the topic, and only 2% saying they were 'very familiar.'

TABLE 16. Familiarity with educational resources or PD for five research topics for which the Montana University System receives federal funding. Arranged in descending order by combined 'somewhat familiar' and 'very familiar' responses. (n = 200)

Rank	Research topic	Combined: somewhat + very familiar	Very familiar	Somewhat familiar	Not familiar
1	Prescribed burning & air quality	66%	10%	56%	35%
2	AI and machine learning	58%	4%	54%	42%
3	Precision agriculture	49%	9%	40%	52%
4	Geospatial skills	41%	5%	36%	59%
5	Quantum tech & computing	18%	2%	16%	82%

FIGURE 7. Familiarity with educational resources or PD for five research topics for which the Montana University System receives federal funding. Arranged in descending order by combined 'somewhat familiar' and 'very familiar' responses (n=200).

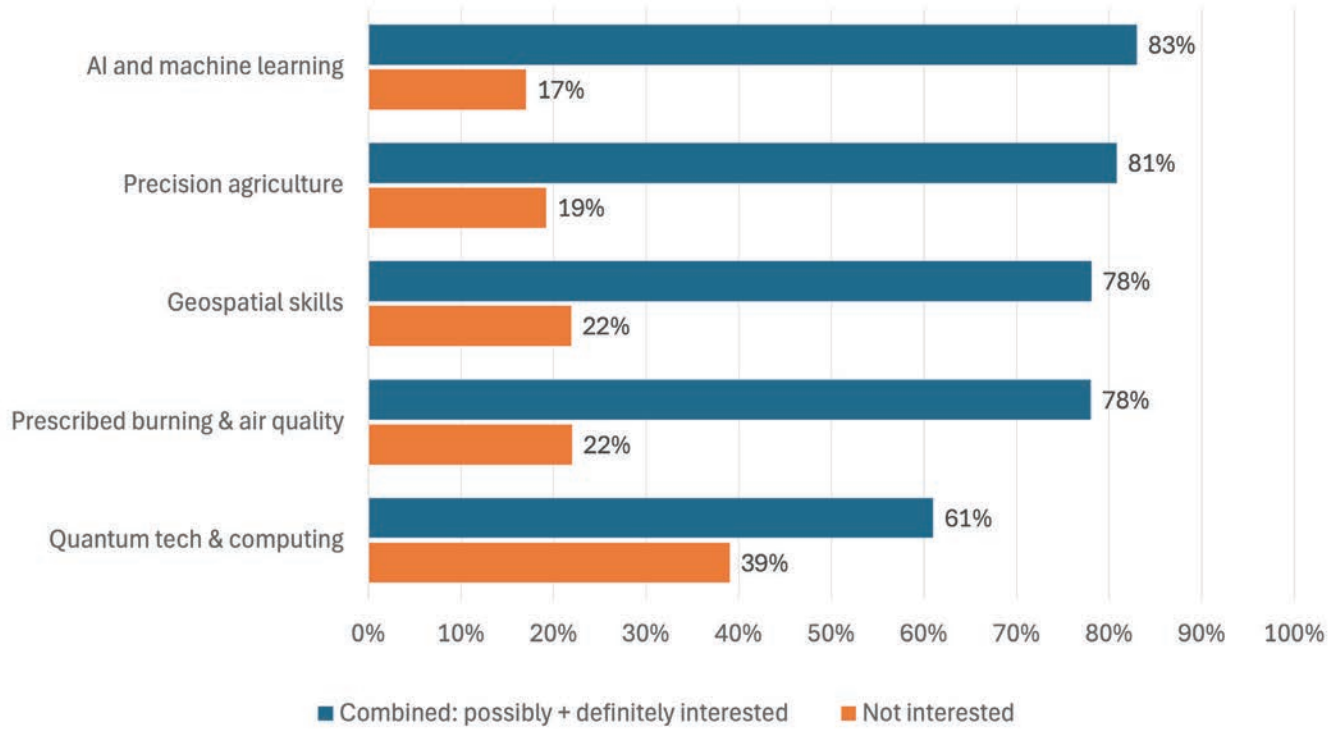


A majority of survey respondents indicated interest in all five topics, with AI and machine learning having the highest interest overall as well as the most 'definitely interested.' The topic with the least overall interest was 'quantum technologies and quantum computing,' with most of those responses in the 'possibly interested' category (Table 17 and Figure 8).

TABLE 17. Percentage distribution of educators who were 'not interested,' 'definitely interested,' or 'possibly interested,' (sorted in descending order by the combined percentages for 'possibly interested' and 'definitely interested') in educational resources or professional learning for these five topics.

Rank	Research topic	Combined: possibly + definitely interested	Definitely interested	Possibly interested	Not interested
1	AI and machine learning	83%	43%	40%	17%
2	Precision agriculture	81%	38%	43%	19%
3	Geospatial skills	78%	36%	42%	22%
4	Prescribed burning & air quality	78%	41%	37%	22%
5	Quantum tech & computing	61%	18%	43%	39%

FIGURE 8. Interest in educational resources or PD for five research topics for which the Montana University System receives federal funding. Arranged in descending order by combined 'somewhat interested' and 'very interested' responses. (n = 198-201)



Usefulness of and Interest in Data Sets and Associated Resources

Again, as this survey was conducted by a National Science Foundation-funded research project, we were curious if educators would be interested in having access to data sets prepared and used by university researchers.

Usefulness of Data Sets

The majority of respondents were either 'possibly interested' or 'definitely interested' in having access to contemporary data sets that are currently being prepared and used by university researchers (Table 18).

Of all responses expressing interest in data sets and related resources, the most valued resource was 'curated lesson plans providing examples as to how data sets can be used and how they align with Montana standards.' Other highly rated resources included 'examples demonstrating how the data sets can be used to demonstrate real-world problems' and 'professional learning workshops on how such data sets can be used in the classroom.' (Table 19). The least popular option was "just the raw data sets."

Interest in Resources Related to University Research

Educators were asked about other possibilities for connecting their classrooms to university research, and descriptive statistics on interest in these resources are presented in Table 20.

Findings suggest that researchers who wish to share their work with K-12 teachers and students could make headway by planning and budgeting for travel to schools and to share information about their data, their instruments and their processes. All these strategies could be included in Broader Impacts (BI) plans and budgets.

TABLE 18. Interest in accessing datasets currently used by university researchers. (n = 200)

Response option	Percent
Not interested	13%
Possibly interested	45%
Definitely interested	43%
Combined: possibly + definitely interested	87%

TABLE 19. Perceived usefulness of four resources related to research datasets. (n = 174)

Selected Choice	Percent
Standards-aligned lesson plans illustrating dataset applications	84%
Examples of dataset use for real-world problems	74%
PD on classroom use of datasets	72%
Just the raw data sets	27%

TABLE 20. Interest in four resources or PD opportunities regarding university research, arranged in descending order by combined 'possibly interested' and 'definitely interested' responses. (n = 199)

Item	Combined: possibly + definitely interested	Definitely interested	Possibly interested	Not interested
University researchers visit schools to share research with students	90%	50%	40%	10%
PD on data collection, cleaning, and visualization	84%	45%	39%	16%
PD on university research processes	81%	36%	45%	20%
PD on research instrument design, manufacture, and testing	83%	35%	48%	18%

Discussion and Implications

This Montana Educator Needs Assessment provides a comprehensive view of the professional development (PD) landscape across the state, revealing both persistent challenges and promising opportunities. The findings address the report's primary goals by examining access, preferences, and participation in PD, and its secondary goals by exploring educator interest in university research and emerging STEM topics.

Access to Professional Development

While most educators reported participating in PD, barriers such as cost, time, and travel remain significant. These findings suggest that logistical and financial constraints continue to disproportionately affect educators in rural and remote areas, limiting their ability to engage in high-quality PD. The lack of substitute teachers—newly added to the 2024 survey—emerged as the most frequently cited obstacle, surpassing even funding concerns.

Technology Access and Online Delivery

Access to high-speed internet has improved slightly since 2020, with 81% of educators reporting they "always" have access. However, nearly one in five still only "sometimes" has reliable connectivity. Additionally, content filters imposed by districts may block access to certain platforms or resources, even outside of school hours. These constraints must be considered when designing online PD, especially for educators in geographically isolated or resource-limited settings.

STEM Interest Across All Subjects

Educators across all grade levels and subject areas expressed strong interest in STEM-related PD. Nearly half of respondents identified as STEM teachers, and most showed interest in STEM integration. However, only a little over half agreed that quality STEM PD is readily available, indicating a gap between interest and access. This gap demonstrates a need for increasing accessible STEM PD offerings given the high levels of interest in STEM integration and its perceived benefits for teaching and learning.

PD Format and Timing Preferences

Survey results show a stronger preference for face-to-face PD at educators' own schools or regional hubs, as well as collaborative learning communities. Hybrid models that combine in-person sessions with online follow-up were also favored. In contrast, evening and weekend PD formats were less popular, with several educators citing burnout and scheduling conflicts. Timing preferences leaned toward summer workshops and PD during school hours.

Emerging Research Topics and Data Resources

Educators showed strong interest in connecting their classrooms with university research, particularly in areas aligned with Montana NSF EPSCoR's current research thrusts—such as prescribed fire, artificial intelligence, and geospatial technologies. Interest in using authentic research data sets remains high, with 87% of educators expressing a desire to access curated, classroom-ready resources. This mirrors 2020 findings and reinforces the need for researchers to work with education specialists to offer lesson plans, real-world applications, and professional learning opportunities that make data accessible and meaningful for K–12 classrooms.

Regarding emerging topics, quantum technologies and quantum computing had the lowest levels of both familiarity and interest among Montana educators. In contrast, artificial intelligence—which also had low familiarity—generated higher interest, possibly due to clearer connections to real-world applications and student learning. These findings underscore the importance of providing accessible entry points and contextualized resources when introducing unfamiliar STEM content to educators.

Connecting Educators with University Research

Educators were most interested in having university researchers visit their schools to interact directly with students. Additionally, educators expressed enthusiasm for PD focused on how scientists collect, clean, and use data; the research process itself; and the design and testing of research instruments. These findings suggest that researchers can make meaningful connections with educators by budgeting for travel and outreach in their Broader Impacts (BI) and outreach plans.

Implications for Stakeholders

These findings have direct implications for PD providers, university researchers, and state agencies:

- **PD providers** should prioritize hybrid and in-school formats, offer subject-specific content, and reduce barriers related to cost and substitute coverage.
- **University researchers** can enhance broader impacts by working with education professionals to offer standards-aligned resources and engaging directly with educators through school visits and workshops.
- **State agencies** and funders may consider targeted investments in infrastructure, travel subsidies, and mentorship programs to support equitable access to PD across Montana.

In summary, the 2024 survey data provide a roadmap for improving professional development in Montana: one that is responsive to educator needs, grounded in research, and designed to overcome systemic barriers.

Conclusion and Recommendations

This report presents an overview of Montana educators' professional development (PD) needs, preferences, and barriers. It highlights strong interest in STEM PD by teachers across all subject areas, enthusiasm for connecting with university research, and a desire for PD that is relevant, accessible, and collaborative. Importantly, it also illuminates the systemic challenges that educators face when trying to engage in PD—particularly those related to time, remoteness, and cost.

Key Challenges

Educators identified three primary barriers to PD participation:

1. **Time constraints,** including limited release time and scheduling conflicts.
2. **Remoteness,** especially in rural districts where travel to PD events is costly and time-consuming.
3. **Cost,** including out-of-pocket expenses and the financial burden of securing substitute teachers.

The shortage of substitute teachers was a major obstacle, particularly among educators in rural and remote areas. Many respondents described the difficulty of preparing for absences, the lack of available subs, and the added stress of leaving the classroom. These logistical challenges often make even subsidized, high-quality PD inaccessible.

Educator Preferences

Despite these barriers, educators expressed clear preferences for PD formats and timing:

- **Face-to-face PD** at their own schools or regional hubs was most preferred.
- **Hybrid models**—starting with in-person sessions and continuing online—were seen as a practical compromise.
- **Summer workshops** and PD during school hours were favored over evenings and weekends.
- **Collaborative learning** with colleagues was highly valued, both during and after PD sessions.

Educators also voiced concerns about the relevance and quality of PD offerings. Some noted that subjects like math and science are underrepresented, and that available PD often feels outdated or disconnected from classroom realities.

Interest in University Research

Educators showed strong interest in connecting with Montana's research enterprise, especially in areas like prescribed burning and air quality, AI and machine learning, and precision agriculture. While familiarity with emerging topics such as quantum computing remains low, interest in learning more is high. Teachers expressed a desire for:

- School visits from university researchers.
- PD on how scientists collect, clean, and use data.
- Resources that demonstrate real-world applications of research.

Notably, educators overwhelmingly preferred curated lesson plans and examples over raw datasets, emphasizing the need for classroom-ready materials aligned with Montana standards.

Recommendations

To address these findings, we recommend the following actions:

1. **Reduce logistical barriers** by subsidizing travel, substitute coverage, and registration costs—especially for rural educators. Whenever possible, offer teachers a stipend for participating in PD.
2. **Expand hybrid PD models** that begin with in-person engagement and continue online, allowing for sustained learning and collaboration. Keep virtual sessions interactive with breakout discussions and activities, and offer short, self-paced modules for educators needing flexible options.
3. **Develop standards-aligned resources t**hat translate university research into practical classroom tools, including lesson plans and real-world data applications.
4. **Support mentorship and peer learning** by fostering professional learning communities and encouraging collaborative PD experiences. When possible, support educators in sharing PD content more broadly with colleagues.
5. **Consult educators directly** to tailor PD offerings to local needs, preferred formats, and subject-specific gaps. When possible, combine science content with other subjects such as math or English Language Arts (ELA).
6. **Leverage Broader Impacts plans** in grant-funded research to include educator outreach, school visits, and resource development.
7. **Explore PD options with four-day week schools** to see how this growing format affects educators' preferences for, access to, and engagement with PD.

Final Thoughts

Montana's educators desire to grow professionally and connect with cutting-edge research, but they need support to do so. By listening to their voices and responding with flexible, well-supported opportunities, stakeholders across the state can help ensure that PD is not only available—but impactful, equitable, and inspiring.

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APPENDIX A - RELEVANT ELEMENTS OF MONTANA NSF EPSCOR STRATEGIC PLAN

Relevant elements of Montana NSF EPSCoR RII Track-1 strategic plan

SECTION 2: BROADER IMPACTS

SMART FIRES will transform wildfire and smoke mitigation strategies by firmly rooting the science of prescribed fire in validated data and predictive models. SMART FIRES builds capacity by forging ties between researchers in environmental science, remote sensing, optical engineering, AI, and social science. Activities will span institutions across the Montana University System (MUS) and include participants from Montana's R1 universities, 4- and 2-year colleges and Tribal Colleges. Research activities including internships, collaborative projects and extramural partnerships will create a skilled workforce capable of leading multidisciplinary projects and of communicating the rationale, benefits and risks associated with prescribed fire to the public. SMART FIRES provides participants with economic development opportunities by leveraging existing ties between SMART FIRES researchers and robust and growing optics and remote sensing industries in Montana. Seed projects specifically dedicated to supporting STEM education at Montana's Tribal Colleges will broaden participation in SMART FIRES-related project activities, and a separate seed project program will ensure that researchers at all MUS institutions and Tribal Colleges will be able to propose ideas that expand and deepen our understanding of prescribed fire. SMART FIRES strengthens Montana's research and economic competitiveness, develops and mentors a new workforce trained in the science and impact of prescribed fire, and creates pathways to bring the results and consequences of academic discoveries into the hands of those professionals charged with managing public and private lands across the jurisdiction.

GOAL 2.1: EDUCATION AND WORKFORCE DEVELOPMENT (WFD)

Education and workforce development in prescribed fire science is critical: at a time when prescribed fire is becoming a preferred means of improving the health and resilience of forests and grasslands, the practice has also come under scrutiny because of recent incidents where prescribed fires escaped containment leading to catastrophic, uncontrolled wildfire. As a state with both heavy timber and prairie ecosystems as well as complex topography, Montana needs more people who know how emerging technologies can be used to improve decision making about when, where, and for how long prescribed fire can be applied to maximize environmental benefit and minimize impacts on local communities.

SMART FIRES will meet this call to action with a statewide effort to mentor and train professionals qualified in all integrated elements of prescribed fire science. An additional project priority is to improve scientific literacy about the practices and consequences of prescribed fire at the K-12 level. SMART FIRES' education and workforce development plans focus on three specific goals: 1) training and mentoring of faculty, postdoctoral research associates, and students to improve research competitiveness within the MUS; 2) workforce development that strengthens ties between university researchers and the stakeholders who make decisions about when and where to authorize prescribed fire events; and 3) statewide education focused on K-12 teachers and students, providing resources and training about prescribed fire and how advances in technology can be used to make data-informed decisions about land management. Outcomes include strong and lasting ties between colleagues at Montana's 2- and 4-year institutions and Tribal Colleges as well as professional relationships with state and federal agencies responsible for making prescribed fire decisions in Montana. Our work with the state's K-12 and out-of-school-time educators will build a cadre of teachers trained in project science who can better prepare students to pursue STEM degrees.

Activity 2.1.3.a1 centers on gathering and analyzing baseline data about K–12 educators and compiling a comprehensive inventory of relevant resources. This includes revising the 2020 Educator Needs Assessment (ENA) to reflect post-COVID challenges and trends, disseminating updated 2024 ENA data to stakeholders, and revisiting these findings annually from Years 3 to 5 to inform ongoing project efforts.

Activity 2.1.3.a3 focuses on developing educational materials and delivering professional development trainings. A training plan is created using the baseline data and existing networks. Each year from Years 2 to 5, spectrUM Discovery Area at the University of Montana and Science Math Resource Center at Montana State University facilitate educator trainings on research topics related to the project, reaching ten educators annually through each organization.

APPENDIX B - NSF Key Emerging Technology Areas

The CHIPS and Science Act in 2022 was designed to increase US competitiveness in critical and emerging technologies. The Act created a new directorate in the National Science Foundation called Technology, Innovations and Partnerships (TIP), which is charged with making investments in use-inspired and translational research with the goal of securing U.S. competitiveness in the key technology focus areas outlined below (source: https://www.nsf.gov/focus-areas/technology).

- Advanced Manufacturing
- Advanced Materials
- Artificial Intelligence
- Biotechnology
- Communications and Wireless
- Cyberinfrastructure and Advanced Computing
- Cybersecurity
- Disaster Risk and Resilience
- Energy Technology
- Quantum Information Science
- Semiconductors and Microelectronics

APPENDIX C - SURVEY QUESTIONS

2024 Montana Teacher Professional Learning Survey

Teaching Experience Overview

Reporting only on your current teaching assignment, which subject(s) do you teach? *(Please select all that apply. If you teach elementary education with a specific focus such as math or art, please check both Elementary education and the other topic.)*

- Arts (fine arts, visual arts, music, etc.)
- Career/technical
- Computer science
- Elementary education
- Engineering
- English language arts
- Health enhancement
- Mathematics
- Science
- Social studies/history
- Special education
- Technology
- Any other subject(s)

Which grade level(s) do you teach? *(Please select all that apply.)*

- K-2
- 3-5
- 6-8
- 9-12

Including this school year, how many years have you taught at the K-12 level?

- ☐ 0-2 years
- ☐ 3-5 years
- ☐ 6-10 years
- ☐ 11-15 years
- ☐ 16-20 years
- ☐ Over 20 years

Professional Learning Hours

For purposes of this survey, professional learning or professional development is defined as any organized activity for the purpose of learning techniques to improve your teaching practice or student learning.

Approximately how many hours of professional learning have you participated in during the past 12 months?

- ☐ 0 hours
- ☐ 1-2 hours
- ☐ 3-10 hours
- ☐ 11-20 hours
- ☐ 21-40 hours
- ☐ More than 40 hours

Approximately what percentage of these professional learning hours were online?

- ☐ None or almost none
- ☐ About one-quarter
- ☐ About half
- ☐ About three-quarters
- ☐ All or almost all

Approximately what percentage of these professional learning hours were required by your school?

- ☐ None or almost none
- ☐ About one-quarter
- ☐ About half
- ☐ About three-quarters
- ☐ All or almost all

Approximately what percentage of these professional learning hours emphasized science, technology, engineering, and mathematics (STEM)?

- ☐ None or almost none
- ☐ About one-quarter
- ☐ About half
- ☐ About three-quarters
- ☐ All or almost all

School Site & District

About how many people live in the town where your school is located?

- ☐ 0 - 1,000
- ☐ 1,001 - 2,500
- ☐ 2,501 - 10,000
- ☐ 10,001 - 50,000
- ☐ More than 50,000
- ☐ Don't know

Please indicate the region in which your school district is located (see map above).

- ☐ Region I (East Montana)
- ☐ Region II (North Central Montana)
- ☐ Region III (South Central Montana)
- ☐ Region IV (Southwest Montana)
- ☐ Region V (Northwest Montana)

How far is your school district from the nearest college or university of any type?

- ☐ Less than 20 miles
- ☐ 21-50 miles
- ☐ 51-100 miles
- ☐ More than 100 miles
- ☐ Don't know

In your school building, how often is reliable access to high-speed internet for viewing videos, streaming content, or participating in web conferences (e.g., Zoom) available?

- ☐ Always
- ☐ Sometimes
- ☐ Never
- ☐ Don't know

Please indicate whether each of the following is a strength, weakness, or neither in your school district in terms of contributing to high-quality professional development.

(❑ Strength ❑ Neither/Unsure ❑ Weakness)
School/organizational climate ❑ ❑ ❑
Administrator support ❑ ❑ ❑
Parent teacher association support ❑ ❑ ❑
Experienced and supportive colleagues ❑ ❑ ❑
Release time ❑ ❑ ❑
Technology ❑ ❑ ❑
Learning resources (books, materials for labs, etc.) ❑ ❑ ❑
Funding for professional learning ❑ ❑ ❑
Size of school/district ❑ ❑ ❑
Availability of substitute teachers ❑ ❑ ❑
Travel distances ❑ ❑ ❑

Please share any other strengths or weaknesses that might contribute to high-quality professional development in your school district. _____

Please indicate your level of agreement or disagreement with each of the following statements about potential barriers to your own personal ability to participate in high-quality professional development.

Not having enough time off from work is a barrier.

- ☐ Strongly agree
- ☐ Agree
- ☐ Disagree
- ☐ Strongly disagree

Having to pay out of pocket to attend is a barrier.

- ☐ Strongly agree
- ☐ Agree
- ☐ Disagree
- ☐ Strongly disagree

Family obligations are a barrier.

- ☐ Strongly agree
- ☐ Agree
- ☐ Disagree
- ☐ Strongly disagree

Are there any other barriers to your participation in professional learning? Please describe. _____

Professional Learning Preferences

Please select your level of agreement with each of the following statements.

Quality professional development programs for STEM teaching and learning and STEM integration are readily available to me.

- ☐ Strongly agree
- ☐ Agree
- ☐ Disagree
- ☐ Strongly disagree

I am able to adopt or adapt strategies learned from STEM or STEM integration professional development into my teaching practice.

- ☐ Strongly agree
- ☐ Agree
- ☐ Disagree
- ☐ Strongly disagree

My participation in STEM or STEM integration professional development would help to improve my teaching.

- ☐ Strongly agree
- ☐ Agree
- ☐ Disagree

Strongly disagree

Professional development focused on STEM or STEM integration would be received positively within my school.

- ☐ Strongly agree
- ☐ Agree
- ☐ Disagree
- ☐ Strongly disagree

Preferred Modes of Professional Learning

There are a variety of on-site, off-site, and virtual ways to participate in professional learning. Assuming the subject matter is relevant to you, to what extent would you be interested in participating in the following modes of professional learning?

Attending face-to-face programs offered at my school site

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Collaborating with other teachers in my school or district in a Professional Learning Community

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Traveling to face-to-face programs offered at a central location (e.g., Billings, Bozeman, Missoula, etc.)

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Receiving mentorship from an expert teacher in my subject area

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Attending online webinars (1-2 hours)

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Participating in online conferences (half day or more)

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Completing online, self-paced learning modules

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Using online communities and forums such as discussion boards, wikis, and/or blogs

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Participating in a hybrid model that incorporates some face-to-face time along with online follow-up opportunities

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Do you have any comments or suggestions on the format of professional learning that works best for you? _____

Timing Format for Professional Learning

Timing is often a factor when deciding whether to attend a professional learning session. Assuming the subject matter is relevant to you and the location is convenient, to what extent would you be interested in participating in professional learning delivered in the following ways?

Training or workshops during school hours

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Training or workshops in the evenings

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Weekend training or workshops

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Intensive summer workshops (3+ days)

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Initial face-to-face training with ongoing online meetings

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Please add any other comments you might wish to share about your professional learning preferences, especially any specific days/times/seasons that work well for you. _____

Interest in Professional Learning Topics

Based on your current teaching assignment, how interested would you be in participating in professional learning focused on each of the following topics?

Designing inquiry-based laboratory activities

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Engineering design practices

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Developing formative assessments

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Classroom discourse and effective collaboration

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Instructional strategies for meeting the needs of diverse learners

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Integrating literacy practices with STEM learning

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Integrating STEM concepts in a non-STEM classroom

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Integrating concepts within STEM (e.g., science and math)

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Integrating Indian Education for All in the classroom

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Connections in my community/region to STEM-related industries and organizations

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Place-based instructional opportunities (e.g., inquiry projects related to local/regional issues in the real world)

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Linking classroom instruction to college and careers

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Social and emotional learning

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Culturally responsive instruction (including all aspects of students' culture)

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Montana career and technical education standards

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Montana computer science standards

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Montana math standards

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Montana science standards

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Montana technology integration standards

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Effective use of educational technologies to support student learning

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Please enter any additional comments about professional learning interests. _____

Resources or Professional Learning Interests by Topic

Assuming they are appropriate for your grade level, how interested would you be in receiving educational resources or professional learning related to the following topics?

Prescribed burning and air quality

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Artificial intelligence and machine learning

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Quantum technologies and quantum computing

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Precision agriculture

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Geospatial skills

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Topic Familiarity

What is your current level of familiarity with the following topics?

Prescribed burning and air quality

- ☐ Very familiar
- ☐ Somewhat familiar
- ☐ Not familiar

Artificial intelligence and machine learning

- ☐ Very familiar
- ☐ Somewhat familiar
- ☐ Not familiar

Quantum technologies and quantum computing

- ☐ Very familiar
- ☐ Somewhat familiar
- ☐ Not familiar

Precision agriculture

- ☐ Very familiar
- ☐ Somewhat familiar
- ☐ Not familiar

Geospatial skills

- ☐ Very familiar
- ☐ Somewhat familiar
- ☐ Not familiar

Connections to Montana University Researchers & Data

Based on your current teaching assignment, how interested are you in having access to data sets that are currently being prepared and used by university researchers?

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Which of the following would you find most useful? (Please select all that apply.)

- Just the raw data sets
- Examples demonstrating how the data sets can be used to demonstrate real-world problems
- Curated lesson plans providing examples as to how the data sets can be used and how they align with Montana standards
- Professional learning workshops on how such data sets can be used in the classroom

Based on your current teaching assignment, please indicate your level of interest in the following resources or professional learning opportunities.

University researchers travel to my school to interact directly with students regarding the research they are conducting

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Professional learning focused on how scientists collect, clean, visualize, and use data

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Professional learning focused on the research process utilized by university researchers

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Professional learning focused on the design, manufacture, and testing of research instruments

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Do you wish to be entered into a drawing to win one of four $100 Amazon Gift Cards or one of 20 $25 gift cards? If you select yes, you will be redirected to a separate drawing survey to collect your contact information. Your responses to this survey will not be connected to your entry in the drawing.

- ☐ Definitely interested
- ☐ Possibly interested
- ☐ Not interested

Appendix D – STRENGTHS & WEAKNESSES Select Open-ended Question Responses

Clarifications are provided in brackets by the report authors to enhance understanding of the comments

Question: Please share any other strengths or weaknesses that might contribute to high-quality professional development in your school district.

There is support for any professional development that teachers want to go to outside of our school year. The district has the budget to pay for it if the teachers push the paperwork through.

We have had to work to get PD days put into our calendar. Also, finding funding for PD is a major issue.

Our school district's focus is on reading and math. Science comes last and many are not given time for it except for reading science articles. It is a sad barrier.

I feel that there is a lack of choice for professional development. Often the pd is something that the district has selected, but does not necessarily relate directly to my content area. There have been professional development opportunities that I am willing to attend during my personal time (summer), but I am not willing to pay for. The district does not fund these opportunities.

Our district has purchased an online computer-based science curriculum that completely removes all hands-on labs and activities from the classroom. This is happening in large districts across the state. We need support and professional development for our admin and curriculum directors about how destructive these types of curriculum materials are for students!!!!!

Rural school where teachers are left to do what they think is best.

Our district is extremely fortunate to have a vast amount of funding for professional development. Furthermore, our administrator is always supportive if we come to her with a professional development opportunity that we would like to partake in. She always says yes, never questions the amount, and assists with finding coverage (if necessary) to make it happen.

more access and money for rural teachers to attend conferences in subject areas

Funding for resources and materials is the biggest weakness in all subject areas for our district. I would include increasing class sizes due to staffing cuts in this category too.

PD offered is poorly suited to individual teacher needs, PD is not offered frequently

High-quality educators who realize that educator efficacy needs to be a holistic goal and not just something that a few do would make professional development meaningful.

communication to teaching staff as to what professional development is available. I don't know how to find what's available.

The biggest weakness is getting parents invested in their child's education and encouraging them to come to school. Plus the lack of reliable substitute teachers.

Cost of travel and stay because we live so far away from everything

Enforcement of the student handbook would help immensely in classroom control.

My school district is very connected to ACE [The Alliance for Curriculum Enhancement, a Montana-based professional development organization] for professional learning, so we are very active in the opportunities provided by ACE.

MSSA [Montana Small Schools Alliance] and/or OPI [Montana Office of Public Instruction} and other sources sending information about PD opportunities.

Time

Having moved from Washington state six years ago, I felt like I went back in time about a decade when I came to MT. I think in my district current best practices, research, and implementation of vertically and horizontally standards-aligned curriculum are a weakness. While we've made progress, it is still an issue across the district.

Over the past 6 years I have attended several professional developments that are STEM based. However, these are always geared towards elementary, even if they say they are k-8. I do not feel that I have the support or resources to give my middle/high school students the projects and applications of upper level mathematics. This causes the constant fight of "when are we going to use this". I show examples and give explanations but students hardly ever believe that math is truly in everything.

Top-down requirements take up all the time

Weakness: professional development is sometimes disorganized and ineffective because of the wide range of grade levels and content areas.

Struggling to survive low enrollment and no housing; professional development becomes a low priority

Lack of subject specific affected by the district. I look to SEPA programs. [Science Education Partnership Award – a National Institute of Health program]

Workload is an issue. It is hard to take time off during school hours and it is hard to make time outside of school hours.

As a larger community/district in Montana our local options are fairly robust and varied however we are still challenged by travel distance and expense to any events/options outside our immediate community and a state or national level

My school district does not offer any professional development. All that we do must be sought out.

Weaknesses that could be improved include sub-coverage and dedicated funding for individual teacher professional development.

(continued on next page)

I like to learn lessons that directly relate to my teaching. I am sick of being forced to attend PD that relates to people's feelings. Sounds mean, but that is not going to help me teach required national standards.

Teachers have a lot of "required" PD and often don't want to go "above and beyond" those hours for additional training.

We have high quality reading professional development. Math and science have not been prioritized.

The district values professional development and invests heavily in it.

The same course offerings are often offered from year to year. After 11 years it is becoming difficult to find one's that I have not done.

The best PD I have had over the years has been colleague driven. Every teacher in the building has their own niche and has something to add to the professional environment.

Don't ask what we want or what works

Weaknesses would be that we are very rural and not many new or experienced educators want to move to the community. Our pay scale is lacking also. We are a long distance from anywhere. Strengths would be the small class sizes, and ability to communicate with parents.

The School District and admin are open for any suggestions for the benefits of the faculty and staff especially our kids/students. Everyone is approachable and you can easily communicate with the admin including the faculty and staff.

I believe admin should target areas of needs and have teachers take training in those areas. I worked in another state and our principal chose areas we were lacking and required a certain amount of hours in that area. The rest were up to us to decide what we wanted to take.

Lack of subs and extreme distance are the main issues

The isolation of the school district is definitely a weakness. The prairie view curriculum consortium that we belong to is a strength because they are always sending out ideas.

When I have done the most inspiring, high-quality, useful PD I have felt like I am alone on a rocketship. We should have the opportunity to share PD learning amongst teachers and then built-in avenues for implementation.

Have a pretty even split of newer teachers and veteran teachers.

I feel like since COVID our district has switched to more of a focus on programs rather than developing good curriculum. It feels like there is less time for STEM, innovation now with all of the mandated programs we have which is very frustrating. I understand the need to have common materials at a point, but these programs take time away from our science and social studies.

People are less willing to change and learn new things after being in education for a certain amount of time. The same types of PD's get offered every year

To turn a weakness into a strength would be to have the Superintendent host all of the small rural schools for a quality profess Development. In addition send the rural districts PD opportunities that larger area schools will be hosting.

Being the largest districts in the state there are many professional development opportunities.

I seek out professional development that is free to me. There is professional development that is offered in my school but I like to seek out other opportunities because I find that meeting with other individuals not in my school district I generate ideas they use in my own classroom.

no longer a yearly requirement but still have to get 60 every 5 years to keep license. As an ag teacher I can really only go to ag themed PD for it to relate to me. Luckily we have lots of those.

Honestly, I have found the best type of professional development is when we are able to travel far enough away from our responsibilities in the classroom to fill our cup.

I answered "unsure/neither" on many of the questions because it seems the only type of PD the district supports is that which is offered by the district. Those days are usually pre-determined by district administrators, with no input from teachers. If teachers want to pursue any PD experiences on their own, they must do it on their own time with their own funds, and there is no reporting to the district. I'm happy to explain this answer further. :)

Experienced teachers are helpful but if not asked no help is given willingly. Administrators are alway changing and not very helpful or nice.

We have community resources such as the local museum that could be utilized more.

Subject area content of professional development is a weakness in our district. The focus seems to centralize on English and related topics. While our district is fully supportive of us traveling to other places for content-specific PD, it's never offered locally for career/tech subjects.

Very high quality stem science projects done in real time + hands on student friendly experience.

I think each district needs to survey teachers in order to find what needs should be met. Some require extra support while others want new ideas. I also believe the restraints imposed by our governmental leaders plays a major role. Education has some many cooks in the kitchen that never step foot into a classroom. I do love that fellow teachers work together to meet the needs of our students.

The superintendent doesn't value staff.

We are so isolated it is hard to get professional development to our school. Most people fly into Billings and then 5 hours to get here. Not many people want to do that.

Eager staff and supportive school board are strengths. Poor local schools create a weakness.

I think we need more days as a district that are set aside specifically for high-quality PD.

There's no real emphasis on professional development. Those of us that pursue it, do so because we know it makes us better teachers.

A strength would be an availability to complete online

Staff like to learn and improve. Individually we will seek out different trainings and share what we've learned with the rest of the staff. This year had more troubles than usual with a poor leadership and loss of grants.

Support of the administration in the professional development is limited. We are not given time to be send to be in person training even once a year.

Our district focuses entirely on reading. It would be nice to be able to focus on something else.

Funding is hard because we live so far from anywhere

APPENDIX E – BARRIERS
Select Open-Ended Responses

Clarifications are provided in brackets by the report authors to enhance understanding of the comments

Question Text: Are there any other barriers to your participation in professional learning? Please describe.

In STEM fields, besides the science sectionals at MEA and this STEM conference, there isn't much going on in Montana and we have to travel large distances. [The MEA – Montana Educators' Association annual PD conference is now led by the Montana Federation of Public Employees – MFPE]
Having to pay for subs, cost of professional development event, and hotel if needed.
Money is my number one reason for not doing more professional development.
My district is MUCH more likely to support us attending professional development if the cost of the substitute teachers are covered.
Knowledge of opportunities out there. Sometimes I don't know about them until after they are over.
Not being able to find high quality training.
Certain training is only offered through travel - no online option available.
I try my best to keep my work life and home life separate, so PD during my free time is not usually something I look forward to.
sub coverage and money to attend in the summer and pay for travel expenses
Lack of motivation to put more personal time into this career that doesn't pay a livable wage
Unsupportive administration and having few subs available.
Not offering professional development opportunities that include an option to attain CEU's.
Access to applicable professional learning
Time is the main factor. Feeling obligation to be in the classroom is another barrier to professional learning during the school year.
No other barriers, time and money are the biggest ones.
Many of them are the same days/times as one another or are offered during the school day. Have no subs available, so need to have on days off.
Location
Lack of availability of the kind I need most: technology / specific applications training
Organizing quality sub plans for students in order to take time off.
Not enough relevant in person professional development nearby.
Travel distance.
distance needed to travel to get quality professional learning.
Incentives to continue professional development.
Health issues. I cannot drive myself to out-of-town conferences.
Continued support and networking after professional learning.
Having PD approved.
Complicated process to get approval from the district for "credit" for PD outside of what is offered by the district.
Knowing about events

(continued on next page)

Appendix E – Barriers Select Open-Ended Responses

The biggest barrier is money for the professional development and for the travel.

Quality professional learning often requires travel. Between hotels, meals, etc. It becomes very cost prohibitive.

Time.

Travel. Information on where to find PD sent out from OPI or from a district curriculum director.

Substitute if the training isn't in the summer

Finding a substitute to take our classes and the amount of time it takes to prepare for sub.

I think that these opportunities should not only be free, but teachers should also be paid for their time and effort.

The distance for the school to the venues of workshop and seminars.

Quality offerings

Distance traveling

Content not related to my subject area

I have a hard time going to things because I don't know any of the other teachers and I am the only science teacher at my school. Plus the other teachers are more experienced so they don't ever want to go to the same sort of professional development as me.

Distance to high quality, STEM conferences.

Due to the location of our school, travel is a huge factor when deciding on professional learning. Opportunities that are virtual are a much appreciated and optimal choice for us.

Just fitting it in the schedule ;-)

Not getting paid to take PD. The expectation of our time without compensation.

School year timing (when in the school year it is offered AND having notice of the PD early enough to ask for permissions to attend, pay, etc. usually PD does not give us enough heads up for all the approvals needed or is past our March budget deadline).

Convincing administrators that it is important and necessary, and not just something that needs to be done on our own time.

Not having team meetings for small schools to collaborate with other small schools.

Often held after school 4pm-8pm, so very difficult to want to do after a work day

Distance

As an agricultural education teacher, I am out of the classroom a lot with my CTSO (FFA) being gone for my own professional development on top of my absences for my students is a challenge. [Career and Technical Student Organization]

I think the fact that it feels disconnected to our role within the district.

As a new teacher there wasn't a very good mentoring program to help me figured out my first year smoothly. I was left figuring out things on my own most times.

The district has to pre approve professional development in order for it to count as your hours.

Again the isolation of my school.

Virtual is more achievable than in person due to rural location.

The cost and childcare can be a barrier for younger teachers

Availability of topics that I feel pertain to my teaching.

I spend a lot of time teaching driver's ed outside of school hours.

A lot of professional development opportunities are held throughout the week during summer break. For those who work summer jobs, it is hard to justify spending money to attend professional learning events while also losing out on money from a second job.

Timing of professional learning opportunities occurring during busiest times at work.

APPENDIX F – PD FORMAT Select Open-Ended Responses

Clarifications are provided in brackets by the report authors to enhance understanding of the comments

Question Text: Do you have any comments or suggestions on the format of professional learning that works best for you?

I prefer in person learning.

I have done both online and in-person professional development, and I much prefer in-person. The teacher-teacher interactions that are so important don't seem to develop in online workshops.

I get the most out of in-person professional development (and enjoy it the most too!), but I can't afford to pay for those costs out of pocket (registration, sub costs, etc), so online offerings are more accessible in that regard.

I am retiring so my interest is from a different viewpoint.

I know that myself and a lot of my colleagues find it difficult to engage in long virtual meetings. I enjoy PD where I learn something that can be applied to multiple grade levels.

Hybrid models are better in my opinion. It is nice to be able to do my individual work for the professional learning on my own time, but also being able to talk with other teachers face-to-face to discuss those things.

What works best for me is zoom meetings that begin on or after 4:30pm weekdays. Would also be nice to have one offered during the October PD days, as an alternative to the State PD sessions. [The Montana Federation of Public Employees offers a statewide annual PD conference in October]

Online is not effective for me.

I prefer face to face

I would like to see a variety of formats presented in short digestible and easy to implement sessions.

I really enjoy hands on PD. The ASM camp I attended on materials science was excellent.

In person is the best, but I don't want to pay for travel or housing. Also, I have high quality training because I have searched it out and now have a network. I feel most teachers don't have this…I didn't the first 10 years of my career.

I would like to observe teachers in their classrooms. I would like to see how students respond to material or methods and discuss the problem-solving and adaptations a teacher used to make the methods successful in their class. This could be done through video observation with a follow-up virtual q & a.

While I understand the necessity of online options (and I have used them myself in the past) to reach isolated educators, I Really prefer at least some aspect of face to face. There is really no substitute for conversation and real time sharing resources and problem solving.

I always seem to get more out of in-person courses where I can not only learn relevant topics, but also collaborate with fellow teachers.

Establishing face to face connections first with online continued support works best for me.

In-person, during school hours, aligned with my job responsibilities (special education).

Summer opportunities; having presenters travel to our district or a co-op between districts

Self-paced with mentorship for application of concepts and practices

Hybrid is the most appealing to me… I can also help present.

In the STEM field the best activities and labs and hands on activities I have experienced have been through the NSTA [National Science Teachers Association] conference. Each session was about an hour and you came back with learning materials and a new activity based on your teaching subject. Online tools can be helpful such as the middle school chemistry website from the American Chemist's Society.

none- mostly time constraints and lack of substitutes

None

This question was upsetting to me because we are located in Eastern Montana "Traveling to face-to-face programs offered at a central location (e.g., Billings, Bozeman, Missoula, etc.)" - THERE IS NO WAY THAT BOZEMAN OR MISSOULA ARE CENTRAL!!!!!! NO WAY! HOW CAN I MAKE MY POINT CLEAR HERE? HOW ABOUT EVERYONE FROM BOZEMAN AND MISSOULA TRAVEL TO MILES CITY FOR ONCE?

Online works best due to the location of my school.

In person for sure

I am already in front of a computer all the time as a CS teacher. I am not interested in sitting in front of a computer any longer than I have to.

Short and in-person and with food and coffee.

Teachers don't get enough time with other teachers from different areas to bounce ideas off of each other. We get too complacent in our own little districts and definitely need to branch out more but it's hard to get admin to facilitate such meetings.

Self paced courses have always been preferred, it is nice to be able to have the flexibility to complete a course at your own pace

In person works best.

Actually providing applicable curriculum that can be built on.

Any format works for me if it is outside of office hours and flexible!

Attending in person with a colleague so we can discuss strategies for integration that we can take back and implement immediately.

I am a visual and hands on learning and prefer face to face. I know a good chunk of my colleagues like self paced learning opportunities. I'm an old fashioned type of learner… I enjoy face to face professional development opportunities.

In person

Please extend the reach to rural communities.

Online, self-paced works the best right now with time and family commitments.

APPENDIX G – PD TIMING
Select open-ended responses

Question Text: Please add any other comments you might wish to share about your professional learning preferences, especially any specific days/times/seasons that work well for you.

Out of school workshop days are easiest for teachers in my district to attend because of the substitute shortage.

Summer works best. I need my weekends during the school year to recuperate and prepare for the next week.

June and August are best

Late September and October tends to be the best month for trainings.

Weekdays during the summer would be best since I am not teaching all day every day during that time and I can still enjoy my weekends. That way I can also put more effort and focus into the work without all of my teaching distractions.

With teaching and coaching evenings and weekends are usually full of games

I truly feel like I get more out of in-person learning with the ability to ask real time questions. Self-guided learning where I can revisit a topic is also helpful.

Would like more offered in July. Most are in June and overlap with one another. The October statewide PD days would be nice for an alternative instead of the State PD sessions. Fridays. Weekdays on or after 4:30pm.

face to face (with hands on) is better. I am interested if it is not paid for by me - I have spent thousands over my career on my professional development!!!

Our admin won't give professional leave. Our teachers have to take personal days to attend educational conferences.

It all depends on the days. Weekends and evenings are hard to attend during the year. Summers are best, but I can only attend if I don't have other commitments. There isn't really a best time, it just depends (which I know isn't helpful). I also only attend when I have lodging and fees paid. For example, the STEM conference in Bozeman this year costs to attend and lodging is super expensive.

Would not do anything not part of regular school day

Weekday evenings or weekend conferences

Early or late summer are the best times. Other times of the year are very busy for my family.

Summer is OK, extensive multiple day workshops can be a bit much like the OPI summer institute. It is worth while going once, but it is a draining few days. Weekends and weeknights are off limits. In my opinion, PD should be done during school ours or the district should give allotted time for PD.

summer works best

I have young kids. Trying to find a sitter during the summer is hard.

School days are ideal since we are building our professional skills. Other careers offer these trainings and usually pay for it. It is helpful to have substitutes available for classes left during that time.

Occasional Fridays due to our hybrid 4day week schedule!

With a lot of schools going to the four-day school week, Friday opportunities might be well received.

Things that are scheduled near the beginning or end of the year, or around the semester change in mid-year are not convenient. Late fall or early spring tend to be the easiest times to make time for extra things.

Anytime is a great opportunity!

Summer is much better. Evenings are okay. I'm single and don't have kids. I can afford to be flexible with my schedule as opposed to my counterparts.

At the elementary level we're already swamped with work and working well over 40 hours a week. Training during school hours would be the best choice to support teachers.

Winter doesn't work. We are a 4 day school. So Friday and Saturday would work.

Weekends and Fridays. Our school is a 4 day / week program with Fridays off

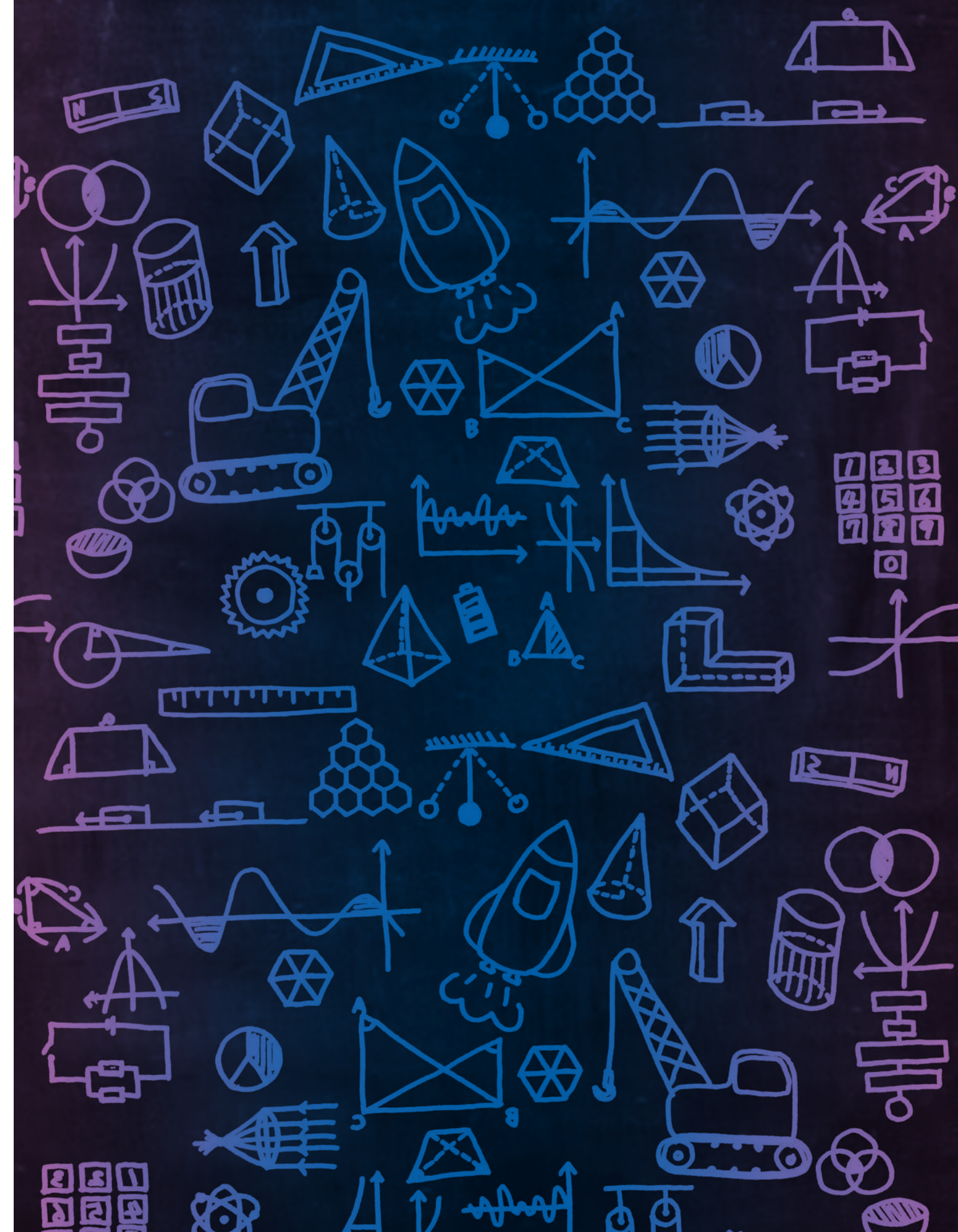
Spring is the worst time for getting away to attend professional development. February, November, and start of August or end of June seem to be the best times.

The school year works better for me. I am pretty busy due the summer.

APPENDIX H – ADDITIONAL COMMENTS ABOUT PD PREFERENCES

Question Text: Please enter any additional comments about professional learning interests.

I would be interested in PD that uses our state standards and relates to engineering and IEFA [Indian Education for All]
Learn to train OR write curricular materials for others.
Step up to writing Online language arts tools Reduce AI writing the students papers
The one I really want is “Effective use of educational technologies to support student learning”
Inquiry-based learning is a need. There is not enough time to teach the standards in silos.
I am concerned that at the college level neither I or my husbands professors (as part of a masters program) who were teaching educational technology were familiar with the SAMR model.
Competency or proficiency based education and reporting
I love any opportunity!
I like hands-on activities
Any PD that focuses specifically on K-1 level would be of great interest.



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