

Introduction

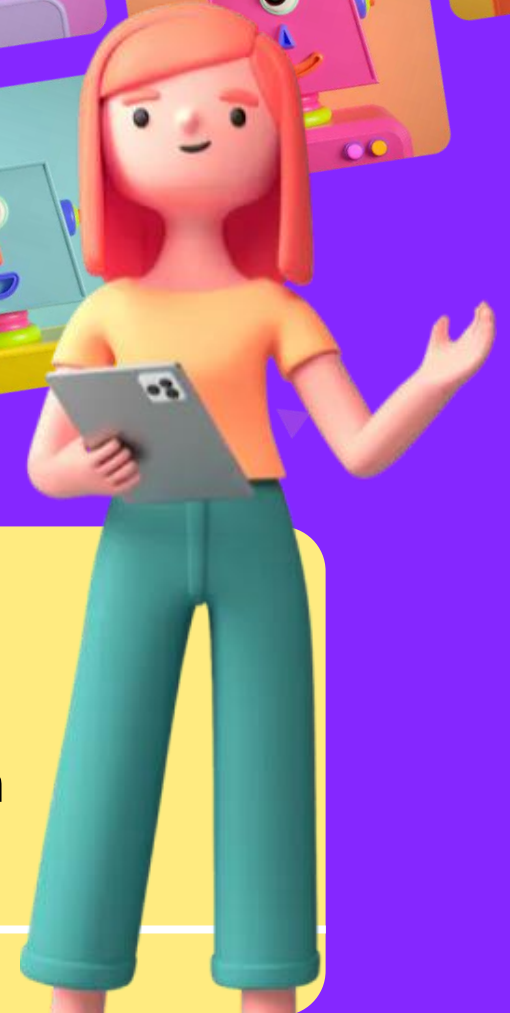


Understanding and enhancing student engagement is a top priority in education, yet it remains a complex and multifaceted challenge.

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“It’s become even more obvious to me that we’re not getting anywhere unless the kids are engaged. It doesn’t matter what the subject is, or even if they’re on recess – if they’re not engaged it’s all a complete waste.”

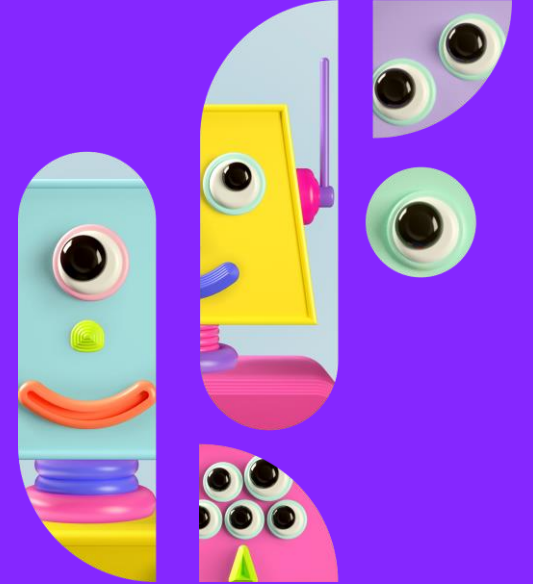
Teacher

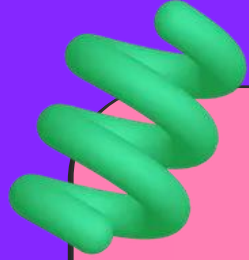




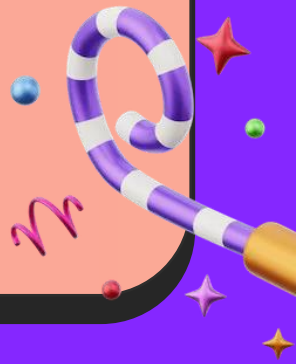
Introduction

- LearningFREQUENCY's longitudinal study offers a groundbreaking approach to decoding the enigmatic phenomenon of student engagement.
- Unlike one-size-fits-all approaches, LearningFREQUENCY creates detailed engagement profiles for students, enabling educators to tailor their teaching strategies to individual needs and preferences.
- The research used momentary time sampling, one-on-one interviews, and weekly surveys to gather both quantitative and qualitative data on student engagement. The resulting individualized student profiles have led to personalized teaching methods that consider each student's unique engagement style, resulting in improved student outcomes
- These personalized teaching methods are especially important given the number of students per classroom. The teachers who participated in the study had up to 23 students per classroom and currently have no simple/at a glance way of understanding individual engagement. This caused them to be more reactive than proactive in addressing disengagement.
- In this report, we will explore the research findings and examine how LearningFREQUENCY's student profiles lead to improved teaching strategies, which will ultimately influence student results. We will provide a detailed look into the methodology, resulting student profiles, and the impact of these profiles on teaching strategies and student outcomes. This robust approach holds significant potential to transform education, creating environments where all students can thrive.





“[Looking at individual students’ engagement styles and learning preferences] is huge. It helps us understand our kids to know how to meet their needs. If we’ve got a student who is engaged at a very low level and not achieving, if we don’t know how they become disengaged we don’t know how to help them achieve. Knowing that data informs the work we do and helps us communicate to parents even. If we don’t deeply know students’ learning styles and engagement and preferences, we create systems that are one size fits all and we know from decades worth of research that that doesn’t work.” - Teacher



Methodology



Study Design

The study was conducted over the course of a school year and involved 108 students from different classrooms and 7 teachers. Among these students, two from each class (6 total) were specifically identified based on teacher observations and initial assessments: one as "engaged" and the other as "disengaged".



Data Collection Methods

Momentary Time Sampling: Observers recorded snapshots of student behaviors at regular intervals to track engagement patterns.

Surveys: Students completed weekly online surveys, rating their engagement levels using both a numerical scale and a multiple-choice question with statements, providing a dual perspective on self-perceived engagement.

Interviews: Teachers and students participated in one-on-one interviews, discussing students' interest in learning, motivation, goal orientation, reading challenges, environment preferences, and focus strategies.



Analysis

The methodology employed in this research was comprehensive and multifaceted. It allowed for a thorough understanding of student engagement

in the classroom setting. Each student's engagement was tracked and analyzed over the course of a school year.

"When we were kids, we were told to follow what the teacher says and now we've switched gears and are more kid focused. Having kids be able to know what they prefer and be able to vocalize that with teachers is huge. They'll learn so much more." - Teacher



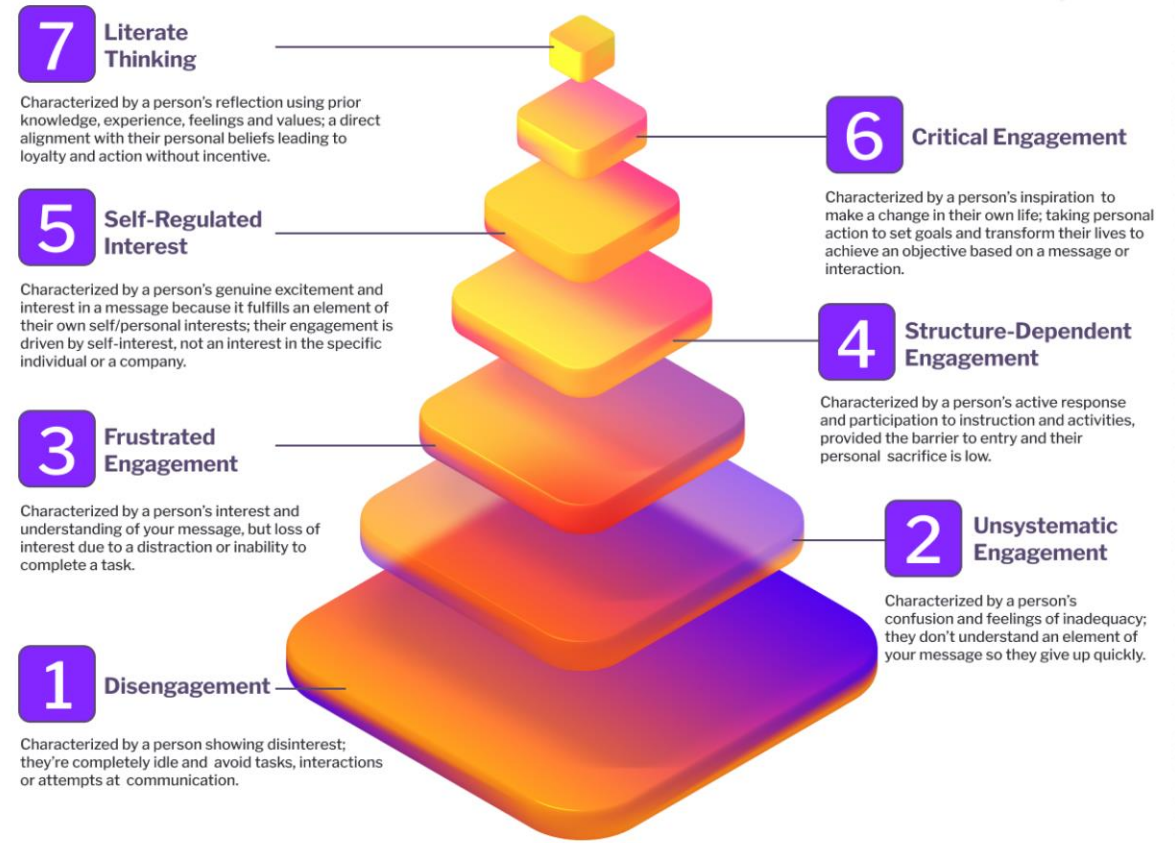
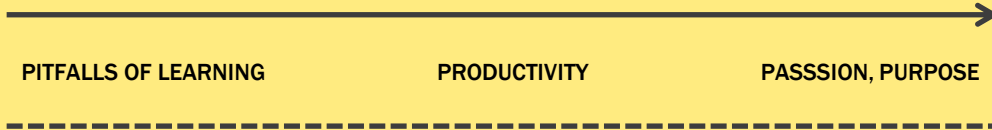
THE 7 LEVELS OF ENGAGEMENT

Methodology

LearningFREQUENCY is built on a proven research-backed 7 level methodology that can quickly and accurately profile each learner's engagement preferences based on key inputs.

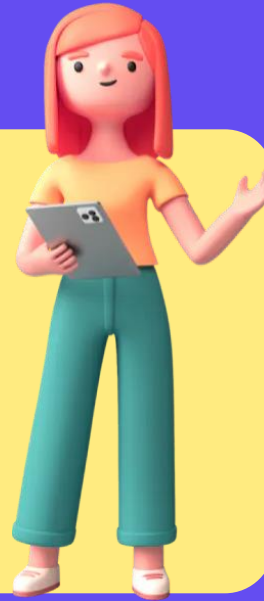
Turn Passive Students Into Active Participants

1 2 3 4 5 6 7



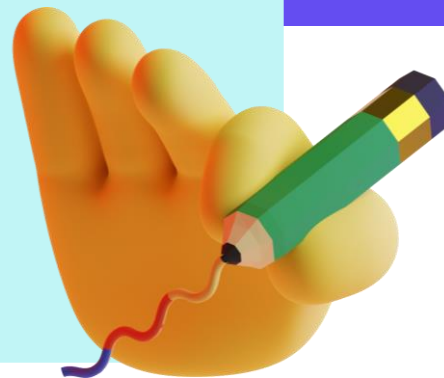
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“I remember you asking me what an engaged student looks like [at the start of the school year, and] I thought it was a student sitting still and paying attention. [I’ve learned how] helpful [it is] when kids understand why we’re doing something. Even the kids hold me accountable now. I think it’s really cool to show they’re more engaged in the lesson.” Teacher



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“I ask more now that I know [more about measuring engagement], instead of just asking if a behavior is good or bad. I am constantly asking them how engaged they are. They’re so much more aware. We did hand gestures too, they came up with those and it makes it more fun and easier to let me know where they are at with the lesson.” Teacher



Personalized Student Engagement Profiles

Through this research, we were able to create personalized student engagement profiles that provide a deeper understanding of each student's preferences and motivational factors. These profiles are based on student responses to a series of questions and were informed by the methodology used in this study.



“If kids have more say of what they’re learning, especially with the new curriculum we’re not giving any options to kids. It’s ‘here’s what we’re doing and why.’ If they’re more excited about it, they’ll be more 6 and 7. If they’re just doing what they’re asked, it’ll be lower.”- **Teacher**

“[I learned that] the quieter it is, the more I can focus, the better I can do my work and really think about things.” - **Student**

Time Sampling Insights

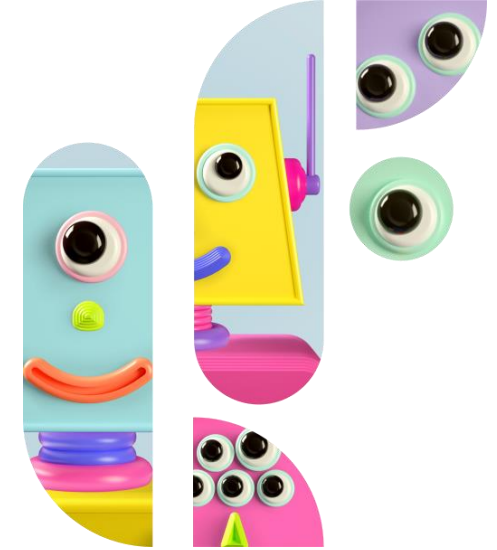
This method helped us understand their daily behaviors in real-time and how they navigated their learning environment. Here are some key observations.

Engaged Students

Engaged students were consistently focused on learning, as shown in the "Engaged Students On-Task and Off-Task" graph on slide 9.

Disengaged Students

Disengaged students had fluctuating levels of engagement, as seen in the "Disengaged Students On-Task and Off-Task" graph on slide 10.



“I’m constantly asking kids what they’re doing and why they’re doing it [that way]. That helps kids know what they’re doing and why.”- Teacher

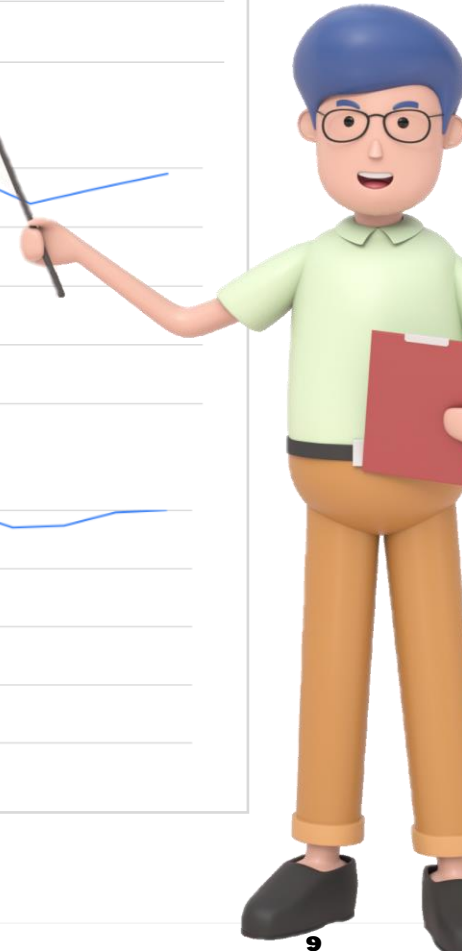
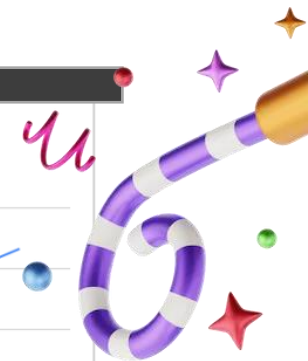
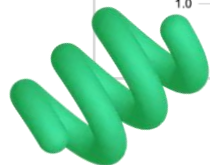
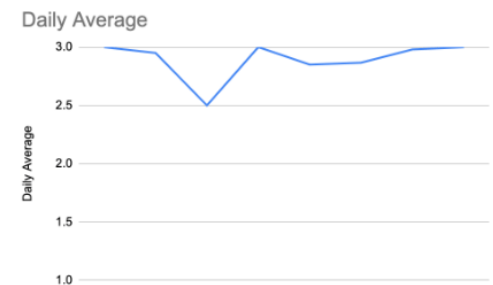
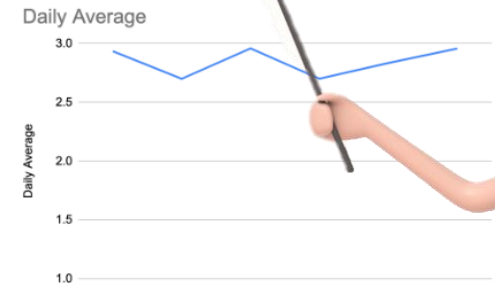
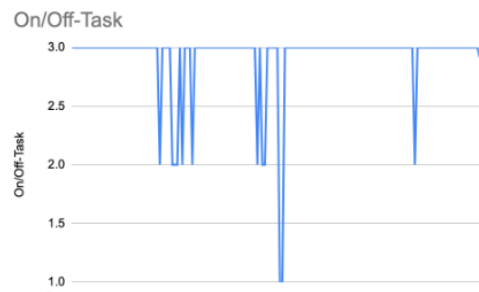
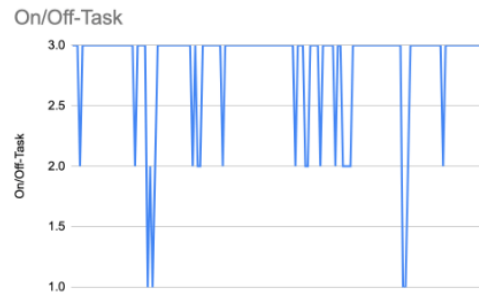


Engaged Students

Engaged students generally exhibited consistent and positively trending behaviors throughout the school year. They were ready to start their work right away, preferred interactive and hands-on activities, and were more comfortable working in groups. “I get inspired a lot, [like with] different kinds of animals I haven’t heard of or seen and then I want to learn lots more about them so when I’m grown up I can know a lot of things and I can tell people what I know.”- Student

ENGAGED STUDENTS | DAILY ON/OFF-TASK TRACKING + DAILY AVERAGES

Similar to the disengaged students, shown on slide 10, we see fluctuations in observing whether or not a student is on task across all observed time periods—although we see less fluctuation with the engaged students shown here than the disengaged students—while students exhibit more consistent and positively trending behaviors when looking at the data

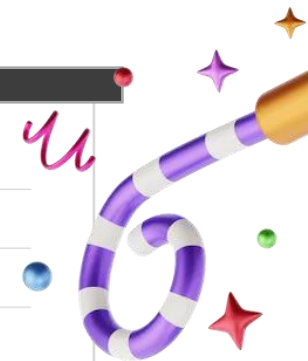
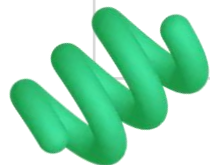
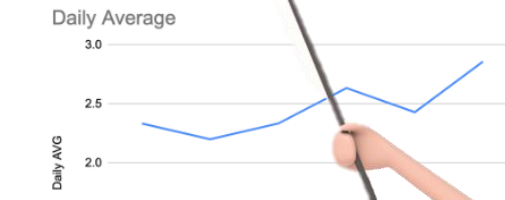
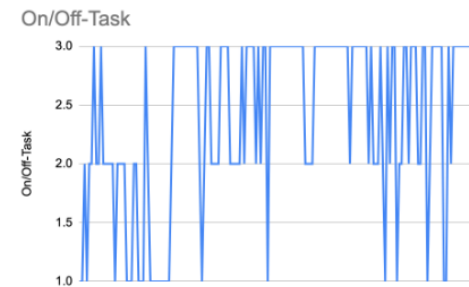
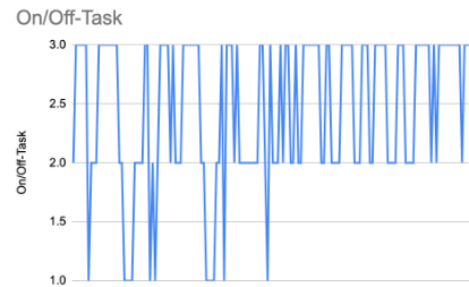
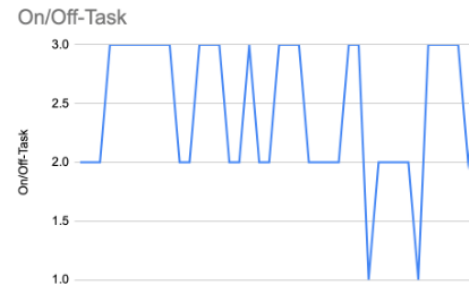


Disengaged Students

Disengaged students showed variable engagement levels and had a tendency to get easily distracted. They often needed more structured and individualized teaching strategies to keep them on task. "I know my learning preferences because that's myself. I learn while doing it. Sometimes [my preferences] stay the same, sometimes they change"- Student

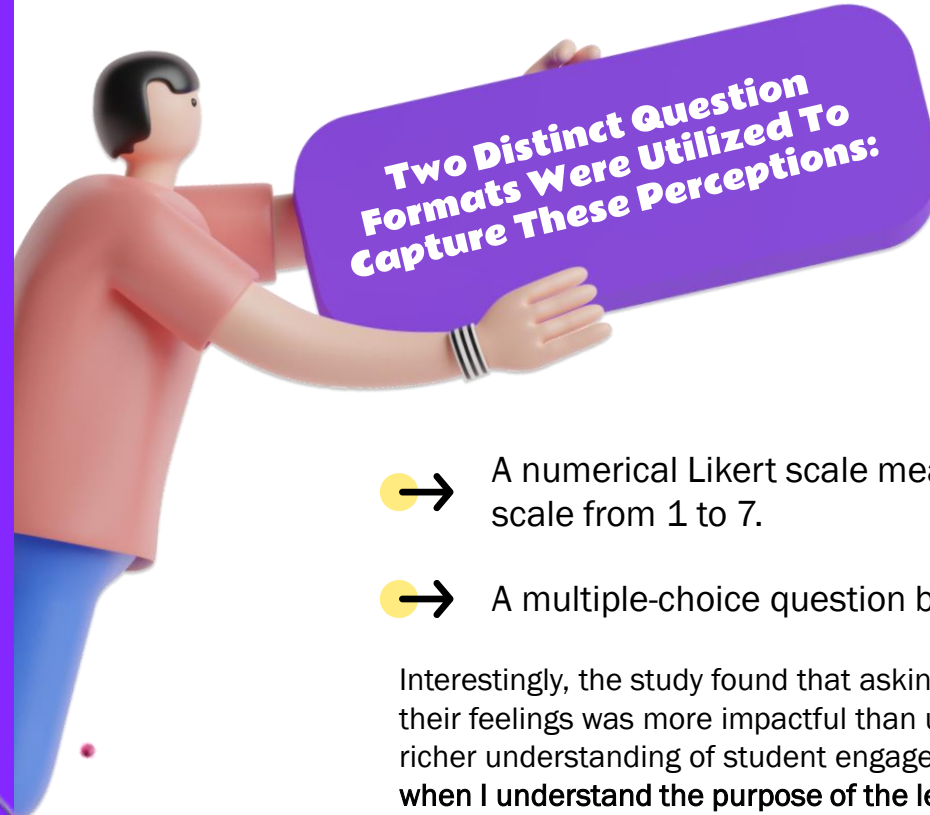
DISENGAGED STUDENTS | DAILY ON/OFF-TASK TRACKING + DAILY AVERAGES

The following charts on the left-hand side show the fluctuations in whether a student is observed to be on task, partially on task or off task over the course of all observation periods. On the right, the charts look at the daily averages of the students' on/off-task behaviors. While there is great fluctuation when looking at all observed time periods, there's significantly less change when looking at the daily averages.



Survey Findings

The surveys offered valuable insights into students' perceptions of their engagement. The graph "Student's Self-Assessed Engagement Levels" shown on slide 12, illustrates the variation in self-perceived engagement levels across different classes and question types. The surveys reinforced the complexity of engagement and underscored the importance of pe....



We used both the likert scale and our own personalized statement questionnaire to ensure that we gathered

- A numerical Likert scale measuring the degree of engagement on a scale from 1 to 7.
- A multiple-choice question based on personal statements about feelings.

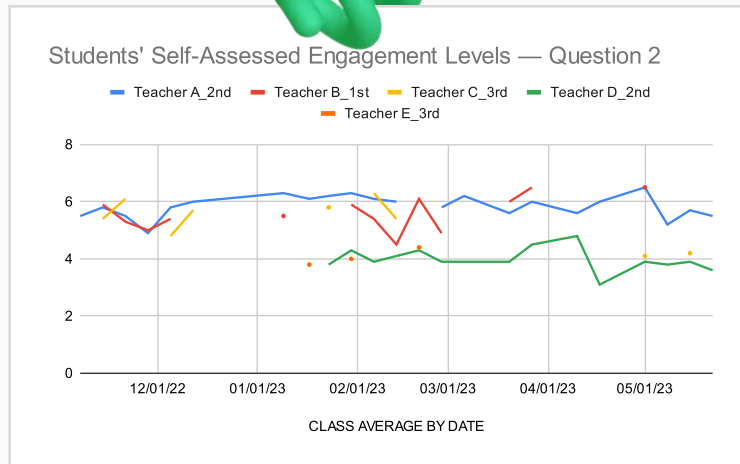
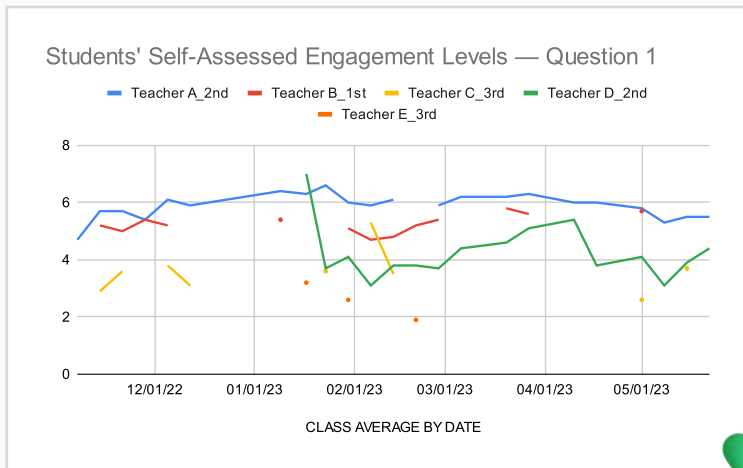
Interestingly, the study found that asking students to select a statement that best described their feelings was more impactful than using a 1-7 Likert scale. This approach allowed for a richer understanding of student engagement. **As one student put it, "I feel more connected when I understand the purpose of the lesson."**

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“Having them be able to know what level they're at throughout a lesson is helpful for me to see how to get them to be motivated to do things. One student is a level 5 and he's always interested in getting something, but I don't do that. I haven't done as many bribes/incentives this year. Part of the lesson can be distracted, part can be engaged and understanding where that change happened is key.” **Teacher**



Comparative Analysis



- **Depth vs. Breadth:** While the Likert scale captures the breadth of student engagement across a spectrum, the personal statements provide depth, offering insights into the nature and quality of engagement.
- **Positive Engagement Indicators:** Both formats revealed a general trend of positive engagement. However, the personal statements added context, helping to understand the reasons behind the levels of engagement shown in the Likert scale.
- **Identifying Areas of Concern:** The Likert scale might highlight lower engagement scores, but the personal statements pinpoint why, offering actionable feedback for educators.
- **Emphasis on Personalization:** The varied responses in the personal statements underscore the diverse experiences and feelings students have. This diversity reinforces the need for personalized teaching strategies tailored to individual student profiles.

The combination of these two survey formats offered a comprehensive picture of student engagement, from broad trends to nuanced feelings. Such a dual approach ensured that the findings were both quantitatively robust and qualitatively rich, providing a solid foundation for the development of personalized teaching methods.



Implications for Teaching

The insights gleaned from the study informed the development of personalized teaching strategies, grounded in students' individual engagement profiles. Teachers began to tailor their teaching strategies to cater to students' needs, fostering intrinsic motivation by offering meaningful learning experiences.

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“Throughout the year they’ve become more familiar with their own learning preferences, especially in second grade they learn so much about themselves and their learning preferences.”- **Teacher**

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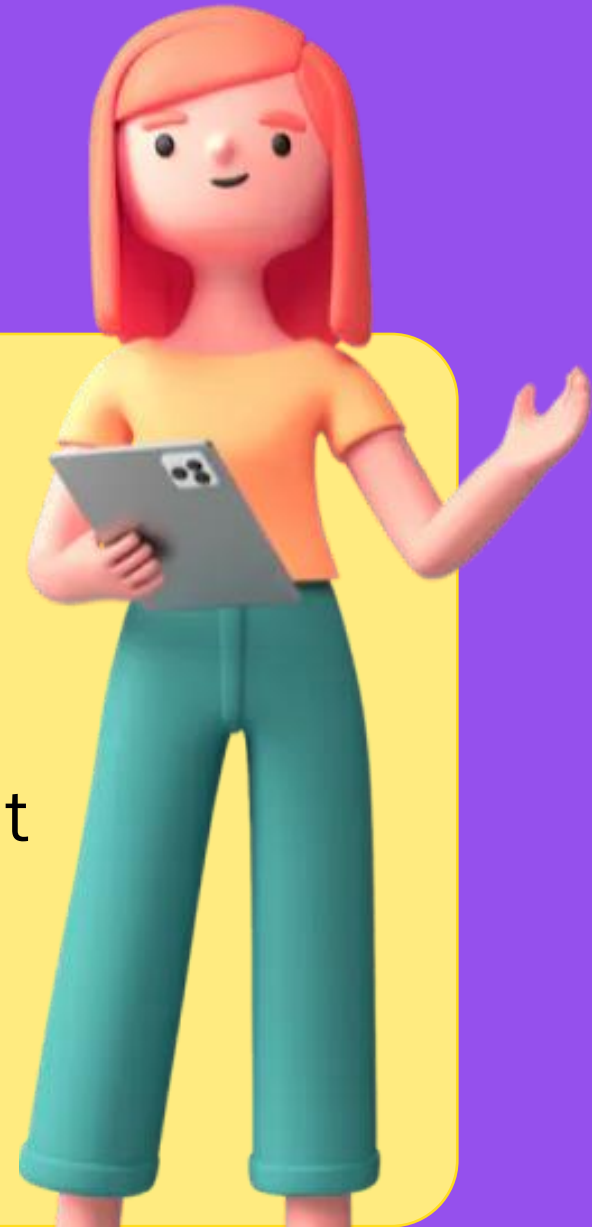
“The kids were so excited to make connections between the bots. Even teachers and people in the office were sharing them back and forth. I’m looking forward to building it more into operational form next year. Even with parents, being able to share this with them and see what resonates with them.- **Teacher**



Research Findings:



The research findings have significant implications for teaching strategies. It became evident that personalized teaching methods, tailored according to individual student profiles, resulted in higher engagement levels. Teachers were able to adjust their teaching methods based on the profiles, leading to better student outcomes.



Research Findings: Insights



Personalized Teaching Strategies

“It’s about making what we want the students to learn relevant. If it’s not relevant to them in their current lives or future lives, it’s not going to stick. Empowering them by way, a la the Learning Frequency bots, of understanding their own preferences and styles so they’re not shutting down. Rather than not knowing why they’re having a tantrum, we can say it’s because they don’t want to do group work.” With this insight, teachers have begun to incorporate more student choice into their teaching methods. By offering options and allowing students to take ownership of their learning, teachers are seeing higher levels of engagement and motivation.” - **TEACHER**

Essential Elements To Enhance Engagement

Relevant and empowering learning experiences paired with a shared awareness of individual learning preferences and styles is a recipe for student success, of which enhanced engagement is a key ingredient.

Recognizing The Importance Of Personalized Learning Experiences:

Understanding individual student preferences and interests allows teachers to connect with students and provide them with personalized learning experiences, while at the same time, empowering students to have a say in what and how they learn. Teachers shared examples of this including leveraging a student's fascination with the Titanic to enhance learning experiences and allowing students to choose an animal to study and later present their findings to the class.

Personalized learning comes with challenges:

Teachers are often outnumbered more than 20:1 in the classroom, so catering to individual needs can be difficult. For example, some students struggle with computer-based learning platforms and need adjusted instruction. Being able to identify and proactively group students according to these preferences can make this easier.

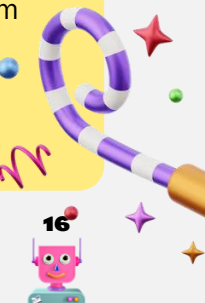
Teachers Need Tools For Implementing Personalized Approaches:

To efficiently and effectively apply personalized approaches to the classroom, teachers need actionable strategies and tactics, such as tools for measuring engagement and a bank of ideas to help them address and improve student engagement levels in real time.



Self-awareness & -advocacy are transformative in shifting students' perceptions of engagement:

Empowering students to take ownership of their learning by, 1) seeking to understand and get curious about how they best learn and, 2) advocating for their own learning preferences, enables the shift from mere compliance in the classroom to a deeper cognitive understanding of both themselves and the curriculum.





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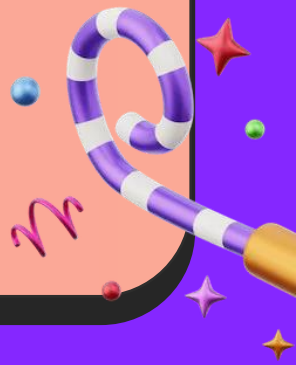
I definitely think engagement can still be improved if kids have more say [over] what they are learning. Especially with the new curriculum we're not giving any options to kids. It's "here's what we're doing." If they are more excited about it they [will reach higher levels of engagement] more 6 and 7. If they are just doing what they're asked to do, it will be lower. - **Teacher**





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“My teacher brain catalogs [individuals’ engagement styles and learning preferences]. “During the day I’m thinking about partner thinking, individual thinking, group thinking. We sit at tables to collaborate, but let’s get our privacy folders out so I can have some “alone” time. Try for a variety of activities, some are on paper, different ways to interact with text, some people prefer to read online, some can listen to the story online. I think about those things as well to help them get engaged.”**Teacher**



Essential Elements To Enhance Engagement

1

Intrinsic Motivation

The shift from external rewards to fostering intrinsic motivation emerged as a significant theme across all data sources. One teacher stated,

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“Students are really thinking, we do the 7 mindsets lessons and surveys, is this something I can use in the future? Did I like it, was it useful to me? That was definitely something new, that level of interest.”

2

Adapting Instruction

Teachers have learned to adapt their instruction based on moment-to-moment changes in student engagement. This has led to a more dynamic, responsive teaching approach that better meets the diverse needs of students.

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“The students have definitely learned to speak up if they feel others are a distraction. They’ll say ‘I can’t learn because you’re making a noise’ and they’ll let other kids know that. We have big personalities and ideas in this building. The students I have are very good at articulating their needs.”

3

Interactive Learning

Students demonstrated a preference for interactive and hands-on activities, expressing that they feel more engaged when they are actively involved in the learning process.

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“I’m most inspired to learn when I’m discovering on my own. If there’s a problem I did wrong I could discover I did it wrong and then I could do it better.”

4

Impact of Physical Environment

The study also highlighted the impact of the physical learning environment on student engagement. One student explained,

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If it’s quiet I can focus on my work more than it being loud.”

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“It was good for me [to learn about my learning preferences], it helped me think about what I can really do instead of what I can’t.”

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“[I learned that] the quieter it is, the more I can focus, the better I can do my work and really think about things.” “[I learned that to stay motivated] it helps to stand up and then sit back down and listen.” “Fidgeting helps [me focus], if there’s a stress ball it helps my mind get on track.”





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“If you know your learning style and how you engage, you are hyper efficient and learn what you enjoy. If they don't know, they stall and nothing gets learned. Knowing means they can fall back on what they like and enjoy just to get started, which is huge. Knowing ‘I need a quiet area’ or ‘I need an area I can talk, then I can get to deeper learning and thinking,’ is huge.”- Teacher



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“Being engaged isn't just staring at something, isn't just being able to answer quickly, it's about being able to get more meta cognitive about it. It's digging deeper to understand. Previously a lot would think they were engaged if they were staring at a screen or looking at a lesson, whereas now they're more about what it is they're learning and why they're learning it.”- Teacher



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“If I can hone in on individual students' engagement styles and learning preferences, I'm able to reach them. I'm able to see where they are best served and make sure that I'm accessing those and helping them access what serves them best. I talk to them about my learning styles, not that different from some of them... I'm very visual and like to work through it whereas if someone tells me how to do it I'm like yeah, OK, and zone out.”- Teacher



Conclusion

The LearningFREQUENCY approach holds significant potential to transform the educational landscape, fostering environments where all students can thrive. This holds significant potential to transform the educational landscape, fostering environments where all students can thrive. Through the continuous evolution and application of these methodologies, we can look forward to more engaging and effective teaching strategies, leading to improved student outcomes.

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“Knowing my preferences helps me to be a better learner.”

Student

