2022

SEL Survey and Observation Tools Development

TECHNICAL DOCUMENT

EDSTAR ANALYTICS

Contents

Technical Document: Surveys

Edstar Analytics, Inc.

Research Basis

In the past decade, educators have recognized the importance of non-cognitive skills for healthy social emotional development and success in school. The Collaborative for Academic, Social, and Emotional Learning (CASEL) is a framework for addressing Social Emotional Learning (SEL) and consists of five competencies for students:

- Self-awareness, which includes being aware of their own emotions.
- Self-management, which includes being able to regulate their behaviors.
- Responsible decision-making, which means they can think about consequences, plan, and have a moral compass.
- Relationship skills, which includes being able to work well with others, build quality relationships, and communicate effectively.
- Social awareness, which means that they are aware of the cultures, feeling, and beliefs of others.

Research has shown that promoting these non-cognitive competencies does promote academic success and better behavior in school. "Overall, SEL is positively related to school engagement and grades, and negatively related to risky behaviors, delinquency, and depressive symptoms, and each outcome relates to one or more specific scales, with substantial consistency in which SEL skills relate to which outcome over early adolescence." These results support the

notion that social and emotional competencies are importantly linked to outcomes of success and thriving in adolescence (Ross & Tolan, 2018, p. 1192).

Edstar Analytics developed this evaluation model to give youth program leaders the platform to review SEL curricula and the instruments to document social interactions that promote problem-solving skills and boost academic performance. The instruments can be used to provide both formative and summative information. The observation instruments can be used by staff to reflect on the degree to which social dynamics that promote the CASEL competencies are present, and what they might do to improve. The student surveys can be used initially to identify the greatest differences between students with high SEL scores and those with low scores, and the strengths and weaknesses overall. Over time, these tools can be used to measure changes in SEL.

Item Development

Survey items were developed to reflect the CASEL competencies. The items were then reviewed by four staff members. A factor analysis was done to determine whether items could be grouped as subscales that aligned with the CASEL competencies. Evaluators also analyzed the data using both classical and Rasch analyses to determine survey reliability, to identify questions which may be worded ambiguously, and to identify questions that could be omitted without losing information.

Reliability

Both classical and Rasch analyses were done to determine overall reliability of the student SEL and STEM surveys. The classical model is dependent on the number of items on the survey, whereas the Rasch model is not. Both item-separation and person-separation reliability were of interest. Results of both classical and Rasch analyses were consistent. Person reliability using the Rasch model was .84, and item reliability was .99; reliability using the classical model resulted in alpha = .87. Therefore, the survey has a high degree of reliability.

The staff and parent survey items were then written to reflect student items.

The stakeholder surveys were developed with the intent of measuring the degree to which parents, teachers, and staff perceive that programs promote social-emotional wellbeing of the students served, and success in school. These surveys use a Likert scale to measure attitudes and perceptions. A Likert scale survey includes a series of statements and an evaluative scale (Alexandrov, 2010). The responses will be used to measure how these stakeholders perceive the degree to which curricula or programs are promoting development of the CASEL competencies.

Instruments

Edstar Analytics developed a STEM Career Interest survey in 2017 for use in several program evaluations that have a goal of increasing interest in STEM careers. Those programs now are required to also measure whether those same programs are promoting SEL. Rather than require students in those programs to take two surveys, SEL items were added to that survey. Three student surveys were developed incorporating the CASEL competencies:

- CASEL competencies and social emotional wellbeing and interest in STEM careers, attitudes regarding problem solving.
- CASEL competencies
- Student self-reflection on social emotional components of group activities that promote academic success, together with promotion of diversity, equity, and inclusion.

The survey items have been administered to 722 elementary, 1029 middle, and 733 high school students. These Likert scale surveys are analyzed using Rasch modeling measurement procedure. This analysis allows both students' responses and "ease of item agreeability" to be measured using the same metric

on the same scale. The Rasch model allows a person's trait levels to be gauged along a scale of items.

This analysis will identify the items most students agree with, which will provide information about both program or curriculum strengths for promoting social-emotional wellbeing, and about student needs. The Rasch analysis of items relating to problem-solving skills and STEM career interests will provide information about how the highest scoring students differ from others, and which strengths can be built on to promote more success and interests. Administering this survey to the same students at different times will identify and document changes in student SEL growth and program success overall at promoting CASEL competencies.

Survey item development was informed by the following research.

Ensuring a Supportive Climate

Survey items draw upon CASEL to align with the SEL framework (Zins & Elias, 2007). SEL addresses self-awareness, self-management, responsible decision-making, relationship skills, and social awareness. These five attributes of SEL are reflected in the survey items. In group settings, communication among the members is the most important component for ensuring a supportive climate. Group members should feel free to share their ideas and feelings, initiate conversations, and ask questions to understand others' ideas and feelings. A supportive climate where students feel emotionally connected emerges when the program promotes openness, trust, collaboration, and respect (Centre for Teaching Excellence, n.d.).

Promoting Academic Success

When people work in groups, individuals sometimes put forth less effort than they would if they were working alone. This phenomenon is known as "social loafing" (Simms & Nichols, 2014). The larger the groups, the more social loafing is likely to occur (Ingham, Levinger, Graves, & Peckham, 1974). Social

loafing is less likely to occur in a group if individual expectations are clearly communicated and understood (Chidambaram & Tung, 2005).

At the other end of the spectrum from social loafing is the Köhler effect. The Köhler effect occurs when group members work harder than they would individually to promote the success of the group. For example, members of a track team will run faster when the team is counting on them than they will when running on their own. Even in a pairing of two athletes, the poorer performer will usually perform better when performing with the better athlete (Kerr, Messé, Park, & Sambolec, 2005). Although the Köhler effect is usually associated with sports, it applies to any conjunctive task, i.e., any task that is not complete until all members of the group have finished their portion of the task.

Social loafing can be reduced and the Köhler effect expanded if groups and the individuals within them are provided feedback (Cherry, 2020). In programs that reduce social loafing and promote the Köhler effect, students would help one another and listen to each other's ideas, while adults clearly defined roles for the students.

Developing STEM Skills

Attitudes and beliefs toward problem-solving skills become increasingly difficult to alter as students age. Typically, students' perceived levels of confidence in math and other STEM problem-solving tasks decline if students have not experienced success, and negative emotions toward developing these skills increase. Students can focus on problem-solving success (getting the right answer) or problem-solving skills (fine-tuning steps to work toward solutions). Encouraging focus on the latter can increase student confidence and reduce negative emotions of students. Getting the correct answer, of course, is important, but receiving encouragement for building and adjusting approaches may have positive effects on student attitudes (Sturm & Bohndick, 2021). In programs that promote the development of problem-solving skills, students

would ask questions when they don't understand something and continue to try, while adults would provide feedback on skill building.

Equity, Diversity, and Inclusion

Students from different demographic groups working together can enhance the learning experience for all students (Centre for Teaching Excellence, n.d.). In group settings, ensuring participation by all students is important. Race, gender, and other demographics should not preclude participation, nor should inability to read at grade level nor speaking English as a second language (or not at all). Teachers and staff members must encourage and support students working, playing, and socially including students from other demographic groups (Cohen, Lotan, Scarloss, & Arellano, n.d.). In a program that supports equity, diversity, and inclusion, diverse groups of students would work and play together, while adults would provide clear ways for all students to participate and have ownership.

Social Emotional Wellbeing

Items measuring social-emotional wellbeing were designed to measure characteristics that are generally present in students who are emotionally healthy (McClellan & Katz, 1992, 2001). These are characteristics that can be observed by others, including general mood, attentiveness, relationships with key adults and peers, empathy, self-awareness and reflection, ability to communicate preferences, and ability to negotiate and compromise with others. In programs that promote social emotional wellbeing, students would

- generally be in good moods.
- listen and follow directions.
- have close relationships with adults and peers.
- care about their friends and show interest in others.
- understand emotions and show empathy.

- have one-on-one relationships with caring adults.

(McClellan & Katz, 1992).

Supportive Climate

In group settings, communication among the members is the most important component for ensuring a supportive climate. Group members should feel free to share their ideas and feelings, initiate conversations, and ask questions to understand others' ideas and feelings. A supportive climate with group cohesion emerges when students practice the following:

- Openness: Being willing to get to know each other, even those with diverse interests
- Trust: Accepting accountability for the tasks assigned to individual members
- Support: Sharing a sense of team loyalty and collaborating with one another rather than competing
- Respect: Treating one another politely and not blaming (e.g., asking "What can we learn?" rather than "Who is to blame?")

(Centre for Teaching Excellence, n.d.)

Observation Instrument

The observation instrument was created to document the characteristics of group project dynamics in terms of the following criteria:

- Performance Boosting
    - Appropriate assignments
    - Enhancing performance of group members for whom these tasks were not among their strengths
    - Promoting social cohesion

- Attitudes and beliefs toward problem-solving
    - Showing a willingness to solve the problem
    - Persevering to find a solution to a problem
    - Improving ability to solve problems
- Equity, diversity, and inclusion
    - Expanding opportunities for everyone to participate
    - Bringing diverse people together
- Supportive climate
    - Respecting different ideas and approaches.
    - Respecting perseverance and risk-taking
    - Reflecting on the progress

These criteria align with multiple CASEL competencies and are labeled as such on the evaluation rubric. A 4-point scale (1- Observed that this was a primary attribute, 2- Observed Moderately, 3- Observed Rarely, 4- Not observed) was chosen to give meaningful descriptions under each scale point to ensure greater interrater reliability. Descriptions for each scale of the rubric were created after developers observed small-group activities having the varying levels of attributes.

After the observation rubric was complete, Edstar Analytics, the school system, and non-profit staff reviewed the descriptions and compared them to desired outcomes, modifying them as needed. This established the content validity of the instrument. Edstar Analytics staff then had two observers use the instrument with a small-group STEM activity to establish interrater reliability. The descriptions were modified until interrater reliability exceeded 80%.

Instructions for Observers

Each observation should be 30 minutes in length, and a new Data Collection Form should be completed with each observation.

For each observation, the observers will rate what they saw based on each area of the rubric. When choosing a rating, it should be noted that **it is NOT expected that observers will see all activities for a given category at once**.

Observers should take notes on what they saw that led to their chosen rating.

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Appendix: Survey Items and Evaluation Rubric

Technical Document: Surveys

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Relationship Skills

Factor analyses showed that relationship skills clustered into two distinct groups: creating relationships, and the quality of relationships. The items measure openness, trust, support, and respect (e.g., treating one another politely and not blaming (e.g., asking "What can we learn?" rather than "Who is to blame?")

Student Items

- My friends and I enjoy sharing some interests, but also have some separate interests.
- I try to do my share when I am working or playing with another student.
- I trust my friends.
- I feel like I am part of a team when I am working with other students.
- Sometimes I make fun of other people so I will fit in.
- It bothers me to see other people unhappy.
- I compliment others when they do something well.

Staff Items

- Students are willing to get to know each other and be friends, even when they have diverse interests.
- Students contribute when working or playing with others.
- Students collaborate rather than compete when they are working together.
- Students treat one another politely and do not look for blame when something goes wrong on a group project.
- Students in this program have close relationships with adults and peers.
- Students in this program care about their friends and show interest in others.

Parent Items

- My child enjoys working and playing with other children in the program who have different interests or different backgrounds.
- My child feels included in work or play with other children in the program.
- My child feels a loyalty to other children in the program.

- My child has learned to be patient with self and others while learning new things.

Responsible Decision-Making

Responsible decision making is reflected in behaviors that show students think about consequences, plan ahead, and have a moral compass. Responsible decision making promotes academic engagement and behaviors that lead to academic success.

Student Items

- When I don't understand something, I ask questions and keep trying.
- Learning new things is fun.
- I like to understand why a way of doing something works.
- When I am working with others and something goes wrong, we work together to figure out why and fix it.
- I care about getting good grades.
- When I work with other students, everyone pitches in and works.
- I come to class with my homework finished.

Staff Items

- In group activities, adults help students understand their roles.
- Students willingly help each other when working together.
- Students work well together and listen to each other's ideas.
- Students keep trying when learning is difficult.
- I provide positive feedback on skill building even when a student gets an incorrect answer to a problem.
- Most students come to class with their homework completed.

Parent Items

- My child cares about getting good grades.
- My child is able to complete homework on time.
- My child keeps trying when learning is difficult.
- My child is benefiting academically from this program.

Social Awareness

Social awareness means that they are aware of the cultures, feeling, and beliefs of others. Diversity, Equity, and Inclusion fall under this heading.

Student Items

- I enjoy working or playing with students who are very different from me.
- I understand other peoples feelings.
- It bothers me to see other people unhappy.
- I fit in at my school.

Staff Items

- There are clear ways for everyone to participate and have ownership.

Parent item

- My child feels socially included in this program.

Self Management

Self management is about being able to regulate their behaviors.

Student Items

- I am usually in a good mood.
- I feel good about myself.
- I listen carefully to directions.
- I feel close to the adults in this program.
- I sometimes control my anger.
- If I don't understand something at first, I keep trying.
- I sometimes go from being happy to sad or mad very quickly.
- If I try, I can do well in school.
- I like to finish my class work right away.
- I am easily distracted when doing my schoolwork.

Staff Items

- Students are usually in good moods.
- Students listen and follow directions.
- Students in this program understand emotions and show empathy.

Parent Items

- My child is usually in a good mood.
- My child has close relationships with adults and other children in this program.
- My child has a one-on-one relationships with a caring adult.

Self Awareness

Self awareness includes being aware of their own emotions and how their emotions affect their behavior, knowing what they are good at and when

additional effort will be required for success, knowing what they believe, and being able to set personal goals.

Student Items

- I notice how my feelings affect how I act.
- I know what I am good at and what is hard for me.

Staff Items

- Students are able to manage their emotions.
-

Parent Items

- My child can effectively work towards goals they set.

Observation Rubric

Assignment: _____

Group Members:_____

Date:_____

Observer: _____

1. Performance boosting: Performance among group members can be enhanced if social loafing is avoided and team members are given appropriate assignments. Evaluation and feedback can also boost students to perform better.				
	Observed that this was a primary attribute	**Observed Moderately**	**Observed Rarely**	**Not observed**
1a. Appropriate assignments (SEL: self-management)	Each member had at least one appropriate assignment. All members knew what their assignments were and were willing to perform them.	Most members had appropriate assignments and were able to perform them.	There was some confusion as to who was assigned to do which tasks. Some members were unaware of their tasks.	No assignments of tasks were made. Group members were unsure what their roles entailed.
Check appropriate box	☐	☐	☐	☐
Examples or Notes				

	Observed that this was a primary attribute	**Observed Moderately**	**Observed Rarely**	**Not observed**
1b. Enhancing performance of group members for whom these tasks were not among their strengths (SEL: responsible decision-making, self-management, relationship skills)	All members knew their tasks and willingly performed them. People willingly helped each other when necessary. Buoyed by the group, some of the students performed better than they would have on their own.	Most members knew their tasks. Some were willing to help others.	Some members of the group did most of the work, with only a little help from the group members who didn't believe they were as skilled for this task as others.	Some members were discouraged from participating and did very little or nothing at all toward the group project.
Check appropriate box	☐	☐	☐	☐
Examples or Notes				

	Observed that this was a primary attribute	Observed Moderately	Observed Rarely	Not observed
1c. Promoting social cohesion (SEL: Social awareness and relationship skills)	Members of the group got along well together. Although each had an assigned task, members helped each other. All were willing to listen to each other's ideas.	Members of the group got along moderately well. Some members helped others and listened to others' ideas.	Members of the group tolerated each other, but interacted very little.	Members of the group were on their own to complete their assignments. Those who didn't were admonished by other members of the group.
Check appropriate box	☐	☐	☐	☐
Examples or Notes				

2. Attitudes and beliefs toward problem-solving				
	Observed that this was a primary attribute	**Observed Moderately**	**Observed Rarely**	**Not observed**
2a. Showing a willingness to solve the problem (SEL: self-management)	All group members were willing and eager to solve problems. Group members helped one another solve problems.	Some group members willingly solved problems. Those who had trouble asked for help.	Several group members were reluctant to solve problems.	Group members did not solve problems.
Check appropriate box	☐	☐	☐	☐
Examples or Notes				

	Observed that this was a primary attribute	Observed Moderately	Observed Rarely	Not observed
2b. Persevering to find a solution to a problem (SEL: self-management)	Group members persevered until a solution to problems was found.	Group members persevered to solve a problem, but eventually gave up.	Group members didn't try hard to solve a problem.	Group members didn't address the problem.
Check appropriate box	☐	☐	☐	☐
Examples or Notes				

	Observed that this was a primary attribute	Observed Moderately	Observed Rarely	Not observed
2c. Improving ability to solve problems (SEL: self-management, relationship skills)	Group members volunteered to help others when problems arose. Those who were helped learned from the experience. Performing problems correctly was emphasized.	When a group members had problems, other members took over and solved it.	Group members were left on their own to solve problems, and little or no group brain-storming occurred.	No problem-solving was attempted. No ideas were generated.
Check appropriate box	☐	☐	☐	☐
Examples or Notes				

3. Equity, Diversity, and Inclusion: Students from different demographic groups should be able to work well together and learn from their diversity				
	Observed that this was a primary attribute	**Observed Moderately**	**Observed Rarely**	**Not observed**
3a. Expanding opportunities for everyone to participate (SEL: Relationship skills, social awareness, self-awareness)	There are clear ways for everyone to participate and have ownership. There are clear paths for people who have been historically excluded from opportunities to participate. There is evidence that decision making is shared and that everyone can lead or take ownership of the process.	Most of the work was done by a few members of the group, while others were allowed to social loaf.	Some group members were marginalized and not encouraged to participate.	Some group members were not allowed to participate and their ideas were ignored.
Check appropriate box	☐	☐	☐	☐
Examples or Notes				

	Observed that this was a primary attribute	**Observed Moderately**	**Observed Rarely**	**Not observed**
3b. Bringing diverse people together (SEL: Social awareness, relationship skills, self-awareness)	People are sharing experiences that have not been around each other before. There is plenty of interaction, dialogue, and exchange of ideas or values.	There is some diversity in race, age, nationality, and perspective. Some people are sharing ideas or values.	There is little diversity. Participants are diverse in one way (i.e. gender) but not in others (i.e. race, culture)	There is no diversity in age, race, gender, nationality, or socio-economic factors. Everyone looks the same.
Check appropriate box	☐	☐	☐	☐
Examples or Notes				

4. Supportive climate: A supportive climate with group cohesion emerges when students practice openness, trust, support, and respect.				
	Observed that this was a primary attribute	**Observed Moderately**	**Observed Rarely**	**Not observed**
4a. Respecting different ideas and approaches. (SEL: Self-awareness, social awareness, relationship skills, self-management)	All ideas were respected and discussed. No ideas were dismissed outright. Group members were lauded for their ideas.	Most ideas were respected.	Some ideas were ignored.	Some group members' ideas were rudely rejected.
Check appropriate box	☐	☐	☐	☐
Examples or Notes				

4. Supportive climate: A supportive climate with group cohesion emerges when students practice openness, trust, support, and respect.				
	Observed that this was a primary attribute	**Observed Moderately**	**Observed Rarely**	**Not observed**
4b. Respecting perseverance and risk-taking (SEL: Self-awareness, social awareness, relationship skills, self-management)	Group members having trouble were encouraged and helped by other group members. Those who thought outside the box were lauded. The group shared team loyalty.	Some group members were encouraged to persevere when they had trouble.	When group members were taking too long, others did the work for them.	Group members had no time for members who couldn't persevere and some of the work didn't get finished.
Check appropriate box	☐	☐	☐	☐
Examples or Notes				

4. Supportive climate: A supportive climate with group cohesion emerges when students practice openness, trust, support, and respect.				
	Observed that this was a primary attribute	**Observed Moderately**	**Observed Rarely**	**Not observed**
4c. Reflecting on the progress (SEL: Self-awareness, social awareness, relationship skills, self-management)	Group members periodically met to see how and what others were doing. Suggestions were made. Those who needed help were helped and encouraged.	Group members sometimes inquired about what others were doing, but no group meetings took place.	Group members rarely inquired about what others were doing, and no group meetings took place.	Group members worked alone until the project was finished.
Check appropriate box	☐	☐	☐	☐
Examples or Notes				