



Weather Programming and SEL

How would weather forecasts lead to social and emotional learning (SEL) in students?

It would be tempting to look at weather programming and only see the academic outcomes, such as various science and engineering practices (measuring, using models) or discussion of disciplinary core ideas (mostly meteorological). But to do so would be to overlook how this small aspect of programming impacts a student's social and emotional growth.

Forecasting is intrinsically tied to decision-making. Making good, responsible decisions depends on accurate information. The students on the weather team have an ethical responsibility to report conditions accurately. If they don't, the forecast could be incorrect, and their contribution to the wellbeing of their group would also be suspect. By taking this time at the weather station, they are actively serving others.

Residential Environmental Learning Centers (RELCs) generally offer programming in remote, outdoor settings. In a typical school day back home, weather may only affect students in a handful of ways: recess cancelled due to rain, days off for snow, cold mornings at the bus stop. But at RELCs, weather is a much more active participant in a student's learning experience. Relative humidity, wind speed, and temperature all matter more to the student who is spending hours outside. This heightens the need for students to make decisions based on weather.

The weather forecast can also contribute to social and emotional skill practice for the rest of the student group who were not on the weather team. Hearing the forecast at breakfast gives students more information to make responsible decisions about their preparations for the day. If rain is in the forecast, they need to remember to pack a poncho or to get one from common group supplies. If dour weather is predicted, they need to mentally prepare for a day in the rain.

It's also worth highlighting how this experience of weather forecasting differs from that of most people in the United States. A small team of people collaborate to make direct observations of local conditions and compute a forecast using a simple model. While reading instruments, they are instructed to give and receive feedback (i.e. "Do you agree or disagree about yesterday's barometric pressure being 30.2 inches?"). There need not be a single computer, television, or phone screen involved in the entire process. It is collaborative, not a one-way transfer of information. All of the forecasting comes from face-to-face communication. At the evening meal, the students can reflect on whether the forecast was accurate or not. In Spring 2019, at Great Smoky Mountains Institute at Tremont, student weather forecasts were judged to be accurate 94% of the time. Thus, students also evaluate how useful this tool and process is for themselves.

You can start having students generate a weather forecast using a simple model and two instruments (a wind vane and a barometer). The model is known as the Sager Weathercaster and is available as both a PDF booklet and online.

Link to PDF: <http://gsmit.org/wp-content/uploads/2017/01/WeatherCodeSheet.pdf>

Link to online Sagercaster: <https://www.weather-above.com/Sager%20Algorithm.html>