



Log-Box Data Logger SC10193



Tested by The Valley, Bolton

Background and Issue/Area to develop

Supporting learners in innovative ways can be a challenge at a large primary school. This is further compounded by nearly all learners in the school speaking English as a second language. One thing that is clear to us is that our learners benefit most from hands-on work and to have the opportunity to apply their learning to the real world. In a word, experiences.

Whilst the school purchased data loggers from various sources previously, these rapidly lost their learning value for various reasons. Namely:

1. They were too fiddly for teaching staff to 'plug and play' to use with the pupils.
2. Extracting data from previous loggers was hard work – who wants to waste half their planning and preparation time trying to work out how to do it?
3. Previous data loggers felt costly in an already tightened school budget.
4. With the former point, too often were previous data loggers left in cupboards because, quite frankly, staff had given up on trying to work out how to use them.
5. Despite the price tags, past data loggers often felt cheap in build and quality. Do companies know that we want pupils to be able to use these devices confidently without the constant worry that they will fall to bits and pieces at the first sign of knocks or scrapes?

The school felt that the TTS Data Logger would solve, if not alleviate, a lot of the concerns mentioned above. We loved that the Data Logger would be able to sense a number of items such as temperature, sound, light but also that it felt a lot more child friendly in contrast to rival data loggers. The potential to connect to an app using Bluetooth connectivity was important to us as it had the scope for pupils to extract their own data set onto their devices. Remember that word from earlier – experiences? Well, pupils would have the ability to experience the full data logging journey themselves rather than rely on the teacher to complete steps for them. Gained opportunities here would mean that our pupils would truly feel a sense of ownership over the TTS Data Logger.

We were hoping to use the TTS Data Logger to support and enhance our learning offer in the cross-curricular learning of Computing and Maths. In particular, the key objectives for learners was to use digital devices to collect, analyse, evaluate and present data linked to statistics work in Maths. Could pupils evaluate data and be able to understand their data sets? Could pupils present that data set? Were pupils able to identify anomalies in the collected data?

To be successful, we envisaged that the TTS Data Logger would generate much more than just data but rather, develop a sense of critical thinking and high-quality discussion from and between our learners who felt a strong sense of ownership over their data.

How was the resource used (focus on implementation)?

Within their computing learning, the TTS Data Logger enabled learners to build on the idea of collecting data over time and were introduced to the idea of collecting data automatically using devices such as data loggers. They were introduced to the concept that computers can capture data from the physical world using input devices called sensors. The sensors on the TTS Data Logger were very obvious to point out and this was key. The TTS Data Logger also helped our learners establish that sensors can be connected to data loggers, which can automatically collect data while not attached to a computer.

Whenever a new resource is introduced, we must simply let the pupils explore. Pupils were given the opportunity to 'test' out the TTS Data Logger. What would the sensors do if they clapped their hands? What about switching classroom lights off? Good news, the TTS Data Logger satisfied our pupils' robust and rigorous testing procedures.

Back to the project, our pupils were given maps of the school building that they had to navigate in small groups. Each group was asked to select a location in school to situate the TTS Data Logger across a week. The TTS Data Logger was set up to collect data for a full day in each location. Each group would have the responsibility of collecting their own data. In the past, our learners would have used pencil and paper. They still could if they wished but they were far more invested in connecting to the TTS Data Logger app and viewing the data set on there when collecting data. To supplement this, we developed some how-to slides for our pupils. Examples of the how-to slides are below:

Data loggers

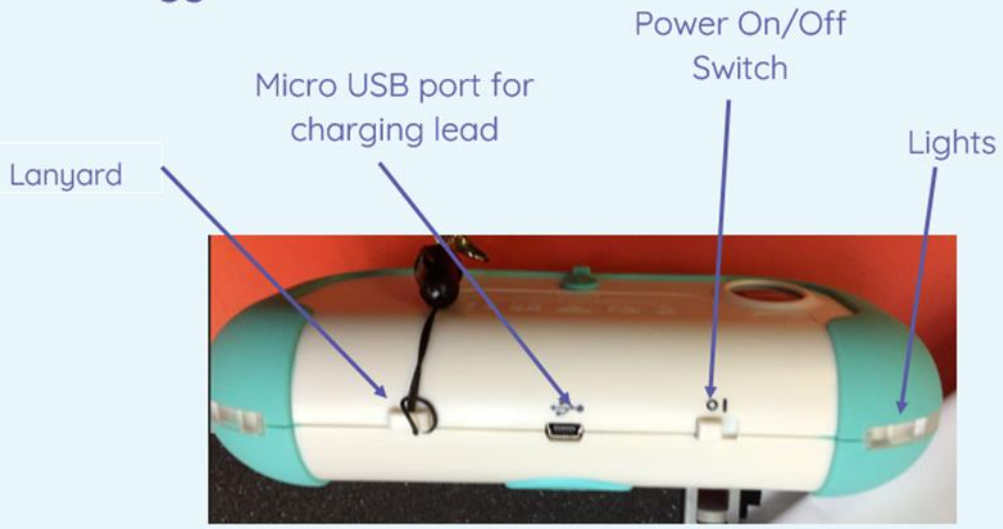
This is a data logger.

- It has sensors
- It can record data
- It can be connected to a computer

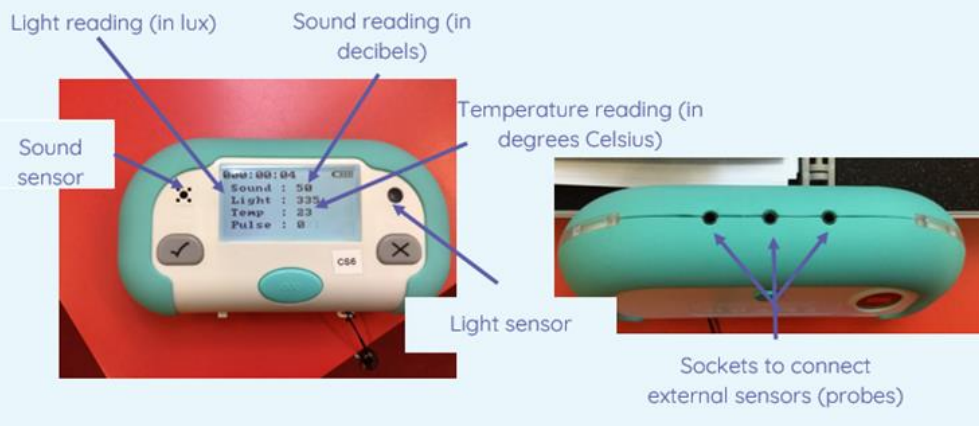
From looking at the picture, what sensors do you think it has?



Data loggers



Data loggers



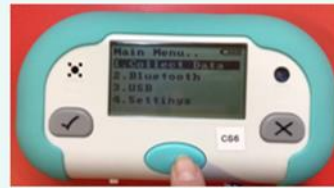
Temperature sensor

Pulse monitor



Live Data

1. Switch on the datalogger
2. Press any button to start
3. Press the tick button
4. You are now viewing live data



Viewing live data on the iPad: bluetooth

1. Click on any button to start
2. Click on the blue tts button once to highlight 2. Bluetooth
3. Press the tick button again
4. Press the blue tts button once to highlight 2. Monitor
5. Press the tick button



On the iPad: bluetooth

1. Open the data logger app
2. Click on View Meters
3. Select temp, light and noise
5. Move your hand over the data logger's light sensor. Clap hands



Using the data sets, pupils were able to create charts and ask/answer questions in their maths lessons as part of their work on statistics. As the data generated was pupil-led, the learners were engaged and able to understand their data better.

Once we got to grips with extracting data from the TTS Data Logger, we found the process of uploading the excel file onto pupil devices simple. Teachers were able to adapt the data from the excel file accordingly based on the needs of learners across the class.

Impact and outcomes

In using the TTS Data Logger, we found that the use of the lanyard and the robust bumper around the edge of the device made it easier for pupils to grip and handle. We liked that the TTS Data Logger was pupil friendly and after some initial exploration/preparation, it was relatively easy to use for less tech savvy teachers. This is no mean feat considering how the use of data loggers can be a daunting prospect for most in an already packed curriculum.

We found that pupils were really engaged in these lessons and took greater ownership over their learning. We are quite excited about the up-and-coming developments on the Data Logger app as these will only serve to assist the teaching of this area further, simplify the use of the resource for teachers and enhance the school's offer.

Pupils worked collaboratively in mixed groups during all of the lesson activities, used their map reading skills to work out the areas of the school that they wanted to collect data from, used the TTS Data Logger and the app on iPads confidently and then interpreted their data. The group of pupils could talk confidently about these links across a number of curricular areas. **We would recommend that schools consider this particular TTS Data Logger as one of the most child and teacher friendly devices on the current market.**



Quotes:

"I noticed that when we went onto the field, the light measurements reached their maximum level." (Yahya U – child)

"I liked measuring my pulse on the Data Logger." (Muhammad I – child)

"The pupils worked really well together and found the use of technology really fun. They didn't think it felt like learning but more fun and discovery." (Mrs Moosa – TA)

"This is one of the best data loggers we have used. In the past, data loggers have felt like hard work, but we were able to use this one confidently. I liked that I could put pupils into mixed groups, and they would lead a lot of their learning once they understood the concept of data logging." (Mrs Parkinson – Y4 teacher)

"I liked measuring my pulse on the Data Logger." (Muhammad I – child)

With many thanks to Mohammed Dawood (Computing Lead) for writing the testimonial and Caroline Vickers and Sam Parkinson (Key Stage 2 teachers) who trialled the resource with their Year 4 class. Also, a big thank you to the pupils at The Valley for being our Terrific Testers.