

# Phase: Discover

## What insights are valuable to teachers?

**Method** → Literature research, Document analysis

### Literature Research



Associated Learning Outcomes:

1. Learning outcome 5: Investigative problem solving
2. Learning outcome 7: Goal-oriented interaction

To divide the literature research fairly, we randomly assigned different topics to each team member. I focused on gathering insights that would be useful to gym teachers regarding the impact of loud sounds on hearing and stress. We also carefully examined the research materials provided by Sorama. Specifically, I extensively studied the research related to insights valuable to PE teachers.

### Why is literature research important & how has it helped us?

Doing literature research was important to learn about existing knowledge on the topic. I read the research conducted by Sorama and discovered interesting insights.

Specifically, I focused on gathering information that would be helpful to gym teachers, showing them how loud sounds can affect hearing and stress. This research helped us understand the valuable insights that can be shared with PE teachers in the gym hall, raising awareness about the potential negative effects of being exposed to high noise levels for a long time. These insights guided us in determining what information can be provided to PE teachers.

### The Results

Link to the literature research - [Literature Research](#)

## My contributions

Independent Literature Research and Insights from Sorama's research

### ▼ Insights valuable to teachers

#### Insights that can be provided to the PE teachers:

1. Conduct noise level measurements: We can use a sound level meter to measure the noise levels in the gym hall and show the results to the PE teachers. This can help them understand the actual noise levels and the potential risks associated with prolonged exposure to high noise levels.
  2. Provide information on the effects of noise on health: Educate PE teachers on the effects of high noise levels on hearing and overall health. Explain that exposure to high noise levels can cause hearing loss, tinnitus, stress, and other health problems.
- Employers are required by law to prevent (hearing) damage to their staff and must provide hearing protection when exposed to a daily dose above 80 dB(A) or daily exposure to a dose above 85 dB(A).
  - **Fatigue, headaches, irritability, reduced focus, and vertigo** are among the complaints that physical education teachers experience as a result of exposure to noise in sports facilities.
  - **Six of the nineteen [30%]** participants were able to identify hearing complaints that they suffer from during work and in daily life.
  - **The organization of the lesson plan** can lead to lower noise pollution and better working conditions for physical education teachers.
  - Improving working conditions with regard to noise can be tackled by limiting the source, adapting the environment, or protecting humans.
  - It is **important to create awareness about the exposure and impact of noise in sports facilities** and to **develop information material to educate and inform** physical education teachers, employers, municipalities, and children.
  - Further research is recommended to **identify the needs that physical education teachers** have with regard to adjustments in sports facilities.

- Five complaints were identified regarding **voice problems**, with four participants experiencing **pain in their own voice** and one reporting a **sore throat**.
- Eleven participants suffer from **headaches** due to **excessive noise pollution**.
- Sixteen participants experienced **fatigue from processing excessive noise during the day**, with two explicitly stating mental fatigue.
- Seven participants reported **irritability due to excessive noise**, especially **at the end of the day**.
- Two participants **had difficulty focusing as the day progressed**, with one mentioning mental fatigue as a contributing factor.
- The most common complaint among participants was the **fatigue caused by excessive noise pollution**.
- Other factors that can influence complaints include **work pressure, stress, emotional state, and environmental factors**.

## The Next Steps

The next steps were to conduct a competitive analysis of apps that measure sound levels.