Method and Instrument: Immersive Learning Case Sheet (ILCS)

Immersive Learning Case Sheet (ILCS): Method and Instrument

The **Immersive Learning Case Sheet (ILCS)** is a method for describing immersive learning cases so that they can be compared, reused, and re-designed across projects and publications.[1] It builds on two existing frameworks:

- the **Immersive Learning Brain (ILB)**, which organises educational *practices* and *strategies* used with immersive learning environments;[2]
- the **Immersion Cube**, which characterises *uses* of immersive environments along three dimensions of immersion: system, narrative, and agency.[3]

In this repository, the ILCS provides the backbone for each case entry. Contributors do **not** need to run the full analysis at research level to participate, but this page explains the complete method so that descriptions remain coherent.

1. Goals of the ILCS method

The ILCS was designed to:

- focus descriptions on **how** immersion is used for learning, not only on outcomes;[1]
- tag each case with **practices** and **strategies** (from the ILB) and **uses** (from the Immersion Cube) so that cases are comparable;
- support **reflection and redesign**, by making it easy to see how a case could be enriched or transformed;
- generate a structured artifact – the *Immersive Learning Case Sheet* – that can be shared as a stand-alone reference.

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2. Overview of the ILCS workflow

At a high level, the ILCS method follows three phases:[1]

1. **Draft a rich description of the case.**
   Include context, participants, immersive environment, activities, and assessment – with attention to what learners actually *do*.
2. **Interpret the case with the Immersive Learning Brain (ILB).**
   Identify which *practices* and *strategies* are clearly present in the case, organised by ILB clusters.
3. **Interpret the case with the Immersion Cube.**
   Decide how much the case depends on system, narrative, and agency immersion, place it in the cube, and identify the closest generic *uses* of immersive environments.

The final **Immersive Learning Case Sheet** pulls these together as:

- a refined text description of the case;
- lists of ILB practices and strategies used;
- Immersion Cube coordinates (system–narrative–agency) and the most proximal uses;
- optional visualisations (images of the case, Immersion Cube plot, bar chart of distances).

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3. Phase 1 – Interpreting the case with the Immersive Learning Brain (ILB)

The ILB groups educational practices and strategies into six clusters such as **Active Context**, **Presence**, **Real and Virtual Multimedia Learning**, **Collaboration**, etc.[2] ILCS uses these clusters to keep the analysis manageable and coherent.

3.1 Minimum ILB steps for this repository

When preparing a case for this repository, aim to complete at least these steps:

1. **Write an initial free-text description of the case.**
   Focus on what learners, teachers/trainers, and systems do over time.
2. **Pick the most relevant ILB cluster.**
   For example:
   - if the case centres on meaningful real-world tasks, start with **Active Context**;
   - if embodiment and bodily movement are crucial, start with **Presence**;
   - if collaborative problem-solving dominates, start with **Collaboration**.
3. **Within that cluster, check each practice and strategy definition.**
   Using the ILB paper's tables,[2] compare the definition of each item with your

case:

- mark it as **present** only if the case description provides clear evidence;
- keep a short note on *where* it appears in the case (e.g., “certification test after VR training ? authentic practice and assessment”).

4. **Repeat for one or two additional clusters that seem relevant.**
   You do not need to cover all clusters unless you are doing a full research analysis.
5. **Revise the case narrative.**
   Rewrite your description so that readers can *see* the practices and strategies you marked as present. Is not necessary to add colored tag text like in the original ILCS article; what is important is to make the supporting details naturally explicit.

3.2 Optional full ILB analysis

For research-grade case sheets you may:

- examine **all six ILB clusters**,
- document *all* applicable practices and strategies, and
- keep a separate table of ILB tags to attach as supplementary material.

In this repository, you are **encouraged – but not required – to go this far**.

4. Phase 2 – Interpreting the case with the Immersion Cube

The Immersion Cube positions immersive learning activities along three conceptual dimensions:[3]

- **System immersion** – being surrounded by or embedded in the environment or system;
- **Narrative immersion** – engagement with spatial, temporal, and emotional aspects of a story or situation;
- **Agency immersion** – possibilities for meaningful action, decision-making, and control.

Previous work located **16 generic uses** of immersive learning environments in this cube (e.g., *Logistics*, *Simulate the physical world*, *Skill training*).[3] ILCS measures how close a specific case is to each of these uses.

4.1 Minimum Immersion Cube steps for this repository

1. **Describe immersion in your case.**
   Briefly explain how participants experience:
   - being present in the environment (system),
   - spatial/temporal/emotional aspects of the situation (narrative),
   - and possibilities for action and decision-making (agency).
2. **Assign coordinates (System, Narrative, Agency).**
   For each dimension, choose a value between 0 and 1:
   - 0 ? the case barely depends on that dimension;
   - 1 ? the case rests heavily on that dimension.
     Example: the wind-turbine maintenance training reported by Cassola et al. combines full system immersion in VR with medium narrative immersion and high agency, and was placed at (1, 0.6, 0.75).[1,4]

3. **Identify the closest generic uses.**
   Using the coordinates of the 16 uses from the Immersion Cube work,[3] compute or look up the Euclidean distance to each one.
   - In practice, you can rely on a spreadsheet, a small script, or the **Immersive Learning Case Sheet Assistant** (custom GPT) to do the calculations for you.
   - Record the **2–3 closest uses** and their distances; these will appear in your case sheet.
4. **Check whether the description supports those uses.**
   If a proximal use (e.g., *Simulate the physical world*) fits the case, ensure your narrative explicitly mentions the aspects that justify it (e.g., attention to fidelity of models and procedures). If it does not fit, you can note this briefly in the case sheet.

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5. Phase 3 – Building the Immersive Learning Case Sheet

Once you have the ILB and Immersion Cube interpretations, you can assemble the **Immersive Learning Case Sheet** for this repository. Each case sheet should at minimum include:

1. **Header block**
   - Case title
   - Contributors and affiliations
   - Source publication(s) and links (if any)
2. **Short description (abstract)**
   A 3–6 sentence overview of the case, focused on how the immersive experience is used.

3. **Context and participants**
   Educational level, content domain, number and profile of learners, other stakeholders.
4. **Immersive environment and technologies**
   Type of environment (VR, AR, MR, 360°, physical mixed setup, etc.), main platforms, physical spaces.
5. **Learning goals and assessment**
   Intended learning outcomes and how they were assessed (formal or informal).
6. **ILB interpretation – practices and strategies**
   - Main ILB cluster(s) used;
   - List of key **practices** and **strategies** with one-line justifications.
7. **Immersion Cube interpretation – immersion and uses**
   - Coordinates (System, Narrative, Agency)
   - Explanation in 2–3 bullet points
   - List of proximal **uses** with distances (and an optional bar chart if you wish).
8. **Media and resources**
   Screenshots, diagrams, links to videos or interactive demos, and links to further documentation about the case (e.g., a project website for the wind-turbine training case[4] or the Ancient Greek technology case[5]).
9. **Enrichment/Innovation notes (optional)**
   Notes based on the ILCS idea of *enriching* a case (adding nearby practices/uses) or *innovating* it (exploring distant clusters or uses).[1]

The **"Immersive Learning Case Presentation Template"** page in this chapter mirrors this structure so that you can create a new case page by copying and adapting it.

6. Using ILCS in this repository: quick path for contributors

If you are contributing a case and want a pragmatic path:

1. **Create a new page** under the repository and start from the **Case Presentation Template** in this chapter.
2. **Fill sections 1–5** of the template using your existing project notes or paper.
3. **Run a light ILB analysis**:
    - pick one or two clusters,
    - identify 3–6 practices/strategies that clearly appear,
    - add them to section 6 of the template.
4. **Estimate immersion coordinates and proximal uses** with the help of:
    - the ILCS article,[1]
    - the original ILB and Immersion Cube papers,[2,3]
    - or the **Immersive Learning Case Sheet Assistant** custom GPT (see “Additional resources” below).
5. **Attach media**, and if possible, add a short Enrichment/Innovation note.

Even this “lightweight” ILCS use already makes cases much easier to compare and reuse.

Additional resources

- **Wind-turbine maintenance training case** – Check out the case in this repository, and find detailed materials, images, and videos at https://vrtraining.inesctec.pt/[4]
- **Ancient Greek technology case** – Check out the case in this repository, and find more details in the arXiv preprint “Ancient Greek Technology: An Immersive Learning Use Case Described Using a Co-Intelligent Custom ChatGPT Assistant”.[5]

- **Immersive Learning Case Sheet Assistant (custom GPT)** – interactive support for following the ILCS method: https://chatgpt.com/g/g-JDLJLXin5-immersive-learning-case-sheet-assistant

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Attribution

Main source for this method summary: Beck & Morgado (2025).[1]

Page created on 13 November 2025 by Leonel Morgado, in co-writing with ChatGPT 5.1 Thinking.

References

1. Beck, D., & Morgado, L. (2025). *Describing and Interpreting an Immersive Learning Case with the Immersion Cube and the Immersive Learning Brain*. In J. M. Krüger et al. (Eds.), Immersive Learning Research Network. iLRN 2024 (CCIS, Vol. 2271). Springer, Cham, Switzerland. https://doi.org/10.1007/978-3-031-80475-5_8
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