Sero! is a **web-based assessment tool** for teachers and students. It uses an alternative to multiple choice — **concept mapping** — as the assessment method.

Brief

With some hindsight, and some usability testing data, I noticed several places where *Assessors* might struggle with the app. The following are three design revisions I made with the goal of **improving the usability of the authoring process.**
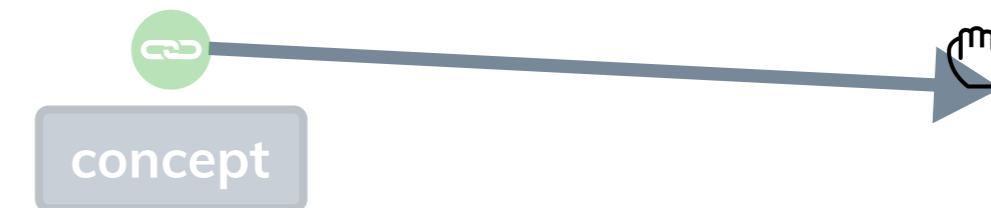
1. Linking interaction

Links are lines with arrowheads that connect ideas together in concept maps. To create links in the *Map area*, users originally had to...

1. Click the **link icon** attached to the **starting object** while holding the mouse down.
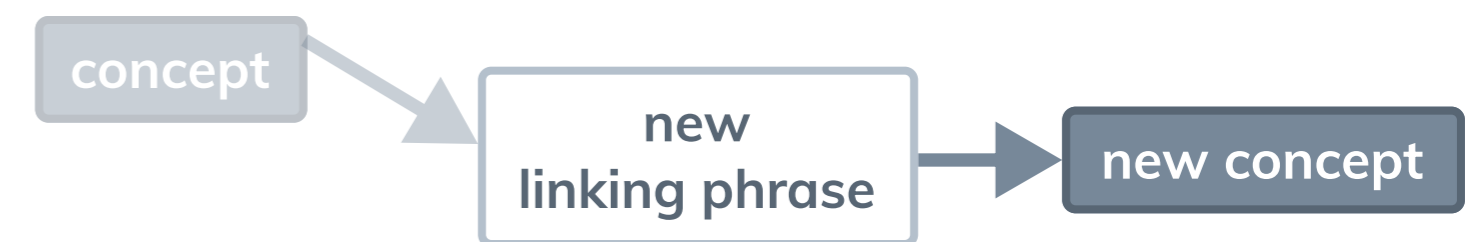
concept

2. **Drag** the cursor out from the starting object.

concept

3a. **Let go** of the mouse once on a **target object** to connect the starting object to it. **Or...**

concept

existing
linking phrase

3b. **Let go** of the mouse in a **blank area** to add **new content** following the starting object.

concept

new
linking phrase

new concept

Most people I observed would click the link icon and **immediately let go**. This unintentionally created new content and seemed to cause a lot of frustration.

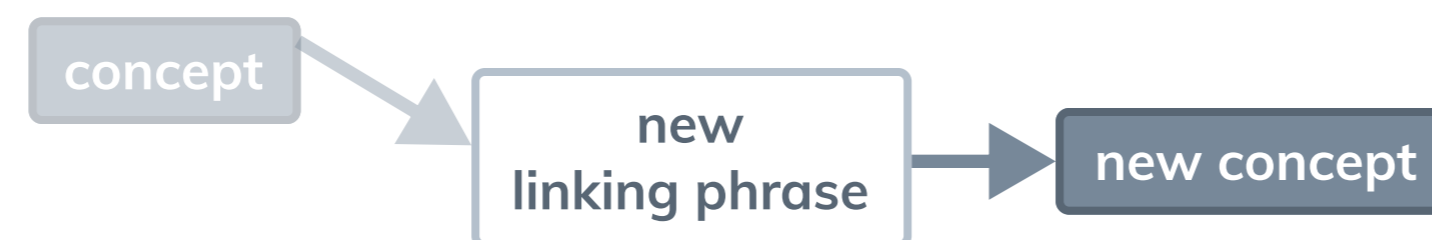I worked with the lead developer on an alternative:

1. Click the link icon attached to the **starting object** (and let go) to start a link.

concept
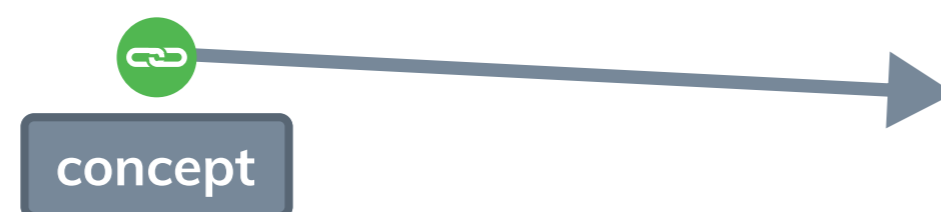
2a. Click the **target object** to connect the starting object to it. **Or...**

concept

existing
linking phrase
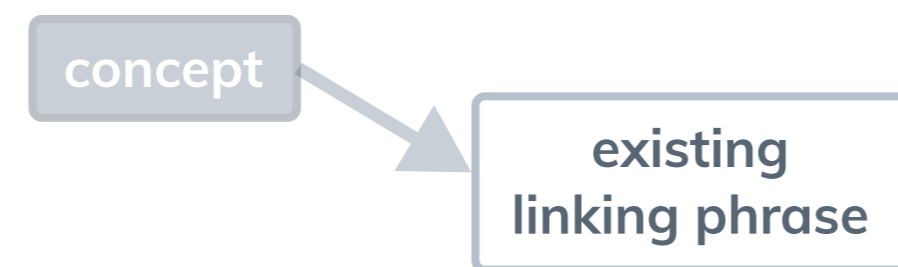
2b. Click in a **blank area** to add **new content** following the starting object.

concept

new
linking phrase

new concept

Concluding thoughts

- Following the updated interaction, teachers were able to **form links more quickly** with **little to no frustration.**
- Minimizing click-and-drag interactions can **maximize accessibility.**

2. Map editing layout

The *Left panel* and *Map area* work in tandem, but my original design displayed a gap between those elements. It would often take teachers a while to understand the relationship between them and to process the available actions.

Another more minor issue was the placement of the toolbar inside the Map area. Sometimes teachers would try moving content to the left and end up running into the toolbar, which was layered on top of the map content.

I made the following design edits in response to those issues:
- Unify the Left panel and Map area by...
  - removing the gap between them and
  - merging the headers of each element into one
- Move the toolbar from the Map area (vertical orientation) to the header (horizontal orientation)

Concluding thoughts

- Place separate elements that work together in the same container.
- Maximize screen space wherever possible.

Before
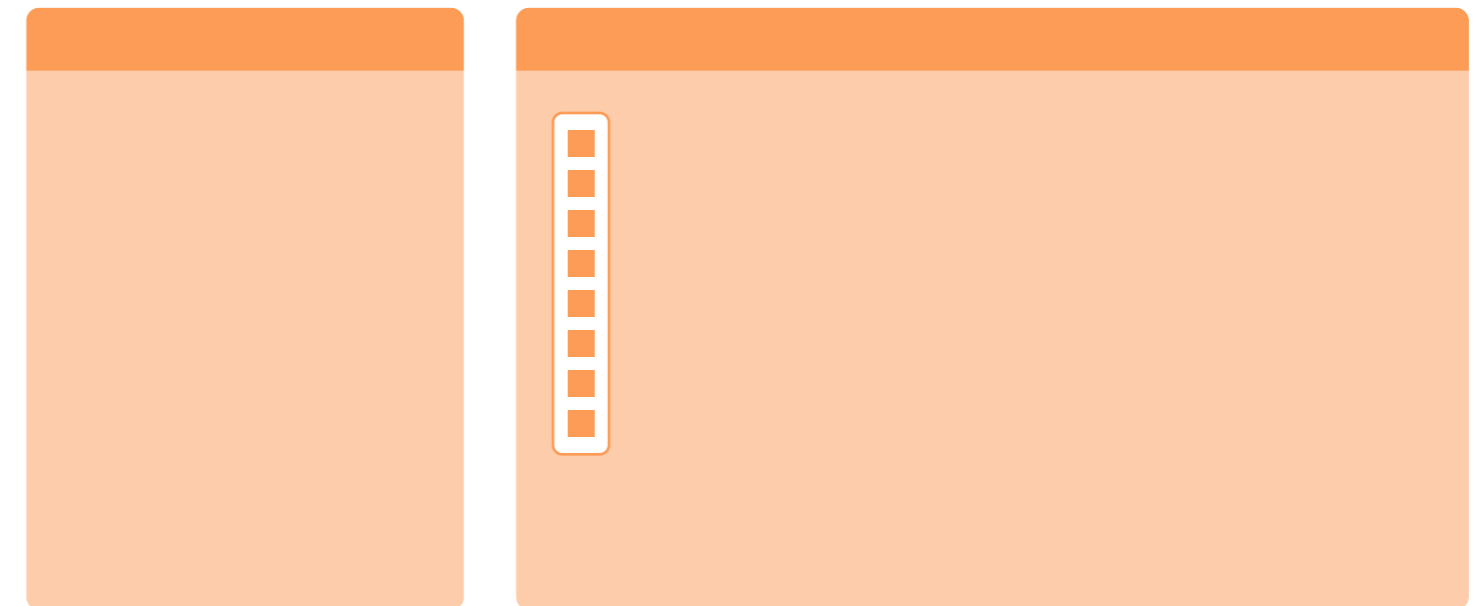
After

3. Map setup design

In the initial step of choosing settings to shape the concept map assessment, many teachers were **unsure where to start** and **struggled to understand some definitions**. The UI included question icons linking to more detailed information, but they were not enough on their own.

I made a couple small changes that would provide more guidance:

- **Number the steps.**
- **Add brief examples** of new terms that are immediately visible.

Concluding thoughts

- Vertical layout of information does not necessarily convey starting at the top.
- When displayed right, extra text does not have to overcrowd a design.
- Designs with too much context are better than those with not enough context.

Before

After

Assessment authoring *Quick Start Guide* ◀

| Map setup | Map content | Assessment | Assign |

Focus question ?

Focus question (required)

Assessment method ?

Scored | Unscored

☐ Let Learners create their own linking phrases

Start map from... ?

Scratch | Assessment | File | Text

Assessment authoring *Quick Start Guide* ◀

| Map setup | Map content | Assessment | Assign |

1. Focus question ?
Example: How is vision processed in the brain?

Focus question (required)

2. Assessment method ?

Scored — Create a full concept map against which Learners' maps are compared for a grade

Unscored — Add concept map elements from which Learners build their own maps for a diagnostic approach

☐ Let Learners create their own linking phrases

3. Start map from... ?

Scratch | Assessment | File | Text