

LectureGlyph

User Manual

Welcome to LectureGlyph

Most note apps remember *what* you wrote. LectureGlyph also remembers *the order* you wrote it in.

That difference is the whole app. When you write a lesson in LectureGlyph, every line, label, and picture is kept in sequence. Later, you press play and the page rebuilds itself in front of your students, one piece at a time, exactly the way you built it. You decide where it pauses, so you can talk, ask a question, or wait for the room to catch up. When you are ready, it continues.

You prepare the lesson once, at your own pace. You deliver it as many times as you like, and every delivery gets your full attention, because the writing is already done.

This manual walks through the app one screen at a time. If you only read one section, read **Five minutes to your first lesson** below. Everything else builds on it.

Five minutes to your first lesson

1. **Make a notebook.** In the Library, tap **New Notebook**  at the top right, pick a paper style, and tap **Create**.
2. **Write something.** Use your Apple Pencil and write a few lines, the way you would on a whiteboard.
3. **Drop a pause marker.** Tap the diamond button  in the top bar wherever you want playback to stop and wait, for example after a question you want the class to think about. The diamond fills in red  whenever the playhead is standing on a marker, so you can always tell whether a tap will add one or take one away.
4. **Play it back.** Drag the playhead to the start of the timeline and press play . Your page rebuilds itself, then stops at your marker. Press play again to continue.
5. **Add a new page.** When the page is full, tap add page  in the top bar and keep writing. Each page is a chapter of the lesson: playback finishes one page, waits for you, and then turns to the next.

That is the core loop: write, mark the pauses, play, turn the page. Everything else in this manual, including pens, pictures, PDFs, video recording, and the big screen, hangs off that loop.

The Library

The Library is the home screen. It has two collections, switched by the selector at the top:

- **Notebooks** : your lessons. Each notebook is a complete, replayable document.
- **Videos** : finished MP4 recordings you have exported. These are ordinary video files, ready to share anywhere.

The header

The title sits at the top left. At the top right is a fixed row of buttons, in this order:

Settings , Sort , New Notebook , New Folder , Import , Share , and Trash .

- The buttons never move. One that does not apply right now is dimmed rather than missing.
- The Videos tab drops New Notebook and Import, since neither means anything there.
- Inside a video folder the row is shorter still: Sort, New Folder, Share, and Trash.

Arranging the view

The sort button  opens one panel that holds both the layout and the order:

- **Grid**  or **List**  at the top of the panel.
- **Sort By:** Name, Created, Modified, or Type. The current choice is shown in color.
- Tap the current choice again to flip between ascending and descending. The small chevron beside it shows the direction. Type has no direction.
- Notebooks and Videos each remember their own arrangement.

Folders

Both tabs support folders, up to three levels deep.

- **Create** one with **New Folder** . The button dims once you are three levels down.
- **File an item** with **Move to Folder**, which lists every folder indented by depth, or drag the item onto a folder card and drop it when the card lights up. A folder can be moved into another folder the same way.
- **Move it back out** with **Library Root**  (**Videos Root** on the Videos tab).
- A folder has to be empty before it can be deleted.

Managing a notebook

Touch and hold a notebook to open its menu:

-  **Rename**
-  **Duplicate**: an exact copy, useful for trying a variation of a lesson without risking the original
-  **Share / Export...**: sends the notebook as a .lesson file (see **Sharing your work**)
-  **Move to Folder**
-  **Delete**: permanent, so be sure

Several at once. Tap **Share**  or **Trash**  in the header and every card grows a circle. Tap the cards you want  and finish with the button that now reads **Share (2)** or **Delete (1)**, or tap **Cancel**. Deleting this way asks first.

A damaged notebook does not vanish. It shows as a card with a warning triangle and the subtitle **Can't be read**. Tap it and the app offers **Share File...**, so you can recover the file elsewhere, **Delete**, or **Cancel**.

The Videos tab

Each card shows a preview frame from the recording, with the date, time, and file size. A video appears here only once it is complete.

- **Tap** to play.
 - **Touch and hold** for **Play**, **Share / Export...**, **Duplicate**, **Move to Folder**, and **Delete**.
 - An empty tab stays empty until you record something (see **Recording a video**).
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Importing a notebook

Tap **Import**  in the Library header and the Files picker opens straight away.

- Pick a .lesson file and it lands where you are, so importing from inside a folder puts the notebook in that folder.
- The app confirms with **Notebook Added** and offers **Undo Import** in case you picked the wrong file.
- Anything that is not a notebook is refused by name rather than failing quietly.

Converting a Doceri file

LectureGlyph can also read a Doceri file (.docerd) and rebuild it as a notebook. Pick one with **Import** and the app asks first, on a sheet headed **Convert a Doceri lesson?**, which tells you plainly what carries over:

- Audio is not converted, so the notebook is silent.
- Shading is approximated.
- Strokes you deleted in the original may reappear.
- A few very light marker taps may be missing. Tap them in again.

Tap **Convert** and a progress card walks through reading the lecture, rebuilding the strokes, and writing the notebook. The conversion runs to the end once it starts. The result arrives in the Library with `_converted` on the end of its name. Your original file is never changed. Play a converted lesson through once before you teach from it.

Settings

The gear  is the first button in the row at the top right of the Library. It opens **Settings**: five rows, then **Done**.

- **Keep the Pencil tool on all the time.** Every notebook opens with Pencil Only already on. You can still switch it off inside a notebook for that session.
 - **Default Playback Speed.** 0.5x, 1x, 2x, 3x, 4x, or 5x. Every notebook opens at this speed.
 - **Jump Buttons. Stop and Wait or Keep Playing.** This is what the jump buttons  do while a lesson is playing. The app arrives set to Stop and Wait (see **Playing your lesson**).
 - **New Notebook Name.** What the name field starts with in a new notebook: **Blank**, **Notebook Date**, **Numbered** (a base word such as “Lecture” and a starting number), or **Custom Prefix**.
 - **Share Diagnostics.** Sends the app’s diagnostics log, the same log the ladybug  in a notebook shares. The build number sits beside it, which is the number to quote if you ever report a problem.
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Creating a notebook

Tap **New Notebook**  and the setup sheet appears. Choose what you like, tap **Create**, and the notebook opens ready to write. That is it.

- **Notebook Name.** Filled in for you according to the naming scheme in Settings, ready to edit or keep.
- **Color.** The paper color: White, Legal Yellow, Blueprint, or Black, and a last swatch that opens the full color picker. Your pen colors follow the paper. Once the notebook opens, the three pen swatches are chosen to stand out against the background you picked (see **Size and color**).
- **Format.** Letter, Legal, A4, A5, or **Video 16:9**, a wide canvas shaped like a video frame and the right choice when the goal is a recording.
- **Orientation.** Landscape or Portrait. Video 16:9 is always landscape.
- **Paper Style.** Blank, Ruled, Grid, Dot Grid, or Music.

The sheet always opens on blueprint paper, Video 16:9, and grid, and the preview beside the choices updates as you go. Nothing here is permanent; you can change the paper of any page later.

The editor at a glance

Open a notebook and you are in the editor. It has three regions.

The top bar, left to right:

- Library , the pages pill  (reads “2 of 5”), and add page 
- undo , redo , and the pause marker diamond 
- the playback transport, and the speed button, which reads the current rate as plain text (**1x**)
- import , share , Pencil Only , and the record button  at the far right

On a full-size iPad at the standard text size, every control stays in the bar. A $\cdots$ button  appears only when something has to fold away: while recording in portrait, on a small iPad or a slim Split View, and in portrait at the largest accessibility text sizes. Nothing is lost; the folded controls are inside it.

The tool palette floats along the left edge, top to bottom: the pen , the highlighter , the eraser , the shape tool , the lasso , the text box , Ink Style , your three color swatches, Size , and the ladybug , which shares the diagnostics log. The build number sits under the ladybug.

The timeline runs along the bottom. It is the lesson’s spine: everything you have written, in order, with a cyan playhead  showing where playback stands. Pages appear as small squares with the page number inside, pause markers as red diamonds .

Leaving. The Library button  at the top left offers **Notebooks** and **Videos**, and below them a **Projector** section (see **Presenting on a big screen**).

Writing and drawing

The pens

Tap the pen button  to write. Tap it again, now that it is selected, to choose which pen it is:

-  **Gel Pen**: a clean, even line. The everyday choice.
-  **Marker**: a rounder, softer stroke.
-  **Chisel Marker**: an angled tip, calligraphy-style, thick and thin depending on direction.

While the notebook is open, the pen button remembers which of the three you last chose.

The highlighter

The highlighter  draws translucent color over your work without hiding it, with its own three swatches (yellow, orange, and pink to start). Tap the small chevron  beside it for its one option, **Straight Line**, which makes every highlighter stroke land perfectly straight.

Shapes

The shape tool  turns a rough drag into a clean line, ellipse, triangle, or rectangle; anything else stays as you drew it. Tap it a second time for the **Draw Shape** panel, where **Fill Color** makes the shape solid instead of an outline.

Ink style: how your handwriting is treated

The scribble button  opens **Ink Style**, which decides what happens to your strokes as you write. It affects new strokes only.

- **Raw:** exact pencil ink. Every point lands where you drew it.
- **Steady:** smooths small wobbles. A slider sets how much. If you are not sure, start here, around the middle.
- **Inked:** pen strokes commit as clean, confident ink with sharp corners. The other tools keep Steady smoothing.

Size and color

Size. The Size button  sits under the swatches and shows the current width as a line or a dot. Tap it for a slider that reads in points.

- Each tool remembers its own size, so switching to the eraser and back does not disturb your pen.
- The starting sizes are 4 pt for the Gel Pen, 5 pt for the Marker, 10 pt for the Chisel Marker, 7 pt for shapes, 36 pt for the highlighter, and 30 pt for the eraser.

Color. The three swatches sit above Size.

- Tap a swatch to switch to that color.
- Tap the *active* swatch (the one showing a small chevron ) to open a grid of fifteen colors plus a wheel for anything else, and change what that swatch holds. The picker works with the Pencil, too.

Pen colors follow the paper. The three pen swatches are chosen to stand out against the background:

- White paper: black, orange, and blue.
- Blueprint or Black paper: white, golden amber, and orange.
- Legal Yellow paper: black, deep green, and magenta.
- A custom paper color: black or white, plus two accent colors picked for contrast.

If a page has its own paper (see **Pages**), the swatches follow as you move onto that page. Change a swatch yourself and your set is saved with the notebook and stays the same on every page from then on. Ink you already drew keeps the color it was drawn in.

Pencil Only

The Pencil Only button  in the top bar makes the canvas listen to the Apple Pencil alone, so your palm and stray fingers stop making marks. Fingers still pinch, pan, and tap buttons. Most people turn this on and leave it on, which is what the Settings switch is for.

Moving around the page

- **Pinch with two fingers** to zoom. The ink stays sharp up close.
 - **Drag with two fingers** to pan while zoomed. With Pencil Only on, one finger pans too.
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Erasing, selecting, and rearranging

The eraser

The eraser  removes ink where you rub, and **erasing is part of the performance**: playback shows the mistake appearing, being erased, and being corrected, in that order. To make something go away *without* it becoming part of the story, use undo instead.

- It has a size like any other tool, 30 points to start, and no options panel.
- It erases ink only. Pictures and text boxes are removed from their own menus.

The lasso

The lasso  selects work you have already written. Draw a loop and the ink inside is picked out with a dashed outline.

- **Drag** the selection to move it.
- **Tap** the selection for its menu:  **Cut**,  **Copy**,  **Delete**.
- **Long-press a single stroke** to select that one stroke without drawing a loop. Press again in the same spot to reach whatever is underneath.
- **Tap outside** and the selection lets go. The lasso stays the active tool. Pinching to zoom does not lose a selection.

Paste

Touch and hold an empty spot on the page for **Paste** .

- Copied work lands already selected, ready to drag into position. Pause markers inside it come along.
 - Anything copied in another app pastes too: text lands as a text box, a picture lands like an imported photo.
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Text boxes

For typed text, tap the keyboard button  and then tap the page where the text should go. On playback the box appears at the moment you added it.

- **Move it while typing.** Drag the box anywhere and the keyboard stays up. Double-tap to select a word.
 - **Style it.** The toolbar sets size, font, color, alignment, and list style . Lists are per paragraph, so one box can hold a heading and a list.
 - **More.** The $\cdots$ at the end of the toolbar holds cut , copy , paste , duplicate , and delete .
 - **Edit later.** A finished text box behaves like ink until you **touch and hold** it, which wakes it for editing. A quick tap always draws, so you will never poke a text box by accident mid-lesson.
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Pictures and PDFs

Importing a picture

Open the import menu  in the top bar and choose **Import Photo...** . The picture lands on the page, selected and ready to place.

- **Place it.** Drag to move; resize from the four corner handles.
- **The buttons above it:** done , cut, copy, duplicate , rotate 90° at a time , and delete. Tap done when it is where you want it.
- **Afterward it behaves like ink.** Taps draw on top of it, and **touch and hold** wakes it again for changes. Pinching on a placed picture zooms the page, not the picture.
- **On playback** the picture appears at its moment, in one step, and the lesson waits there for you.

Importing a PDF

Choose **Import PDF...**  from the same menu and pick a file. The **Import PDF** sheet opens with a thumbnail of every page under **Pages**, all checked to start with, and a count at the top such as “3 of 3 pages selected”.

1. **Pick the pages.** Tap a thumbnail to leave a page out, or use **Deselect All** and tap only the ones you want.

2. Choose how they land, under **Import as**:

-  **Full pages**: each PDF page becomes its own notebook page, full size. The sharpest choice and the best one for writing on top. The classic worksheet as background.
-  **Pictures on new pages**: each PDF page becomes a picture on its own page, which you can move, resize, and rotate like any picture.
-  **Pictures on this page**: all selected pages land on the page you are on, staggered so you can arrange them. Good for a comparison or a collage.

3. Set the orientation, if you chose pictures. For the two picture styles a **Picture orientation** choice appears: **Upright** or **Rotated 90°**.

4. Tap **Import** and they arrive.

A password-protected PDF is refused with a plain message telling you to unlock it in another app first.

Pages

A page in LectureGlyph is more than a sheet of paper: it is a **chapter of the timeline**. Everything on page 1 plays back before anything on page 2, and playback rests at every page turn, so pages give a lesson its rhythm.

Adding a page. Tap  in the top bar. The button wakes up once the current page has something on it, so a lesson never collects blank pages in the middle.

The Pages panel. The pages pill  (“2 of 5”) opens a floating card with a thumbnail of every page:

1. **Tap a page** to jump there.
2. **Tap +** in the corner of a page card to insert a blank page in front of it.
3. **Touch and hold a card, then drag** to move it. The others slide aside as you go.
4. **Touch and hold a card without moving** for  **Edit Paper...**, which changes that page’s paper style and color, so one notebook can mix ruled pages with a grid page for graphs. Pages made from a PDF or a picture keep their background and have no Edit Paper.
5. **Delete pages**  turns the panel into **Select Pages**: tap the circles on the pages to remove, then **Delete (1)**, or **Cancel**.
6. **Done** applies your changes, and Undo puts them back. The  closes the panel and drops changes you had not applied.

You can also jump by tapping a page square in the timeline. Deleting pages happens only in the Pages panel, where you can see what you are removing.

The timeline, the playhead, and pause markers

The strip along the bottom is your lesson laid out in time.

- The **cyan triangle** ▼ is the playhead: the current moment. Everything before it is on the page; everything after has not happened yet.
- **Small numbered squares** are page boundaries. Tap one to jump there.
- **Red diamonds** ♦ are your pause markers. Touch and hold one for **Delete Marker**.
- **Scrub** by dragging anywhere on the strip. The page follows in real time, which is the fastest way to review a lesson.
- **Zoom the timeline** from the **Speed & Zoom** panel, which the **1×** button opens. Under TIMELINE ZOOM, slide right to stretch time around the playhead, or far left to see the whole lesson (🔍 / 🔍). This panel is the only place zoom lives.

Pause markers

A pause marker is where playback stops and waits for you. Move to the moment you want, usually right after you finish writing a thought, and tap the diamond ◇ in the top bar. A red diamond appears in the timeline, and the button fills in red ♦ while the playhead stands on a marker.

The button knows where it is:

- At a fresh moment, it **adds** a marker.
- Tapped again right after placing one, it quietly **removes** that marker, so a double-tap is never a mess.
- On any other marker, it **asks before removing**, so a finished lesson is protected from a stray tap.

A good starting rule: one marker after each question you would naturally ask the room, and one before each reveal.

Undo and redo

Undo ↶ and redo ↷ sit in the top bar. Undo in LectureGlyph works **where the playhead is**, not only on the last thing you did.

- **At the end of the lesson**, where you normally write, undo peels back your most recent work as you would expect.
 - **In the middle**, scrub back and undo the step there. The rest of the lesson stays intact, which is how you fix an old mistake without unwinding everything after it.
 - **What you add is safe for good**. Undo history for writing and edits is saved with the notebook, so you can still undo yesterday's work tomorrow.
 - **A delete gets one chance**. Deleting or cutting a lasso selection, a picture, a text box, or a pause marker can be undone only until the next thing happens: another edit, or the playhead leaving that page. After that, and after the notebook is closed, the delete is permanent. Undo it right away or not at all.
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Playing your lesson

This is the payoff. Move the playhead to wherever you want to start, then press play . The page rebuilds itself in your handwriting, in your order, and stops on its own at:

- every **pause marker**  you placed;
- every **picture and text box**, which arrive in one step and wait for you;
- every **page turn**. Playback rests on the finished page so you can talk about it, and the next press turns to the new page.

Press play again to continue. The lesson advances in beats that you chose, and between beats you teach. With the playhead at the very end of the notebook, play does nothing; it will not wrap back to the start behind your back.

The transport.

-  /  **Play and pause.**
-   **Step** back or forward one piece of work at a time. Useful for “wait, go back one step.”
-   **Previous and next section** jump between markers and page turns. While a lesson is playing they follow **Jump Buttons** in Settings: **Stop and Wait** lands on the stop and waits there, **Keep Playing** jumps and carries on. When playback is already paused the two choices do the same thing.
- **1x** opens **Speed & Zoom**, where **PLAYBACK SPEED** runs from 0.5x to 5x. Many lessons play well a notch or two faster than you wrote them. A change here lasts for this session; the opening speed comes from Settings.

Hands-free: keyboards and presenter remotes

Pair a Bluetooth keyboard or a presenter clicker with the iPad and you can drive playback from across the room. A clicker shows up as a tiny keyboard, so nearly any brand works out of the box.

Key	What it does
Enter	Advance: play on to the next pause
→ or Page Down	One press starts or stops playback where you stand. A quick second press jumps ahead to the next stop and waits there
← or Page Up	Go back to the previous stop and wait there
Space	Play / pause
Esc, B, or . (period)	Pause right now (“eyes on me”)
↓ / ↑	Next / previous section, following Jump Buttons in Settings
F5	Start from the beginning and play

Using a clicker. Most clickers send either Enter or Page Down from the forward button, and they behave differently:

- **If yours sends Enter**, one click plays on to the next pause. That is all you need.
 - **If yours sends Page Down**, one click starts or stops the lesson where it stands.
Double-click to move ahead: two quick clicks, less than half a second apart, jump to the next stop and wait there.
 - **The back button** (Page Up) always stops the lesson and returns to the previous stop.
 - Keys do nothing while you are typing in a text box.
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Recording a video

Recording turns a lesson into an MP4 video with your voice on it, for absent students, flipped classrooms, or posting online.

1. **Tap the record button**  at the right end of the top bar. The app asks for microphone access the first time. A double-tap is harmless; the take keeps running.
2. **Perform the lesson.** Advance through your pauses and talk as you would in class. A red readout shows the elapsed time, as in “REC 0:42”. The notebook saves itself every few seconds during a take, so a crash or a flat battery costs seconds rather than the session.
3. **Pause if you need to** , then **Resume recording** . Coughs and interruptions never need to be in the final video.
4. **Stop and save recording** . A **Rendering Video** card shows the progress while your narration and the page are combined. A long take asks first, since rendering takes a while and should not be interrupted. The finished MP4 lands in the **Videos** tab.

Good to know:

- **The ... menu.** In portrait the readout needs room, so Import, Share as PDF, Pencil Only, the speed list, and the two section buttons move into ...  for the duration of the take. The readout, pause, and stop always stay on screen.
 - **Throwing a take away.** Tap the Library button during a take and the app offers **Discard**. The audio recorded so far is deleted; your strokes stay in the lesson. Your writing is never touched by recording.
 - **Paper.** If video is the main goal, build the notebook on **Video 16:9** paper, and the page fills the frame edge to edge.
 - **Sharing.** From the Videos tab, send the MP4 anywhere a video goes: AirDrop, mail, a learning management system, YouTube.
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Presenting on a big screen

Connect the iPad to a projector or TV, by AirPlay, an Apple TV, or a cable, and LectureGlyph can send a **clean feed** to the big screen: only the page and the ink appearing on it. The audience sees a lesson; you see the controls.

Open the Library button  at the top left and look under **Projector**. One of three choices is always in force:

- **Standby** shows a neutral LectureGlyph card. A projector that has been plugged in always lands here first.
- **iPad screen** shows the room your whole iPad, tools and all. Pick it when you want to show how something is done.
- **Presentation** sends the clean feed: the page and the ink and nothing else.

Every launch starts on Standby. With nothing plugged in, the menu says “No projector connected”. Pair this with a clicker and the setup is complete: the lesson on the wall, the controls in your hand, and you free to stand wherever the teaching is best.

Sharing your work

Three different things can leave the iPad:

- A **video** is a normal MP4. Share it from the Videos tab ; nothing special is needed to watch it.
 - A **PDF of the notebook** is the handout version: the finished state of every page, ready to print or post as notes. Tap **Share**  in the top bar and pick **PDF**, the normal choice, with ink that stays sharp at any zoom, or **Flattened PDF**, which turns each page into a single picture for rearranging or editing pages in another PDF app.
 - **The notebook itself** is a .lesson file, shared from the Library . This is the *living* version, with the full timeline and markers. Another iPad with LectureGlyph can open it and play, edit, or record it. Use it to move lessons between your own iPads, to share with a colleague, or to keep an archive.
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Every icon at a glance

Library header

Icon	Name	What it does
	Settings	App-wide preferences and Share Diagnostics
	Sort	Grid or List, then Name / Created / Modified / Type
	New Notebook	Opens the setup sheet
	New Folder	A folder here (up to three levels)
	Import	Brings in a .lesson notebook or a Doceri file
	Share	Starts selection, then Share (2)
	Trash	Starts selection, then Delete (1)

Top bar

Icon	Name	What it does
	Library	Notebooks, Videos, and the Projector choices
	Pages pill	“2 of 5”; opens the Pages panel
	Add page	New page after this one (needs content first)
	Undo / Redo	Playhead-aware undo (see Undo and redo)
	Pause marker, off	The playhead is not on a marker; a tap adds one
	Pause marker, on	The playhead is on a marker; a tap removes it, asking first unless you placed it a moment ago
	Sections	Jump between markers and page turns
	Step	One piece back / forward
	Play / Pause	Run the lesson
	Speed	Text, not a glyph; opens the Speed & Zoom panel
	Import	Import Photo...  or Import PDF... 
	Share	PDF or Flattened PDF
	Pencil Only	Only the Apple Pencil draws
	Record	Start a video take
	More	Appears only when controls have to fold out of the bar

Tool palette

Icon	Name	What it does
	Pen	Gel Pen, Marker, or Chisel Marker
	Highlighter	Translucent color, own swatches, Straight Line
	Eraser	Recorded erasing (part of the performance)
	Shapes	Clean shapes, optional fill
	Lasso	Select, then move / cut  / copy  / delete 

Icon	Name	What it does
	Text	Typed text boxes
	Ink Style	Raw / Steady / Inked, with a steadying slider
	Size	Width in points, remembered per tool
	Share Diagnostics	Sends the log, with the build number under it

Timeline

Icon	Name	What it does
	Playhead	The current moment; drag the strip to scrub
	Pause marker	Playback stops here and waits

Accessibility

- **Text size.** LectureGlyph follows the text size you set for the iPad, so labels and panels grow with it. At the largest sizes, in portrait, some top-bar controls fold into the ... menu, and long panels scroll, so nothing runs off the screen.
- **VoiceOver.** The controls have spoken names, including the current playback speed.
- **Motion and transparency.** The app respects Reduce Motion and Reduce Transparency.

The teaching behind LectureGlyph

LectureGlyph grew out of a classroom problem, and the reasoning behind it is set out in the white paper *Teaching Into the Pause*. This is the short version.

The problem. Teaching at a board asks you to do two demanding jobs at once: *producing* the visual (writing legibly, placing things correctly, keeping the steps in order) and *delivering* the lesson (explaining, pacing, watching faces, answering questions). Done together, each gets in the way of the other. Slides escape the problem by giving up the unfolding. Recordings escape it by giving up the liveness. LectureGlyph keeps both: prepare the handwritten path once, then teach it live, one step at a time.

Why the design should help. It rests on cognitive load theory: working memory is small, and teaching works better when unnecessary load is removed (Sweller, van Merriënboer, and Paas 2019).

- **For the teacher: offloading.** The writing was done earlier, when nothing competed with it. In class your attention goes where only a person can spend it, on the explanation and the room (Risko and Gilbert 2016).
- **The pauses: segmenting.** People learn more from material presented in meaningful chunks, with a moment to process between them, than from one continuous stream (Rey et al. 2019). A pause marker is a segment boundary made physical.
- **The stillness between pauses: transient information.** Speech and live drawing vanish as they go. A paused page turns a vanishing stream into stable steps a student can study for as long as the moment needs (Leahy and Sweller 2011).
- **The hand that draws.** Students learn more from watching a diagram being drawn than from seeing the same diagram finished (Fiorella and Mayer 2016). This is why LectureGlyph replays strokes rather than showing finished pages.
- **Worked examples.** A solution shown clearly step by step is one of the most reliable tools for teaching novices, especially in mathematics (Barbieri et al. 2023). A LectureGlyph lesson is a worked example delivered one step at a time, with a teacher present at every step.

The lesson doubles as the notes. Because the page arrives already written, students do not have to race to copy the board. You can also plan the opposite on purpose: leave part of a page blank, or erase a worked step, pause, and give the class time to produce it themselves.

One lesson, every modality. The same notebook teaches in person on the projector, live online through a shared screen, recorded as a video for a flipped or self-paced course, and in hybrid courses without being made twice. That reach comes from storing the lesson as strokes and pauses rather than as video.

What is claimed and what is not. The research findings above are established results from the learning sciences. That this particular design delivers them in real classrooms is, so far, design reasoning: well grounded, not yet measured. The white paper says so plainly, and so does this manual.

Further reading

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