

Weak-Network Reach Readiness Checklist

A one-page path to delivering learning video on slow, costly, and unreliable networks — recorded lessons, live classes, offline, and codec choice.

A. Recorded lessons — adaptive bitrate

- Ship an HLS or MPEG-DASH adaptive ladder, not one fixed-quality file
- Include a real low rung at 240p/360p (a few hundred kbps), not just 480p and up
- Verify the ladder on a throttled 3G connection before every release
- Keep captions on every rung — a few KB, and they help most on weak links

B. Live classes — graceful degradation

- Use WebRTC with simulcast/SVC so the server forwards fewer layers on poor links
- Define the fallback order: lower video layer, then audio + slides, then audio only
- Carry voice on Opus (16-32 kbps speech) with FEC and DTX enabled
- Prioritise the instructor's audio above every other stream

C. Offline & intermittent connectivity

- Offer download-on-Wi-Fi, watch-offline for commuters and field learners
- Queue xAPI statements on the device; sync to the LRS on reconnect
- Handle the edge cases: half-finished download, failed sync, full storage

D. Codec & device floor

- Keep an H.264 version as the universal compatibility floor
- Offer HEVC/AV1 only where the device decodes it in hardware
- Test on a real low-end phone, not just office Wi-Fi, before launch
- Track data-per-hour as a product metric, not just resolution