Barriers to Breakthroughs

Assistive Technology Solutions for Under-Resourced Student Populations

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This handout is the accessible companion to the poster. It contains the same content in a linear, screen-reader-friendly format, including the full tool comparison and resource list.

The Financial Barrier

About 1 in 5 undergraduates (roughly 21%) report having a disability, yet only about 37% disclose it to their college. At Hispanic-Serving Institutions, Minority-Serving Institutions, and community colleges, disability often overlaps with limited finances, first-generation status, and work and family demands.

The traditional “recommend-and-purchase” assistive technology (AT) model assumes that students or institutions can afford costly commercial software. For under-resourced campuses, that model fails — which makes AT access an equity issue, not just a technical one.

- Approximately 21% of undergraduates report a disability.
- Only about 37% disclose their disability to their college.
- Roughly 60% of students at the presenter’s HSI/MSI are first-generation college students.

A Five-Strategy Framework for Affordable AT

1. Free and open-source software — low- or no-cost tools that match commercial functionality.
2. Built-in operating-system accessibility — features already paid for on every device and platform.
3. Streamlined equipment loans — a simple, sustainable lending system students can rely on.
4. Campus partnerships — leverage IT, libraries, and bulk licensing already available on campus.
5. In-house alternate formats — produce accessible materials with tools you already own.

Commercial AT vs. Free and Built-In Alternatives

Tool names are examples for illustration, not endorsements. Confirm current licensing and accessibility before adopting any tool.

Need / Function	Common Commercial Tool	Free or Built-In Alternative	Platform
Screen reader	JAWS ($$$)	NVDA (free, open-source); plus Narrator, VoiceOver, TalkBack	Windows / Mac / iOS / Android
Text-to-speech & reading support	Kurzweil 3000, Read&Write ($$)	Microsoft Immersive Reader, NaturalReader (free tier), Read Aloud	Windows / Mac / Web
Speech-to-text (dictation)	Dragon ($$)	Voice Typing (Windows key + H), Apple Dictation, Google Docs voice typing	Windows / Mac / Web
Screen magnification	ZoomText ($$)	Windows Magnifier, macOS Zoom, mobile operating-system magnifiers	Windows / Mac / Mobile
Note-taking & audio capture	Genio ($)	OneNote, Otter.ai (free tier)	All platforms
Mind-mapping & organization	Inspiration ($)	Freeplane, XMind, Coggle (free tiers)	Windows / Mac / Web
OCR & alternate formats	ABBYY FineReader ($)	Microsoft OneDrive, OneNote OCR, built-in scan tools	Mobile / Windows
Dyslexia & reading focus	Specialty overlays ($)	OpenDyslexic font, Immersive Reader line focus	All platforms

Built-In Accessibility Features by Platform

Every major platform includes accessibility tools at no extra cost. These are often the fastest, lowest-barrier option for students.

Platform	Key Built-In Tools (No Cost)
Windows	Narrator, Magnifier, Voice Typing (Windows key + H), Live Captions
macOS	VoiceOver, Zoom, Dictation, Spoken Content
iOS / iPadOS	VoiceOver, Speak Screen, Dictation, Live Captions
Android	TalkBack, Live Transcribe, Select to Speak, Voice Access
ChromeOS	ChromeVox, Select-to-speak, Dictation, Magnifier

Building a Sustainable Equipment-Loan Program

- Prioritize versatile devices — “buy once, serve many” by choosing equipment that meets multiple student needs.
- Track simply — a clear check-in / check-out log plus routine maintenance keeps equipment in service.
- Set a tiered loan policy — written agreements and clear timelines make lending fair and predictable.
- Reinvest the savings — redirect freed budget into student training and ongoing support.

Key Takeaways

1. For nearly every commercial AT category, at least three free or low-cost alternatives exist.
2. Built-in operating-system accessibility features are powerful and already paid for.
3. A sustainable equipment-loan program is achievable on any budget.

The Bottom Line

Cost-effective AT can match commercial tools when it is matched to student need and paired with good training. Quality access is a matter of strategy — not budget.

Resources

The poster includes QR codes linking to (1) a downloadable Free and Low-Cost AT Tool List and Resource Guide and (2) the AHEAD session evaluation form.

References

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