LIBRELEARNER - A PROOF OF CONCEPT PROJECT

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PROJECT SUMMARY

LibreLearner is a project to see how much of K-12 education can be provided in the form of free software and open-access materials. It seeks to streamline three necessary functions of schooling: conveying information, facilitating collaboration among students, and certifying subject mastery. It can be used as a standalone app or a tool for schools to reduce overhead and material costs. This is an introductory briefer on what core features the project may entail.

EDUCATION TYPES

Public Schooling:
Per-student spending has more than doubled since 1970, yet performance and graduation rates have been stagnant. Curricular content disputes are frequent.

Private Schooling:
Many private schools cost less per student yet deliver better results. Room for improvement in terms of cost and flexibility is still possible with the right tools.

Homeschooling:
Home schooled students typically score at around the 85th percentile of public school counterparts. Costs for curricular materials is usually hundreds of dollars per year. It often faces the criticism that students do not interact much with a variety of peers, or spend much time encountering the outside world. "Co-ops" are a means families address this purported drawback. A way of forming up collaborative learning groups on the fly with a wider variety of students would be of help.

MVP FEATURES

MVP Overview:

We will start with a two-stage MVP (minimum viable product) that will initially focus on math to reduce obsolescence issues. The first stage will entail testing each of the core features independently with as little coding as necessary. We intend to gauge interest in features by testing them outside of a software context. Our feature-unison MVP will come as close as possible to being an alpha prototype of the app itself.

Cognitive Loading:

Achievement gaps on psychometric exams are less prevalent on tests of raw memory than pure intelligence. For LibreLearner, cognitive assessments similar to the Stanford-Binet or Wechsler Adult Intelligence Scale will be generated and used to find realistic user pace for various academic subjects. From there, material will be formatted in a way that puts the focus on memorizing smaller steps; each requiring less mental effort for users to process. Current research suggests this is truly what effective schools do to begin with when raising the performance of struggling students. Chunking more sophisticated material has the potential to put struggling students on easier ground.

Distributed Practice:

Distributed practice is a concept that is well documented in research literature as an effective way to help students master subject material over time. In app form, LibreLearner will recommend that users review material less often over time as they become more familiar with it. Early MVP testing will utilize manual review to get a sense of how useful this technique is for various subjects, as well as what app-based review must achieve.

Wikischool Utility:

Homeschool "co-ops" are great, but how might students meet a wider variety of people in a wider variety of locations? LibreLearner will utilize user's zip codes for geospatial and demographic uses. From there users can be linked up into collaborative study groups on the fly. These groups can be one-time gatherings, or ongoing. An additional goal would be to utilize the API's for various rideshare services as a means to facilitate transportation if needed. Virtual schooling is also an option for long-distance student collaboration. Overall this utility alone would mean a common criticism of homeschooling (not meeting others or seeing the outside world) would not apply to users of LibreLearner.

Subject Decision Trees:

Traditional schooling places students in grade levels according to age and prior subject mastery. LibreLearner takes a more open-ended approach in which users can learn any type of "problem" or subject matter as long as they have mastered prerequisite material. Grade levels are replaced with something more reminiscent of decision trees; but level of achievement can be mapped onto traditional K-12 grades as needed.

Ideological Turing Tests:

In more soft subjects, controversial issues may arise in which debate between one or more sides is commonplace. Rather than mandate or ban a particular viewpoint, LibreLearner users are invited to engage in Ideological Turing Tests in order to see if they truly understand views they disagree with. These could be done in a live Toastmaster's style presentation, or in the form of essays that other people read and rank via the app itself.

Proctoring & Open Badges:

LibreLearner will use the Open Badges platform as a form of "diploma" for subject mastery. For test proctoring, using blockchain algorithms to digitally sign audio/video footage of someone taking an exam will be explored as a possible feature (but not in the MVP!). If workable, it would make charging for tests unnecessary and make centralized control of certification nearly obsolete.

Revenue Models:

LibreLearner will utilize various open-source business models while operating as a Benefit Corporation. This means we can have room for incentive while maintaining our primary goal: Giving a better alternative to government and corporate means of schooling for as many people as possible.