Looking Over the Edge — Open and Affordable Educational Resources: From Promise to Adoption

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Introduction

The landscape of higher education is on the brink of transformation as two well-known industry drivers come together at the center stage: technological advancement in the form of "AI" and rising economic pressures. While these ingredients are not all new, the particular flavor of the former comes with high expectations — for university administrators, faculties, publishers and students alike.

This all takes place at a time where we are already witnessing two shifts that are well underway, both in the research as well as the teaching and learning spheres: On the research side, the shift to open access publishing — with over 50 million free scholarly articles being available via open databases such as Unpaywall[1] today. On the teaching and learning side, the growing call for "affordable learning" in the form of Open Educational Resources (OER), library resources and free online resources — in an effort to halt rising costs associated with education.

The body of open and affordable resources continues to grow, with large repositories such as OERCommons holding over 50,000 resources[2] and over 1,500 open textbooks being available in the OpenTextbookLibrary today. Per ITHAKA's latest S+R U.S. Library Survey,[3] nearly half of the libraries indicated support for instructors and students with OER as a high priority. Despite the increasing availability of high-quality free and open educational materials, their integration into higher education curricula has not kept pace with their production. Data from the Open Syllabus Project[4] reveals that OER textbooks are assigned to about 1 in 80 for all of the U.S. syllabi it holds for 2023. Moreover, uptake can differ strongly from institution to institution depending on their profile, commitment to open and affordable learning, available staff support and other factors.

This paradox raises important questions about the barriers to wider adoption and how these can be overcome. Where course adoption, for all learning resources, comes with its challenges and barriers, open and affordable learning resources typically face certain unique challenges of their own. The ability to overcome these seems all the more important today, to ensure sustainable savings and lasting impact. Educators face a number of obstacles such as time-constraints, local adaptability challenges and quality concerns, to name a few.

As a result, libraries and instructional designers increasingly find themselves at the forefront of this, tasked with navigating this complex terrain to support both educators and learners. While spirits and potential are high, time constraints and ambiguity around OER quality and the many options out there remain a reality. With new technology advancements such as AI, the road from promise to mass adoption is now in sight.

Together with several universities and their faculties in Europe, we have explored these challenges and developed Sylla — a technology solution that teams up with universities and faculties to adopt open and affordable resources, tailored to their syllabus, within minutes. Let's have a look at the "adoption challenge," results from real-world pilots, and touch upon the road ahead to ensure we can move from promise to adoption.

Adoption Challenges for Open and Affordable Resources

At many institutions, librarians, instructional designers and faculty are in search of cost-effective solutions to support teaching and learning. Adopting open and library-licensed materials has been presented as a promising area for reducing expenses without compromising educational quality. The Zero Textbook Cost (ZTC) movement as well as Inclusive Access (IA) deals with publishers are new models that aim to lower course material spend per student. Where ZTC focuses on leveraging open and library-licensed resources to avoid any student courseware purchases, the IA model has enabled library and consortia to centrally negotiate more competitive textbook prices for their students. The IA model has, however, also received criticism for limiting student choice, imposing financial burdens, and impacting the role of academic libraries adversely[5] — and time will tell whether it will be opt-in, opt-out or something different all together.

Still, it is clear that both the institution and faculty intend to make this transition work. This is also reflected in an increasing level of awareness of faculty when it comes to open materials and the topic of affordability.[6] However, the road to widespread adoption of cost-effective resources holds a number of challenges, particularly from the faculty perspective.

In our conversations over the last year with library staff, industry experts and faculty, we saw strong support and a shared commitment in using more open and library-licensed materials — both from the institutional staff as well as educators. As we zoomed in on what was holding back larger success, a number of issues came up repeatedly. Understanding these hurdles is crucial for institutions and policymakers seeking to promote adoption of open and library-licensed resources:

Time Constraint, Competing Priorities and Limited Discoverability

The main barrier to adoption raised by faculty lies with the substantial time and effort required to change a course. This applies to any switch in learning material, either a new commercial textbook, OER or library-licensed resource.

Adopting new materials for one's course demands a significant investment, often competing with educators' already packed schedules of teaching, research, and administrative duties.

With open and library-licensed resources scattered across various repositories and platforms, faculty often struggle to find high-quality materials that match their specific course needs. The sheer volume can make the evaluation and selection process overwhelming, discouraging faculty from even starting a search in the first place.

OER Quality Concerns

Quality concerns also loom large in the minds of many teaching faculty for OERs in particular. Unlike traditional textbooks produced by commercial textbook publishers, the quality of OER can be inconsistent and vary widely. Consequently, faculty members must invest additional time in carefully evaluating OER before adoption, a process that can be both time-consuming and challenging as mentioned above.

Limited Supply of Materials

The availability of suitable OER presents another significant hurdle, particularly in specialized or advanced fields. While introductory courses often have a large number of open resources available, the same cannot be said for upper-level or niche subjects. Fields that require frequent updates or highly specialized content, such as law or medicine, face even greater challenges in finding appropriate OER. This scarcity often forces faculty to either create their own materials from scratch or continue relying on traditional textbooks.

Lack of Ancillary Courseware and Classroom Fit

Traditional textbooks often come bundled with instructor resources, test banks, and supplementary materials that faculty rely on to streamline their course preparation and delivery. Many OER and library-licensed materials lack these ancillary resources, placing an additional burden on faculty to create them from scratch. In fact, many library-licensed materials may hold relevant information but are not geared towards the classroom, thereby uniquely troubling their integration into a learning context.

Lack of Institutional Support and Recognition

The absence of policies, incentives, or support structures for adoption can discourage faculty from exploring any adoptions at all. Given the many tasks, the lack of institutional incentives significantly impact faculty enthusiasm for course reform. The level of training on-campus and ongoing support tools vary across institutions, which results in different levels of open and cost-effective resource adoptions.

OER Sustainability and Updates

Faculty using traditional textbooks for their teaching are used to receiving periodic updates to keep their classes current. They tend to stick with their textbook of choice as a reliable source for their ongoing teaching duties. On the contrary, the long-term maintenance of OER, platforms and the continued availability of adopted resources are not always guaranteed. Exceptions exist, such as OpenStax, which has proven itself and established a significant community to support new editions. Yet, keeping OER content current, especially in rapidly evolving fields, can be challenging without dedicated funding or community support structures in place.

Case Study: Implementing Open and Affordable Resources

Amidst the challenges mentioned above, some institutions have made remarkable strides in realizing affordable learning adoptions and reducing costs while preserving quality. In the United Kingdom, one of these is Coventry University. Coventry University centrally supports their undergraduate students by providing all course essentials[7] from day one at no additional cost to the student. Thanks to this scheme, students have benefited from day one access to high quality digital materials, resulting in increases in academic performance as well as student outcomes.[8] We should note a key differentiating factor here compared to how other schemes frequently used by peer-institutions work. In this particular case, the institution centrally pays for the essential course resources, whereas in many other cases students still carry the cost for these resources at the end of the day.

While a central payment model has its benefits, costs for educational resources can differ from provider to provider and year to year. In an effort to better align expenditure on educational resources with perceived value, Coventry made a remarkable transition in the 2022/2023 fiscal year. During a one-year period, they managed to transition approximately 50% of their courses to more affordable learning alternatives. This result was achieved thanks to a top down and coordinated approach led by University leadership, and supported by library, staff and key decision-makers. This campaign resulted in annual savings of approximately 25% per student per text — while ensuring students continued to receive access to high quality learning resources at no additional costs. Beyond financial success, the campaign demonstrated that, with the right approach, faculty members can be mobilized and an institution-wide adoption strategy can work.

From there, we worked on how we could repeat such success — yet, now including OER and a sustainable practice that could remain in place over time — as this initial effort involved significant manual work, staff time and other challenges that could possibly be improved upon. By incorporating OER, the potential for cost savings increased significantly, while again ensuring that students continued to receive access to high quality learning resources at no additional costs. Besides cost-savings, this shift involves a broader and shared vision to move towards a future where we avoid commoditization and create more flexibility around course-creation and how content in various shapes and sizes may serve the needs of the educator.

This, coupled with the pedagogical benefits of open and adaptable materials, made for an attractive prospect for the University — and potentially other budget-conscious institutions in future.

Designing a Framework for Adoption

To design a (replicable) framework for adoption, we collaborated closely with library staff, senior leadership, as well as faculty members from day one and throughout the entire process. This way, we could quickly learn what had worked well in the past (transforming 50% of the courses within 12 months) and which pains and challenges existed for repeating such an exercise now involving OER.

From these conversations, we drew up the following pilot scope and principles:

Pilot Scope:

- Test a technology solution that can support the adoption process for open and affordable resources.
- Provide recommendations for 16 high-enrollment courses in the undergraduate domain of the Faculty of Business.
- Test and deliver custom features that support a seamless adoption process for library and academic staff.
- Scope the requirements for a scaled-up solution to roll out institution-wide.

Principles:

- **University in Control:** The University handpicked a particular school within the institution with high-enrollment courses, and open to experimentation around OER.
- **The desire to "swap" one particular paid-for-resource for one open resource:** While there is potential for the mixing of resources, there was a desire to keep things as simple and frictionless as feasible to start with.
- **Ensuring a quality experience, while respecting time limitations:** As both library and academic staff time is scarcely available.
- **Technology as augmentation:** Any technology should be easy to work with and usable for both library and academic staff, to ensure the University and staff can preserve their autonomy.

From Theory to Practice: Testing the Technology Solution on the Ground

Based on the pilot scope and principles, we came up with the first version of the technology solution (Sylla) which emphasized a more streamlined and effective OER discovery and adoption process. This approach leverages cutting-edge technologies to create a personalized discovery experience for faculty members, tailored to their specific syllabi and learning objectives.

Key features and elements included:

- **Syllabus-based recommendations:** The system analyzes course syllabi to suggest relevant OER materials, ensuring a close alignment with course content and learning outcomes.
- **Limited, high-quality results:** Rather than overwhelming users with extensive lists, the system presents a curated selection of the most relevant resources from a controlled set of trusted OER databases — displaying five recommendations initially.
- **Contextual elaboration:** For each recommended resource, the system provides detailed explanations of its relevance to the syllabus and potential contributions to learning outcomes — from a resource to a chapter level.
- **Gap analysis:** The system identifies potential areas where OER materials may not fully cover course requirements, allowing faculty to make informed decisions about supplementary resources.
- **User-friendly interface:** The solution is designed to be intuitive and easy to use, minimizing the time and effort required from faculty members.

Results

From Spring until Summer 2024 onwards, over a six month period, we jointly implemented and tested this solution at Coventry's School of Business and Law. Thanks to strong support from the Associate Dean during this period, we received syllabi for 16 courses, and 16 faculty members tested the solution.

- 16 faculty members accessed the solution.
- 10 faculty members committed to using OER in their upcoming term as their core course resource.
- This resulted in significant savings for these high-enrollment courses.
- Thousands of students now benefiting from these OER-enabled courses.
- This switch resulted in savings of approximately 95,000 GBP compared to last year's spent on commercial eBooks for these 10 courses.

For a holistic cost picture, we should note that related expenditures still exist, of course, and should be considered for an accurate comparison. These expenditures, mainly related to technology (hosting services, providing EPub 3 across the board, Sylla services) remain in place to ensure a consistent and high quality faculty and student experience. When we deduct these fees of 34,000 GBP, total savings net 61,000 GBP — a saving of approximately 64%.

The Associate Dean and faculty members welcomed the solution and appreciated the personalized experience. By taking their existing syllabi as the starting point, the discovery and adoption process felt intuitive — as it was tailored around their programme already. Providing a granular breakdown of how the recommended resources could match with their learning objectives and teaching topics saved significant time and effort, when it comes to searching and identifying possible resources. Additionally, the "less is more" approach, simple steps and direct URLs to inspecting and assessing the options (as they are openly available) made for a smooth journey.

While overall positive, certain areas of improvements and interesting feedback came back. Firstly, there was a preference and a wish for more locally authored open textbooks or options (UK-authored in this case) which did not always exist. Secondly, in some cases, there were what we called "geographical constraints" for courses. For instance, for one of the courses in question (UK Contract Law), open textbooks exist, though not tailored and specific for UK-based contract law. This meant that, for some courses, we were not able to meet the required quality standards and thus this resulted in an unsuccessful adoption. Still, this information (of cases where no suitable options exist) was deemed very interesting as a potentially "demand-driven" approach for creating new OER to fill these gaps in future.

Promising Results – Moving to an Institutional-wide Approach

We jointly concluded the Coventry pilot to be a success, while not all courses were transformed, a large number of them were — and we have been able to further realize real cost savings for the institution while demonstrating the potential of targeted, user-friendly discovery tools in promoting OER adoption.

Next to the Coventry pilot, we worked in parallel on a second small-scale pilot at Utrecht University in the Netherlands. This way, we could learn from a different institution, in a different country and context, whether our solution might also work outside of the Coventry & UK context — for wider audiences. At Utrecht University, following a similar adoption framework and working with six courses from across departments and teaching levels (under and postgraduate teaching), we managed to reach a similar verdict.

Where both institutions are distinct and each have their unique vision on open and affordable learning, they were aligned in their wishes for the next step for Sylla:

Now that we demonstrated that we can effectively realize adoptions for open and affordable resources — how can we broaden success and impact across the institution?

Next Steps for Implementing Open and Affordable Resources

To broaden success and move towards institution-wide success, we feel that a critical ingredient to support quality teaching and learning lies in having seamless access to a wide array of educational materials. As institutions start to implement more cost-effective teaching models and solutions, we are convinced that the availability of a bespoke solution for collating such resources is crucial. Challenges towards adoptions have been discussed, and we believe that with today's tools and awareness, the time is right to make the leap.

Saving Time with Personalized Discovery

In order to tackle the main issue of limited time, any campus-wide implementation needs to be focussed on personalisation and efficiency. At Sylla, we are focused on analyzing teaching profiles, as well as course syllabi and learning objectives, so that we can offer relevant resource recommendations. Many solutions today are focused on a traditional keyword search, returning a vast amount of results to skim and filter through. Instead, we observed that by presenting faculty with a limited set of contextually relevant recommendations yields higher engagement. We believe that this can promote the chances of deeper discovery and thus ultimately result in a more effective approach for realizing adoption.

Strategic Institutional Support and Quality Control

A recurring theme when discussing open and affordable adoptions is the central question of "what is affordable" and "what is qualitative content"? We envision that, today and in the future, institutions can control which databases and collections to activate, so that these interpretations are within institutional control. This enables autonomy and the delivery of a trusted resource pool by institutional experts to faculty and ultimately their students. This collaborative effort between librarians, instructional designers and faculty is critical and probably ever more relevant in a world involving AI.

Addressing Supply by Enriching Library-Licensed Content and Filling OER Gaps

As mentioned, another challenge toward wider adoption of open materials is the lack of supply and fit with the classroom. We strongly believe that this can be overcome by a combination of identifying and addressing OER gaps together with better leveraging existing resources. For existing resources, by focusing on recontextualizing existing resources such as monographs, videos and articles, they can become more suitable for teaching needs. Or to quote a recent blog on the Scholarly Kitchen by Lisa Hincliffe[9]:

"*By transforming information objects into learning objects, these tools unlock the contents of articles and books and expand their reach beyond experts who can already relatively easily make sense of what they are reading.*"

Similarly, the leading repository for Open Access monographs OAPEN[10] also identified this opportunity, and stated that:

"Content from open access monographs and articles may be incorporated into OER, but is usually recontextualised for pedagogic purposes"

Enriching such open and library-licensed resources will support a more diverse pool of resources available for adoption. Especially for upper-level and specialized courses that rely on academic articles or book chapters, this holds true. As a result, a large number of affordable resources can be unlocked and drive adoptions to grow their reach and impact.

Achieving Interoperability with Institutional Infrastructure

Finally, to ensure a seamless experience for faculty, the adoption system needs to integrate well with existing institutional infrastructure. This includes ensuring that selected resources can be readily integrated into the institution's student delivery system — crucial for widespread adoption. Also, making sure faculty can access library-licensed materials requires a deeper integration as well as partnerships with such publisher and database providers. Ensuring compliance with licensing requirements and transparently flagging risks for selected resources to faculty.

Conclusions

As we look to the future and address increasing scrutiny on the cost of education, it is important to embrace recent technologies and leverage existing quality resources already made available. Together with institutions and their faculty members, we have explored the question of growing adoption for open and affordable resources. This effort evolved into Sylla, through which we are determined to elevate the resource adoption experience for faculty members, so that more faculty members can deliver an affordable and qualitative learning experience to their students. As we are working towards this and keep a close eye on rapidly changing technologies, we have some early remarks which we believe can support this transition:

Next-Generation Discovery Platforms

The development of sophisticated, AI-driven discovery platforms holds the promise of changing how faculty prepare for their semester teaching. These platforms should:

- Analyze existing information such as course syllabi and learning objectives to provide tailored recommendations
- Seamlessly integrate and enrich open and library-licensed content
- Offer intelligent gap analysis and suggestions for (supplementary) materials
- Provide tools for easy customization and adaptation of resources

Empowering Faculty Creativity and Shifting to More Personalization

By leveraging open and library-licensed content and making it easier to work with these, faculty can be empowered to create truly personalized teaching experiences:

- Support diverse teaching and learning styles
- Enable easy collaboration and sharing of customized materials amongst faculty
- Allows for more responsive and adaptable curricula
- Facilitate the creation of adaptive learning pathways

Balancing Openness with Sustainability

While pursuing greater openness and affordability for educational resources, it's crucial to maintain a balanced ecosystem. We see a need for ensuring sustainable support for the creators of open and affordable resources as well as support for key infrastructures and service providers. With particular areas of attention being:

- The exploration of sustainable funding models for OER creation and maintenance
- Developing of fair compensation mechanisms for authors and publishers of high-quality educational content
- Fostering collaborations between institutions, libraries, faculty and content providers to ensure a rich and diverse educational resource landscape
- The development of infrastructure and service providers to enable long-term success

While the road ahead is long, it feels attainable, and we envision the key to success lies in creating an ecosystem that seamlessly blends open resources and library-licensed material. We believe the future of education is one of personalization and accessibility — where there is more to choose from, for more people. A world where high-quality, affordable educational materials are readily available to all teachers and learners, supporting a more accessible and dynamic educational experience for all.

Endnotes

1. https://unpaywall.org/
2. https://oercommons.org/about
3. https://sr.ithaka.org/wp-content/uploads/2023/03/SR-Report-2022-US-Library-Director-Survey-03302023.pdf
4. https://blog.opensyllabus.org/oer-adoption-update-2023
5. https://acrlog.org/2024/02/02/unveiling-the-deceptive-duo-inclusive-access-and-equitable-access-a-threat-to-student-choice-and-library-reserves/
6. https://www.bayviewanalytics.com/reports/digitallyestablished-2023.pdf
7. https://www.coventry.ac.uk/study-at-coventry/student-support/course-essentials/
8. https://bibliu.com/go/student-outcomes-and-content
9. https://scholarlykitchen.sspnet.org/2024/07/30/ai-enabled-transformation-of-information-objects-into-learning-objects/?informz=1&nbd=1abff775-64c1-4637-8119-510a2b2e37da&nbd_source=informz
10. https://oabooks-toolkit.org/faqs/4608422-open-access-books-landscape/article/15707814-oa-books-and-open-educational-resources