The Open Education Consortium (OEC)

A Future University Concept

Salvo Lavis

Overview

The **Open Education Consortium (OEC)** is a hybrid approach to American post-secondary education rooted in providing fundamental value on three levels:

1. To the **individual**, as the development of inherently valuable personal knowledge and skills
2. To **society as a collective**, as the aggregate effects of a more knowledgeable populace
3. To **individual-institutional transactional interactions**, as more efficient, effective, equitable markets for labor and education. Perhaps the most common such transactional interactions are in markets for labor, but the value provided by OEC extends beyond job searches.

OEC itself is comprised of three related but independently-functioning divisions, each focused on providing value at one of the three societal levels (presented here in reverse order of connection with the levels above):

- **Platform** - The Open Knowledge, Skills, and Experience Platform (OKSEP) is a system for creating a digital model of an individual's knowledge, skills, and experiences (KSE). This model generates a unique KSE Passport for each student, which can hold models of educational attainment, or stamps, based on a variety of factors relating to the student's educational journey. It is *open* in the sense that any institution can stamp or query the student's record — but only with his or her consent. The utility and reliability of the system will grow over time as the amount of data on the platform grows. The OKSEP team is composed largely of data and computer scientists, responsible for platform development, data mining, security, and continual improvement of the KSE data and query functionality. The OKSEP primarily supports the OEC's mission to facilitate transactional interactions between individuals and institutions.
- **Research Institute** - The Open Education Consortium Research Institute (OECRI) is an interdisciplinary academic research institute dedicated to better understanding

relationships between knowledge and society. This includes the study of fundamental knowledge that benefits the individual and his or her community, how knowledge and education impact societies from local communities to internationally, and trends in knowledge and skills needed in labor markets. Faculty are drawn from diverse fields including economics, philosophy, government, data science, artificial intelligence, and the humanities. The OECRI primarily supports the OEC's mission to improve access to work and education for the betterment of society. It provides research advice for the development of the Platform. It also advises the Open Education Consortium Academy (see below) regarding design and development of its course offerings.

● **Academy** - The Open Education Consortium Academy (OECA) provides free online education in a core set of areas determined to be of critical importance to the individual and society irrespective of employment. The OECA provides certifications of completion of these courses in the form of stamps in the student's KSE Passport. The OECA primarily supports the OEC's mission to provide individuals with inherently valuable personal knowledge and skills. Its classes are built to take full advantage of the Platform's KSE Passport, and its curriculum is developed in partnership with the Research Institute.

The focus of the Open Education Consortium's fundamental values and its associated institutional components are summarized as follows:

Value Levels	Institutional Components
Transactional Interactions	Open Knowledge, Skills, and Experience Platform (OKSEP)
Society	Open Education Consortium Research Institute (OECRI)
Individual	Open Education Consortium Academy (OECA)

The following is a deeper dive into the functioning of each institutional component for a more elaborate picture of the OEC. I will conclude with a discussion of the merits of the institution.

OEC in Detail

Platform

Higher education is often described and justified bottom-up, starting from knowledge. There are many things that are "good to know," and college is an opportunity to learn them. The OEC shares in the belief that there are, indeed, things worth knowing for their own sake. Unpacking these is the mission of the Research Institute, and teaching these things is the mission of the Academy. But to understand the need for the OEC overall, we must first focus on education from a transactional viewpoint.

The transactional utility of an education is well known—education helps tell employers if and why they should hire you. More accurately: some combination of a person's knowledge, skills, and experience (KSE), as well as their university degree itself (and other potential "market signals"), present a model of that person to institutions considering if and how they want to transact for labor. But for the sake of understanding the need for a knowledge platform, a dynamic notion of transaction is important.

With respect to labor transactions, the transaction that likely comes to mind is the trading of time for money. But the more salient transaction for the purposes of considering the OKSEP is the exchange of information between the individual and hiring institutions. Before wages get paid, companies want to know if your skills match their job profile. Will you be a good fit for the job? Conversely, you as a job applicant want to know if a job is a good fit for your skills and growth interests. But the job market is vast, and companies can't get to know each applicant for each position. So parties on both sides rely on proxy signals. Currently this informational transaction happens rather crudely, at least early in the application process. An applicant presents a resume listing a degree and previous work experiences; a company presents a job listing that details functions of the role. Often information on both sides is cloaked in decorative or vague language. Perhaps a candidate's degree and some keywords suggest a fit.

It is helpful to think of KSE in the transactional sense as a basis for query. In many job searches, a degree functions as a kind of binary "if" gate—*if* you have a bachelor's degree, consider; *else*, reject. Beyond that first gate, especially if the applicant's college major isn't directly related to the job posting (e.g. a history major applying for an account supervisor role, or a psychology major applying for a job in restaurant management), the specific knowledge or subjects learned by the applicant often become topics for interview discussion (at best, *if* the applicant gets an interview).

But what if a query could be much more customized and focused? Instead of "does this person have a BA?" or "do any keywords match our keywords?" what if the job search could be powered by queries such as:

- Given the KSE profiles of the last three people who succeeded in this role, would this applicant's KSE profile be a good fit? What factors point to yes, and what factors detract?
- How does this applicant's interest in and academic success in history courses bear on our sales team's ability to sell government contracts, and why?
- How likely is this person to learn X and Y systems quickly?
- Given the KSE profiles of everyone currently in the department, and given that we want to expand our service offerings to include X, which applicants best compliment the existing core KSE requirements while introducing KSE elements demanded of the new role?

Note: none of the queries above talk about bachelor's degrees or majors. A bachelor's degree or major would be one of many factors in an applicant's KSE Passport. Existence of a BA *could* be part of a KSE query, but it might be weighted less than other factors relating directly to an

applicant's learning journey. Companies would have the means to query potential employees in innovative ways, augmenting or replacing the bachelor's degree as a proxy requirement for a lot of entry-level jobs. This is about more than making job searches more efficient for employers. It means an individual's knowledge and skills can better speak for themselves, irrespective of how or where people developed them. By allowing institutions to more accurately query applicants, we can lighten the effects of many traditional barriers to higher education when it comes to how those effects play out downstream in peoples' livelihoods. People without traditional bachelor's degrees might rightfully access jobs that they would have been locked out of otherwise. This expands economic opportunities for economically disadvantaged individuals and communities.

It also gets at the core assumption of the KSE Passport model: if institutions are able to run robust, reliable, specific queries based on better knowledge of their own needs as well as more deep information about individuals with whom they wish to contract—and if those queries are able to be run at scale across many applications—then education's function in the search process can have a more nuanced, accurate, and efficient effect.

Individual-Institutional Interface

But this system should not be limited solely to matters of hiring people for jobs. As mentioned before, it helps to think of the KSE Passport as facilitating the individual-institutional interface between people and institutions. I use "individual-institutional interface" here to mean any situation where institutions and individuals exchange information for the purposes of understanding and/or decision making. We do this all time time when we:

- Decide which jobs to apply to / Decide which applicants to hire
- Decide which schools to apply to / Decide which prospective students to admit
- Decide to join a club / Decide whether to admit prospective members

All of the above are transactional between two parties. The aggregate results of many such queries over time can lead to a kind of reflexive query — one that doesn't involve another party directly, but which uses existing knowledge of KSE to affect decisions about KSE itself. Notably:

- An individual can consider whether and how to invest in further education or training
- An institution can consider whether and how to restructure or better train its workforce

Note that these are not transactional in the traditional sense, but a kind of "self transaction." This highlights a great use of the KSE Passport: not only can it be used to facilitate transactions, but it can be used to better institutions as well as a person's knowledge of his or her own skills (and shortcomings). With the Platform:

- An individual can better understand strengths and gaps in his or her KSE profile.
- A company can better understand KSE strengths and gaps in its workforce.
- An educational institution can create and adapt learning experiences tailored to the individual's KSE profile.

That last point is key — the same system designed to facilitate the economic ends of education can also be leveraged to help learners better understand gaps in their own knowledge, either as a matter of marketability or for the sake of learning itself.

On Passports and Stamps

The passport terminology provides a helpful analogy. With a conventional passport, as a person travels across borders, foreign countries will apply stamps—generally upon entry and exit. The Passport issuer doesn't suggest where the individual should travel, or for how long, or what to do while there. The Passport issuer simply provides the ability for the holder to receive stamps and visas. Imagine a hypothetical travel passport that doesn't just stamp the day you entered and the day you left a country, but rather logged a detailed accounting of where you traveled within the country, what kinds of activities you did, how you interacted socially, what you ate, what new experiences you tried, how proficiently you spoke the language, and what information you retained about all these various experiences. Such a passport wouldn't only answer the question "have you been to France?" but would answer "what *kind* of trip to France did you take?" Travel to many countries, and such a passport could start to answer the question "would this person enjoy visiting Argentina, and why?" Or "if this person traveled to South Africa, they would most engage with X." Extending this analogy to the KSE Passport, the notion of a "stamp" implies the latter, robust model. But it also, critically, does not require that all stamp-issuing bodies stamp equally.

The OKSEP functions much like a sovereign country as the issuer of a passport. It verifies the integrity of the Passport itself, and allows certain benefits to its citizens—rights as a holder of the Passport. In the case of OKSEP, those rights include the right to privacy of the data, to only allow access to data selectively, to accredited querying bodies, and in certain instances. Where you decide to travel—who you decide to let stamp and read your passport—is up to you, the holder.

In the educational context, imagine that select institutions were equipped to issue multi-dimensional stamps while others simply stamped in/out. Learners (as "travelers") could choose educational institutions (as "destinations") based on the complexity with which they want their passport stamped. For the KSE Passport, the OEC Academy will set the gold standard for mapping educational experiences onto multi-dimensional Passport stamps. Other educational institutions can follow suit.

The open platform also allows a user to self-stamp. Imagine that you love natural history, and you regularly visit public lectures at your local natural history museum and you also seek out museums of natural history wherever you travel. Ideally, these institutions could stamp your KSE Passport with factors relevant to the lectures and exhibits you attend. But you could also stamp your own passport, attesting to your interest and action. The Platform's AI will learn over time whether your self-stamps are trustworthy (by virtue of comparison against other people, as well as by how other entities rate your ability in self-stamped areas). Self-stamping allows an individual to benefit from the self-directed learning they already do (through books, films,

podcasts, informal classes, lectures, museum visits, articles, etc), and it encourages people to seek out such opportunities.

Finally, any stamp of any level of complexity can be factored into queries about a user's KSE journey. But as popularity of robust stamping catches on, and queries favor stamps with more meaningful data, educational institutions will develop more meaningful, complex ways of stamping KSE Passports. (See for case studies and a hypothetical Passport.)

Information Symmetry

The goal here to to make information as symmetrical as possible for both parties on the end of a KSE query—that is, institutions should be able to query an individual's KSE Passport in an attempt to evaluate match to a model, but individuals should also know how robust an institution's model is, and what KSE Passport dimensions are being queried. It is better in a market for information that all parties have as much information about other parties as possible. In an ideal world, a company would deeply understand how an individual's KSE profile fit their labor needs and an individual would similarly deeply understand how a company's KSE demands fit with their profile.

A Passport Profile Over Time

An individual's KSE Passport will not be static, but will build over the course of his or her lifetime as she acquires and develops knowledge, skills, and experience. Similarly, hiring institutions should be expected to develop and hone their models for KSE needs.

Your Passport is Your Private Data

An individual controls all data in his or her KSE Passport, forever. It cannot become the property of any third party. Third parties can be granted access to Passport data selectively:

- For limited periods of time (e.g. five minutes, one hours, five days, or two years)
- At varying levels of access (e.g. read, write, modify)
- For parties with certain credentials (e.g. an educational psychologist, but not employers)

Other useful security levels can apply, including control of the depth of query. For example, imagine having a black box in which you store various objects, adding and removing objects as you like. In the most *open* query, I would ask "let me see what's in the box." But perhaps you don't want me looking in the box. Perhaps you will allow me only to ask functional queries for which you can generate answers, something like: "Do you have at least three but no more than eight tools, including at least one hammer that you've acquired in the past year?" A bit esoteric in the case of the box of stuff, but now consider your KSE Passport as the safeguarded repository in question. You could reject questions like "show me your grades and motivational levels on all your classes that you've ever taken," but allow questions like:

- How much experience do you have engaging with topics in popular culture?

- Do you understand how to compute basic statistics using a spreadsheet, but not necessarily have any advanced computer coding skills?
- In what ways do you continue to acquire skills and experience relating to English composition?
- What are the five stamps that you most share in common with my current team?

The idea is that you don't have to let an inquirer see every stamp, strength, and weakness reflected in your Passport. You just have to agree to answer questions to the degree the inquirer wants. You can understand what is being asked before you decide to answer, and you'll know what information will be acquired.

This fine-grained level of control when applied to the KSE Passport means that the individual can control her privacy comfort level.

Research Institute

Now that I have discussed the importance and value of the OKSEP and KSE Passport, I can take a step back and ask: what knowledge and skills do we need to thrive? This is where the Research Institute side of OEC comes in.

A knowledge passport model as described above could be developed as a private enterprise. However, there would be little incentive to treat knowledge and skills as more than transactional demands of customers. For the KSE Passport to be more than a tool for industry, its models must also reflect current understanding about how knowledge best impacts the individual and the public. Thus, the Research Institute studies knowledge as a contributor to individual thriving and public good, independent of an individual's employment status or institutional affiliations. Its findings impact design and development of the Passport, though it operates as an independent entity.

Core research focuses include:

- How industry needs and uses KSE in employment. Faculty would come from business schools and economics departments.
- Models of knowledge: what we know, should know, and will need to know, as well as how domains of knowledge influence each other. Faculty would come from philosophy, education, economics, cognitive science, and history departments, as well business schools and across scientific disciplines.
- Socioeconomic trends in education and labor. Faculty would come from economics departments and business schools, as well as futures studies.
- How to best teach and instruct. Faculty would come from education, psychology, and cognitive science, as well as centers for teaching.

The list above is a sampling of the research interests of the Institute. In short, if the topic affects not only what we know and how we know it, but also how that information might be applied in terms of education and/or Passport queries, it's fair game for the Institute.

The aim of the OECRI is to become the world's preeminent research institution on matters of applied models of knowledge.

Academy

The Open Education Consortium Academy's mission is fairly straightforward: provide free online classes for adults in the core pathways of knowledge that the Institute deems critical for adults in the U.S. Completion of the degree pathway is certified on the KSE Passport, with OECA as the school of record.

There are plenty of schools and organizations that offer free classes. But the OECA aims to be precise and selective in terms of the specific knowledge that it imparts for free. In this endeavor it is closely guided by the Institute. It also aims to make the digital record of the learning engagement as meaningful and detailed as possible. In this capacity it is deeply linked to the Platform.

The Academy will develop courses taught by preeminent teachers from around the world. In many cases, the same subject matter will be offered in multiple classes, each presented in different teaching styles. The objective is to allow as wide and diverse a set of learners to grasp ideas that are deemed critical for an individual in modern society.

Anyone with the interest and desire can enroll in these courses for free. There are no prerequisites and no entrance exams. The OECA core pathway is intended to be completed in 12 months, with a standard pace of 200 hours of course and reflection time spread over 50 weeks, at 4 hours per week. The pathway can be completed as quickly as in 6 months, but no longer than 2 years. The program is intended to be a serious commitment, but one that doesn't require more time than watching two movies per week for a year.

The OECA does not issue diplomas or credentials in the traditional sense. Rather, it "stamps" the learner's KSE Passport with a model of learning engagement more robust than a letter grade and a degree. The courses are designed to measure a depth of metrics about the student ranging from time spent reviewing and studying, engagement with AI discussion bots, performance on intermediate tests (if taken), performance on final exams (if taken), persistence, quality of written argument, and quality of verbal argument. All exams and free-form responses are graded by AI. The resulting KSE Passport stamp is not intended to replace a traditional bachelor's degree, but rather to model the user's engagement with core critical knowledge. Also it can provide a stepping stone for anyone to explore critical ideas, test and prove their ability at engaging with these ideas, and leverage their experience to pursue additional education or employment as desired.

An individual who pursues his bachelor's degree through a traditional university can still have his KSE Passport stamped with this critical knowledge. The complexity of the stamp in the KSE Passport depends on the issuing institution's degree of integration with the OKSEP model.

OECA is not a replacement for a traditional four-year college. Pursuing a traditional undergraduate major will still come with many of the benefits still afforded by colleges and universities. But the OECA certification might replace the *function* of a bachelor's degree as a de facto requisite for a lot of work.

Finally, OECA does not get into the business of *job training* per se — it solely focuses on critical fundamental knowledge. The teaching of job-specific skills will still be left to traditional universities, upstart universities, trade schools, and private industry. Ideally these institutions will deeply integrate with the KSE Passport.

Discussion Questions

Is there a need for a multi-part model for higher education?

It is known that knowledge itself improves quality of life. Knowledge expands a person's ability to model the world, allowing him or her to make more informed decisions about all aspects of life including health, social, and economic decisions.

It is also known that education as *formalized* knowledge has transactional value. That is, degrees and credentials get a person better jobs and other opportunities.

Meanwhile, the cost of higher education is as high as it's ever been, and that cost continues to grow. This puts a significant financial burden on the individual.

American colleges are experiencing a crisis of shrinking enrollment. Small colleges and universities are especially vulnerable.

All these challenges point to a need to re-evaluate value, cost, and access when it comes to higher education. Access to critical knowledge should be increased. The cost of access to that critical knowledge should be as low as possible (arguably free, as the OEC sees it). And systems of education should study and integrate deeply with the ways that knowledge and credentials interplay.

So yes, radical rethinking of post-secondary education is warranted. This model is one proposal.

What does "open" mean and why is it important?

The "open" in Open Educational Consortium is inspired by two senses in which the term is often applied. Open source software, as defined by Red Hat, is "software with source code that anyone can inspect, modify, and enhance." This inspires the open nature of the OKSEP. And open education, per the US Department of Education's Office of Educational Technology, is in part an "ecosystem" with "learning materials, data, and educational opportunities available without restrictions imposed by copyright laws, access barriers, or exclusive proprietary systems

that lack interoperability and limit the free exchange of information." This inspires both the OECRI and OECA.

The open nature of the OEC means:

- Anybody can obtain a KSE Passport
- No institution is inherently more privileged than another when it comes to stamping Passports; distinctions between institutions are borne out by the quality of their stamps and the quality of individuals who carry their stamps
- The research findings of the Research Institute are available for free to anyone online
- The ability to enroll in OECA is available free to anyone

Who pays for all this?

While obtaining a KSE Passport is free for the individual, stamping and querying a Passport will cost a nominal fee. As educational institutions and companies derive value from recording and querying information with greater fidelity, it is fair that they share in the cost of providing that value. Much like Visa and MasterCard earn money from small fees on credit card transactions, the OKSEP will earn a small fee from stamps and queries of KSE Passports. Unlike Visa and MasterCard, however, OKSEP is a non-profit institution. Any revenues in excess of operating costs will generate funds for new research and help fund creation of new Academy courses.

The first years of the OEC are expected to be net negative, and as such the OEC seeks a seed endowment from existing well-endowed universities interested in investing in a future model of education. Ideally, professors from those universities could participate in the OECRI; scientists could help build the Platform; and faculty could team OECA courses. The possibilities for mutual benefits for both OEC and existing universities are deep.

Case Studies and an Example Passport

Abel

Abel is an 18 year-old high school graduate. He's smart and curious, but traditionally has not performed well in school. He still isn't sure whether college is the right move for him. He is more comfortable working at a local art supply store than applying for college and taking out student loans. As he works, Abel decides to take the Open Core Knowledge Credential series over two years.
As he progresses through the program, he sees that his learning profile would be a good fit for mechanical engineering (based on the Platform's AI advisor). This resonates with Abel, as he has enjoyed being the go-to person to construct the art store's window displays.
He is able to apply for work with an engineering firm as an inventory specialist, with his new employer agreeing to subsidize a B.S. in mechanical engineering. His Open Core credential allows him to waive certain general education requirements of the B.S., saving Abel time and money.

Abel's KSE Passport might look something like this on his iPhone's secure KSE Passport app:
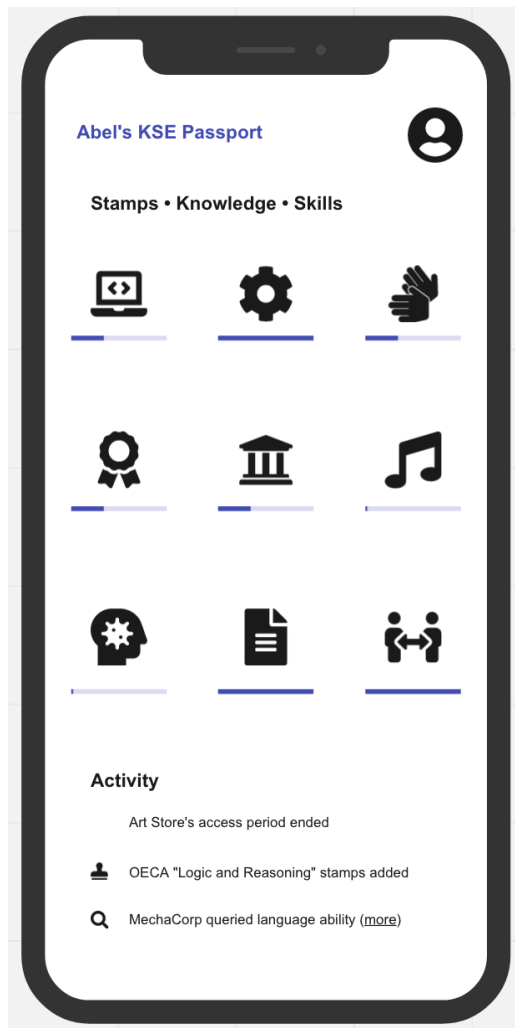
He can view his stamps as subject icons (i.e. Mechanics, Computer Science, Government, Arts, etc), which can be clicked to see various KSE dimensions of the stamp (i.e. he can click "Mechanics" to see scores for interest, ability, progress, self-study, collaboration, and inquiry with respect to 2D modeling, 3D modeling, dynamics of motion, energy conservation, and current forefronts of physics).

He can also view Knowledge or Skills as icons — in which case he would see things like English - Written, English - Comprehension, Conflict Resolution, or Systems Change. He could then see the subjects, courses, and skills that strengthened each. For example, he might have many skills stamps for English - Written across Psychology, History, and Biology courses.

Beth

Beth pursued a traditional four-year BA in history at a small liberal arts college in her home state. Because her college integrates with OKSEP, her Passport is digitally stamped to reflect a

wide assortment of classes she attended. It reflects particular strengths in linguistic ability and English composition. It also reflects a curiosity about biology, despite Beth's mediocre performance in a biology lab.

After she graduates, Beth will continue to self-stamp her passport at natural history museums and as she reads trade books on biological diversity. Her credentialed strength in language and composition combined with an ongoing, years-long self-certified interest in biology makes her a strong contender as a copy editor at a science journal.

Carla

Carla decides that college is not for her. She loves tinkering with tools and wants to work in the automotive industry. Maybe one day she'll design cars, but for now she wants to know how to take them apart and fix them. She applies to entry level jobs at local car dealership service centers. After a year of good work at a dealership as a mechanic's apprentice, she is promoted and works two more as a mechanic. Along the way she learns a lot about auto maintenance from the auto manufacturer's internal training courses. Carla allows her employer to stamp her KSE Passport with a record of her skills acquired.

At three years into her employment, Carla begins to wonder about next steps for her career. She's still interested in automotive design, but doesn't have the college requirement to get her foot in the door of a design shop. She does see, however, that some entry-level design jobs are looking for certain KSE skills. She realizes that good performance in trade school coupled with an OECA certificate and her existing mechanic skills stamps might work to help her land a job in design.

David

David studies biology at a religious college, which stamps his Passport with details about his BS. Because the platform is open, David's college can stamp just as any other. Future queries into David's Passport will show gaps in knowledge compared with biology majors who attended schools that teach about evolution.

As David pursues a career as a pharmacist at a drugstore, this aspect of his education doesn't weigh heavily one way or another—as designed by the drugstore's query. However, later in his career when David looks to work in a pharmaceutical company, their queries will note the evolution gap in David's Passport when he applies to a role that's deeply involved with issues of antibiotic resistance. David also considers leaving the pharmaceutical industry and teaching biology at a local religious high school. They, too, might note the gap in David's college biology education in their query. The Passport itself doesn't value or discredit David's educational attributes; but individual inquiries—which David authorizes—can.