The Open Organization Guide for Educators

The Open Organization Guide for Educators

{book subtitle goes here}

with an introduction by Ben Owens

Contributing authors

(in alphabetical order)

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Amarachi Achonu's "Making computer science curricula as adaptable as our code" originally appeared at https://opensource.com/open-organization/19/4/adaptable-curricula-computer-science

Beth Anderson's "An open process for discovering our school's core values" originally appeared at https://opensource.com/open-organization/16/6/opening-discover-education-centers-core-values.

Curtis A. Carver's "Crowdsourcing our way to a campus IT plan" originally appeared at https://opensource.com/open-organization/17/10/uab-100-wins-through-crowdsourcing.

Heidi Ellis' "What happened when I let my students fork the syllabus" originally appeared at https://opensource.com/open-organization/18/11/making-course-syllabus-open.

Heidi Ellis' "Open organizations on Mars" originally appeared at https://opensource.com/open-organization/18/1/imagining-open-communities.

Tanner Johnson's "How our non-profit works openly to make education accessible" first appeared at https://opensource.com/open-organization/19/2/building-curriculahub.

Gina Likins' "Performing the collaborative dilemma" originally appeared in *The Open Organization Workbook.*

Race MoChridhe's "Confronting linguistic bias: The case for an open human language" originally appeared at https://opensource.com/open-organization/19/4/open-language-for-open-education.

Jim Whitehrust's "Open education is more than open content" originally appeared at https://opensource.com/open-organization/16/8/harnessing-power-open-education.

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2 https://dejavu-fonts.github.io/

3 http://overpassfont.org/

4 https://www.libreoffice.org/

Additional reading

From Jim Whitehurst

The Open Organization: Igniting Passion and Performance (Harvard Business Review Press)

Organize for Innovation: Rethinking How We Work (Opensource.com)

From the open organization community

The Open Organization Leaders Manual: A handbook for building innovative and engaged teams (Opensource.com)

The Open Organization Guide to IT Culture Change: Open Principles and Practices for a More Innovative IT Department (Opensource.com)

The Open Organization Workbook: How to build a culture of innovation in your organization (Opensource.com)

Every week, Opensource.com publishes new stories about the ways open principles help innovative leaders rethink organizational culture and design.

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Contents

Activities

Appendix

Learn More

Preface

Editors Names

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Visions

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Open education is more than open content

Jim Whitehurst

The famous playwright George Bernard Shaw once said: "If you have an apple and I have an apple and we exchange apples, then you and I will still each have one apple. But if you have an idea and I have an idea and we exchange these ideas, then each of us will have two ideas."

I love that quote, and in May 2016 I shared it with a room full of educators, administrators, and open source advocates at New York University during the Open Summit, an open conversation about education.[5] I believe it reveals something critical about the future of education and the positive role openness can play in the future, if we embrace it.

As I shared in *The Open Organization*, the nature of organizations is changing, because the nature of how we organize to create value is changing. Educational organizations are realizing this more than most, because their stock-in-trade isn't something primarily physical (like apples). It's ideas. And ideas are becoming more plentiful, not less.

How we prepare people for life in these new organizations—where an ability to innovate and produce the new is much more important than an ability to work efficiently and reproduce the same—has to change just as significantly. We need to use the power of open to rethink education.

Unfortunately, much of what I read about "open" in education applies to the sharing of educational content: the materials educators use to teach students, from lesson plans to activities to syllabi to

5 https://opensource.org/node/832

entire curricula. While sharing content is certainly valuable, I think we can do more to make education more open.

To me, what makes openness such a compelling path forward for education has less to do with specific licensing decisions and more to do with the attitude we adopt toward educational practices altogether. It's the way we both imagine and work to build value around educational experiences (the "downstream" benefit of being open, as open source developers might say). More specifically, thinking openly changes how we *create*, *interact in*, and *sustain* educational organizations.

Creation beyond control

By default, most traditional educational organizations aren't inclined toward sharing. Just look at the ways many activities central to them—like tenure, publication, and advancement—tend to emphasize solo authors, thinkers, and inventors. In the context of higher education, we like to imagine scholars and scientists toiling away in isolation, dreaming up big ideas and releasing them to the world in brilliant form.

But we tend to forget a critical piece of the scene: The ever-present "Works Cited" or "References" pages that list every idea and innovation a scholar builds on when creating something new. Instead, educational organizations' cultural norms push against open exchange and collaboration and reward individual careers built on singular efforts—even though this isn't how innovation occurs.

And that's more evident today than it ever has been. Take big data, for example. In this exciting new field, every major innovation has been open sourced and shared, and what's been possible has been because of developers' desire for transparency and collaboration.

Thinking of ideas as possessions individual people create and control is a relatively new historical development, of course. In the context of the industrial era, people wanted informational goods to function more like physical goods, so they invented things like copyright and patent law to make ideas work more like apples. And those

inventions influence not only how we think about our creations and their value, but also how we build them.

When open education advocates focus too narrowly on content distribution, they can miss the act of *content creation*—and then risk missing ways we might change the pace and quality of the work we're doing together. Quite simply, co-creation allows better, richer, more diverse solutions and insights. It also allows us to succeed or fail faster, so we can accelerate the pace of innovation necessary today. Reforming our criteria for valuable educational contributions might help us begin rewarding an open approach to creation rather than discouraging it.

Interaction beyond prescription

When openness *does* become a default attitude, people's interactions change dramatically. Today we're enjoying the fruits of some of the largest distributed groups we've ever seen: organizations of creators and innovators spread across the entire globe. Each of them has something to teach us about the way we relate to and communicate with one another.

This is no less true for educators. But educational organizations (like public schools, to name just one kind) are still rooted strongly in certain values that emerged during an era of industrialization—where the purpose of education was preparing people to perform rote tasks repeatedly in closed organizations with little contextual perspective.

And yet, as we're seeing, the organizations that graduates join when they leave school (especially in the global West) are less and less industrial—and even the ones that are industrial are reinventing themselves for largely post-industrial activities. These organizations demand new models of both cooperation and leadership: new ways of working together, new standards for effective interaction, and new rules for distributing authority.

In the meritocracies that so frequently form inside open organizations, formal titles mean less than reputation with regard to power relationships. Leading an increasingly educated and savvy workforce involves creating context for great work rather than pre-

scribing and specifying every detail in order to mitigate deviation. Directing is less important than catalyzing. What might happen to classrooms if we began teaching this way?

We need to think seriously about how we're educating tomorrow's organizational participants and leaders, because—for now, at least—we're emphasizing modes of interaction that are just outdated.

Sustainability beyond transmission

Thinking about educational organizations as catalysts raises one other interesting point: What happens to these organizations in an age of abundance?

This is a particularly hot topic among folks in higher education, who are beginning to realize that imagining universities as machines for the transmission of information is no longer working. Under traditional models, schools market themselves as places with the best educational "content" for students. But today—a time when we're celebrating much easier access to information—these organizations no longer have a monopoly on ideas. Many are even putting their courses online and making them available at little or no monetary cost to students. The "content" is losing its place as a key value generator.

That's prompting educational organizations to face a kind of existential crisis—one that raises difficult questions. When abundance is the default, what happens to an organization that depends on scarcity? How does its purpose change? And what happens to the revenue-generating mechanisms that allow it to persist, thrive, and grow?

These aren't easy questions, by any stretch. But they're exactly the ones that challenge us in the open source software business, where our ongoing task is to *create business models around abundance*.

Red Hat's product, for example, isn't software. The software is open source, easily accessible to others, and licensed to promote sharing. Development is community-oriented. The "content," in other words, is free and abundant.

Red Hat adds value to the open source ecosystem by leveraging abundance to create more and better abundance. We support people using the software. We contribute to communities creating new, more advanced versions of the software. We patch and secure the software. We sift through the abundance, make sense of it, and help other people leverage it effectively. That's our product (and we're very good at making it!).

As they ponder their place, role, and function in an age of relative abundance, educational organizations must find new ways to generate value from that abundance. The longer we conceive of education as an enterprise focused solely on "content," the longer we're going to miss opportunities to help those integral organizations survive.

Reimagining education today might begin with a few simple questions:

- What value do educational organizations provide?
- What is their product?
- What role can they play today?

Answers to these simple but difficult questions will differ for everyone involved. But in an age of abundance, the educational organizations that survive will be those most focused on what they can add, what they can catalyze—and how they can best harness the power of openness to change the ways they create, interact, and sustain themselves.

Jim Whitehurst is president and chief executive officer of Red Hat, the world's leading provider of open source enterprise IT products and services.

Review and discussion questions

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Case Studies

Chapter

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Review and discussion questions

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What happened when I let my students fork the syllabus

Heidi Ellis

I teach a traditional "get to know college" course for freshmen. It's designed to help new students work on the skills they'll need to be successful in college, such as time management, personal management, and communication.

It's also become a prime opportunity for me to introduce freshman students to the guiding principles of open culture.

I've developed a method for treating my class as an open organization. To create a more collaborative and inclusive environment, I let the students co-construct the official course syllabus.

Here's how I do it—and what students have taught me about the value of making our classrooms more open.

The open syllabus

I taught two sections of the course in fall 2017 with a total of 27 students. We met twice each week, for 50 minutes each time. My goal was to afford the students as much control over the course as possible within the constraints set by the course description and requirements. In the spirit of open and transparent problem-solving, I facilitating a few activities that involved:

- identifying an aspect of the course yet to be specified (for example, a"disruption policy"),
- discussing (as a group) the constraints of the problem, and
- helping students generate a solution.

Early in the semester, we used these techniques to construct some course policies. Later on in the term, we employed the same methods to construct some homework assignments too.

Building the policies

First I challenged the students to collaboratively compose a "disruption policy" for the course. I offered the following instructions:

> The Code of Conduct currently has no policy for attention and handling classroom distractions, such as cell phones. We will create one during this activity. This policy will apply to all of Heidi Ellis' sections of LA-100. We are attempting to solve the following problem: "Computer noises, cell phones, messenger apps, IM, whispering, music, talking, etc., can all potentially draw learner attention away from learning. How do we ensure that class can proceed without interruptions or distractions? How do we ensure that class meetings are a time and place where we can focus on learning? How do we ensure that everyone in the class has an equal opportunity to learn?"

This exercise was a learning experience for both my students and me, as we clearly had different visions of what constituted a "disruption." While we all agreed that students should pay attention to the instructor and engage in all classroom activities, students thought they should be able to take "important" calls during class time and that texting during class was acceptable. I thought that cell phones should be turned off entirely during class. Students also thought that leaving the classroom to get a drink without asking permission was acceptable, while I thought that they should handle thirst needs before or after class.

This resulted in a discussion about professionalism and the expectations associated with college-level work. We discussed what constituted a distraction and agreed that making sounds, whispering, and talking in class all counted as distractions. This in turn led

to a discussion of the impacts distractions can have on a learning environment and the importance of paying attention in class. We also explored the impact various learning technologies can have on a classroom—for example, the tools students with disabilities require to fully participate in class, such as a screen reader—and agreed that noise generated by these was acceptable under the policy we intended to construct.

In much the same way, I also involved the students in co-constructing the course's policy regarding work submitted late. This was the challenge:

> The Code of Conduct currently has no "late policy" that determines when assignments are considered "late." The problem we are trying to solve is this: "This policy applies to all out-of-class work. How do we ensure that everyone in the class has the same opportunity to complete assignments? What is a 'timely' submission of a deliverable? End of class? Beginning of class? End of day? What should be done when a submission is not timely? How do we handle legitimate lateness due to extreme illness or death in the family? What is a legitimate lateness? We need a policy that ensures fairness to all class members, including the instructor."

As with the disruption policy, the students and I had very different views of what constituted "late" work, which led to fruitful discussions. Students thought that submitting homework a day or two after the deadline should not be considered late, while I thought that anything submitted after a deadline should be considered late. We then discussed what happens in a professional environment when work is submitted late and when someone arrives late to a meeting. In this case, students still wanted some leniency when handing in assignments, so we agreed that all deliverables would have a one-day "grace period" after which students' scores on those assignments would decrease by one letter grade per day late. Collaboratively, the class produced the following statement:

> A deliverable is late when it is submitted after the due date and time. Legitimate lateness reasons include approved illness, family emergencies and death, and athletic events. All deliverables have one grace day after the due date. Submissions that come in after the grace day will be docked one grade per day. *Deliverables that will be discussed in class have no late days allowed*.

I hosted both the disruption and late policies on GitHub, and in order to make changes students were required to fork the Code of Conduct, make changes, and submit a pull request for group review. A small number of students jumped right in, forking the document and making changes; however, this number was small (perhaps two or three students at most). The majority of students either did not try to make any changes—or tried at the very last minute.

In retrospect, I think the joint construction of portions of the course policy was a real learning opportunity. In the future, I would provide students with a clear understanding of professional behavior *before* attempting the policy construction and preface this with activities to convey an understanding of professional behavior. I would then use the construction of policy as a real-world example of professional behavior.

Building the assignments

Later in the semester, I again tried an open approach to creating assignments, which I found to be more successful.

The most successful of these was the assignment to fulfill the Oral Communication requirement for the class. The requirement includes creating a presentation and being able to deliver that presentation clearly.

We began with a brainstorming session, during which we identified possible ways of fulfilling the objective. Students came up with the traditional presentation, but also came up with a number of interesting ideas, including:

- Lecture: 2–3 people create and deliver a presentation followed by quiz. Quiz results displayed on the board interactively.

- Individual, related presentations: Multiple speakers with connected topics where one talk leads into the next.
- Jeopardy game: 3–4 people, one person per category. Clues would be facts about the open source topic. The person responsible for the topic would introduce the topic, expand on each clue, and conclude the topic at the end.
- Classroom debate: Six debates on six topics, with 2–3 people per team. Audience takes notes, asks questions, and assesses performance.
- Movie: 3–4 people, 1 or 2 topics per movie. Choose a story that explains the point. Could use still images with narration.

In addition to the ideas listed above, students also suggested Socratic Seminar and Fishbowl. However I eliminated these ideas as I could find no way to assess these approaches based on the necessary rubrics.

We then discussed which was the most popular idea and jointly decided that a mock Jeopardy game was an ideal way to fulfill the requirement. Students selected a topic related to open source and created questions and answers for the game. Students were then organized into teams of five.We used a modified answer/question approach: Rather than asking questions across categories, each student provided an introduction to their topic and presented five "answers," and the rest of the class were encouraged to provide the "questions." Once all "questions" had been asked, the student provided a summary of the topic.

Students were engaged throughout the process of constructing the assignment and were enthusiastic about the game itself.

Open organizations and university classrooms

Overall, the "open syllabus" exercise taught me a lot about both open organizations and about student preparation for learning in one.

In the future, to better support an open classroom, I would make the following changes:

- Beginning the class by providing students with information about how open organizations work and examples of open organizations
- Creating one or two in-class activities (early in the term) that allow students to experience open principles and how they work in an organization
- Creating activities to instill a foundation of professionalism (in order to employ open organization principles, students need to have an understanding of the boundaries of professional behavior)
- Progressing to using an open organization approach to developing assignments by starting small (perhaps by having students develop a small assignment first, rather than attempting to create self-governance as their first effort)

Keeping student work open and accessible has value for *subsequent* groups as well. I could foresee, for example, teaching successive sections of the same course in which current students reviewed the actions and decisions of previous classes to better understand open organization principles.

I do see a good deal of potential for running classrooms using principles derived from open organizations. The Jeopardy assignment was the most popular and most successful at engaging student interest. Clearly, provoking interest is an important factor to employing open principles in the classroom.

I found that students were more creative when I gave them more space to create. They came up with very interesting ideas in response to fulfilling a broadly defined assignment. This type of creativity is key for supporting learning.

Moreover, students clearly felt empowered to exert some agency over their learning. They felt more like they were part of the education process rather than just a consumer of knowledge. I expect that further use of an open approach would allow students to be

more invested in their learning, thereby producing students who are better prepared for real-world complexity.

Heidi Ellis is Professor and Chair of the Computer Science and Information Technology department at Western New England University. She has a long-time interest in computing education and has been supporting student participation in open source software since 2006.

Review and discussion questions

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An open process for discovering our school's core values

Beth Anderson

When I joined The Hill Center in Durham, North Carolina, as Executive Director nearly two years ago, I realized immediately that I had joined a wonderful, successful, highly conventional education organization. Hill has been transforming students with learning differences into confident, independent learners for nearly 40 years, and many of the faculty and staff (including the outgoing Executive Director) had been at Hill for most of that time. Hill has a strong culture, and its faculty and staff all consistently deliver high-quality programs for students and teachers alike—all despite evident tensions, misunderstandings, and mistrust between senior administration, faculty, and staff as well as across different programs and teams in this rigidly siloed, hierarchical organization.

From the start, I publicly stated I wanted to address issues of culture, trust, and transparency, in part by establishing organizational core values. But I didn't know how or when to do so. And, candidly, I was scared. I knew I couldn't come into Hill and impose my own core values, yet I was petrified of what might emerge if I opened the value-creation process to everyone—and I didn't how I would respond if I simply didn't believe in, like, or want to adhere to what did.

Hill did have core values posted on its website and included in its strategic plan, but they just didn't resonate with me, and hardly anyone within the organization could articulate them. I saw both an opportunity and a challenge. Despite my public proclamation, however, I decided to wait.

The time comes

Fast forward 18 months.

I'd read *The Open Organization* (and many other articles along the way) as I tried to navigate the path forward, discover my authentic leadership and management style within this (still very foreign) context, and lead change in a non-threatening manner. I'd adopted and promoted "All Hill" language and events to help break down siloes. We'd engaged in an All Hill "strategic visioning" process that was faculty/staff-centric, rather than being led by the board, and that resulted in some new relationships, dialogue, and common language. We had hired, retired, or exited many faculty and staff, resulting in an organization that was suddenly fairly evenly split—almost exactly one third newer personnel, one third in the three-to-ten-year range, and one third employees who had been at the school more than a decade (half for more than 20 years). And we were still very, very far from being an "open organization."

So I decided it was time to embark on a core values process, and I decided to do it as collaboratively, openly, and organically as felt possible. I had no idea where it would lead or what would result. And I was still scared.

Why did I decide suddenly it was time? First, we were losing veterans to retirement each year, and I didn't want to lose their perspectives on what made Hill successful and unique—and what had made them dedicate decades of their lives to Hill. Moreover, as we welcomed the next generation of faculty and staff, we needed to be able to recruit and retain great people, and clearly communicate and deliver on "Why Hill?"

By soliciting ideas and feedback from staff, I could honor what we'd done well in the past while preparing for future transformations. Second, I knew teachers at The Hill Center often spoke positively about feeling autonomous and enabled in their classrooms, and I wanted to recreate that feeling of empowerment and involvement at an organizational level. Finally, I recognized that a sense of ownership of shared values could foster parity across staff members with varying levels of experience and authority.

When it comes to adhering to and executing on our core values, nobody is held to a higher or lower standard; consistency of values prevents favoritism or bias in decision making. Anyone should be able to ground a conversation with anyone else—regardless of position, team, or program—in shared core values without making that conversation personal. In short, by asking All Hill to collaborate on "discovering our core values," and then making the final product explicit and alive, I hoped to reinforce the greatest strengths in the pre-existing culture of The Hill Center while continuing the move towards a more open, transparent, and trustful organization.

We just needed to think about how we'd actually do it.

Discovering our core values

Along with Michelle Orvis, Hill's Chief of Staff, I began reading articles and watching videos related to open sourcing core values, and we informally interviewed personnel from other organizations to solicit their advice. In the end, we wanted a hybrid approach: something open and inclusive but not completely democratic or consensus-driven. We also did not want the process to be too time-consuming for our already busy faculty and staff. We wanted to conduct it over several months, but not forever, and we wanted to accept input in a variety of forums.

After announcing the process and sharing multimedia examples from other organizations over email, we had an optional "lunch 'n learn" kick-off (I had learned early on that the only possible window for bringing All Hill together was lunchtime, between morning and afternoon classes!). I provided some context, laid out two guiding principles for our core values—"clear and simple" and "truly authentic"—and folks worked individually, in pairs, and in small groups to describe the "essence" of Hill in words and phrases. We captured the words and phrases, then shared and discussed them via email communications, smaller informal lunches, and preliminary synthesis and discussion at a half-day leadership team retreat. During this process, we also added two more guiding principles: "Bias towards action" and "All Hill—knit together entire organization."

Following one of the informal lunch discussions, I received an email from Kate Behrenshausen, one of The Hill Center's newest teachers. The note surprised me, given that Kate had opted out of the kick-off meeting at the beginning of the process. Suddenly, she was ready not only to participate in the values-writing process, but also to engage further by collaborating on additional writing (like this book chapter!).

How had Kate made the jump from disinterested to engaged, and what could I learn from this?

Initially, Kate admitted, she did not believe the core values process would apply to her role at Hill; in fact, she admitted, she wasn't even totally sure what "core values" meant. To her, they sounded like sterile, superficial management buzzwords.

But later, when I asked Kate and her coworkers to submit five words or phrases that described the "essence" of Hill, she was intrigued. She'd received a concrete method for providing feedback, and she appreciated the implication that her opinions mattered. In fact, she said, that feeling of appreciation had guided her decision to join Hill in the first place. During an early interview, Head of School Bryan Brander had reassured her that Hill gives its teachers the freedom to do what is best for student learning. Bryan's words inspired her—especially after several years in the public school system, where decisions seemed to come from far-off offices of people who did not know her students and would never see her classroom. In her estimation, the follow-up core values activity had reinforced those feelings of reassurance, encouragement, and inclusivity.

All (Hill) in

I recently shared draft core values with All Hill at one of our bi-monthly, post-board meeting lunches. The draft was an updated version of what our leadership team synthesized from the "words" activity at the kick-off lunch, then modified to reflect the other feedback I had been collecting in formal and informal ways. We've posted them on the wall in the mailroom with markers, post-its, and dots in hopes that folks will share their reactions, ideas, questions,

concerns. We'll go from there, working towards unveiling "new" core values at our August Back-to-School kick off.

What currently hangs on the wall are not the core values I'd have written myself (though many of my original themes do come through). Some of them raise questions (even concerns). And yet, on the whole, I feel better about them at this point than I might have expected, and I think they will spur more needed dialogue as we progress. I've learned three valuable lessons so far:

- Letting go can be both scary and liberating. While I certainly haven't let go completely, I haven't "backwards planned" or tried to over-engineer it, and I genuinely have listened and sought out the input of everyone. And it's been fun, engaging, stimulating, and affirming of the many great people, ideas and things happening every day at Hill—much less work for me than it could have otherwise been, too!
- "Authenticity" is a simple but challenging guiding principle, for both individuals and organizations. But to me it seems central to being an "open" leader and organization. What seems authentic to some may not to all; what is authentic in certain relationships or circumstances may not manifest itself in others. And what if there are things about "who we are" as an organization that we need to change in order to thrive and survive, or about who we think we are supposed to be that we need to actually embrace more fully rather than let go? I think we may need to have some hard conversations about authenticity as a part of this process.
- Nothing is better than actually sitting down and engaging in dialogue with different people, taking the time to talk less and listen more, and then having the discipline to capture and translate that dialogue into something that is made explicit and shared. It takes time. It takes planning. It takes effort. But it is so

much better than just thinking about things or wishing them to be different or true.

I still have a long way to go and grow as a leader at Hill. And we still have a long way to go and grow as an organization. But the journey is one worth taking. And I am determined to enjoy and learn from the ride. Hopefully, many others feel the same—and will join Kate and me along the way.

Beth Anderson is the executive director of The Hill Center in Durham, North Carolina. The Hill Center is a private-public, K-12 model that serves students who are struggling academically—especially those with learning differences and attention challenges—and their teachers.

Review and discussion questions

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Chapter

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Review and discussion questions

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Confronting linguistic bias: The case for an open human language

Race MoChridhe

As scholars in the digital humanities continue to transform scholarship, they're increasingly noting a "black-box" problem with the tools they're using—not to mention the resources and artifacts they're creating as a result. As Tara Andrews describes it:

> …we are, implicitly or explicitly, constructing models of our objects of study; all such models contain a certain amount of domain knowledge, and all of our computational tools operate on the basis of that domain knowledge. These facts … directly give rise to … the black box question: can we truly know what models, assumptions, and inferences are made within the source code of a particular software tool? If so, how? If not, how can we justify a blind use of it?[6]

Open source—that is, making the code of digital tools and datasets accessible to anyone—is a popular approach to improving the methodological transparency of this work in educational organizations. The field's broader open access movement stresses skepticism about the proprietary nature of algorithms, data, and code involved in humanistic research more generally—and cautions researchers about the impact that ownership can have on the research process itself.

This perspective has tremendous implications for the way we think about the embedded biases and assumptions in humanistic re-

6 https://doi.org/10.1080/03080188.2016.1165456

search. What if we subjected our *human* languages to the same rigorous assessment we do with our *computational* languages? What biases might we discover in them? How might those biases impact our scholarship?

And does that mean open educational organizations and open scholarship require an open language?

Confronting linguistic bias

The language researchers and educators use to conduct and report research frames how that research unfolds and impacts its conclusions. Many debates about the boundaries and "proper methods" in the humanities and the sciences are exacerbated (if not driven) by the use of the English language. For example, English-language scholarship distinguishes between the "humanities" and "science," dividing realms of scholarship that in German and many other languages fall under a single heading (in German, "*Wissenschaft*"). In the English-speaking world, researchers commonly work in a single language, and the paradigms that language establishes—the effects of its specific structure and lexicon—often go unchallenged.

While few languages are private intellectual property in a legal sense the way that computer code can be (Quenya and Klingon are probably the most notable cases of privately owned human languages), "proprietary" is nonetheless a useful label for the less explicit (but no less powerful) rights of "ownership" that a native-speaker population exercises over language. It includes things like: the implicit "right" to assign new meanings to existing words, to employ non-standard semantic or rhetorical constructions, to import words from other languages, and to engage in all these activities while having the results regarded as legitimate lines of development within a descriptive grammar, rather than as deformations, errors, or inadequacies of language acquisition. A whole host of freedoms vitally important to innovative and imaginative communication are assigned almost exclusively to native speakers.

While there are approaches (like the "World Englishes" paradigm) that do more to affirm and enfranchise second-language

speakers, these have some strict limits when trying to guarantee the common frames of meaning and relatively easy reproducibility demanded by academic research, whether humanistic, scientific, or technical. Putting scholars (and students) on more equal footing and obtaining a more critical perspective on the biases inherent in the use of "proprietary languages" for teaching and research will require a different approach.

Luckily, this isn't the first time researchers have addressed the issue of linguistic "openness" in educational organizations. The International Academy of Sciences San Marino (AIS) was founded in 1985 with the aim of creating an academic framework that, to the greatest possible extent, would encourage openness, collaboration, and transparency. Thesis and dissertation defences at AIS, for example, must be both publicly announced and open to the public. In particular, AIS's founders sought to enhance openness in language. The first paragraph of the AIS constitution states that members shall "*komunikadas inter si precipe per neŭtrala lingvo*" ["communicate with one another principally by means of a neutral language"]—in other words, a language belonging to no particular group or nationality, such that no users would be linguistically privileged and no group would have a special right to the definition of linguistic norms.

An open language

Among possible candidates, Esperanto—created by Ludwik Zamenhof in 1887 to serve as a neutral, "international" language for all purposes—was selected as the only one in which a significant body of scientific literature and a suitable terminology for higher educational contexts had already been developed (over more than a century of use, it has been employed for everything from the scientific paper that first described the jet stream[7] to works of poetry[8] nominated for the Nobel Prize).

7 https://www.airspacemag.com/as-next/as-next-may-unbelievablebuttrue-180968355/

8 https://www.theguardian.com/theguardian/1999/sep/29/features11.g22

What the language's creator and many of its promoters have described as "neutrality" we might better understand as "openness": Esperanto is the only widely-spoken language explicitly "licensed" for general use. In 1905, Zamenhof and representatives of leading Esperanto organizations at the time promulgated the Boulogne Declaration, which established that Esperanto was "no one's property" and that "[t]he primary master of this language is the whole world," such that everyone was entitled to use it "for any possible purposes" and all fluent speakers were to be regarded as equal Esperantists, without respect to their background, ideology, or membership status in any organization. The document also specified that, beyond the sixteen basic grammatical rules laid out in the *Fundamento de Esperanto [Fundaments of Esperanto]*, not even Zamenhof could establish any narrower restriction, so that all Esperantists could express themselves "in a manner which they deem the most correct."

Although there are now approximately two thousand native speakers of Esperanto, there is no special native speaker role in establishing linguistic norms.[9] Sociolinguistically speaking, every speaker who has acquired fluency has equal influence on the development of norms of usage. While not everyone agrees on Esperanto's purported "neutrality," it does seem productive to talk about the language as "open" in the same way we talk about code.[10]

This "openness" contrasts meaningfully with the "proprietary" status of ethnic languages, where the "ownership" of the native speaker population controls the establishment of idiomatic norms that, if not mastered precisely, adversely impact acquiring speakers. Even the most advanced second-language speakers of English encounter systemic barriers to acceptance of their research for publication, for instance.[11] But there is another sense—more metaphorical and more impactful—in which the use of Esperanto has promoted openness in the Academy's scholarship, and that is in the

9 https://doi.org/10.1016/j.langsci.2016.10.003

10 http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.492.4267&rep=rep1&type=pdf

11 http://dx.doi.org/10.1087/095315103320995096

simple fact of having a common second language-medium available for research and pedagogy. At AIS, every degree candidate is required to work on a dissertation in their own native language and in Esperanto—a process which observers of the AIS have found to be demonstrably effective in raising students' metalinguistic awareness and exposing assumptions and biases that might otherwise have gone unchallenged.

What would happen if we viewed an ability to express academic arguments across two dissimilar languages as a key metric of "reproducibility" in humanities research? At minimum, we could begin increasing confidence that the arguments made in the research are not dependent on the idiosyncrasies of a particular linguistic model or cultural horizon. But the use of Esperanto offers two additional forms of openness that deserve consideration:

Transparency of grammar. Every part of speech in Esperanto is marked by a distinct ending and can be transposed to any other part by changing that ending. Likewise, a wide range of affixes are available for meticulously documenting transitivity, verbal aspect, and other grammatical features. This factor in the language's design has proven effective for language pedagogy in what is known as the Paderborn Method, which teaches Esperanto as a foundation for later language study much as the recorder is used as a general introduction to playing musical instruments. To return to our analogy with software, though, we might think of Esperanto as a kind of "verbose output," that lays the logic of expressions bare by making the grammar expressing them more visible.

Global accessibility. Esperanto was created for international communication and its world-wide speaker base is near two million. It is taught at universities in Hungary and China, broadcast by state media in Cuba and the Vatican, and promoted by thousands of local clubs, small publishers, annual conferences, and other infrastructure. As a complement to the current major languages of scholarship, its wider adoption in educational organizations and research institutions would offer possibilities to transcend and break down language barriers that currently inhibit scholarly communication. Were the model of the International Academy of Sciences San

Marino to be followed globally, or even just at European scale, the open access ecosystem of the future could potentially guarantee access to research free not only of financial restrictions on access but of linguistic ones as well.

Even just at the scale of the AIS, however, their experiment has shown that a standard second language has important benefits for open education. It renders transnational study and collaboration more egalitarian and, perhaps most importantly, it forces educators to critically reflect on a tool of scholarship so basic that many of us scarcely think of it as a tool at all.

As we become more aware of the capacity for computer languages to hide threats to the integrity of our research, we must paraphrase Tara Andrews' question and ask ourselves: *Can we truly know what models, assumptions, and inferences are made within the vocabulary and grammar of a particular language? If so, how? And if not, how can we justify a blind use of it?* Esperanto is no more immune to such embedded "models, assumptions, and inferences" than any other language, but working in tandem with students', instructors', and researchers' ethnic languages, it can illuminate what hides in the famously dark space within our skulls, and it might just help us crack open the black boxes so pervasive in our teaching and research.

Race MoChridhe is a Master of Library and Information Science student at the University of Wisconsin Milwaukee and currently serves as the Open Access Publishing Intern of the American Theological Library Association. His primary research interests center on applications of interlinguistics to improve library and information services, scholarly communication, and language pedagogy.

Review and discussion questions

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Crowdsourcing our way to a campus IT plan

Curtis A. Carver

When I became CIO at the University of Alabama at Birmingham in 2015, I confronted the same mandate every new IT leader faces when assuming the role: outlining, developing, and executing a strategic plan. The pressure to do this swiftly and immediately can be immense—and I think many CIOs feel compelled to articulate and hand down fully formed plans on Day 1. After all, that's typically the quickest way to assert your position and vision as a leader.

But I like to take a different approach. I don't dictate my team's initial goals. I open them up.

Working this way felt especially important in my new role at UAB, which I knew was going to be the last gig of my career. I wanted to make the largest contribution I could—not only to the university, but also to higher education in general.

What better way to do this than to let them openly contribute to the goals my team would be tackling during my tenure?

So I let the entire university community help me determine and prioritize our most pressing IT problems. The results were astounding, a perfect example of the benefits of taking an iterative, adaptive approach to this kind of development.

Let me share what happened.

Just a SPARK

My first day as CIO at UAB was June 1, 2015. That was also the day we launched a new, university-wide idea collecting and brainstorming platform. The platform (which we code-named "SPARK," in honor of UAB's mascot, Blaze the Dragon), was a crowd-

source-style tool for collecting and surfacing the best ideas for ways IT could improve the lives of students, administrators, and faculty.

Anyone could use the platform to submit an idea. "Help us understand the issues you're facing and what would make the biggest difference in your life," we told anyone interested in participating. "You can submit an idea that anyone can comment on, and as long as you play nice, everything is in scope."

Our goal was ambitious but clear: Identify 100 potential "wins"—100 things we could do to improve university life—in 100 days, then implement all of them within a year.

Within the initiative's first 55 days, 386 users posted 73 ideas, made 367 comments, and cast 1,747 votes. (Keep in mind, too, that this activity was spurred almost entirely by word of mouth during the summer, when a sizable portion of the faculty and students aren't even on campus.) As a result, we became aware of issues and ideas like:

- Electronic signature of documents as part of moving to a paperless system
- One gigabit bandwidth to the desktop
- Technology training and certification for IT pros and IT consultants
- Unlimited storage for all students, faculty, and staff
- Orientation for new IT employees

And those are just a few. While the ideas were flooding in, my team and I were taking meetings—hundreds of meetings (collectively), including several town hall-style gatherings to solicit feedback from the university community in an open forum.

In the end, we amassed an unbelievable amount of data. How were we going to sort it so the best ideas could rise to the top?

Making sense of it all

We began by arranging our crowdsourced suggestions into four primary categories:

1. Ideas that are great, but not directly applicable to the customer/community

2. Ideas for solutions that were actually already available as part of our current IT infrastructure and resources
3. Ideas that were clearly "quick wins," something we could implement in a day (or less)
4. Ideas that were groundbreaking and needed to be rolled into a broader strategic plan with a longer timeline

Believe it or not, most of the ideas we received fell into the first three categories. So our list of priorities was already becoming clear.

At the same time, our team was working with the insightful feedback we'd gleaned from our in-person meetings. Using mind-mapping software, we charted common responses and pain points, and connected these to our broader strategic goals and imperatives. All senior members of the IT leadership team contributed to this effort.

With that, we'd found our 100 potential wins. And true to our word, we got to work acting on all of them within the year.

The results are in

I'm proud to report that we actually achieved *147 wins* before the following June. I can't possibly recount all of them here. Many, however, were so startlingly simple—and yet so profoundly game-changing—that they seem almost laughably obvious in hindsight.

For example, take our approach to passwords on campus. Our policy really was outdated and ineffective, and we quickly learned that people disliked our approach to password security. So we modified aspects of it—first, our requirements for acceptable passwords (making them much stronger) and, second, our required interval for mandatory password changes (lengthening and aligning it with the operational rhythm of a university, so users needed to switch passwords less frequently). Members of the campus community appreciated these changes so much that they were literally hugging me on the street in gestures of pure joy—the first time in my career, I can honestly say, that's ever happened to me.

In line with another frequently received request, we worked diligently to increase the data storage limits for users on campus. This work seemed especially pressing—and the need so very obvious—when I learned from faculty researching Parkinson's disease that they weren't able to store all the high-resolution brain scans they needed to do their work efficiently and effectively. Once we removed their data caps, they told me they were finally able to spend more time seeking a cure for Parkinson's and less time sorting through data files to make space for new work.

As we were steadily chipping away at our 100-win checklist, people around the campus couldn't help but take notice. My provost threw my team a surprise party (complete with delicious cake) to celebrate our crossing the 100-win milestone. Even the most skeptical members of the faculty senate stood up and applauded my team at a budget meeting (and our fiercest critics began saying things like "Well, while I don't think this is going to last long-term, I'm suspending disbelief because you've demonstrated you can achieve results"). And in another career-first moment for me, I got to serve as an honorary coach during the opening home football game. That's really when I realized that our community now viewed the IT staff as trusted partners in campus innovation. How many other IT organizations get recognized on the football field?

Lessons learned

I learned some valuable lessons during those 100 busy days. Here are a few of the most valuable:

Trust the community. Opening a feedback platform to anyone on campus seems risky, but in hindsight I'd do it again in a heartbeat. The responses we received were very constructive; in fact, I *rarely* received negative and unproductive remarks. When people learned about our honest efforts at improving the community, they responded with kindness and support. By giving the community a voice—by really *democratizing* the effort—we achieved a surprising amount of campus-wide buy-in in a short period of time.

Transparency is best. By keeping as many of our efforts as public as possible, we demonstrated that we were *truly listening* to

our customers and understanding the effects of the outdated technology policies and decisions that were keeping them from doing their best work. I've always been a proponent of the idea that everyone is an agent of innovation; we just needed a tool that allowed everyone to make suggestions.

ITERATE, ITERATE, ITERATE. Crowdsourcing our first-year IT initiatives helped us create the most flexible and customer-centric plan we possibly could. The pressure to move quickly and lay down a comprehensive strategic plan is very real; however, by *delaying* that work and focusing on the evolving set of data flowing from our community, we were actually able to better demonstrate our commitment to our customers. That helped us build critical reputational capital, which paid off when we *did* eventually present a long-term strategic plan—because people already knew we could achieve results. It also helped us recruit strong allies and learn who we could trust to advance more complicated initiatives.

IT'S MORE WORK. Sure, acting alone to sketch a roadmap for my first 100 days would have been easier. But it wouldn't have generated the results the crowdsourced version did. Without a doubt, collaborative approaches like ours require more work than solitary, draconian ones. You'll need to think strategically and long-term. (Case in point: Launching SPARK on June 1 actually required *three months* of planning and development leading up to that critical day.) But if you really seize this opportunity to engage with your community, you'll realize better results.

Our yearlong lesson in community-focused crowdsourcing revealed the benefits that *adaptive* approaches to strategic planning can have for our organization. I'm sure they can do the same for yours.

Curtis A. Carver Jr., Ph.D. is the Vice President and Chief Information Officer for the University of Alabama at Birmingham.

Review and discussion questions

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How our non-profit works openly to make education accessible

Tanner Johnson

I'm lucky to work with a team of impressive students at Duke University who are leaders in their classrooms and beyond. As members of CSbyUs,[12] a non-profit and student-run organization based at Duke, we connect university students to middle school students, mostly from title I schools across North Carolina's Research Triangle Park.[13] Our mission is to fuel future change agents from under-resourced learning environments by fostering critical technology skills for thriving in the digital age.

The CSbyUs Tech R&D team (TRD for short) recently set an ambitious goal to build and deploy a powerful web application over the course of one fall semester. Our team of six knew we had to do something about our workflow to ship a product by winter break. In our middle school classrooms, we teach our learners to use agile methodologies and design thinking to create mobile applications. On the TRD team, we realized we needed to practice what we preach in those classrooms to ship a quality product by semester's end.

This is the story of how and why we utilized the principles we teach our students in order to deploy technology that will scale our mission and make our teaching resources open and accessible.

Setting the scene

For the past two years, CSbyUs has operated "on the ground," connecting Duke undergraduates to Durham middle schools via af-

12 http://csbyus.org/

13 https://www2.ed.gov/programs/titleiparta/index.html

ter-school programming. After teaching and evaluating several iterations of our unique, student-centered mobile app development curriculum, we saw promising results. Our middle schoolers were creating functional mobile apps, connecting to their mentors, and leaving the class more confident in their computer science skills. Naturally, we wondered how to expand our programming.

We knew we should take our own advice and lean into web-based technologies to share our work, but we weren't immediately sure what problem we needed to solve. Ultimately, we decided to create a web app that serves as a centralized hub for open source and open access digital education curricula. "CurriculaHub" (name inspired by GitHub) would be the defining pillar of CSbyUs's new website, where educators could share and adapt resources.

But the vision and implementation didn't happen overnight.

Given our sense of urgency and the potential of "CurriculaHub," we wanted to start this project with a well defined plan. The stakes were (and are) high, so planning, albeit occasionally tedious, was critical to our success. Like the curriculum we teach, we scaffolded our workflow process with *design thinking* and *agile methodology*, two critical 21st century frameworks we often fail to practice in higher ed.

What follows is a step-wise explanation of our design thinking process, starting from inspiration and ending in a shipped prototype.

Our Process

Step 1: Pre-Work

In order to understand the *why* to our *what*, you have to know *who* our team is.

The members of this team are busy. All of us contribute to CSbyUs beyond our TRD-related responsibilities. As an organization with lofty goals beyond creating a web-based platform, we have to reconcile our "on the ground" commitments (i.e., curriculum curation, research and evaluation, mentorship training and practice, presentations at conferences, etc.) with our "in the cloud" technological goals.

In addition to balancing time across our organization, we have to be flexible in the ways we communicate. As a remote member of the team, I'm writing this post from Spain, but the rest of our team is based in North Carolina, adding collaboration challenges.

Before diving into development (or even problem identification), we knew we had to set some clear expectations for how we'd operate as a team. We took a note from our curriculum team's book and started with some rules of engagement. This is actually a well-documented approach to setting up a team's social contract used by teams across the tech space.[14] During a summer internship at IBM, I remember pre-project meetings where my manager and team spent more than an hour clarifying principles of interaction. Whenever we faced uncertainty in our team operations, we'd pull out the rules of engagement and clear things up almost immediately. (An aside: I've found this strategy to be wildly effective not only in my teams, but in all relationships).

Considering the remote nature of our team, one of our favorite tools is Slack. We use it for almost everything. We can't have sticky-note brainstorms, so we create Slack brainstorm threads. In fact, that's exactly what we did to generate our rules of engagement. One open source principle we take to heart is *transparency*; Slack allows us to archive and openly share our thought processes and decision-making steps with the rest of our team.

Step 2: Empathy Research

We're all here for unique reasons, but we find a common intersection: the desire to broaden equity in access to quality digital era education.

Each member of our team has been lucky enough to study at Duke. We know how it feels to have limitless opportunities and the support of talented peers and renowned professors. But we're mindful that this isn't normal. Across the country and beyond, these opportunities are few and far between. Where they do exist, they're

14 https://www.atlassian.com/team-playbook/plays/rules-of-engagement

confined within the guarded walls of higher institutes of learning or come with a lofty price tag.

While our team members' common desire to broaden access is clear, we work hard to root our decisions in research. So our team begins each semester reviewing research that justifies our existence. TRD works with CRD (curriculum research and development) and TT (teaching team), our two other CSbyUs sub-teams, to discuss current trends in digital education access, their systemic roots, and novel approaches to broaden access and make materials relevant to learners. We not only perform research collaboratively at the beginning of the semester but also implement weekly stand-up research meetings with the sub-teams. During these, CRD often presents new findings we've gleaned from interviewing current teachers and digging into the current state of access in our local community. They are our constant source of data-driven, empathy-fueling research.

Through this type of empathy-based research, we have found that educators interested in student-centered teaching and digital era education lack a centralized space for proven and adaptable curricula and lesson plans. The bureaucracy and rigid structures that shape classroom learning in the United States makes reshaping curricula around the personal needs of students daunting and seemingly impossible. As students, educators, and technologists, we wondered how we might unleash the creativity and agency of others by sharing our own resources and creating an online ecosystem of support.

Step 3: Defining the Problem

We wanted to avoid scope creep caused by a poorly defined mission and vision (something that happens too often in some organizations).[15] We needed structures to define our goals and maintain clarity in scope. Before imagining our application features, we knew we'd have to start with defining our north star. We would generate a clear problem statement to which we could refer throughout development.

15 https://www.pmi.org/learning/library/top-five-causes-scope-creep-6675

This is common practice for us. Before committing to new programming, new partnerships, or new changes, the CSbyUs team always refers back to our mission and vision and asks, "Does this make sense?" (in fact, we post our mission and vision to the top of every meeting minutes document). If it fits and we have capacity to pursue it, we go for it. And if we don't, then we don't. In the case of a "no," we are always sure to document *what* and *why* because, as engineers know, detailed logs are almost always a good decision. TRD gleaned that big-picture wisdom and implemented a group-defined problem statement to guide our sub-team mission and future development decisions.

To formulate a single, succinct problem statement, we each began by posting our own takes on the problem. Then, during one of our weekly 30-minute-no-more-no-less stand-up meetings, we identified commonalities and differences, ultimately merging all our ideas into one. Boiled down, we identified that *there exist massive barriers for educators, parents, and students to share, modify, and discuss open source and accessible curricula*. And of course, our mission would be to break down those barriers with user-centered technology. This "north star" lives as a highly visible document in our Google Drive, which has influenced our feature prioritization and future directions.

Step 4: Ideating a Solution

With our problem defined and our rules of engagement established, we were ready to imagine a solution.

We believe that effective structures can ensure *meritocracy* and *community*. Sometimes, certain personalities dominate team decision-making and leave little space for collaborative input. To avoid that pitfall and maximize our equality of voice, we tend to use "offline" individual brainstorms and merge collective ideas online. It's the same process we used to create our rules of engagement and problem statement. In the case of ideating a solution, we started with "offline" brainstorms of three S.M.A.R.T. goals.[16] Those goals

16 https://www.projectmanager.com/blog/how-to-create-smart-goals

would be ones we could achieve as a *software development team* (specifically because the CRD and TT teams offer different skill sets) and address our problem statement. Finally, we wrote these goals in a meeting minutes document, clustering common goals and ultimately identifying themes that describe our application features. In the end, we identified three: support, feedback, and open source curricula.

From here, we divided ourselves into sub-teams, repeating the goal-setting process with those teams—but in a way that was specific to our features. And if it's not obvious by now, we realized a web-based platform would be the most optimal and scalable solution for supporting students, educators, and parents by providing a hub for sharing and adapting proven curricula.

To work efficiently, we needed to be adaptive, reinforcing structures that worked and eliminating those that didn't. For example, we put a lot of effort in crafting meeting agendas. We strive to include *only* those subjects we must discuss in-person and table everything else for offline discussions on Slack or individually organized calls. We practice this in real time, too. During our regular meetings on Google Hangouts, if someone brings up a topic that isn't highly relevant or urgent, the current stand-up lead (a role that rotates weekly) "parking lots" it until the end of the meeting. If we have space at the end, we pull from the parking lot, and if not, we reserve that discussion for a Slack thread.

This prioritization structure has led to massive gains in meeting efficiency and a focus on progress updates, shared technical hurdle discussions, collective decision-making, and assigning actionable tasks (the next-steps a person has committed to taking, documented with their name attached for everyone to view).

Step 5: Prototyping

This is where the fun starts.

Given our requirements—like an interactive user experience, the ability to collaborate on blogs and curricula, and the ability to receive feedback from our users—we began identifying the best technologies. Ultimately, we decided to build our web app with a Re-

actJS frontend and a Ruby on Rails backend. We chose these due to the extensive documentation and active community for both, and the well-maintained libraries that bridge the relationship between the two (e.g., react-on-rails). Since we chose Rails for our backend, it was obvious from the start that we'd work within a Model-View-Controller framework.

Most of us didn't have previous experience with web development, neither on the frontend nor the backend. So, getting up and running with either technology independently presented a steep learning curve, and gluing the two together only steepened it. To centralize our work, we use an open-access GitHub repository. Given our relatively novice experience in web development, our success hinged on extremely efficient and open collaborations.

And to explain that, we need to revisit the idea of structures. Some of ours include peer code reviews—where we can exchange best-practices and reusable solutions, maintaining up-to-date tech and user documentation so we can look back and understand design decisions—and (my personal favorite) our questions bot on Slack, which gently reminds us to post and answer questions in a separate Slack #questions channel.

We've also dabbled with other strategies, like instructional videos for generating basic React components and rendering them in Rails Views. I tried this and in my first video, I covered a basic introduction to our repository structure and best practices for generating React components.[17] While this proved useful, our team has since realized the wealth of online resources that document various implementations of these technologies robustly. Also, we simply haven't had enough time (but we might revisit them in the future—stay tuned).

We're also excited about our cloud-based implementation. We use Heroku to host our application and manage data storage. In next iterations, we plan to both expand upon our current features and configure a continuous iteration/continuous development pipeline using services like Jenkins integrated with GitHub.

17 https://www.youtube.com/watch?v=52kvV0plW1E

Step 6: Testing

Since we've just deployed, we are now in a testing stage. Our goals are to collect user feedback across our feature domains and our application experience as a whole, especially as they interact with our specific audiences. Given our original constraints (namely, time and people power), this iteration is the first of many to come. For example, future iterations will allow for individual users to register accounts and post external curricula directly on our site without going through the extra steps of email. We want to scale and maximize our efficiency, and that's part of the recipe we'll deploy in future iterations. As for user testing: We collect user feedback via our contact form, via informal testing within our team, and via structured focus groups. We welcome your constructive feedback and collaboration.[18]

Our team was *only* able to unite new people with highly varied experience through the power of *open* principles and methodologies. Luckily enough, each one I described in this post is adaptable to virtually every team.

Regardless of whether you work—on a software development team, in a classroom, or, heck, even in your family—principles like transparency and community are almost always the best foundation for a successful organization.

Tanner Johnson is a digital era education advocate and technologist. While studying computer science at Duke University, he co-founded CSbyUs, a non-profit aimed at expanding access to quality digital era education. Currently, he's working in Spain as a Fulbright Scholar, teaching and researching at the intersection of technology and the physical classroom.

18 http://csbyus.org/

Review and discussion questions

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Making computer science curricula as adaptable as our code

Amarachi Achonu

Educators in elementary computer science face a lack of adaptable curricula. Calls for more modifiable, non-rigid curricula are therefore enticing—assuming that such curricula could benefit teachers by increasing their ability to mold resources for individual classrooms and, ultimately, produce better teaching experiences and learning outcomes.

Our team at CSbyUs noticed this scarcity, and we've created an open source web platform to facilitate more flexible, adaptable, and tested curricula for computer science educators.[19] The mission of the CSbyUs team has always been utilizing open source technology to improve pedagogy in computer science, which includes increasing support for teachers. Therefore, this project primarily seeks to use open source principles—and the benefits inherent in them—to expand the possibilities of modern curriculum-making and support teachers by increasing access to more adaptable curricula.

Rigid, monotonous, mundane

Why is the lack of adaptable curricula a problem for computer science education? Rigid curricula dominates most classrooms today, primarily through monotonous and routinely distributed lesson plans. Many of these plans are developed without the capacity for dynamic use and application to different classroom atmospheres. In contrast, an *adaptable* curriculum is one that would *account* for dynamic and changing classroom environments.

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19 https://csbyus.herokuapp.com/

An adaptable curriculum means freedom and more options for educators. This is especially important in elementary-level classrooms, where instructors are introducing students to computer science for the first time, and in classrooms with higher populations of groups typically underrepresented in the field of computer science. Here especially, it's advantageous for instructors to have access to curricula that explicitly consider diverse classroom landscapes and grants the freedom necessary to adapt to specific student populations.

Making it adaptable

This kind of adaptability is certainly at work at CSbyUs. Hayley Barton—a member of both the organization's curriculum-making team and its teaching team, and a senior at Duke University majoring in Economics and minoring in Computer Science and Spanish—recently demonstrated the benefits of adaptable curricula during an engagement in the field. Reflecting on her teaching experiences, Barton describes a major reason why curriculum adaptation is necessary in computer science classrooms. "We are seeing the range of students that we work with," she says, "and trying to make the curriculum something that can be tailored to different students."

A more adaptable curriculum is necessary for truly challenging students, Barton continues.

The need for change became most evident to Barton when working students to make their own preliminary apps. Barton collaborated with students who appeared to be at different levels of focus and attention. On the one hand, a group of more advanced students took well to the style of a demonstrative curriculum and remained attentive and engaged to the task. On the other hand, another group of students seemed to have more trouble focusing in the classroom or even being motivated to engage with topics of computer science skills. Witnessing this difference among students, it became important that curriculum would need to be adaptable in multiple ways to be able to engage more students at their level.

"We want to challenge every student without making it too challenging for any individual student," Barton says. "Thinking about

those things definitely feeds into how I'm thinking about the curriculum in terms of making it accessible for all the students."

As a curriculum-maker, she subsequently uses experiences like this to make changes to the original curriculum.

"If those other students have one-on-one time themselves, they could be doing even more amazing things with their apps," says Barton.

Taking this advice, Barton would potentially incorporate into the curriculum more emphasis on cultivating students' sense of ownership in computer science, since this is important to their focus and productivity. For this, students may be afforded that sense of one-on-one time. The result will affect the next round of teachers who use the curriculum.

For these changes to be effective, the onus is on teachers to notice the dynamics of the classroom. In the future, curriculum adaptation may depend on paying particular attention to and identifying these subtle differences of style of curriculum. Identifying and commenting about these subtleties allows the possibility of applying a different strategy, and these are the changes that are applied to the curriculum.

"We've gone through a lot of stages of development," Barton says. "The goal is to have this kind of back and forth, where the curriculum is something that's been tested, where we've used our feedback, and also used other research that we've done, to make it something that's actually impactful."

Hayley's "back and forth" process is an iterative process of curriculum-making. Between utilizing curricula and modifying curricula, instructors like Hayley can take a once-rigid curriculum and mold it to any degree that the user sees fit—again and again. This iterative process depends on tests performed first in the classroom, and it depends on the teacher's rationale and reflection on how curricula uniquely pans out for them.

Adaptability of curriculum is the most important principle on which the CSbyUs platform is built. Much like Hayley's process of curriculum-making, curriculum adaptation should be *iterative*, as it involves learning from experience, returning to the drawing board,

making changes, and finally, utilizing the curriculum again. Once launched, the CSbyUS website will document this iterative process.

The open-focused pedagogy behind the CSByUs platform, then, brings to life the flexibility inherent in the process of curriculum adaptation. First, it invites and collects the valuable first-hand perspectives of real educators working with real curricula to produce real learning. Next, it capitalizes on an iterative processes of development—one familiar to open source programmers—to enable modifications to curriculum (and the documentation of those modifications). Finally, it transforms the way teachers encounter curricula by helping them make selections from different versions of both modified curriculum and "the original." Our platform's open source strategy is crucial to cultivating a hub of flexible curricula for educators.

Open source practices can be a key difference in making rigid curricula more moldable for educators. Furthermore, since this approach effectively melds open source technologies with open-focused pedagogy, open pedagogy can potentially provide flexibility for educators teaching various curriculum across disciplines.

Amarachi Achonu is a current undergrauate studying Computer Science. As a member of the Technology Research and Development team at CSbyUs, an open-source website for CS curriculum and support, she has worked to build not only this platform but to bridge the gap in technology careers for underrespresented students.

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Activities

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Performing the collaborative dilemma

Gina Likins

ACTIVITY

Estimated time to complete: 30–60 minutes

Materials needed: Two varieties of prizes, one "choice card" for every participant, a whiteboard and markers, signs that read "30 seconds" and "20 seconds"

I wanted groups to experience open source values in a very concrete, hands-on way—so I created a game called "Candy or Swag,"[20] which is based on The Prisoner's Dilemma.[21] Unlike The Prisoner's Dilemma, however, Candy or Swag tests a negotiation scenario based on reward (rather than punishment) and uses real, tangible prizes of varying value to demonstrate how collaboration and transparency can form the basis of a sound business strategy.

In this chapter, I'll explain how I run "Candy or Swag," including game setup, instructions for play, and hints for facilitation.

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20 Adapted from "Teaching the Prisoner's Dilemma More Effectively: Engaging the participants," by Michael A. McPherson and Michael L. Nieswiadomy (http://www.cas.unt.edu/~mcpherson/papers/mcpherson_nieswiadomy_jee.pdf)

21 The Prisoner's Dilemma (http://www.investopedia.com/terms/p/prisoners-dilemma.asp) is a classic exercise in game theory that explores the "competing" desires of cooperation and self-preservation. I've always been fascinated by game theory and the Prisoner's Dilemma, but found them difficult to explain to others—because they're abstract, existing in the realm of "thought experiment."

Facilitation steps

Phase 1: Preparation

Step 1. Gather materials. For this exercise, you will need four things:

- *Prizes of two different varieties:* "*candy*" *and* "*swag*." Candy (or "low value" prizes) can be anything with trivial value, like individually wrapped pieces of candy (my typical choice), pennies, or stickers. To estimate quantity, assume that every participant can win a piece of candy every "round" and that you will run at least eight rounds. Swag (or "high value" prizes) doesn't have to be physical objects; it could be "two hours off," for example—but there should be a physical representation of the prize, like a coupon (I've used company-branded items that we usually give away at conferences). To estimate quantity, figure that every participant can have one piece of "swag" and have a few to spare.
- *A* "*choice card*" *for each participant*. On each card, write the name of the "low value" prize on one side, and on the reverse write the "high value" prize. I tend to use candy for the former and swag for the latter (hence the name of the exercise), but you should use whatever works best for you. Throughout this chapter, I'll use the terms "candy" and "swag" as placeholders for these two types of prizes.
- *A whiteboard and whiteboard markers or printed sheets to distribute with the payoff matrix* (see Figure 1).
- Signs (handwritten is fine) reading "30 seconds" and "20 seconds."

Step 2. Place a choice card at each participant's desk.

Phase 2: Game Play

Step 1. Explain the rules to participants. Here they are:

1. *No talking from this point forward. Anyone who talks gets neither candy nor swag.*
2. *You have a choice card in front of you. When I say so, pick up the card and hold it so that your choice (of candy or swag) is facing up and the other side is hidden by your hand.*
3. *I'll come around and tally your choices, so make sure to hold your card so I can see it but no one else can. If you want "candy," for example, hold the card so I can see "candy" when I come around.*
4. *Here's the twist: Whether you receive candy, swag—or nothing at all!—is based on what choices the whole group makes, based on a payoff matrix.*
5. *Here's how the payout works. Pay close attention.*

STEP 2. Explain the "Payout Matrix." I find that constructing the payoff matrix in real-time on the whiteboard (while talking it through) works best. This seems to help participants better understand the choices.

If using a whiteboard is not feasible, you can distribute printed copies of the payoff matrix. The payoff matrix is based on a "target number" of participants, which is the maximum number that can choose "swag" and ensure a scenario where everyone gets something. I usually set the number at roughly 1/10 the size of the group. For example: In a group of 20, the target number is 2, while for a group of 8, the target is 1 (as it's hard to have less than a whole person). For a group of 15, I'd use 2 as the target.

If...	Who gets CANDY	Who gets SWAG
... **everyone** chooses **candy**	**Everyone**	**No one**
... ≤ target# of participants choose **swag**	**Everyone except** the participants who chose **swag**	The participants who chose **swag**
... > target# of participants choose **swag**	**No one**	**No one**

Figure 1: The "payout matrix"

After explaining the payout matrix and taking questions, you're ready to play! (Important: Do not tell the participants how many rounds you're playing.)

Step 3. Ask the participants to choose candy or swag by holding their choice card so that you can see their choice (but no one else can).

Step 4. Count the number of participants who chose swag.

Step 5. Tell the group how many people chose swag (but not who chose swag). Explain what everyone won (if anything) using the payout matrix above, and hand out prizes.

Step 6. Run a few rounds (at least three) like this, then ask for some reflection about what the participants are noticing.

Step 7. By now the participants are usually getting a little frustrated (which is fine), so explain: "*We are going to try playing the game a little differently—in a way that's more 'open.*'"

Step 8. Review the Open Organization Definition (see Appendix) and ask the group if they think it might help if they were allowed to collaborate a little before making their decision for candy or swag. Assuming they jump on this opportunity (and I've never seen a group that hasn't), you can explain some new rules.

Step 9. Explain these new rules:

1. *You will have one minute from when I say "go" to collaborate as a group before each of you again chooses candy or swag.*
2. *I'll hold up signs telling you when you have 30 seconds left, then 20 seconds left, then count down the last ten.*
3. *All the rest of the rules are the same. Remember to choose the card for the prize you want, then hold it so that I am the only person who can see your choice.*

Step 10. Say "*Go.*"

Step 11. At 30 seconds, hold up the "30 second" card. Then, at 20 seconds, hold up the "20 second" card. At 10 seconds, begin a silent countdown using your hands held high above your head. (Note: I'm not incredibly strict with the timing. If there was clear progress, I let the time run long, for example. This step is primarily a

way to ensure participants know there's not room for endless debate.)

Step 12. As above, tally the votes for swag and explain the "payout." If at any time a participant asks how many more rounds there will be, tell them that you don't know. Run at least three rounds this way. Run more rounds if it takes them a while to get collaborating.

Step 13. After a couple of rounds of playing the game this way, ask the group if—based on your discussions about "openness"—anyone can think of a change that would make the process even more open.

Step 14. If the group has had people who said they'd choose candy but really chose swag in the collaboration period (what we might call "cheaters"), they'll usually come up with "transparency" on their own. Even if you haven't seen cheaters so far, though, consider proposing a hypothetical situation asking what would have happened if the group still ended up with too many swag choices and how that would have affected the outcome. (I will often use this opportunity to talk about the open source idea of "trust then verify"—or collaborating with people to find the best solution, rather than competing, but having the code be open and transparent to everyone so it's "checkable.")

Step 15. Change the rules one more time. Now have the participants make their choices in an "open" or transparent way (for example, by placing their choice card face up on the table). This variant is especially helpful if you have groups that are unable to figure out how to effectively manage the collaboration variant of the rules.

Reflection

If your exercise runs anything like mine have, then during the first few rounds of the game more than the target number of participants will choose swag and no one will receive anything. In groups I've facilitated (which typically had about 20 participants with a target number of 2), the number of participants who chose swag each round ranged from four to eight, but it was never fewer than two (so

no one won anything). When asked to reflect on what they're seeing, the participants typically identify a few issues:

- "A lot of people are greedy (i.e., want swag)."
- "There's no way to tell who is asking for what."
- "There were a lot of people who were trying to do the right thing so everyone could get candy at least."

After I've changed the rules to allow for more collaboration, however, the participants immediately figure out that if they work together they can *all* get candy every round, and they can *take turns* getting swag. Watching the discussions between the participants evolve is fascinating: even though I've just met these participants, I can tell who the leaders are. I've seen groups came up with their own variants of a "sharing protocol." For example, one group chose one person from each table in the first round, then the next person from each table during the next round, while in another group they just moved around the room clockwise. When we enter the reflection phase of the exercise, almost every group I've worked with has observed that they have fared better when everyone was collaborating.

One group was particularly illustrative. Apparently, there'd been some interpersonal drama earlier in the week and tensions in the group were high. When they first played the collaboration round, they came up with a plan—but someone "cheated"[22] (i.e., didn't stick to the agreed upon plan) and ended up causing the swag count to be "3."

So we tried it again, and the same thing happened. And again. By this point, the group had figured out who the rogue was and was becoming quite upset with him. To my utter surprise, on the next round the cheater didn't cheat. I had to laugh, though, when someone pointed out that one of the other participants had taken away his swag card!

The cheater was understandably frustrated, but I used this as an opportunity to talk about what happens in open source communities when people show they are not trustworthy or that they don't

22 I have "cheated" in quotes because in one sense he was following the best possible plan, if you were to discount altruism as a means to obtain future good.

have the community's best interests at heart. As I explained to the group, in open communities, if someone is consistently causing problems, the community will attempt to work it out with that person. But if that doesn't work, the community will often have no choice but to remove that person from the community.

The open organization values of collaboration and transparency seem like they should be easy enough to understand. But giving people the opportunity to discover how well they work through experimentation has proven far more effective than all the explaining I could do. This exercise is one way to provide that opportunity.

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Open organizations on Mars

Heidi Ellis

EXERCISE

Estimated time to complete: 90 minutes

Materials needed: The Open Organization Maturity Model, score cards, writing utensils, notepads, and paper

Those who are new to the idea of open organizations (and open source in general) may have a difficult time envisioning how the open organization principles (see Appendix) are incorporated as part of an existing culture. Many of these folks may not be participating in—or even have had extensive exposure to—an open organization, and therefore may not have ready access to a live community from which to observe and from which to learn.

This exercise allows participants to create their own communities and then evaluate them with respect to the Open Organization Maturity Model. It is intended to allow participants to gain an understanding of how open organization principles could be implemented within a culture. The process of creating a community allows the participants to clearly understand how the community works, providing a solid foundation for the process of evaluating the community with respect to the Open Organization Maturity Model. The application of the model provides participants the opportunity to test their understanding of open organization principles by evaluating their inclusion in a known environment.

Facilitation steps

Phase 1: Imagine a new society

In this phase of the exercise, participants will collaborate in teams to imagine a new society. Divide the group into teams with an equal number of members.

Step 1. Explain the exercise's hypothetical premise to participants. Say something like: "*You are part of a team of 50 people that is going on an expedition to Mars. The team will be responsible for creating a new community on Mars including terraforming, exploring, and establishing a government. You are responsible for defining the culture and government for the new community. In this assignment, you must define a society built on open source principles. How do people act? How do people govern themselves? What kind of institutions/organizations do you build?*"

Step 2. Ask participants to imagine a system of government for their new society. Say something like: "*Describe how your community will be run. Will your society be a democracy? A monarchy? A dictatorship? A mixed government that combines elements of several systems? What kind of a constitution will you have? How will your government make decisions? Define a motto for your government. Explain your choices.*" Allow at least 10 minutes for this step.

Step 3. Ask participants to imagine a legal system for their new society. Say something like: "*Your community must have rules. Define a list of at least 10 rules all community members must follow. Provide an explanation for each rule. You will also need a legal system in order to handle those who break the rules or harm others. What sort of a system will you use? How will you address conflict resolution? How will you enforce the rules of your society?*" Allow at least 10 minutes for the step.

Step 4. Ask participants to imagine an economic system for their new society. Say something like: "*Your society's economy determines how resources (goods and services) are allocated. What systems will be in place for the production and distribution of resources? What form of currency will you use? What structure will you use for distributing resources? Does the government own all re-*

sources and means of production? Are the resources owned by private individuals? Is it a blend? How do people earn a living? What industries and careers are available?" Allow at least 10 minutes for this step.

Step 5. Ask participants to imagine various social programs their society will offer. Say something like: "*Social programs exist to ensure that all members of a community are provided for. How will your government care for the poor? How will your community be housed? What rights to community members have? What are the obligations of all community members?*" Allow at least 10 minutes for this step.

Phase 2: Evaluate the new society

In this phase of the exercise, teams of participants will evaluate each others imagined societies, specifically their relative degrees of openness.

Step 1. Explain the Open Organization Maturity Model[23] to participants. Also explain that everyone will be evaluating the values that underpin the imagined societies with respect to each of the following aspects of a culture:

- Transparency
- Inclusivity
- Adaptability
- Collaboration
- Community

Step 2. Invite a representative from one of the teams to share the details of the society they generated in the first phase of the exercise. That representative should "read out" on the team's collective work and describe all facets of the society in as much detail as the team was able to generate.

Step 3. Other teams around the room will use scorecards (see Figure 1) to "rate" the society's position on the Open Organization

23 https://opensource.com/open-organization/resources/open-org-maturity-model

Maturity Model. They should place an "X" in the space that corresponds with their estimation of the society's degree of openness.

	Transparency	Inclusivity	Adaptability	Collaboration	Community
Level 1					
Level 2					
Level 3					

Figure 1: Scorecard

Step 4. Ask participants from around the room to share the scores they allocated to the society just described. Be sure to ask participants to justify their scores by describing their perceptions of the society.

Step 5. Repeat the steps in Phase 2 until all teams have had an opportunity to report on their imagined societies.

Reflection

Levels of open organizational maturity will vary, both across the aspects of a single team's culture and across the cultures of *all* the teams. The evaluation process may engender lively discussions as participants debate how the parts of the culture map to various levels in the Open Organization Maturity Model. This discussion affords the facilitator the opportunity to highlight some of the differences between the levels in the model, as well as to bring in real-world examples from existing organizations to illustrate the aspects and levels.

An interesting add-on exercise (if time permits) is to have the teams then discuss how their community could be "moved up" the Open Organization Maturity Model. Questions to structure that discussion might include:

- Which aspects of your community are most mature? Why did you design them in the manner that you did?
- Which aspects of your community are least mature? Why did you design them in the manner that you did?
- What underlying assumptions did you make when you designed the culture?

- What changes might you suggest to move the least mature aspects of the community to be more mature? What sort of changes would that require in the community?
- Given the current state of your community, what sort of a process would you envision to help the community become more mature with respect to being an open organization?

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Appendix

The Open Organization Definition

The Open Organization Ambassadors

Preamble

Openness is becoming increasingly central to the ways groups and teams of all sizes are working together to achieve shared goals. And today, the most forward-thinking organizations—whatever their missions—are embracing openness as a necessary orientation toward success. They've seen that openness can lead to:

- **GREATER AGILITY**, as members are more capable of working toward goals in unison and with shared vision;
- **FASTER INNOVATION**, as ideas from both inside and outside the organization receive more equitable consideration and rapid experimentation, and;
- **INCREASED ENGAGEMENT**, as members clearly see connections between their particular activities and an organization's overarching values, mission, and spirit.

But openness is fluid. Openness is multifaceted. Openness is contested.

While every organization is different—and therefore every example of an open organization is unique—we believe these five characteristics serve as the basic conditions for openness in most contexts:

- Transparency
- Inclusivity
- Adaptability
- Collaboration
- Community

Characteristics of an open organization

Open organizations take many shapes. Their sizes, compositions, and missions vary. But the following five characteristics are the hallmarks of any open organization.

In practice, every open organization likely exemplifies each one of these characteristics differently, and to a greater or lesser extent. Moreover, some organizations that don't consider themselves open organizations might nevertheless embrace a few of them. But truly open organizations embody them all—and they connect them in powerful and productive ways.

That fact makes explaining any one of the characteristics difficult without reference to the others.

Transparency

In open organizations, transparency reigns. As much as possible (and advisable) under applicable laws, open organizations work to make their data and other materials easily accessible to both internal and external participants; they are open for any member to review them when necessary (see also *inclusivity*). Decisions are transparent to the extent that everyone affected by them understands the processes and arguments that led to them; they are open to assessment (see also *collaboration*). Work is transparent to the extent that anyone can monitor and assess a project's progress throughout its development; it is open to observation and potential revision if necessary (see also *adaptability*). In open organizations, transparency looks like:

- Everyone working on a project or initiative has access to all pertinent materials by default.
- People willingly disclose their work, invite participation on projects before those projects are complete and/or "final," and respond positively to request for additional details.
- People affected by decisions can access and review the processes and arguments that lead to those decisions, and they can comment on and respond to them.
- Leaders encourage others to tell stories about both their failures and their successes without fear of repercussion; associates are forthcoming about both.
- People value both success and failures for the lessons they provide.

- Goals are public and explicit, and people working on projects clearly indicate roles and responsibilities to enhance accountability.

Inclusivity

Open organizations are inclusive. They not only welcome diverse points of view but also implement specific mechanisms for inviting multiple perspectives into dialog wherever and whenever possible. Interested parties and newcomers can begin assisting the organization without seeking express permission from each of its stakeholders (see also *collaboration*). Rules and protocols for participation are clear (see also *transparency*) and operate according to vetted and common standards. In open organizations, inclusivity looks like:

- Technical channels and social norms for encouraging diverse points of view are well-established and obvious.
- Protocols and procedures for participation are clear, widely available, and acknowledged, allowing for constructive inclusion of diverse perspectives.
- The organization features multiple channels and/or methods for receiving feedback in order to accommodate people's preferences.
- Leaders regularly assess and respond to feedback they receive, and cultivate a culture that encourages frequent dialog regarding this feedback.
- Leaders are conscious of voices not present in dialog and actively seek to include or incorporate them.
- People feel a duty to voice opinions on issues relevant to their work or about which they are passionate.
- People work transparently and share materials via common standards and/or agreed-upon platforms that do not prevent others from accessing or modifying them.

Adaptability

Open organizations are flexible and resilient organizations. Organizational policies and technical apparatuses ensure that both positive and negative feedback loops have a genuine and material effect on organizational operation; participants can control and potentially alter the conditions under which they work. They report frequently and thoroughly on the outcomes of their endeavors (see also *transparency*) and suggest adjustments to collective action based on assessments of these outcomes. In this way, open organizations are fundamentally oriented toward continuous engagement and learning.

In open organizations, adaptability looks like:

- Feedback mechanisms are accessible both to members of the organization and to outside members, who can offer suggestions.
- Feedback mechanisms allow and encourage peers to assist one another without managerial oversight, if necessary.
- Leaders work to ensure that feedback loops genuinely and materially impact the ways people in the organization operate.
- Processes for collective problem solving, collaborative decision making, and continuous learning are in place, and the organization rewards both personal and team learning to reinforce a growth mindset.
- People tend to understand the context for the changes they're making or experiencing.
- People are not afraid to make mistakes, yet projects and teams are comfortable adapting their pre-existing work to project-specific contexts in order to avoid repeated failures.

Collaboration

Work in an open organization involves multiple parties by default. Participants believe that joint work produces better (more

effective, more sustainable) outcomes, and specifically seek to involve others in their efforts (see also *inclusivity*). Products of work in open organizations afford additional enhancement and revision, even by those not affiliated with the organization (see also *adaptability*).

- People tend to believe that working together produces better results.
- People tend to begin work collaboratively, rather than "add collaboration" after they've each completed individual components of work.
- People tend to engage partners outside their immediate teams when undertaking new projects.
- Work produced collaboratively is easily available internally for others to build upon.
- Work produced collaboratively is available externally for creators outside the organization to use in potentially unforeseen ways.
- People can discover, provide feedback on, and join work in progress easily—and are welcomed to do so.

Community

Open organizations are communal. Shared values and purpose guide participation in open organizations, and these values—more so than arbitrary geographical locations or hierarchical positions—help determine the organization's boundaries and conditions of participation. Core values are clear, but also subject to continual revision and critique, and are instrumental in defining conditions for an organization's success or failure (see also *adaptability*). In open organizations, community looks like:

- Shared values and principles that inform decision-making and assessment processes are clear and obvious to members.
- People feel equipped and empowered to make meaningful contributions to collaborative work.
- Leaders mentor others and demonstrate strong accountability to the group by modeling shared values and principles.

- People have a common language and work together to ensure that ideas do not get "lost in translation," and they are comfortable sharing their knowledge and stories to further the group's work.

Version 2.0
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github.com/open-organization-ambassadors/open-org-definition

Learn More

Additional resources

Book series

Continue reading about the future of work, management, and leadership in the *Open Organization* book series. Get started at opensource.com/open-organization/resources/book-series.

Mailing list

Our community of writers, practitioners, and ambassadors regularly exchange resources and discuss the themes of this book. Chime in at www.redhat.com/mailman/listinfo/openorg-list.

The "Open Organization Highlights" newsletter

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