Leveraging CK-12 in School Change
– the Power of Flexing

Louise Bay Waters

Saving textbook dollars, supporting individual teacher creativity, and putting up-to-date information in the hands of students are all important reasons to use CK-12 flexbooks. However, Ck-12 also has the potential to impact more fundamental school change. I have found that the power of CK-12 to support wider school change lies in the process of flexing, or creating tailored textbooks.

Strategic Roles for CK-12 in School Change

Supporting the Change Lever

CK-12 allows schools and districts to select instructional change levers (critical thinking, content literacy, differentiation, project-based learning, cooperative learning, Marzano’s strategies, etc) and embed them into a content curriculum that is standards based. Too often instruction and content must be separated because available content materials do not incorporate the desired instructional strategies or experts in the strategy lack familiarity with specific content standards.

The first step in using CK-12 for instructional change, then, is to select an instructional lever(s) powerful enough to merit incorporating across classrooms and courses. This becomes the focus and purpose of flexing.

Supporting the Change Process

Curriculum change processes encounter predictable challenges. The flexing process of CK-12 offers strategies to address or ameliorate many of these issues. To begin with, districts often face twin
conundrums – how to get the **consistency of top-down change and the buy-in of bottom up** and relatedly, how to **balance fidelity and flexibility**. By using CK-12 and involving teachers in the flexing process at the district/school level, it is possible to define and maintain a consistent focus and framework across a curriculum initiative while generating considerable ownership among individual teachers. Similarly, the ability of individual teachers to flex the materials at the classroom level allows for a high level of school or district-wide consistency while allowing teachers to adapt the flexbooks for specific classes or to add in teacher-created materials.

A further typical balancing act in school change is how to **grow innovation and teacher engagement while ensuring quality**. Whether a change initiative is teacher initiated or school/district initiated, teacher enthusiasm for a particular instructional strategy or curriculum content may or may not mean that these practices are educationally the best. At the same time, work by experts may be pedagogically sound but never get traction in the classroom. By instituting a collaborative flexing process, expert review can be inserted at any point. In addition, the foundational CK-12 content is expert generated and has already passed a variety of expert reviews. Ironically, when there are teacher-developed innovations of high quality, schools often have problems spreading these “best practices” to other teachers or sites. Again, the collaborative flexing process allows teachers to take these resources as foundational and then make adaptations to tailor the materials to their classrooms. The ability to make small tweaks can greatly increase buy in and the actual use of the curriculum.

Another challenge in curricular change is providing the **right type and depth of professional development to take a good idea from theory to implementation**. Involving teachers in the flexing process provides a powerful embedded professional development opportunity. If the flexing is centered on implementing a particular set of instructional strategies, framing the flexing work entails providing at least an introductory level of PD on those strategies. The next step, actually applying the strategies by embedding them in the new flexbooks involves applying these strategies in the development of concrete lessons and readings. This is a sophisticated type of professional development that has the added advantage of being immensely practical – teachers are preparing materials they will actually use in their classes.

The final change-process challenge that the CK-12 flexing can mitigate is one of alignment. While pedagogical experts can develop materials and training related to a particular change lever (writing process, critical thinking, formative assessments, cycles of inquiry), they operate in isolation – focusing on just that initiative. However, there is no one silver bullet. A school must move on multiple fronts either concurrently or consecutively. This creates **change fatigue – teachers are legitimately skeptical about one more thing** coming down. However, the ability to flex and re-flex CK-12 materials means that they can be tailored to incorporate critical thinking and align to benchmark assessments. They can center on power standards, incorporate expository writing, and change the sequence of the physics curriculum. Or this year they can be flexed to incorporate literacy in science and next year can be re-flexed to incorporate high-powered labs – while continuing to incorporate literacy. When teachers see that the work is cumulative and aligned, skepticism and burn-out can be mitigated.
Leadership Public Schools and CK-12 College Access Readers

Leadership Public Schools (LPS) is a network of four urban charter high schools in the California Bay Area. The majority of students enter our 9th grades reading significantly below grade level but we are committed to offering a college preparatory curriculum that prepares all of them to enter and succeed in college. Given this reality, the change levers that we have selected as the focus of our CK-12 work are content literacy and differentiation. Specifically, we are embedding literacy scaffolds directly into CK-12 Algebra, Geometry, Biology and US History materials to create flexbooks we call College Access Readers. The Readers offer college preparatory content flexed to provide access for the majority of our students. Students with higher-level literacy skills use the original CK-12 content flexed to our scope and sequence. The lowest readers will soon access the materials through text-to-speech versions or Spanish translations. Reflecting the change process strategies laid out above, we deliberately built a “collaborative innovation” process to do the flexing incorporating the following steps.

• **Evolution unit pilot in Biology** - In the February, 2010 the Biology teachers from our four campuses came together at CK-12 to prepare for the first flexing. This entailed:
  o Reviewing the California State Standards in Biology and selecting the power standards to be given the heaviest emphasis and then determining the curriculum sequence
  o Participating in a short training on the content literacy strategies we were planning to embed and the rationale for the flexing
  o Going through the actual CK-12 text and selecting material to delete (in order to create room for literacy work); material to edit because it was not accessible to most students but the actual wording was not critical; and finally material to scaffold because the vocabulary and content were critical (natural selection, genetic mutation, allele, etc) no matter how weak a student’s reading skills
  o Piloting the unit, getting feedback from teachers and students and then framing the other Biology units

• **Framing the full flexbooks** in the other three subjects. The Biology planning process (minus the pilot unit) was repeated for each of the other subjects in May and June of 2010

• **Determining the specific content literacy strategies** to embed in the College Access Readers in June, 2010
  o Drafting an initial academic literacy framework to guide the flexing and reviewing it with internal and external literacy experts, particularly administrators with literacy expertise
  o Going over the frame at an all-administrators’ retreat in June

• **Flexing the Readers** in June – August
  o Employing teachers and outside specialists to
    ▪ Flex the CK-12 books to our scope and sequence do readability edits and embed literacy scaffolds

• **Writing an overview of the project and literacy strategies** in July to serve as the foundation for site and central professional development, **CK-12 and Leadership Public Schools Introduce College Access Readers**

3
• Provide the College Access Reader introduction to teachers and administrators in August Retreats - a bound, printed copy of the guide which, in finished form, features chapters by 22 LPS teachers and administrators
  o Meeting individually and collectively with principals to integrate CK-12 work with each school’s site academic literacy PD
  o Walking through the first unit in each subject with teachers
• Continuing development of the CK-12 Readers
  o creating subsequent units during the year using non-teacher editors with teacher review
  o working with CK-12
  o developing the text-to-speech and translated versions of the flexbooks
• Supporting teachers and administrators in implementation
  o Bi-weekly on-site visits by the LPS Reading & Literacy Specialist to support individual teachers and the site administrator designated as the literacy lead
  o Paid phone conferences/webinars walking through each new unit prior to finalizing edits
  o Four-cycles of formative evaluation by an outside evaluator to gather input for rapid iteration, identify issues, clarify communication, and determine impact – cycles September, November, February, April

Lessons Learned

Despite the careful attention to process and even though the initiative is still in its early stages, lessons have already been learned. First, the involvement of teachers in the framing of the flexbooks was critical. Unfortunately with teacher turnover some of those involved in development left and others who were not involved joined the faculty. The strongest initial implementation has been with those most involved in the process.

Lesson learned: design strategies to involve new teachers in ongoing development and refinement as soon as possible.

Buy-in to the concept, involvement in framing or flexing, and support for the materials is not enough. There still needs to be ongoing and tailored support continuing through implementation. Some teachers are uncomfortable with the technology; some have difficulty with integrating the flexbooks with the rest of their curriculum; some are uncomfortable using the embedded pedagogy (in our case academic literacy strategies). Administrators who are supportive may still have difficulty addressing each of the teacher issues just delineated. They must also struggle with how to integrate this initiative with professional development across the site when all teachers are not using CK-12.

Lesson learned: anticipate a need for intense, individualized support for teachers and administrators for the initial phase of implementation.
High-level overviews of the scope and sequence and walk throughs of an initial unit during pre-school PD are not enough to make teachers comfortable using new material. Given the press of daily work, the stress of new pedagogy, and comfort with material they have used in the past, it is easy for good intentions to go by the wayside as school actually begins. In addition, as with most new venture, things happen and the production timeline is often not met, giving teachers less time to integrate new materials into their instruction.

**Lesson learned: anticipate delays and plan for phone or in-person walk throughs prior to each unit.** These conferences also provide opportunities for last-minute edits to correct mistakes or make suggested changes, which increases teacher involvement and improves implementation. These meetings also increase collaboration across schools and encourage teacher – to – teacher sharing of other instructional materials and ideas.

Flexing is more complex than it appears, particularly in high school STEM subjects and particularly if the flexing involves integrating in specific instructional strategies. We have found that there is often a need for four levels of “flexers:” first, course teachers to provide the overarching framework and decisions; second, subject experts to realign the CK-12 material, adding and deleting content and making sure that the standards are still covered and that the concepts flow and build throughout the flexbook; third an editor to smooth out the actual prose after flexing and to deal with issues of readability, particularly in initiatives like ours; and fourth pedagogical experts to embed the focus instructional strategies. The preview walk-throughs discussed above bring the final version back to the course teachers for another look to see how it all fits together.

**Lesson learned: there are multiple types of flexing – all types may be done by teachers but any one teacher seldom has all of the requisite skills.**

Finally, the beauty of CK-12 is that it allows for continual iteration and improvement and for what we call “collaborative innovation*. This is the process of structuring teacher innovation in such a way that the fruits of this work come back to enrich and advance the whole. Most teachers and administrators enthusiastically support the idea of iteration and collaboration. However, this means being comfortable with works in progress and less-than-polished products. For many people this state of flux is easier to handle in theory than in practice.

**Lesson learned: over communicate, over support, and set in place processes for listening and input.**

CK-12 can be used on many levels. It has the power and potential to provide the engine for deep, systemic change. Leveraging this power is not simple but in my 35 years as an educator I have seen few platforms for change that offer the potential of CK-12. Danielle Alvarado, and LPS San Jose Biology teacher speaks to some of this potential.

*While my students definitely benefited from the Evolution pilot, I benefitted as well. Working with the Biology teachers from the other LPS high schools to build something for our students was energizing. Being part of the development of the College Access Readers and the partnership with CK-12 allowed me to experience a new level of professionalism. It made me proud to be a teacher.*