**Research Practice Partnership Playbook**

**Co-Designing for Student-Centered Teaching & Learning**

We describe a co-design model and process that involves a multidisciplinary team and is focused on creating problem- and project-based learning (PBL) curricula that support teachers in providing student-centered learning experiences. This co-design model is derived from experiences related to multiple design-based implementation research initiatives involving partners from the University of Washington and Bellevue School District.

Our goals in engaging in co-design with a multidisciplinary team have been to promote meaningful learning on the part of all participants and to create curriculum that is research-based, relevant, engaging, and classroom sensitive.

Although the process described here is about the work of designing PBL curriculum, we believe the process and lessons learned are applicable to RPP co-design efforts that are neither focused on curriculum development nor PBL specifically.

**A. Co-Design Team Members:**

We recommend that the Co-Design Team include a diverse and balanced representation from all arms of the partnership, as described here:

Practitioners:

* School District Curriculum Specialists
* Teachers
	+ Design & Implementation (i.e., Teachers who co-design and implement the curriculum)
	+ Implementation & Feedback (i.e., Teachers who implement the curriculum and provide feedback to the Co-Design Team)

Researchers:

* Learning Sciences
* Curriculum & Instruction
* Content (e.g., Science Education, Mathematics Education, etc.)
* Measurement

Content Experts:

* Disciplinary
* “Real world”  (e.g., workplace professionals and other individuals who are in the role or have the expertise that is depicted in the curriculum projects)

**B. Forming and (re)Forming the Co-Design Team**

The Steering Team decides on the members and composition of the Co-Design team, seeking to represent a range of expertise.

When seeking out teacher partners, we recommend that:

* A district curriculum specialist, administrator, or others knowledgeable about the district recruit teachers
* Teachers’ participation is voluntary. Our experience has been that teachers who volunteer are those who are interested in new learning opportunities and open to working collaboratively
* Teachers are compensated (including release time)
* Teachers are supported by curriculum designers when implementing new curriculum
* Teachers have administrative buy-in or support to participate in the co-design work
* Teachers have the professional and personal capacity to devote to the work--it takes time and commitment!

Real world experts are identified and recruited as needed by the Steering Team.

**C.  Guiding Principles**

The following guiding principles reflect the complexity of the co-design process and serve to focus teams on two core purposes: 1) promote meaningful learning on the part of all participants; and 2) create curriculum that is research-based, relevant, engaging, and classroom sensitive.

In order to achieve these goals, we recommend:

**1.     Value each individual’s expertise**

* What expertise do we need for the work?
* What kinds of expertise do members bring to the team?
* What is missing from our team that we need? How can we bring that to the team?
* Based on their expertise, is each individual serving the *role* that best fits?
* Are there perspectives that are not represented on our team? By what means can we gain these perspectives?
* Are we *effectively* drawing on the expertise across the team?

**2.     Commitment to learning with & from each other; investing intentionally in learning**

* What does it mean to be committed to learning with and from each other?/What does it look like to learn with and from each other?
* What do you want to learn from your team?
* What do you bring to your team to build their knowledge?
* How can we stay focused on our design vision?

**3.     Flexibility (“blurred” boundaries, roles, processes)**

* What does it mean to flexible?
* Are you comfortable with blurred boundaries in terms of roles?
* In what areas are you not willing to be flexible? What are your non-negotiables?
* What do we need to adjust to work better together/better achieve our goals?
* How can we support one another in the work?

**4.     Clear expectations (people, product, processes)**

* Does each person have a clear expectation regarding their role is on the project?
* Does each person on the team understand the product(s) that will be created?
* What processes will be followed? Has everyone participated in the determination of the processes? Does everyone understand them?

**D. Co-Design Tasks, Processes, and Recommendations:**

In the table below, we detail each co-design task and the members involved.

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| **Phase** | **Co-Design Tasks** | **Description**  | **Recommendations/Lessons Learned** |
| 1. | **Big picture/brainstorm design** **Subtasks:*** Identify learning standards/objectives
* Craft a realistic problem or challenge that in order to solve necessitates the learning of the targeted learning objectives.
	+ Gather information about the challenge, and find and consult with real world experts to help craft the challenge
* Create/write the project narrative

* Work with/apply the design principles when designing the unit/project
* Lay out the project outline, identifying the the major tasks and associated concepts in sequence
 | In phase 1, researchers, practitioners, disciplinary experts, and outside/real world experts come together to identify learning objectives and brainstorm ideas for the project or problem.  By the end of the process, the team has a written document that specifies the learning objectives for the project/problem, a narrative of the problem/project and an outline of the sub-tasks comprising the project/problem that will guide the curriculum writing in phase 2.An example of a project narrative is: “In this project, students are in role as Ancient Roman architects who have been tasked with designing original triumphal arches for Emperor Augustus, answering the challenge, *“How can I design an arch that best pleases the emperor?”*An example of a project outline is: “In Task 1, *Do as the Romans Do*, students get into their role by researching Emperor Augustus and ancient Rome. This prepares them to make initial decisions for their arch designs. In Task 2, *ARCHitect’s Blueprint,* teams draft their initial arch designs. In Task 3, *Heavy Lifting*, teams are creating their engineering plan; tackling the challenge of moving their stone blocks out of the quarry, to the build site, and building their arches. Etc.” | * In the creation of the original challenge/problem space, it is ideal for the team to work synchronously together.
* Recognize that teacher time is limited; consider devoting resources to teacher buy-out and/or release time, in addition to monetary compensation.
* The big picture design phase takes a great deal of time (think months, not hours). It is a “messy” process with lots of “dead-ends” and an unknown time for completion. However, it is worth the time and effort--a well-documented and conceptualized project outline makes for easier curriculum writing in phase 2.
* Spaced vs. concentrated design time (need time for consolidation and reflection on ideas).
* Design principles need to be re-visited at various points in the design process to ensure that they are embodied in the design.
* The big picture phase results in lots of ideas that need to be evaluated from multiple perspectives: Are the learning objectives and design principles met by this idea? Is the project is authentic, student-directed and engaging for learners?
* Having different voices around the table is opportunity and a challenge! A designated Facilitator can make sure all members’ ideas are heard and kindly vetted.
* The real-world experts are the individuals on the team who know what problems are authentic and relevant. They can best describe the role and the parameters of the job. Their work with the team is short term and most intensive during Big Picture phase.
* Have team members use their social networks to find real-world experts. “Cold calls” will likely be necessary (e.g., one of our members called an expert she heard on NPR!). Experience tells us that most real-world experts are more than happy to help.  Teachers will help bridge the world and the classroom to make the problem doable/realistic for the classroom.
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| 2. | **Curriculum writing****Subtasks:** * Write lessons
* Create teacher materials
* Create student materials
* Create assessments
 | In this phase, several members of the Co-Design team write curriculum materials using the written documents developed in phase 1 as a guide.  | * Curriculum writing is best accomplished by a subset of the Co-Design team; for example, a teacher, researcher, and a disciplinary expert might write the curriculum materials.
* Not one person should write the materials; different team members should contribute to different parts of the materials based upon their expertise/interests/strengths.
* The writing process is iterative and will likely involve reconciling differences between the status quo and new ideas. Once there is a shared referent (e.g., a lesson plan or student activity) to reflect upon; differences in understanding among team members become evident and can be clarified.
* Have outside Disciplinary Experts review the curriculum and revise accordingly.
* Capitalize on teachers’ wisdom of practice in designing learning materials.
* It is important to iterate on the curriculum materials from the perspective of “what will be assessed”; this process will likely result in changes to the curriculum materials, especially the student materials. The is value to having “fresh eyes/perspective” review the materials at this point, for example, team members with a content focus who can frame the conversation on “what are students learning here?”
* Researchers slow down the writing relative to a group of teachers writing curriculum materials; the former group brings a critical eye/alternate design principles to the design. Be aware that differing expectations about how much time things take will need to be clarified/managed.
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| 3. | **Curriculum implementation with ongoing teacher support** **Subtasks:*** Teachers implement curriculum
* Researchers support classroom implementation.

* Co-Design team meets regularly during implementation of the curriculum
 | Teachers implement the unit/project with support from researchers.Researchers provide support through a variety of means; for example, by documenting the teaching and learning, reflecting and problem solving in-the-moment on issues with teachers, facilitating communication between teachers and other members of the  Co-Design team, etc.Regularly-scheduled meetings over the school year are held that focus on: (1) what went well and/or needs revisions in regards to just-completed parts of the curriculum, and; (2) upcoming lessons, pedagogical practices, and anticipated student thinking. | * A significant amount of teacher professional development/learning occurs during the formulating and writing of the curriculum. Hence, the typical “onboarding” Professional Development Workshop is not necessary for Teacher /Co-Designers. However, during curriculum implementation, regular after-school meetings are needed both to support teachers and further the learning of the Co-Design team.
* Ideally, teachers and other members of Co-Design team convenes frequent (at least monthly) meetings for 2-3 hours in face-to-face meeting.
* Find a convenient-to-teachers meeting location--in all likelihood, this will be at one of the teacher’s school.
* Having a Researcher in the classroom during implementation serves a liaison role and is critical for keeping communication open between Researchers and Teachers.
* Graduate Research Assistants can benefit from serving in this role; it is an excellent training opportunity and a context for conducting their own research.
* Regular meetings are opportunities for reflection and revision of curriculum and teaching. Systematically document the take-aways from meetings so that these can be referenced later on when the curriculum is being revised.
* Meetings are learning opportunities for all team members; they offer chances to reflect on practices and student learning and advance understanding of curriculum, teaching and learning.
* The Researcher who supports implementation provides formative feedback in the implementation to other members of the Co-Design team and nominate and/or collect classroom artifacts used in during Co-Design team meetings.
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| 4. | **Collect formal (formative and summative) feedback on implementation (e.g., interviews, focus groups, teacher documentation)****Subtasks:*** Researchers individually interview students (e.g., early, mid and end of year)
* Teacher and/or Researcher conduct student focus group at conclusion of projects
* Teacher formally documents ideas for curriculum changes
* Researcher formally interview implementing Teachers
 | The Co-Design team collects feedback from a variety of sources that inform project revisions. This is formal feedback in addition to informal feedback provided by the Researcher-in-the-classroom and by the Teacher in phase 3. | * A major challenge is timely review and compilation of formal feedback so that it is available during the curriculum revision process (phase 5).
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| 5. | **Reconceptualization (as needed)** | Based on formal and informal feedback, it may be necessary for the Co-Design team to revise the project narrative and/or project outline. This may be an opportunity to bring real-world and disciplinary experts back to the Co-Design team or, if necessary, to seek out new experts. | * The Co-Design team meets face-to-face to review the formal feedback; this is “messy” process in which there will (hopefully) be lots of input and factors that must be weighed in making decisions about what and how to revise the materials.
* Use data to drive the decision- making, where possible.
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| 6. | **Curriculum rewriting****Subtasks:*** Rewriting teacher/lesson materials
* Rewriting student materials
* Rewriting assessments
 | Based on formal and informal feedback, changes to individual tasks or lessons will likely need to be made.   | * Reconvene the Co-Design team to review formal feedback and make changes to curriculum materials.
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