

Game Design Charette

Green Jobs Youth Pathways Portal

November 7, 2020



PROCEEDINGS from 3 PERSPECTIVES

What happened at the Charette?

On November 7, 2020, Sustainability Ambassadors convened students, teachers, corporate learning partners, and game-based learning experts for a 3-hour charrette. The purpose of the charette was to **apply game-based learning principles** to design an interactive exploration of Green Jobs that would uniquely engage middle school, high school, and college age students.

We explored **definitions of green jobs**, issues and opportunities related to **workforce diversity**, and a wide range of **organizations already working in this area**, from community-based environmental justice nonprofits, to educational associations, to corporate and government programs.

We used the current Green Jobs Youth Pathways resources developed by Sustainability Ambassadors as a starting point to imagine a much richer interactive experience that would **benefit multiple stakeholders** including the needs of CTE/STEM teachers and their students as well as employers seeking to diversify their workforce in context of advancing a sustainable economy.

We asked ourselves how can we design an interactive Green Jobs Youth Pathways experience with **equity outcomes front and center**?

With the help of Tammie Schrader, national expert on game-based learning, we built a shared understanding of the **value of game-based learning**.

We divided into **three teams to outline navigation scenarios** for a Green Jobs game.

Three Inquiries - Team Breakout Groups

1. **Workforce:** What are the diversity workforce hiring needs of our local corporate and government stakeholders as we build a green jobs, sustainable economy?
2. **Classroom:** What are the equity / CTE classroom requirements, lesson ideas, resource needs for career connected learning that would be enlivened by a game-based approach as we build the green jobs, sustainable economy?
3. **It's a Game:** What are the game-based design considerations for an interactive user experience for Green Jobs Youth Pathways unique to middle school, high school and college users?

Notes From the 3 Teams

Synthesized, Supplemented, Amplified

Workforce

How can corporate partners play a role in middle school and high school game-based learning?

- Corporations already excel at design charrettes, team problem solving, scoping, and subcontracting. These can be real-world, team-based challenges exposing users to green jobs in context of solving an engaging problem.

How can corporate partners support and utilize the Green Jobs Portal?

- Employee profiles (text and video) can be featured on the portal.
- Help build a digital library of case studies of sustainability projects that can be shared as examples of problem-solving linked to green jobs. Example: clean energy, green building, sustainable transportation, green infrastructure, water systems, food systems, green chemistry, circular economy, etc.
- Support mock charrettes with job teams working together to solve a local problem integrating multiple green jobs and sustainability principles.
 - Video a zoom call team charette and edit for speed
 - Cut away to other resources, job profiles, related inquiries...
- Engage high-level students of color in a live, in person, real world charette (partner with Rainier Scholars, Chief Sealth, Cleveland, Franklin or Garfield High Schools)
 - Video team charette and edit for speed
 - Cut away to other resources, job profiles, related inquiries...

How can corporate partners support equity outcomes from the top down?

- Recognize the value of diverse perspectives, ideas, and styles when problem solving as a team.
- Create a public-facing statement on equity principles and practices.
- Diversity on the team helps generate more effective client/customer relationships.
- Find innovative ways to reach potential workers outside of the usual top graduate school programs at renown universities which tend to reinforce a student pool that is predominantly white, male, and privileged.
 - Partner with Community Colleges
 - Strengthen early exposure opportunities in middle and high school
 - Partner with Equity, Diversity Inclusion programs in higher education
 - Network directly with BIPOC associations
 - [Got Green](#)
 - [Rainier Valley Corps](#)
 - [Puget Sound Sage](#)
 - [Front and Centered](#)
 - [Latino Community Fund](#) (Alianza, Latinos in Tech)
 - [Environmental Professionals of Color](#) | [EPOC Seattle Chapter](#)

PORTAL DESIGN CONSIDERATIONS

Goals for the Portal

1. **Provide exposure for Green Jobs** which are little understood by students. Most students have only a broad, general understanding of the more “traditional” jobs such as attorney, doctor, programmer, a narrow view that is often reinforced by parents.
 - a. Focus on opportunities for **very early exposure** to green jobs so students in middle school and high school can form positive mental models around green jobs and sustainable systems.
 - b. Make it clear that green jobs are achievable and appropriate for both College, and Non-College students. Help students envision themselves in a green job.
 - c. Build an understanding of the wide range of green jobs available in all fields and sectors with many different points of entry. Are all jobs green jobs as we pivot towards a sustainable economy?
 - d. Reinforce the importance of soft skills such as collaboration, communication, critical and creative thinking. See [Basic Employability Skills](#)
2. Use the evolving development of the portal as an **opportunity to convene** learning partners, thought leaders, and advocates from across generations, jurisdictions, and community sectors.

Portal Design Strategies

1. Build game navigation around the [Career Development Path](#): Awareness, Exploration, Preparation, Placement, Maintenance, Mentoring
2. Make the user experience driven by skills and preferences
 - a. I like working with my hands...
 - b. I like designing new things...
 - c. I like unraveling problems...
 - d. I like setting up mechanical equipment
 - e. I like working in teams
 - f. I like working independently
 - g. I like working in nature
3. Tell stories of **career pathways and progressions** that reinforce different ways to get experience, education, and skills.
 - a. Help students understand that most “jobs” are not one and done careers or even “ladders” but more like a string of creative pathways and progressions.
 - b. The most important skills might be an assertive, self-directed sense of exploration and adventure, willingness to risk, getting to know yourself, setting personal goals, being persistent, allowing for surprises.
 - c. Super important to shift student from academic smarts to [Basic Employability Skills](#). This is what employers actually are seeking, not your academic degree.

4. Provide student choice through a “**Choose Your Own Adventure**” Model
 - a. Students follow characters or develop avatars as a Green Job professional
 - i. Job types pop up
 - ii. Pop up attributes of forming a green jobs team of diverse skills
 - iii. Pop up constraints and opportunities related to stakeholder positions.
 - b. Leveled Tasks invite students to solve one small element of the problem
 - i. Grow your expertise
 - ii. Ask an expert/embedded video of an expert
 - iii. Video games that aren't necessarily content based, but show important characters? Person talking to scientists/researchers to directly learn about a job integrated within a video game
 - c. Feature a dynamic, ongoing poll among working green job professionals tracking interesting data points in career pathways:
 - i. 50% characterized their career progressions as “strategic, and targeted”
 - ii. 50% characterized their career progressions as “circuitous and unexpected - only clear in retrospect”
 - d. Develop a rich library of mini-stories, video profiles as examples of unique pathways. Study the model of [storycorps](#) and the [Moth Radio Hour](#). Students need to see and hear themselves in these stories.
 - e. At appropriate points in the process - connect students to external resources
 - i. Video clip of professionals in the field; Providing insights and counsel
 - ii. Email contacts for professionals willing to contribute their time and work with students as Mentors (Link to mentor / intern resource page)
 - iii. Professional organizations or firms in the field (internship opportunities)
 - f. Ideally, the game algorithms track your interests and link you to applicable stories.

5. Provide **Case Studies** that show how a real-world project unfolds
 - a. Include multiple project team members and roles with multiple, interdependent contributions
 - b. Communicate understanding of project flow and major milestones
 - c. Example sustainable systems for building a library of case studies: clean energy, green building, affordable housing, urban planning, sustainable transportation, green infrastructure, water systems, food systems, green chemistry, circular economy, etc.

Game Design Considerations

TO DO:

- Analyze games we already like to play and tweak them for Green Job adventures.
- How cool is [Filament Games](#)? Would you want to work for [their Team](#)?
- Play Minecraft and imagine needing to understand sustainability systems and to assemble the right green jobs team to solve a neighborhood scale challenge that measurably improves sustainable community conditions. If you win, go on to the next level.

QUESTION: How can equity outcomes drive green jobs game design?

- How will students who need to find it, find it?
- What are the IT Equity access issues in schools around our region?
- How do we insure culturally appropriate vocabulary images, examples, stories?
- How can we engage in a design process that is by and for marginalized populations so that we learn from the user up what the design needs to look like?
- Provide multiple points of entry for youth, girls, and BIPOC. Also provide entry points for **adult** women and BIPOC so that we can foster exemplary models for our youth.

QUESTION: What game elements, adventures, journeys, surprises, or level challenges maintain engagement? In today's gaming world, the rewards are multi-levels of "Achievements."

- Games with a **clear objective** - like Portal
- Games that require **quick reactions & adaptation to a changing situation** - like Temple Run etc.
- Games that are **collaborative** - like Civilization
- Games that are **creative and freeform** - like Minecraft
- Games that have a **good narrative** - (example?)
- Games that allow players to **explore and discover** without having a "tutorial level"

Backcast from personal passion: To engage users in content creation and storytelling over time, start with a personal passion calling, or professional goal then back-cast to the job. Users can access the goals before backcasting to the job that achieves this goal.

- For example: "I care about renewable energy" - what are the jobs that I can do to get there?
- User stories: "Here is my story of playing the game."
- Alumni stories: "Actually my career path was catalyzed by playing the Green Jobs Game. I had no idea how cool or expansive this sector was until I stated to play the game."
- Teacher Stories: "I have integrated the following lessons with the Green Jobs Game..."

QUESTION: How do we integrate video, VR, personal stories, photos, graphics? Examples:

- SIXR and Rainier Beach Action Coalition made VR game related to the Food Innovation District.
- The VR game [Job Simulator](#) provides work experiences doing simplified tasks that we might emulate

Classroom Engagement Ideas

1. **What different kinds of experiences would uniquely engage these users?**
 - a. **Middle School - “The world is a big interesting place.”**
 - i. Games are especially useful for wide open exploration just for fun.
 - ii. Take risks on something you would never usually associate with.
 - iii. I need to see a photo or video of someone in a green job who looks like me.
 - b. **High School - “I can see a pathway for me here.”**
 - i. Students get more choice of problems and levels of complexity, more systemic challenges that requires a balancing of equity, economic, environmental considerations.
 - c. **College - “I’m refining my career decisions and looking for entry.”**
 - i. Internships, mentorships, group coaching sessions, opportunity to participate in problem solving teams and design charrettes.

2. **Effective Hooks:**
 - a. Environmental/social justice is a strong motivator for youth.
 - b. Personal agency is a hook.
 - c. Hyper-local solutions implemented or envisioned at the neighborhood or community scale where students live, work, learn, play helps students see change and take pride in their contribution.

3. **Opening with a problem. Emphasize real world scenarios and keep them hyper local to enhance relevance.** Link to standards-based learning to integrate classroom rigor with community relevance.
 - a. Start with a problem and then progress into the green jobs needed to solve it.
 - b. Tie it to topics/problems students already care about with a strong focus on deciding which problem to solve.
 - c. Give plenty of problems so students can see that all jobs can be green jobs.
 - d. **Examples...**
 - i. Fast-fashion is not as cool as I thought. I want out.
 - ii. Food Deserts: Why are there more bars, fast food restaurants, and mini-marts in my neighborhood than grocery stores with healthy produce?
 - iii. How does affordable housing drive job opportunities for me and my parents?
 - iv. How would community solar help my family pay bills?
 - v. What does zip code have to do with life expectancy?
 - vi. Redevelop a neighborhood incorporating EcoDistrict principles or the Living Community Challenge
 - vii. Plastics in Puget Sound; oil spills, Green Chemistry
 - viii. Bottled water is for suckers, it a marketing con-job

4. **Transform static content (SA PDF Job Profiles) into dynamic stories**
 - a. Ask students, how could these professions solve specific problems? Use job profile content where students see how careers address real-world issues.
 - b. Turn into story-based learning
 - c. Introduce small pieces at a time - a journey

5. **Integrate existing tools and resources from Sustainability Ambassadors**
 - a. [Neighborhood Inventory Protocol](#)
 - b. [Impact Project Design Training](#)
 - c. [Student Impact Project Ideas](#)
 - d. [Mapping Community Impact](#)

6. **Make it fun!**
 - a. Each student starts with what they already care about (fashion, food, justice.)
 - b. Seminars, class debates, and discussions instead of worksheets
 - c. Competition/team-based work
 - d. Emphasis on effective communication
 - e. Potential to be part of massive, multiplayer games, or simulation, gnarly real-world problems

Evaluation and Impact Storytelling

- How do we track the efficacy of the Green Jobs Game and Portal resources?
- Who are the users?
- Who are the “alumni” of the game? What is the impact over time?
- Ideally, the “game” would track individual interests and link you to applicable case studies, profiles, and other aligned stories.
- Data related to individual interests could be aggregated to show users and employers broad patterns of interest and need.