

FlexSTART 2020

a flexible framework for individualized internship learning experiences

FEDC TechSTART — March 2020

Where we Started — Where We Are

FEDC TechSTART offers Cañon City High School students a chance to explore tech-related careers through internships at our partner companies. We have grown from a single intern to over a dozen interns currently working with multiple TechSTART partners in a half-dozen tech career fields.

Our program's greatest strength is flexibility. We accept all students interested in interning with us. We offer a variety of tech experiences from over 2 dozen businesses. Our flexibility allows interns to achieve different successful outcomes from college attendance to tech employment to continued exploration of tech career opportunities. Even learning that tech is *not* the student's desired career choice is regarded as a successful learning experience.

Creating Our Future

To handle continued growth, focused on the PTECH program, we need to formalize parts of our program while maintaining critical flexibility to personalize the learning experience — enter FlexSTART 2020.

FlexSTART 2020 builds upon the strengths of the existing program while improving weaker portions, outlining program elements required for continued development.

Major strengths include:

- Flexibility
- Depth & breadth of students' tech backgrounds
- Depth & breadth of TechSTART knowledge and experience
- TechSTART support — Sponsors, volunteers, and other partners

Areas for improvement:

- Intake and placement planning, including assessment tools
- Matching student schedules to sponsor opportunities
- Documenting internships: specific skills, tasks, projects and products

We continue to operate under some basic constraints on resources, mostly time and money.

Design principles

FlexSTART 2020 is guided by several learning experience principles:

- Individualize experiences
- Blended learning experiences with multiple-modality content (video, print, web, instructor/tutor/coach)
- Frequent and helpful feedback
- Emphasize and support self-directed learning
- Encourage cohort learning and peer coaching

Finally, development will be guided by the principle of *emergent design*. Emergent design can be defined as allowing, accepting, and incorporating new ideas and concepts during the development and implementation of a new learning system. Using a flexible framework to shape intern experiences eases implementation and benefits both sponsors and interns.

FlexSTART 2020 Core Components

The FlexSTART framework builds on 4 core components:

- Introduction
 - Program — Focus or Exploratory
 - Soft skills*
 - Showcase
- *embedded throughout via gameful design

Introduction: The Sorting Hat (*a la Harry Potter & Hogwart's*)

The first week's activities start with a basic orientation to TechSTART, our partners, and placement opportunities. This includes a tour of the building (including safety features and shared resources) and visiting available TechSTART partners.

Activities

- Building tour
- Safety review
- TechSTART shared resources
- Contact info, security code
- TSI expectations — attendance, reporting, completion of assignments
- CCHS expectations — scheduling, paperwork
- Intern expectations — personal favorites & goals

Tasks/exercises:

"Favorites & Futures" — informal discussion to set the stage

AKA Einstein — 1) research an unfamiliar topic;

2) present to peers about the topic

- Choose 1 from LinkedIn's Top 20 Hard Skills
- Choose 1-3 TechSTART partners

Introducing your secret mission: the Quest for Future-Proof Superpowers

Internship as a Hero's Journey

Gameful challenge: Set an Epic Win

Gameful elements: Mini-Quests, Allies, Bad Guys, Power-ups

- Week 1 mini-quest: Set SMART goals

Areas to Improve

- Descriptions of internship opportunities
- Assessment tools — Field-specific tests (e.g., coding, web design)
- Schedule matching
 - Record-keeping and tracking

Program

Most interns work attached to a single "sponsor" (employer), a TechSTART partner who has agreed to act as a teacher-mentor. This provides a directed focus on a core skillset, such as coding or hardware/networking skills. Some interns may use their internship in an exploratory mode, either as a "survey" learning more about several TechSTART partners, or as a self-directed skillset development, such as 3D printing.

Focus (previously: Dedicated interns)

These individuals work in a single field with a single TechSTART partner. For example, interns work for Blickel to learn coding; VenRoman to learn hardware and networking; and Unbridled to learn web development.

Exploratory (previously: Shared interns)

We have always had more interns than sponsors. Some students have interests in fields with no sponsor-based opportunity, e.g., 3D printing. Non-sponsor partners sometimes spend time with these interns, either teaching a specific task (designing & selling a t-shirt online) or working with them on specific assignments (live video coverage of local Rotary meeting).

The framework will guide two types of Exploratory internships, *survey* and *skillset*. A "survey" internship would provide a broader-based overview of tech businesses and/or skills. A "skillset" internship would focus on a particular set of skills (3D printing) in a structured sequence.

Suggested standards

Whether an intern chooses a specific focus or exploratory track, they should trust this will be time well spent. Standards should guide the codification of existing internships, as well as development of future opportunities.

Job description	Paragraph describing the focus of the internship: duties, projects, and skill sets (hard and soft) involved
Business description	Paragraph describing the individual business: name, owner, technology focus, product or service, target market
Objectives	What the intern will learn and do during the span of the internship; hardware and software to be used, projects to be completed, and final showcase format
Preferred prerequisites	Specific skill sets that will make the particular placement more meaningful, e.g., ADDA classes for placement with an architect.
Program	Scope and sequence of tasks intern will learn and do; e.g., Phase 1) learn to use the 3D printer, Phase 2) design & print 3D pieces for yourself and Phase 3) design & print 3D pieces for a client.
Showcase	Documents what they have done and learned during the term, and applications of this knowledge and experience moving forward.

Given the variety of specific internships, no single structure will suffice, nor do we intend for these standards to interfere with our ongoing successful sponsors. In the absence of existing descriptions or documentation (never previously required of our sponsors) of these, we would work with the interns under that sponsor to help write these.

Soft Skills – aka Future-Proof Superpowers

In addition to technical training and the vocational experience working for a tech business, our interns need training in the so-called “soft skills.” Notoriously difficult to define, assess, or train, these skills are increasingly identified by employers as more important than proficiency in “hard skills.” LinkedIn annually lists in-demand skills and now estimates that close to 2/3 of employers rank soft skills as more important than hard skills.

FlexSTART 2020 will focus on 5 core soft skills derived from LinkedIn’s list:

- Communication
- Collaboration
- Creativity
- Self-management
- Adaptability

We call these “Future-Proof Superpowers,” because these skills will always be in demand (future-proof) and can be learned and practiced to transform innate abilities into superpowers. FlexSTART will embed a gameful contest for all interns, *The Quest for Future-*

Proof Superpowers. Using principles described by Jane McGonigal in *SuperBetter* (her life-game to help build resiliency), we challenge the intern to undertake a Hero's Journey.

Gameful elements of the Quest include:

- Epic Win — difficult but attainable long-term goal, e.g., secure a good-paying tech job
- Mini-Quest — weekly assigned task practicing a soft skill; e.g., Set SMART goals (Self-management)
- Allies — people to assist the intern; e.g., friends and family
- Bad Guys — things that hinder the intern; e.g., procrastination, perfectionism, and distractibility
- Power-Ups — quick and simple things to do for a surge of energy & resiliency; e.g., drink a glass of water

Using a personal scorecard each week, we set the weekly goal as:

1 Mini-Quest + 1 Bad Guy battled + 3 Power-ups = a Great Week!

FlexSTART provides the basic framework to build this gameful approach through emergent design with the active assistance of our interns themselves.

Showcase

FlexSTART culminates in the Showcase. Similar to the high school's capstone project, the showcase ties together all aspects of the intern experience, from products, projects and processes involved in the internship, as well as soft-skill superpowers practiced and honed.

FlexSTART focuses students on the showcase from the beginning of their term. In setting SMART goals for their internship, one goal must focus on the showcase. Starting with the end in mind, we set expectations for self-management in meeting this requirement. Interns exercise all the soft skills in preparing a presentation.

Envisioned as a way for the intern to share the story of their experience, showcases are primarily intended to be live 15-20-minute presentations to a TechSTART gathering. We have accepted videos and would accept websites, social media campaign, or media archives. We don't know what might serve as a proper showcase for future interns. Given the emergent nature of technology, we simply cannot foresee what an intern might choose as a culminating showcase.

To maximize the value and impact of the Intern Showcase, we should set aside the time and energy to plan for and execute these as major events at the end of each semester with full support from the TechSTART family.

"Breadcrumbs," Emergent Design, and Future Development

Finally, one intent throughout is to leave a "breadcrumb" trail for future interns. As we accumulate an archive of intern showcases, we build a library of the learning of our interns. Already, we see this in the sequential sets of intern-produced instructions for our 3D printer. By testing the prior set of instructions for accuracy, completeness and clarity, each successive team of interns working on 3D printing has been improved for the next group. Showcase archives can serve as a preview for interns during the Sorting Hat activities.

PHASE 2 FlexSTART 2020

The FlexSTART framework was designed to be open-ended to facilitate emergent design for further development. Phase 2 is intended as an intern-assisted continuous improvement process, carrying forward the model of the original PTECH grant proposal, written by students.

To be Developed in Phase 2 (listed by core component):

Sorting Hat Week

- Full but adaptable “Sorting Hat” checklist of required activities and tasks
- Finding , testing, and adapting assessment tools for placement purposes
- Better record-keeping and tracking — try out tools for future use, starting with Blickel but also looking into G-Suite (available on student Chromebooks), Trello, and other software tools as identified

Program — Focus and Exploratory

- Complete internship description using Suggested Standards
- One-page flyer describing placement and activities
- Suggested course of activities and tasks, especially for Exploratory internships

Quest for Future-Proof Superpowers

- Create lists of mini-quests supporting each of the 5 soft skills
- Find and curate materials (videos, articles, classes) supportive of each soft skill
- Develop and test rubric for measuring soft skills’ proficiency for each soft skill

Showcase

- Create archival system for past and future showcase documents and add contents and index

There will be other aspects to Phase 2 build-out as we move forward, but these will guide the next efforts. It is anticipated that each semester will result in new growth as our interns help to fill out the FlexSTART 2020 framework into more fully-developed internship opportunities and hone our program into a finer focus to help future students.