

Resources and activities including UEL (University Design for Learning) guidelines, such as encouraging multiple modes of discourse and engagement, would stimulate participants to expand upon their diverse learning needs.

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Multiple Means of Representation
to enhance (bi-directional)
transfer between the designed
program and external activities

Features of the learning environment design which articulate realization of the high-level conjecture.

Interactions which are expected to emerge from theoretically salient design features

- Video and audio recordings of classroom environment
- Screen capture recording of students' app interfaces

* Purpose: Acts as a comparative control for the Prototype Observation (see below: #2). The baseline observation will be conducted during an Outreach Learning Fellow (OLF) robotics session facilitated by the DEED. These sessions are useful for understanding the interactions and relative critical incidents within a learning environment similar to that cultivated by the prototype intervention. Furthermore, these sessions are more accessible to researchers compared to "usual" classroom instruction.

* Purpose: To collect rich data describing the culture, interactions, environment, and context when the Winter Hill Innovation School A.I.W. students are exposed to the ORBIT App. The researcher's data aims to capture a nuanced description of the complex interaction system which exists during the first instance of exposure to the ORBIT design.

[illegible][illegible]

- LEGO Remotely kits
- Planning Board
- Word & Symbol Glossary
- Wins/Losses/Challenges
- Customizable Programming Instructions

Built-in feedback mechanisms to support continued independent participation by suggesting negative fertilization

"If learners engage in this activity (host + participant) structure with these tools, through this discursive practice, then this mediating process will emerge."

If learners use a visual block-based interface with adjustable complexity, they will engage in structured programming tasks that foster computational thinking skills.

If students use a Planning Board to organize coding steps, they will develop executive functioning skills like planning and task organization.

If robot functions are displayed through text, symbols, speech, and physical feedback, learners with diverse needs will demonstrate improved engagement and comprehension.

If teachers scaffold open-ended design challenges, students will gradually develop independence and collaborative problem-solving skills.

- When data collection continues until a point of saturation is reached, which is the third or a category occurs from the collection without additions.

"If this marketing process occurs it will lead to this outcome."

Framework: Social Constructivism

- **What?** A rejection of the idea that knowledge resides solely in the individual; rather, learning and understanding are inherently social processes, where cultural activities and tools, including language, are essential for nonoptimal development.

- Why? Social constructivism holds that learning and understanding are fundamentally social phenomena.

- **How?** As individuals collaborate, they internalize the effects of working together and acquire new strategies and knowledge. This is a non-passive process, and rather a transformative process in which the individual actively constructs meaning and understanding.

Desired commitments from the design endeavor
Successful outcomes are determined by the
level of specificity and a plan for
observation or measurement.

- CT SKILLS
- IEP GOALS
- TEACHER'S DUTY/FREE SCHOOL