Tailoring Intro to Programming: Using the User Type Hexad

Connor Wilson | Alex McInnis | Scott Bateman

How can educators better design introduction to programming courses tailored to students' key intrinsic motivators?

Over the Summer of 2022,

we performed a study analyzing the effect of tailoring the learning style of middle and high school students in a programming summer camp based on a student's preferred intrinsic motivator (determined by the User Type Hexad test).

55 Participants identified as:

- 13 Achievers
- 15 Free Spirits
- 8 Socializers
- 19 Philanthropists

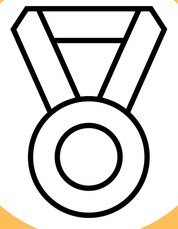
4 Lessons of C#/Unity Programming Lessons:

~1 Hour/Lesson

2 Tailored, 2 Non-Tailored

All data gathered from surveys, focus groups, and a design activity. Data analyzed using **Affinity Diagramming** to search for common themes.

Achievers

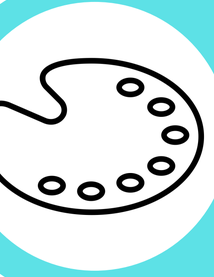


PREFERRED MOTIVATOR: **MASTERY**

prefer learning programming in environments that include:

- **Challenging** content/tasks with **feedback**
- Quiet environments for **easy focus**
- **Competition** (self or with others)
- **Independent** work

Free Spirits

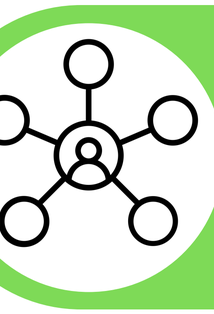


PREFERRED MOTIVATOR: **AUTONOMY**

prefer learning programming in environments that include:

- **Exploring** within their ability level
- Chances for **creativity**
- A **slower** pace and **easier difficulty** level
- **Choice** in groupwork composition

Socializers



PREFERRED MOTIVATOR: **RELATEDNESS**

prefer learning programming in environments that include:

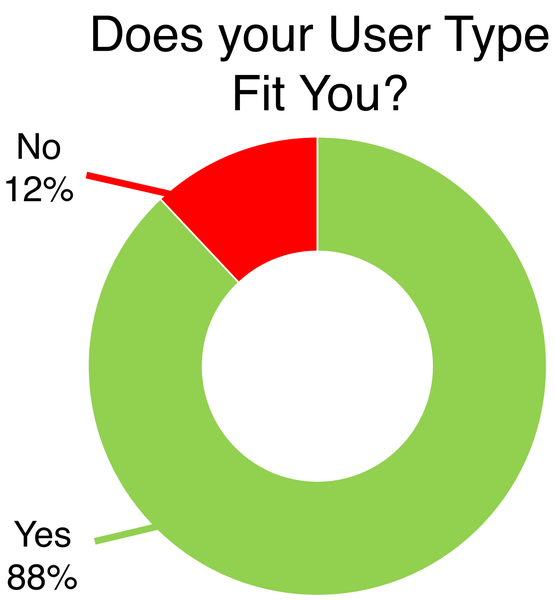
- **Group work** that is **monitored**
- Unplugged activities that lead to **bonding**

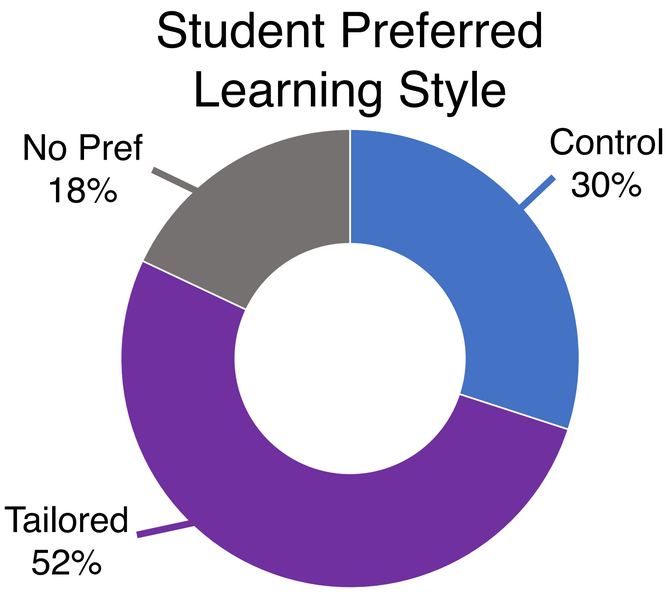
Philanthropists

PREFERRED MOTIVATOR: **VALUE**

prefer learning programming in environments that include:

- **Helping others** in a safe environment
- Content that is **useful** to them
- **Group work** that is **monitored**





Future work will involve further investigating the implementation of tailored learning for each intrinsic motivator in Introduction to Programming classes. Interested in more information? Contact me at: connor.wilson@unb.ca

References:

1. Gamified UK Gamification User Type HEXAD Test: *https://gamified.uk/UserTypeTest/user-type-test.php*. Accessed: 2022-02-23.
2. Tyack, A. and Mekler, E.D. 2020. Self-Determination Theory in HCI Games Research: Current Uses and Open Questions. Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (New York, NY, USA, Apr. 2020), 1–22.

HCI LAB UNIVERSITY OF NEW BRUNSWICK

UNB EST. 1785 UNIVERSITY OF NEW BRUNSWICK