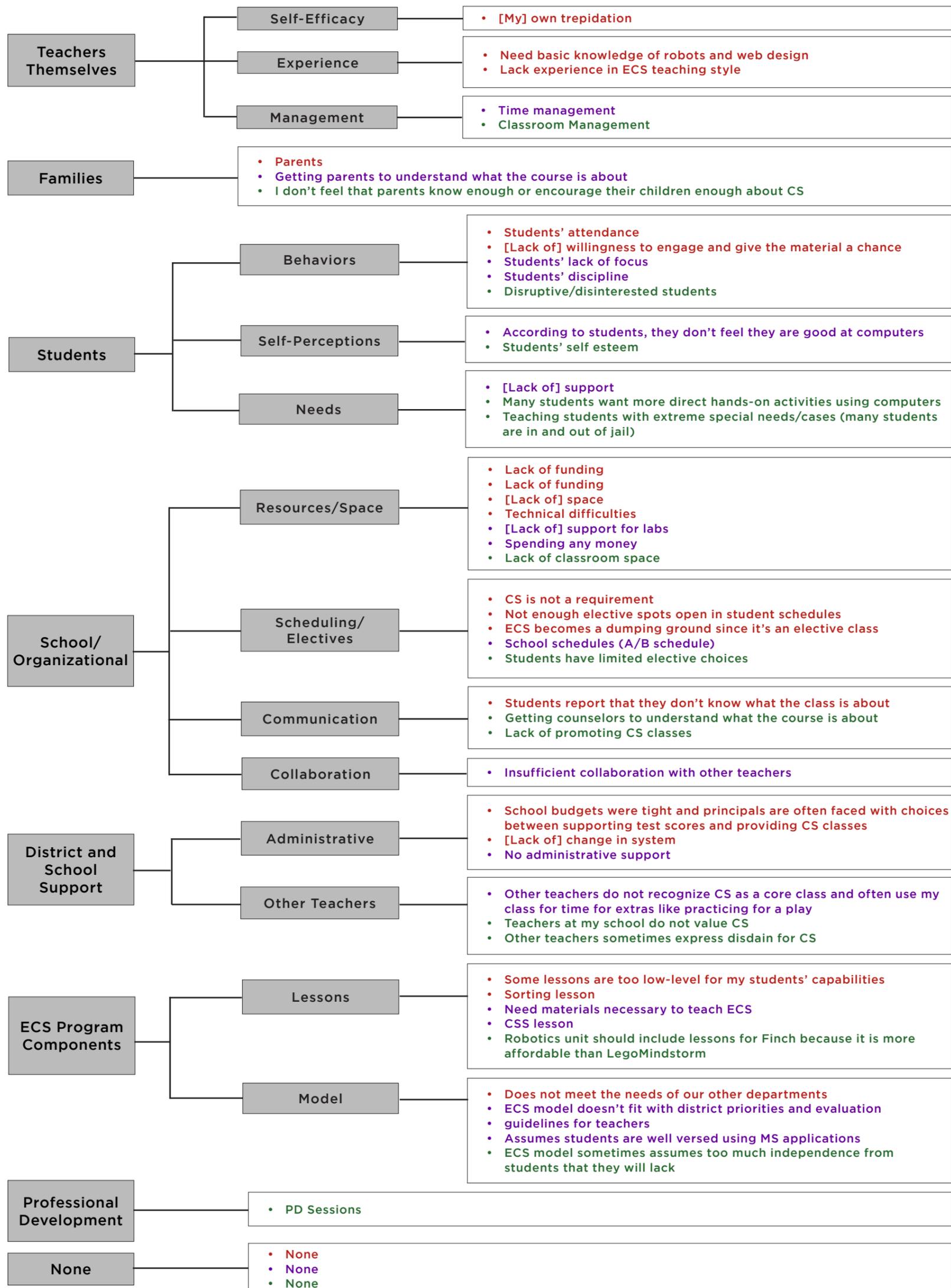# BARRIERS to Teaching Introductory Computer Science
(with *Exploring Computer Science* Materials)

Key

Red: Barrier #1
Purple: Barrier #2
Green: Barrier #3

Teachers Themselves

- **Self-Efficacy**
  - [My] own trepidation

- **Experience**
  - Need basic knowledge of robots and web design
  - Lack experience in ECS teaching style

- **Management**
  - Time management
  - Classroom Management

Families
- Parents
- Getting parents to understand what the course is about
- I don't feel that parents know enough or encourage their children enough about CS

Students

- **Behaviors**
  - Students' attendance
  - [Lack of] willingness to engage and give the material a chance
  - Students' lack of focus
  - Students' discipline
  - Disruptive/disinterested students

- **Self-Perceptions**
  - According to students, they don't feel they are good at computers
  - Students' self esteem

- **Needs**
  - [Lack of] support
  - Many students want more direct hands-on activities using computers
  - Teaching students with extreme special needs/cases (many students are in and out of jail)

School/Organizational

- **Resources/Space**
  - Lack of funding
  - Lack of funding
  - [Lack of] space
  - Technical difficulties
  - [Lack of] support for labs
  - Spending any money
  - Lack of classroom space

- **Scheduling/Electives**
  - CS is not a requirement
  - Not enough elective spots open in student schedules
  - ECS becomes a dumping ground since it's an elective class
  - School schedules (A/B schedule)
  - Students have limited elective choices

- **Communication**
  - Students report that they don't know what the class is about
  - Getting counselors to understand what the course is about
  - Lack of promoting CS classes

- **Collaboration**
  - Insufficient collaboration with other teachers

District and School Support

- **Administrative**
  - School budgets were tight and principals are often faced with choices between supporting test scores and providing CS classes
  - [Lack of] change in system
  - No administrative support

- **Other Teachers**
  - Other teachers do not recognize CS as a core class and often use my class for time for extras like practicing for a play
  - Teachers at my school do not value CS
  - Other teachers sometimes express disdain for CS

ECS Program Components

- **Lessons**
  - Some lessons are too low-level for my students' capabilities
  - Sorting lesson
  - Need materials necessary to teach ECS
  - CSS lesson
  - Robotics unit should include lessons for Finch because it is more affordable than LegoMindstorm

- **Model**
  - Does not meet the needs of our other departments
  - ECS model doesn't fit with district priorities and evaluation guidelines for teachers
  - Assumes students are well versed using MS applications
  - ECS model sometimes assumes too much independence from students that they will lack

Professional Development
- PD Sessions

None
- None
- None
- None

In Spring, 2014, 24 Computer Science teachers in Chicago and Washington, DC completed a questionnaire that, among other things, asked them to identify the three biggest supports for and barriers to their computer science classes. All of the teachers were using *Exploring Computer Science* (ECS) instructional materials.

This visual represents what teachers said were their biggest supports to teaching computer science (unedited).Teachers were asked to provide a text response for "Barrier 1" "Barrier 2" and "Barrier 3." Nineteen of the 24 teachers provided at least one response.

[BASICS] | outlier
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