Creating the next g ration of Senio Engine

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Soft neer n

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Source: Paramount Pictures

Pedagogy

The study of teaching


<CODE>YOUR
FUTURE
We teach people who
don't have access to
traditional education
how to code

How can we do more with less?

Mentoring

Coaching

Lunch-and-Learns/Brown bags

Code reviews

Pairing

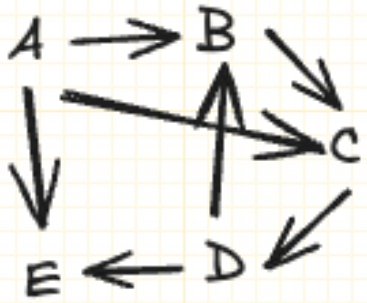
Steering a colleague away from a dead end

Annual review feedback

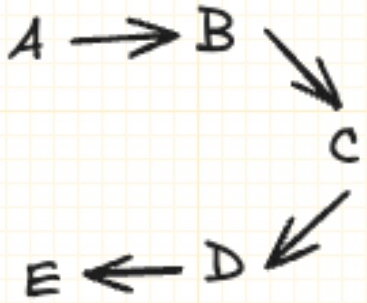
Yes, you are teaching!

1. **Understand** your learners
2. **Structure** their learning plan
3. Deliver **teaching**

Expert



Non-expert



Mental models

Understand Structure Teach

Get your coaching hat on

Be patient! Try not to jump in with answers

Questions not landing? Get more precise

Mental models

Understand Structure Teach

Learning techniques that work for experts don’t work for non-experts

Expertise reversal effect

Source: Kalyuga, Ayres, Chandler & Sweller, 2003

Get practical

Encourage experimentation

Practice empathy

Expertise reversal effect

Outcomes → Learning objectives

A statement that clearly describes what we expect to achieve after teaching

Backward design

Understand **Structure** Teach

Source: McTighe and Wiggins, 2013

Outcomes → Learning objectives

Multi-page apps →

- Interpret requests in browser dev tools
- Identify components of HTTP requests/responses
- Simulate requests with cURL
- ...

Backward design

Understand **Structure** Teach

Working memory

Long term memory

Working memory

Understand Structure Teach

Working memory is limited to between 7 ± 2 chunks

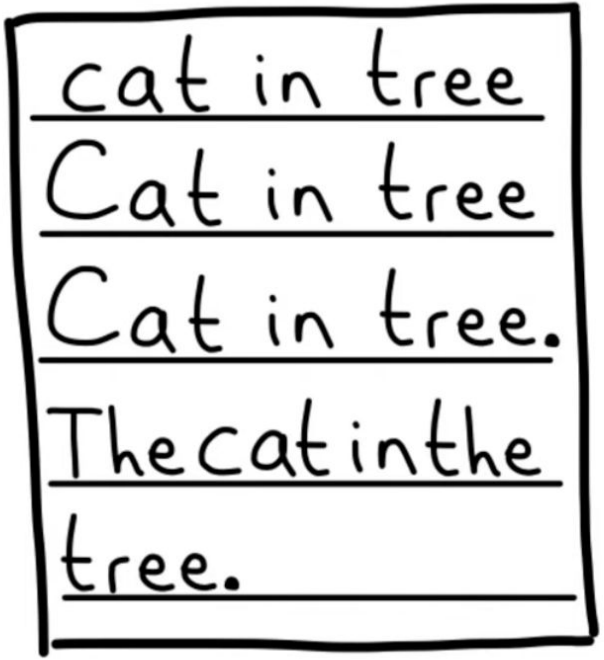
Working memory

Source: Miller, 1956

Cognitive load is the mental effort required to solve a problem

Cognitive load

Understand Structure Teach



Cognitive load

Understand Structure Teach

Source: Hedy Introduction Talk

Level 1

```
print Hi there, programmer!
print Welcome to Hedy!
```

Level 2

```
name is Hedy
age is 15
print name is age years old
```

Level 3

```
animals is dogs, cats, kangaroos
print animals at random
```

Cognitive load

Understand Structure Teach

Source: Hedy

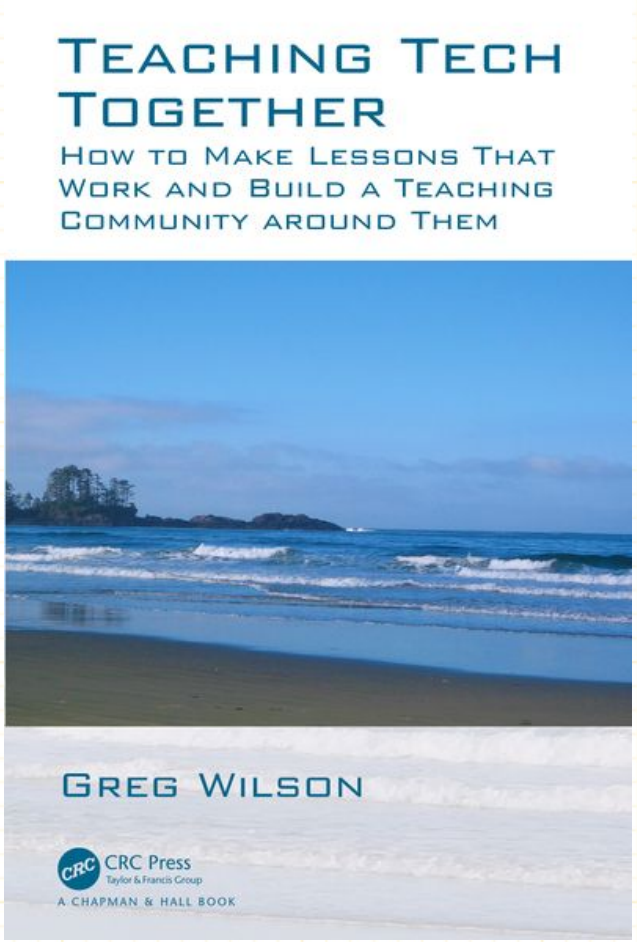
Stay focused on 1 - 2 learning objectives

Use predictions to check progress

Write things off-topic on a shared doc/whiteboard to revisit later

Cognitive load

Invest in your team with teaching



Freely available online at: teachtogether.tech

codeyourfuture.io/volunteers

Or try:
MigraCode, Hack Your Future, Codebar, Outreachy

Practice these skills with CYF!

Thanks for listening!

More info & follow: alasdairsmith.co.uk