Mob Programming and the Power of Flow

November 2018

“The value of another’s experience is to give us hope, not to tell us how or whether to proceed.”

Peter Block

A Rapid Introduction to Mob Programming
A Whole Team Approach

Mob Programming
All the brilliant minds working together on the same thing... at the same time... in the same space... at the same computer...
Gather together people with all the needed skills and knowledge

Completely Different, All Together

This seems preposterous

Definition:
Contrary to reason or common sense; utterly absurd or ridiculous.

It is NOT: 5 people watching 1 person coding.
Driver/Navigators

For an idea to go from someone’s head into the computer it must go through someone else’s hands.

Llewellyn Falco

This is being done all over the world.

Hunter Industries
San Marcos, CA

Alaska

UK
You can also do this remotely... A virtual Mob

Why would we work this way?

- Knowledge sharing
- Continuous code and design review
- Many perspectives on the work
- Work on the right things
- Rapid feedback
- Better solutions
- Flow of work items
- Higher quality
- More fun, less stressful, more engaging... etc.

NASA Mission Control

When I share Mob Programming this question is almost always asked:
How can we be productive with 5 people at one computer?

We were paying attention
Here is what we noticed

I don’t know.
Does that matter?

Working Separately

Work + Work + Work + Work + Work =
But working together

VS

Not just more stuff
The more useful stuff
It was better done
And of higher quality

“Ａ system is not the sum of the behavior of its parts, it’s the product of their interactions.”
Russel Ackoff

About Productivity
Efficiency
Productivity
Effectiveness
Efficiency
- How well we do things
- Minimum wasted effort or expense in doing the work
- Goal: More output for same input
- Problem: Busywork - lot’s of work, no output.

Productivity
- Something is getting “done”
- Measure of outputs divided by inputs
- Problem: Could be the wrong things are getting done

Effectiveness
- Doing the “right things”
- Complete the important things, the valuable things
- Get feedback to learn
- Adjust accordingly
- Getting the impact we “want”

Condensed:
Efficiency = Doing things right
Productivity = Output / Input
Effectiveness = Doing right things
Why I’m after effectiveness:
Efficiency: Busywork
Productivity: Wrong things
Effectiveness: Right things

“Impression comes more from pursuing profound questions than seeking practical answers.”

Peter Block
Book: The Answer to “how” is YES!

W. Edwards Deming
W. Edwards Deming

“If you do not know how to ask the right question, you discover nothing”

Tim Ottinger

“The answer is not in the answers”

How can we be effective with 5 people at one computer?

Let’s Flip This Over

Jenny loves Kitty
What is a possible “reverse” question to “How can we be effective with 5 people at one computer?”

Effectiveness Question
How can we be effective if we separate the people who should be working together?

This led to a better question
What are the things that destroy effectiveness?

Exercise

A short list of things that can destroy effectiveness:

- Fatigue
- Hunger
- Personality conflicts
- Personality clashes
- Missing requirements
- Missing resources
- Insufficient resources
- Monolithic architecture
- Cambrian processes
- Disagreements
- Poor working conditions
- Too Much Noise
- Too Quiet
- Context Switching
- Workflow interruptions
- Onboarding
- Negativity
- Not taking enough time the first time
- Communication barriers
- Lack of knowledge
- Lack of skills
- Needless meetings
- Waiting on clarification
- Lack of motivation
- Lack of plan
- Fear
- Upsetting work environment
- Lack of control/understanding
- Indecision
- Doubt
- Distractions
- Analysis paralysis
- Snow days
- Not everyone is on the same page
- Not knowing something
- External dependencies
- Unclear requirements
- Unclear expectations
- Unrealistic expectations
- Time zone differences
- Waiting on other teams
- Lack of work backlog
- Interacting with others
- Dependency on other teams
- Technical blockers
- Scarcity materials
- Waiting on dependency
- Not knowing how to do something

Some possible categories of things that destroy effectiveness

- Communication Problems
- Decision Making Problems
- Doing more than is barely sufficient
- Technical Debt, and etc.
- Thrashing
- Politics
- Meetings
- Many, many others
We noticed many problems simply faded away when we started Mob Programming!

Communication Problems
Decision Making Problems
Doing more than is barely sufficient
Technical Debt, and etc.
Thrashing
Politics
Meetings
Many, many others

Question Queue Time
The amount of time we must wait to get an answer to a question that is blocking us

Question Queue Time
Value Stream Map

As an example:
One Hour, One Question
**Question Queue Time**

- Zero Queue Time – No Waste
- Two Minute Queue Time – Wasting 16 minutes a day
- Ten Minute Queue Time – Wasting 70 minutes a day
- One Hour Queue Time – Wasting 4 hours a day
- One Day Queue Time – Wasting the whole day!!!

**How do we typically solve this?**

One task we are working on

What do we do while we are blocked?

**How do we typically solve this?**

One task we are working on

We increase inventory so we can stay busy

**How do we typically solve this?**

We work on many tasks to keep us busy

**Symptom? – Not busy**

**Problem? – Waiting for answers**
How do we typically solve this?

Work on many tasks to keep us busy

Let’s not “solve” queueing symptoms by introducing an inventory problem

Note: Inventory is work we’ve started on, but is not yet delivering value

How did we Solve This?

Zero Queue Time

How did we Solve This?

Zero Queue Time

Two Minute Queue Time

How did we Solve This?

“How Automatic” One-Piece Flow
Flow
“A state in which [a person] is so involved in an activity that nothing else seems to matter.”
Csikszentmihalyi, 1990

Flow
“You are so involved in what you’re doing, ...you don’t see yourself as separate from what you’re doing.”
A rock climber (Csikszentmihalyi 1975, p. 39).

The Nature of Flow
Balance between challenge and skills
Experience is intrinsically rewarding
Complete concentration on the task
Clarity of goals and reward in mind
Actions and awareness are merged
Losing self-conscious rumination
Feeling of control over the task
Lose awareness of time
Effortlessness and ease
Immediate feedback

Complete concentration on the task
Clarity of goals/reward  immediate feedback

Sense of time evaporates

The experience is intrinsically rewarding

Effortlessness and ease
Balance between challenge and skills

Actions and awareness are merged, losing self-conscious rumination

There is a feeling of control over the task

Flow
Being “In the Zone”
- Leads to a sense of ecstasy and clarity
- You know exactly what you want to do from one moment to the other
- Sense of time disappears.
- You forget yourself.
- You feel part of something larger.
  – Csikszentmihalyi
Do we destroy this when we work as a team?

Can we get this “Flow” in a team?
**Team Flow**

- Collective ambition
- Common goal
- Aligned personal goals
- High skill integration
- Open communication
- Safety
- Mutual commitment
- Sense of unity
- Sense of joint progress
- Mutual trust
- Holistic focus

Jef van den Hout

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This is **ALL GOOD!**
But... There is another kind of flow.
Flow, as in Lean

Flow In Manufacturing [simplified]
- Complete production of one piece
- From start to finish
- With as little work in process (inventory) and as little waiting (queueing) between operations as possible

Well Worth the Read

The Principle of Queueing Waste:
- Queues are the root cause of the majority of economic waste in product development

Donald Reinertsen
Queues create:
Longer cycle time
Increased risk
More Variability
More overhead
Lower quality
Less motivation

Value Stream Map

Green: The Right Work Getting Done
(includes exploring, experimenting, discovery)

Red (Waste): The Wrong Things
Examples: Waiting, Merging, Arguing, Discussing rather than trying things, Work that doesn’t need to be done, Doing the “Wrong Thing”, Failure Demand, meetings, coordination, prioritizing… ad nauseam

Flow with Software Development:
Each Story flows from “idea” to delivered, working software directly
without queueing, waiting, distraction, interruption, or multitasking

The Small, Inexpensive, Attempt at Value
ONE AT A TIME

Idea

Something to learn

Story

Evaluate
And what did we learn?

Design
and Code

Feedback

Deploy to real use
With Mob Programming what do we want to optimize for???

We optimize for the flow of the work rather than for the output of the individual

We are not NOT trying to Get the most work out of each person

We are seeking to get the best of each of us into everything we do.
I believe I can now answer that original question.

Effectiveness
How can we be EFFECTIVE with 5 people at one computer?

Flow Plus Flow

Flow
Plus Flow
Plus Flow
**Flow++**

**We Enable Individual FLOW**
by giving each person the safety and space to think in their own way.

**We Enable Team FLOW**
by Working Well Together

**We Enable Lean FLOW**
by Eliminating Queues
The object isn’t to make art, it’s to be in that wonderful state which makes art inevitable

Robert Henri

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Mob Programming Book

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