Impact of Course Delivery Mode on Learner Engagement in MOOCs

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2 Course Delivery Modes for MOOCs

Instructor-paced (IP)
2 Course Delivery Modes for MOOCs

Instructor-paced (IP)
- Content released gradually
2 Course Delivery Modes for MOOCs

Instructor-paced (IP)
- Content released gradually
- Multiple deadlines
2 Course Delivery Modes for MOOCs

Instructor-paced (IP)
- Content released gradually
- Multiple deadlines
- Short duration

~50-60 days
2 Course Delivery Modes for MOOCs

**Instructor-paced (IP)**
- Content released gradually
- Multiple deadlines
- Short duration

**Self-paced (SP)**

~50-60 days
2 Course Delivery Modes for MOOCs

**Instructor-paced (IP)**
- Content released gradually
- Multiple deadlines
- Short duration

**Self-paced (SP)**
- Content released at once

~50-60 days
2 Course Delivery Modes for MOOCs

Instructor-paced (IP)
- Content released gradually
- Multiple deadlines
- Short duration

Self-paced (SP)
- Content released at once
- Single deadline at end

~50-60 days
2 Course Delivery Modes for MOOCs

Instructor-paced (IP)
- Content released gradually
- Multiple deadlines
- Short duration

Self-paced (SP)
- Content released at once
- Single deadline at end
- Long duration

~50-60 days

~360 days
2 Course Delivery Modes for MOOCs

Instructor-paced (IP)
- Content released gradually
- Multiple deadlines
- Short duration

Self-paced (SP)
- Content released at once
- Single deadline at end
- Long duration
Does running a MOOC in SP vs IP mode increase learner engagement?
Analyzed SP vs IP runs of 2 Computational MOOCs

- **Advanced Quantitative Biology**
  - ~3000 registered learners/run
  - 5 IP runs, 2 SP runs

- **Introductory Computer Programming**
  - ~85,000 registered learners/run
  - 8 IP runs, 1 SP run
Running a MOOC in SP vs IP ...

... did NOT increase engagement metrics for all learners

- Participating, exploring, completing, verifying
- Posting to the forum, attempting a problem, watching a video
Running a MOOC in SP vs IP ...

- ... did NOT increase engagement metrics for all learners
  - Participating, exploring, completing, verifying
  - Posting to the forum, attempting a problem, watching a video

Does running a MOOC in SP vs IP ...

- ... increase activity of learners who complete the MOOC?
  - Submitting a problem in a greater range of days
  - Submitting a in a greater total number of days
Does running a MOOC in SP vs IP result in learners who complete the MOOC submitting problems in a greater range of days?

Range of days = last - first date a problem submitted during active run

![Diagram showing range of days between first and last problem submitted]

First problem submitted

Last problem submitted

range of days
Running a MOOC in SP does result in learners who complete the MOOC submitting problems in a greater range of days.
Running a MOOC in SP does result in learners who complete the MOOC submitting problems in a greater range of days.

**Quantitative Biology**

**Computational Programming**

**Color Legend:** IP runs  SP Runs
Does running a MOOC in SP vs IP result in learners who complete the MOOC submitting problems in a greater total number of days?

Total number of days = unique days problems submitted during active run

Total number of days = 5
Running a MOOC in SP does NOT result in learners who complete the MOOC submitting problems in a greater total number of days.

Quantitative Biology

Color Legend: IP runs   SP Runs

Year: 14 15 16 16 17 18 19

Total number of days

100

80

60

40

20

0
Running a MOOC in SP does NOT result in learners who complete the MOOC submitting problems in a greater total number of days.
Running a MOOC in SP vs IP ...

- ... did NOT increase engagement metrics for all learners
  - Participating, exploring, completing, verifying
  - Posting to the forum, attempting a problem, watching a video

- ... did NOT increase activity of learners who complete the MOOC
  - Submitted problems in a greater range of days
  - Submitted problems in less or similar total number of days
  - Attempted fewer problems per day
Thank you!