MARYLAND STATE DEPARTMENT OF EDUCATION
EQUITY AND EXCELLENCE

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State Superintendent of Schools

TO: Members of the State Board of Education

FROM: Karen B. Salmon, Ph.D.

DATE: June 22, 2021

SUBJECT: Data and Research on the Impact of Virtual Learning

PURPOSE:

To present an analysis of Maryland data on the system-level relationship between virtual learning and other outcomes, as well as a review of extant research on the impact of virtual learning during and previous to the pandemic.

EXECUTIVE SUMMARY:

Additional analyses were conducted on Maryland third term metrics, and extant research studies on virtual learning was reviewed. Data and research will be presented to the State Board of Education.

ACTION:

Information for discussion.

ATTACHMENTS:

None

Data and Research on the Impact of Virtual Learning

Maryland State Board of Education

June 22, 2021

Research and Data on Virtual Learning

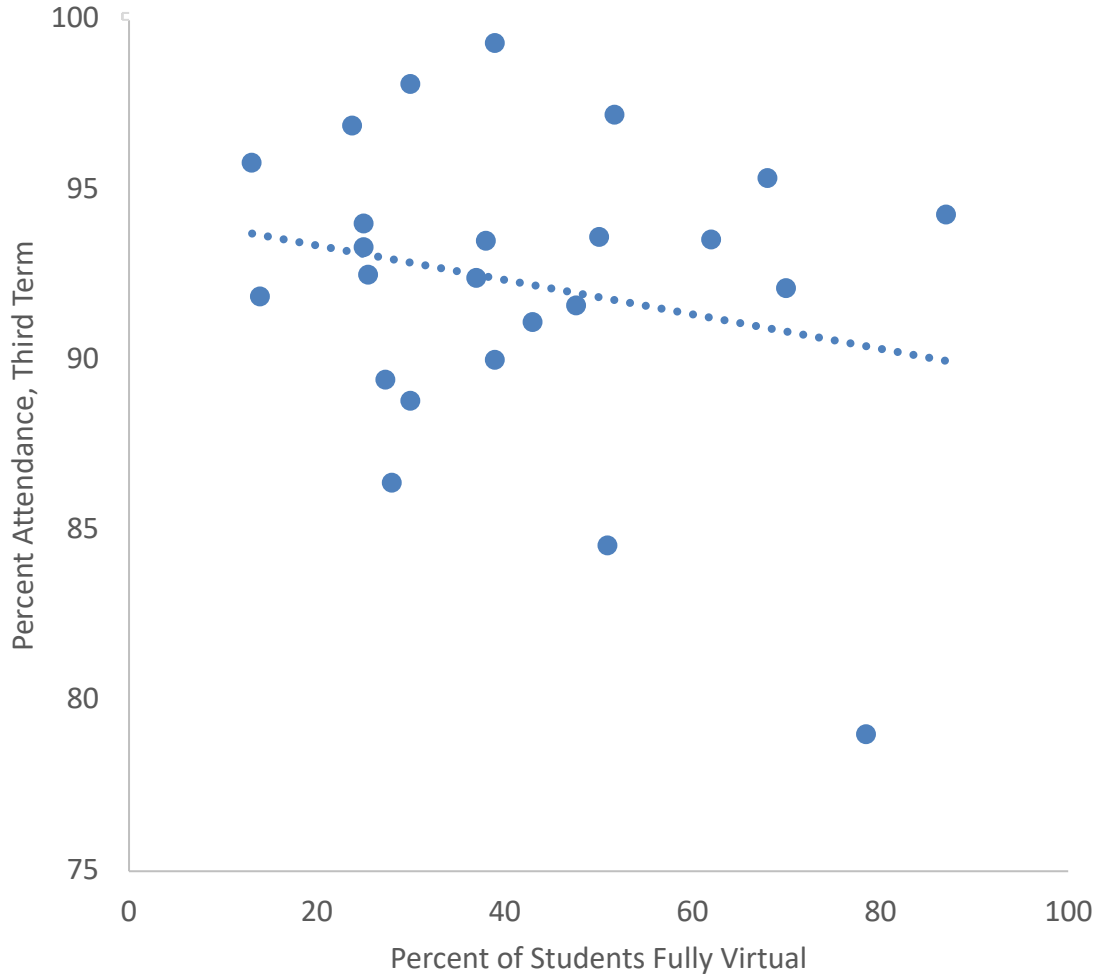
1. Maryland third term data: **What is the system-level relationship between fully virtual learning during the pandemic and other outcomes?**
2. Quantitative research: **What is the impact of virtual learning on student outcomes?**
3. Education psychology research: **What student characteristics are associated with a likelihood of success in virtual learning?**

SUMMARY OF FINDINGS

Maryland third term data: What is the relationship between virtual learning and other student outcomes?

1. Systems with higher percentages of fully virtual students tend to have lower attendance rates.
2. Systems with lower attendance rates tend to have lower rates of students passing their coursework.

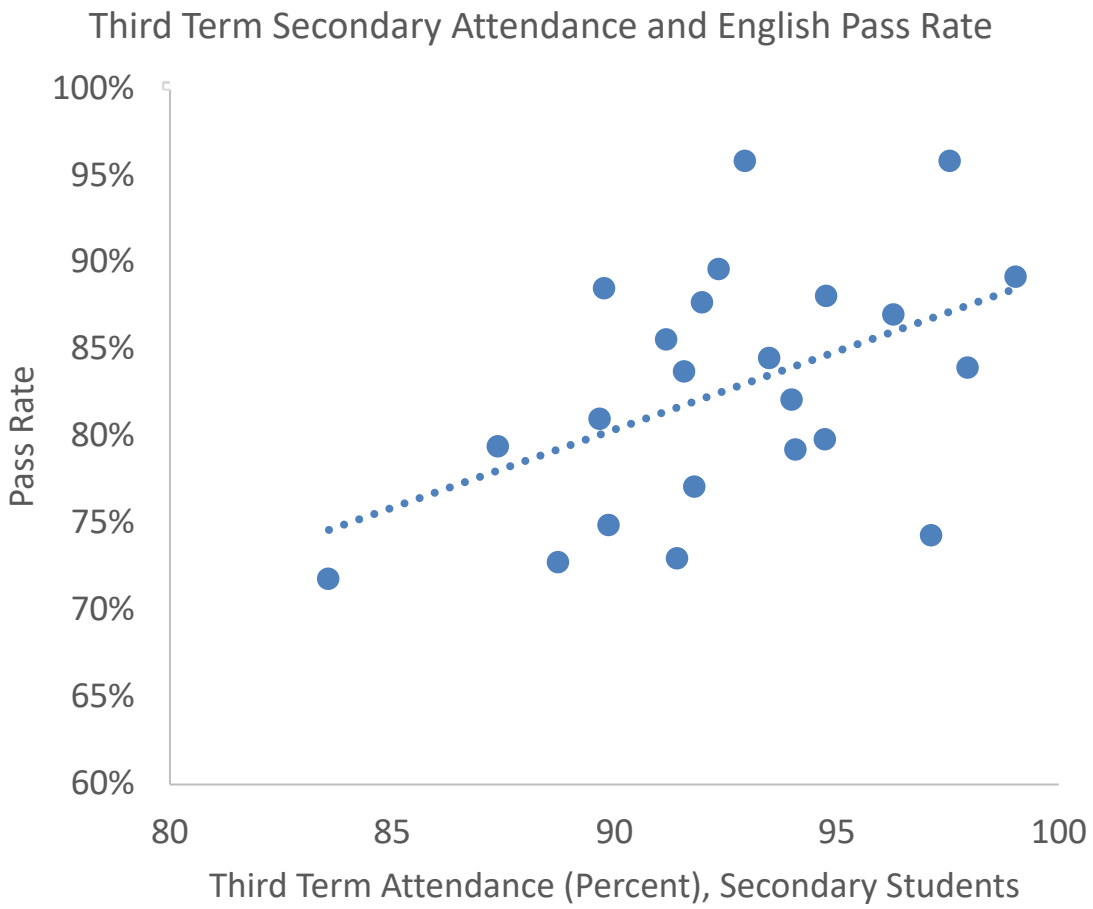
Third Term Data: Virtual Learning and Attendance

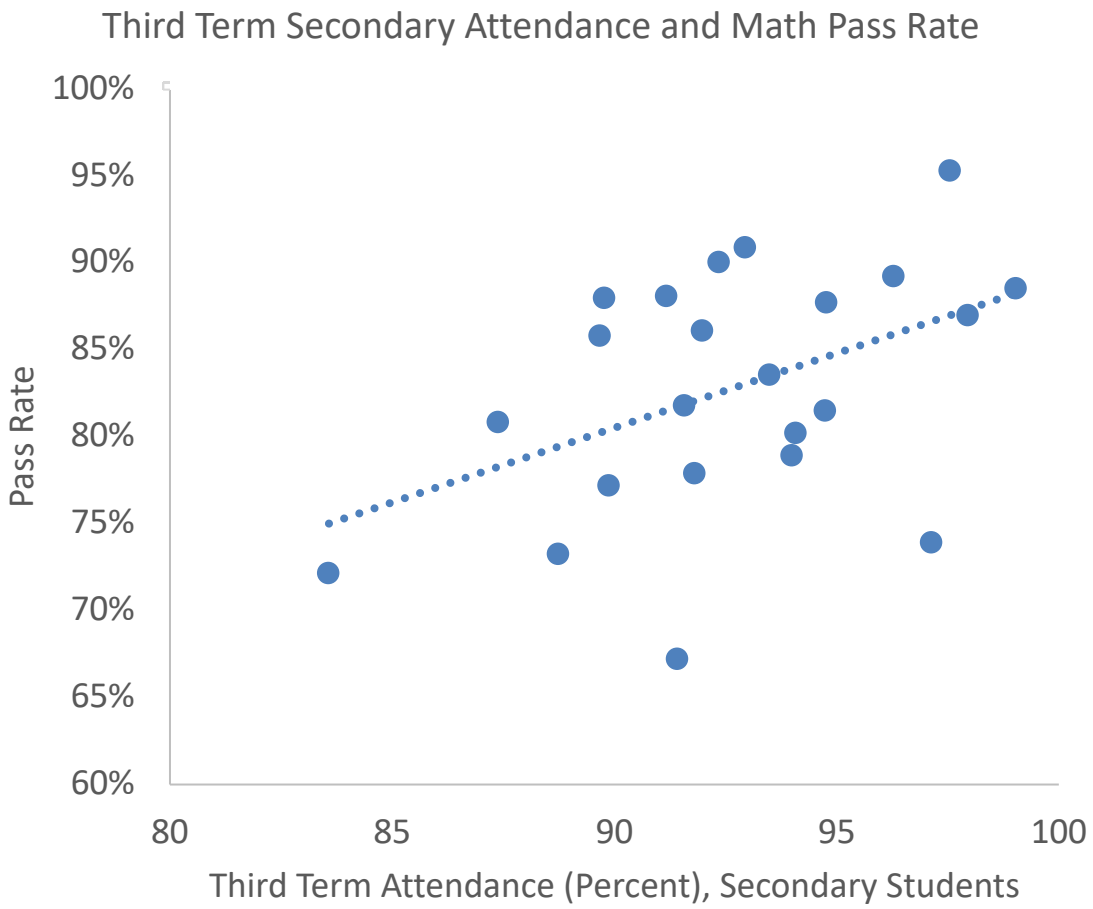


Each dot represents a school system.

Systems with higher percentages of students receiving fully virtual instruction tended to have lower attendance rates.

Third Term Data: Attendance and Course Pass Rate





Each dot represents a school system. Systems with higher attendance rates tend to have higher rates of students passing courses.

Pandemic Research Summary: Teacher Perspective

- Teachers in schools that were fully remote reported less instructional time and curriculum coverage [1].
- Teachers reported lower perceived effectiveness of remote learning compared to in-person learning. In Spring 2020, more than half of US teachers rated the effectiveness of remote learning between 1-3 on a ten point scale [2].
- Teachers in virtual settings estimated student assignment incompletion and absenteeism to be almost twice as high as teachers in fully in-person settings [3].

Pandemic Research Summary: Student Learning

- Multiple studies found student courses grades were significantly lower during virtual instruction as compared to previous in-person years, especially for English Learners, Hispanic students, and low income students [4].
- Multiple studies found student learning during virtual instruction was significantly lower than in a typical year (one estimate was between 50 and 90% lower). The difference was especially large for students who were already not testing as high as their peers, and achievement gaps between student groups were found to widen as well [5].

Research Summary: Characteristics for Student Success

- Research has identified that students likely to be successful in virtual learning environments are:
  - Self-disciplined independent learners
  - Effective communicators (good at reading and writing, and willing to ask for help)
  - Highly intrinsically motivated
  - Students with strong time management and technology skills
  - Students with a clear and demonstrated interest in online learning [6].
- Multiple studies conducted prior to the pandemic found that students in *fully virtual schools* performed worse academically and graduated at lower rates than their peers in traditional brick-and-mortar schools. Further, students who were struggling academically in brick-and-mortar schools fell further behind when they transferred to virtual schools [7].

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