eCitizen Education 數碼素養 360

From outcomes and challenges of online learning to enhanced digital preparedness for the NEW NORMAL

Effort of schools and parents to sustain learning paid off

Pre-suspension e-learning preparedness crucial to effective online learning transition

The cumulative negative effects due to **socio-economic and digital divides** on disadvantaged students need attention

About eCitizen Education 360

The prolonged period of fight against COVID-19 and school suspension has posed huge challenges to every member of the education community. The tremendous effort of schools and parents in sustaining learning online has not only overcome limits presented by social distancing, but also inspired a new chapter of educational transformation as schools resume.

This project is a comprehensive 360-degree survey study with widespread support from academia, parents, professionals and community organizations. By gathering information about the experiences and needs of primary and secondary schools during the periods of school suspension and resumption, we aim to enhance our comprehensive capacities to act as a community to improve the education opportunities, digital competence and well-being of students. These would also enable them to cope with various aspects of life in a fast-changing world in which digital technology plays a pervasive role.

an Action Focused Post-COVID-19 Study for Equitable Quality Education for All

More information is available at https://ecitizen.hk/360

Organized by

Learning and Assessment for DIGITAL CITIZENSHIP

Supported by

賽馬會STEM自主學習計劃
Jockey Club Self-directed learning in STEM Programme

Supporting Organizations

eTLE | BGCA 香港小童群益會 | 數碼港 Cyberport | Academy | HKACE 香港電腦教育學會 The Hong Kong Association for Computer Education | 香港輔導教師協會 Hong Kong Association of Careers Masters And Guidance Masters Limited | AHSS Hong Kong Association of the Heads of Secondary Schools | 香港教育城 HKedCity | 香港遊樂場協會 HONG KONG PLAYGROUND ASSOCIATION | 香港津�中學議會 Hong Kong Subsidized Secondary Schools Council | UGPSHH 官立小學校長協會 UNION OF GOVERNMENT PRIMARY SCHOOL HEADMASTERS AND HEADMISTRESSES

Research purpose

eCitizen Education 360 stems from the initial findings of the "**Learning and Assessment for Digital Citizenship**" Project, to find out what are the challenges, wellbeing issues and status of learning outcomes during and after school suspension in primary and secondary schools, support at home, and the most urgent needs and actions after school resumption.
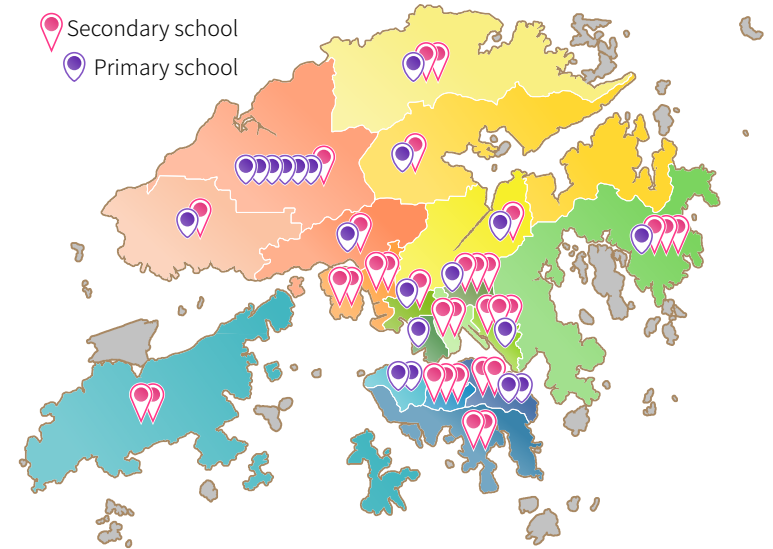
Research design

The study adopted **a multi-level survey-based design** to investigate the experiences and needs, before, during, and after the school suspension, of different stakeholders in Hong Kong, including **school leaders, ICT coordinators, teachers, students and their parents in primary and secondary schools**. Each school also completes a school profile form to provide basic information about the school. This study takes a broad perspective on school leadership to include all staff members having formal responsibilities to contribute towards school-level decisions, including principals, vice principals, academic masters/mistresses/ curriculum leaders, subject/KLA panel chairs, heads of e-learning, heads of STEM, moral/civic education coordinators, counselling/guidance coordinators, discipline masters/mistresses, life-wide learning coordinators, etc. School leaders contribute much to a school's decisions related to its e-learning preparedness before the school suspension, contingency plans during the suspension, and the strategies and actions as the school resumes. Teachers serve a key role in implementing these decisions and contribute directly to the learning experiences and outcomes of their students. For school leaders who have teaching roles, the survey also asked questions about their teaching practices. Together with the responses from the student and parent surveys, we can get a comprehensive 360 degree understanding of how school and family conditions contribute to the learning experiences and outcomes of students before, during and after the school suspension.

Figure 1. Map showing geographic location of primary and secondary schools in the sample

Secondary school
Primary school

* One participating special school is not labelled in this map.

Participation

All schools in Hong Kong were invited to participate and participation was on a voluntary basis. The specific grade levels and numbers of classes participating in the study was also decided by the schools based on their perceived needs and administrative possibilities. Parents of the participating students were invited to complete the parent survey. All surveys were conducted online, starting from June 8 at Secondary school level, and from 20 June at Primary school level. Data collected until July 14 were included in the analysis reported in this first bulletin.

Figure 2. Distribution of school types in participating schools

Private School 2%
Direct subsidy school 8%
Government school 12%
Government aided school 78%
53 schools
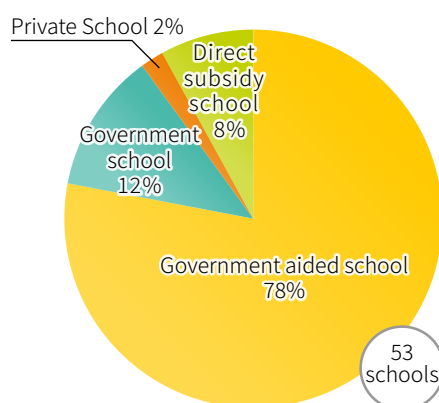
Figure 3. Grade level distribution of student respondents

S6 0.5%   Not reported 3%
S5 16%
S1 23%
S4 18%
S2 20%
S3 20%
5050 Secondary Students

Not reported 3%
P6 18%   P3 20%
P5 28%   P4 30%
1279 Primary Students
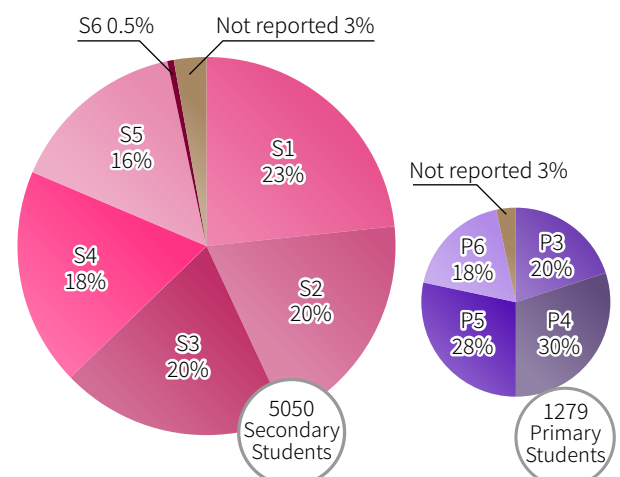
A total of over 550 school leaders, about 790 teachers, 1300 parents and 6300 students from primary, secondary and special schools participated in the survey. Participating schools are distributed over a wide geographic area including nearly all of the 18 districts in Hong Kong, encompassing government, aided, Direct Subsidy Scheme (DSS) and private schools.

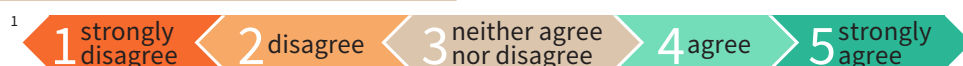# Efforts of schools and parents
to sustain learning paid off

Students, parents, teachers and school leaders were all asked about whether they were concerned about any negative long-term or short-term impacts on students. Overall, our results show a reassuring picture that the surveyed students have generally kept on track with their studies, despite some setbacks.

Impact perceived by students

Students generally did not perceive negative long-term impacts on their learning, though they were somewhat stressed about the upcoming school examination, particularly for the secondary school students. Both primary and secondary students were slightly worried about getting addicted to the Internet (i.e. always thinking about going online). They did not report a high level of emotional stress. Their responses also indicate that their relationship with parents and with classmates have improved and that they were happy to be back in school.

Table 1. Perceived worries by students

Sources of worry for students	Secondary students Mean[1] (SD)	Primary students Mean[1] (SD)
Upcoming examination	3.63 (1.13)	3.27 (1.26)
Always thinking about going online	3.15 (1.05)	3.17 (1.24)
Long-term negative effect on learning	3.10 (1.02)	3.24 (1.15)
Catching up with schoolwork	2.94 (1.08)	2.27 (1.11)
Emotional stress	2.91 (1.14)	2.28 (1.17)
Relationship with parents	2.68 (0.90)	2.42 (1.10)
Relationship with classmates	2.63 (0.91)	2.32 (1.10)
Going back to face-to-face lessons	2.50 (1.11)	2.37 (1.28)

[1] 1 strongly disagree 2 disagree 3 neither agree nor disagree 4 agree 5 strongly agree

No long-term impact perceived by parents, teachers and school leaders

Overall, parents, teachers and school leaders do not perceive long-term negative effects resulting from the school suspension period on the students. According to the teachers, they were by and large able to fulfil the curriculum coverage required. However, *they also indicate that students had difficulties in mastering more complex concepts and skills.*

Students' and teachers' digital skills improved

Students, parents and teachers perceived improvements in students' digital skills during the school suspension period. School leaders also reported improved digital skills in teachers from their own school.

Table 2. Perceived improvement of digital skills from different stakeholders

	Mean[1] (SD)
Perceived by primary school students on themselves	3.40 (0.87)
Perceived by secondary school students on themselves	3.71 (0.95)
Perceived by parents on their children	3.44 (0.87)
Perceived by teachers on their students	3.84 (0.78)
Perceived by school leaders on teachers	4.16 (0.63)
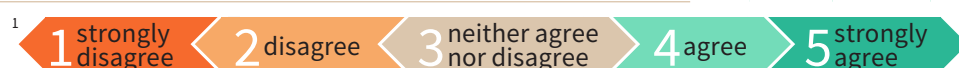
[1] 1 strongly disagree 2 disagree 3 neither agree nor disagree 4 agree 5 strongly agree

The cumulative negative effects due to
socioeconomic and digital divides
## on disadvantaged students need attention

While the overall situation as reported by the different stakeholders are relatively positive, there is a big divide between students' experiences and outcomes due to their family's socioeconomic (SES) situation. For parents, we collected information about whether the family received any form of financial subsidy from the Government. The results show that about 60% of responding parents did not receive any form of subsidy, while they others received different extents of financial support. The student survey had other questions to collect information about SES, and about the level of home access to large screen digital devices (desktop, laptop or tablet computers) and the Internet. We find that sustained online learning aggravated the disadvantage faced by lower SES students because of inadequate digital access and family support.

Students from low SES backgrounds worried more and had lower gains in digital skills

Students from lower SES backgrounds reported more stress. They also reported lower levels of improvement in relationship with their parents, and lower self-perceived improvements in digital skills.

Importantly, about 3%-5% of students reported lack of access to large screen devices for learning at home, and 17%-19% of students reported inadequate internet access. These obstacles need to be overcome first before other support measures can be implemented.

Figure 5. Levels of adequacy in Internet and digital device access for home-based learning
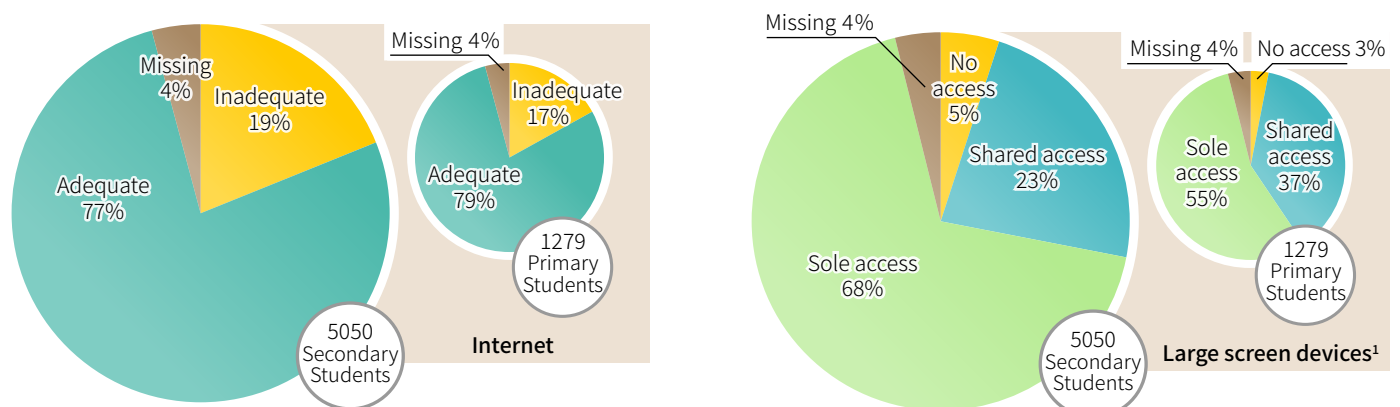
[1] Large screen devices include desktop, laptop and tablet computers.

Table 3. Levels of stress experienced by students from different SES backgrounds

Sources of worry for students	Secondary students		Primary students	
	Higher SES[1] students	Lower SES[1] students	Higher SES[1] students	Lower SES[1] students
Upcoming examination	3.6	3.8**	3.1	3.3
Preparation for future career	3.3	3.5***	N/A[2]	N/A[2]
Always think about going online	3.1	3.2**	3.1	3.2
Long-term negative effect on learning	3.0	3.3***	3.2	3.1
Catching up with schoolwork	2.8	3.1***	2.0	2.4

[1] SES is computed using the following indicators: have a desk to study, own personal room, have a quiet place to study at home, the number of books at home, and the highest level of education completed by parents.

[2] Primary students were not asked this question.

** Significant at <.01

*** Significant at <.001

1 strongly disagree **2** disagree **3** neither agree nor disagree **4** agree **5** strongly agree
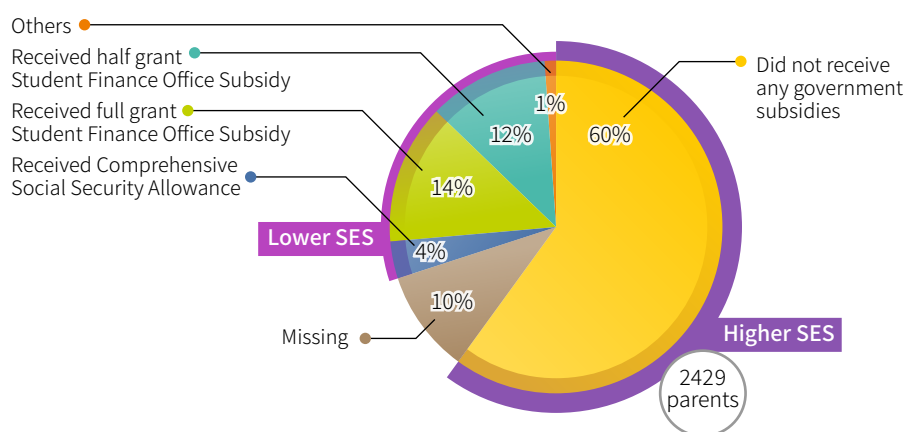
Parents from lower SES backgrounds worried more and had lowered expectations of their children's examination results

Parents from lower SES backgrounds:

- Perceived their children's gains in digital skills during school suspension to be comparatively lower
- More likely to feel that they have not been able to provide adequate digital learning support (inadequate Internet access by 8.1%, and inadequate large screen devices by 13.5%) to their children
- Had lower expectations on their children's upcoming examination results—overall only 15% of parents reported lowered expectations while 30% reported heightened expectations. The change in expectations was positively related to their SES.
- Were less likely to be involved in home-based learning of their children, both before and during the school suspension period.

Figure 4. Proportion of parents receiving financial subsidy

Others
Received half grant Student Finance Office Subsidy
Received full grant Student Finance Office Subsidy
Received Comprehensive Social Security Allowance
Lower SES
Missing
Did not receive any government subsidies
Higher SES
2429 parents

1% · 12% · 14% · 4% · 10% · 60%

School leaders and teachers are worried about the increased achievement divide

Teachers of different grade levels and school leaders across primary and secondary schools commonly perceived that differences in students' academic achievement had widened. They worried that students from disadvantaged families were less able to benefit from online learning and thus may not be able to catch up with their learning progress after classes resume.

Pre-suspension e-learning preparedness
crucial to effective online learning transition

What are the characteristics of effective e-learning preparedness?

According to the literature and research conducted by the Centre for the Information Technology in Education (CITE) of the University of Hong Kong, if e-learning is to be successfully implemented (Including fully online, and blended online and face-to-face modes), schools need a comprehensive plan and multi-faceted support that are implemented methodically. The following are common characteristics of schools that have demonstrated effective e-learning implementation:

- Teachers often arrange students to use different types of online learning platforms and tools for learning in class and at home;
- The school has an online learning management system (LMS) that serves as a platform for all teachers to support various interactive, student-centered learning activities and for supporting teacher sharing and collaboration;

- The school emphasizes that all students, regardless of their socioeconomic background, can learn online in school and at home, for example through participation in the Bring Your Own Device (BYOD) Scheme;
- The school has a comprehensive e-learning strategy, which is an integral part of the school's focal development strategy.

The survey results show that students and teachers reported more effective online learning and teaching practices if they belong to a school that was **_digitally (or e-Learning) prepared before_** the school suspension took place. **_e-Learning Preparedness_** of a school include having an e-learning strategy well-integrated into the school's overall development plans, and giving a high priority to student-centered e-learning pedagogies in which emphasis was on students using digital technology to interact and explore. We also find that the more e-Learning prepared schools tend to have in place measures to ensure that students have large screen devices suited to their own learning needs at home, such as through participating in the Bring-Your-Own-Device (BYOD) program.

Figure 6. Participating schools' BYOD status according to the ICT coordinator survey
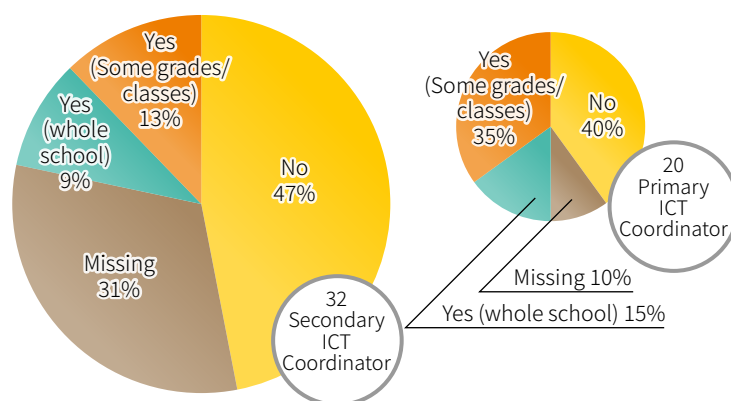
N.B.   The participating SEN school implemented BYOD in some grades/classes.

Students in digitally prepared schools reported better learning outcomes and engagement

Student survey results show that those from more digitally prepared schools:

- Were more likely to participate in online courses/activities before or during the school suspension period;
- Reported greater gains in digital skills during the school suspension period;
- Were more able to be attentive during the online classes during school suspension; and
- Reported better social relationships with classmates, and a stronger sense of identity with their schools.

It is apparent from the survey results that these digitally prepared schools had paid more attention to developing engaging pedagogies, as their students reported higher levels of concentration even during the face-to-face classes before the school suspension. Students who had experience of participating in online courses before school suspension reported greater confidence in their own online learning ability.

Teachers in digitally prepared schools reported more supportive and collaborative work environments

Teacher survey results show that those working in more digitally prepared schools:t

- Were more likely to receive support on online teaching and learning (T&L) from peers;
- Were more likely to collaborate with colleagues on designing online assessments;
- Were more likely to use digital technologies for professional sharing with peers;
- Perceived higher gains in their own digital skills over the school suspension period;
- Were more confident about their own online teaching effectiveness;
- Reported lower stress about school resumption;
- Reported lower concerns about issues related to bullying, cyberbullying and digital security issues encountered by their students.
- More likely to have adopted student-centered online pedagogy such as individual counselling and small group tutorials via videoconferencing during school suspension.

It is noteworthy that that teachers from the more digitally prepared schools reported a stronger sense of belonging to their schools, enjoyed higher job satisfaction, and more likely to report that their schools value research-informed practice.

School leaders in digitally prepared schools reported more effective online learning implementation

School leaders were asked about their perceptions of the digital skills and online teaching practices of the teachers in their own schools. The responses show that school leaders in the digitally more prepared schools perceived that:

- Their school teachers' gains in digital skills over the school suspension period to be higher;
- The use of mobile digital devices (e.g. iPads) for teaching and learning in classrooms to be more likely;
- Their evaluation of their school teachers' effectiveness in the following online T&L activities to be higher:
  - The production of quality online learning materials;
  - Conducting online individual consultations or group discussions using videoconferencing;
  - Using discussion forums or chat applications to conduct discussions with students.

These school leaders were also more convinced that BYOD would be getting more and more important, and need to be an integral part of a school's e-learning strategy.

Despite the many concerns that schools and teachers may have regarding allowing students to bring and use their own digital devices in the classroom, Government statistics show that about half of Hong Kong primary and secondary schools have in place a BYOD program. In the case of our present study sample, there is a much higher proportion of primary schools having in place such an arrangement. This probably indicates that the participating primary schools were those especially concerned about the impact of online learning during school suspension on their students. It also shows that BYOD is viable even in primary schools, a finding that is important as schools prepare for the new normal.

Figure 7. Number and percentage of school leader and teacher respondents working in schools with different BYOD status
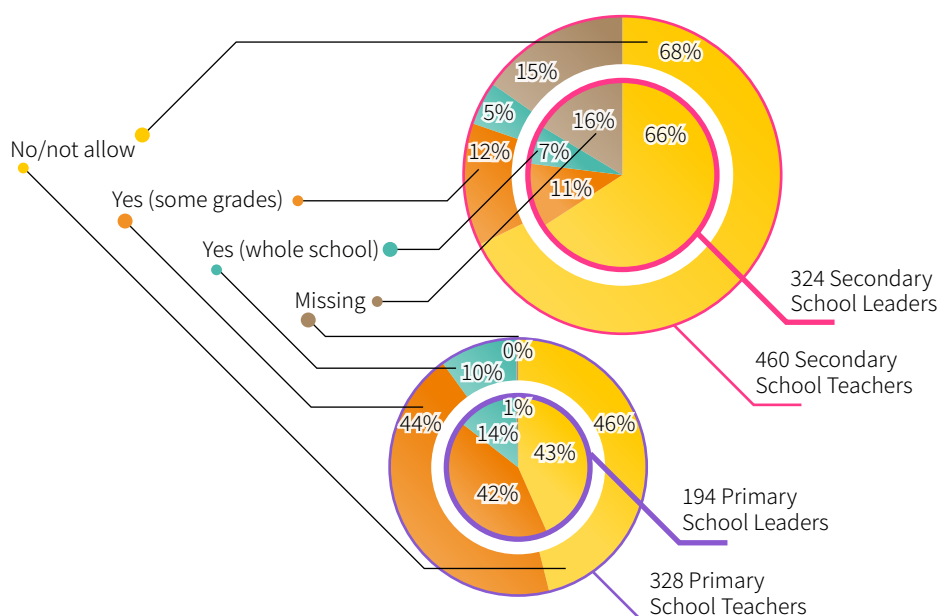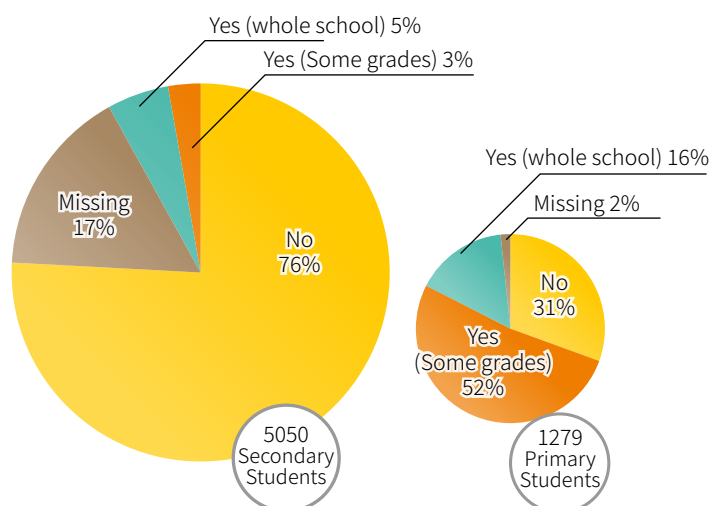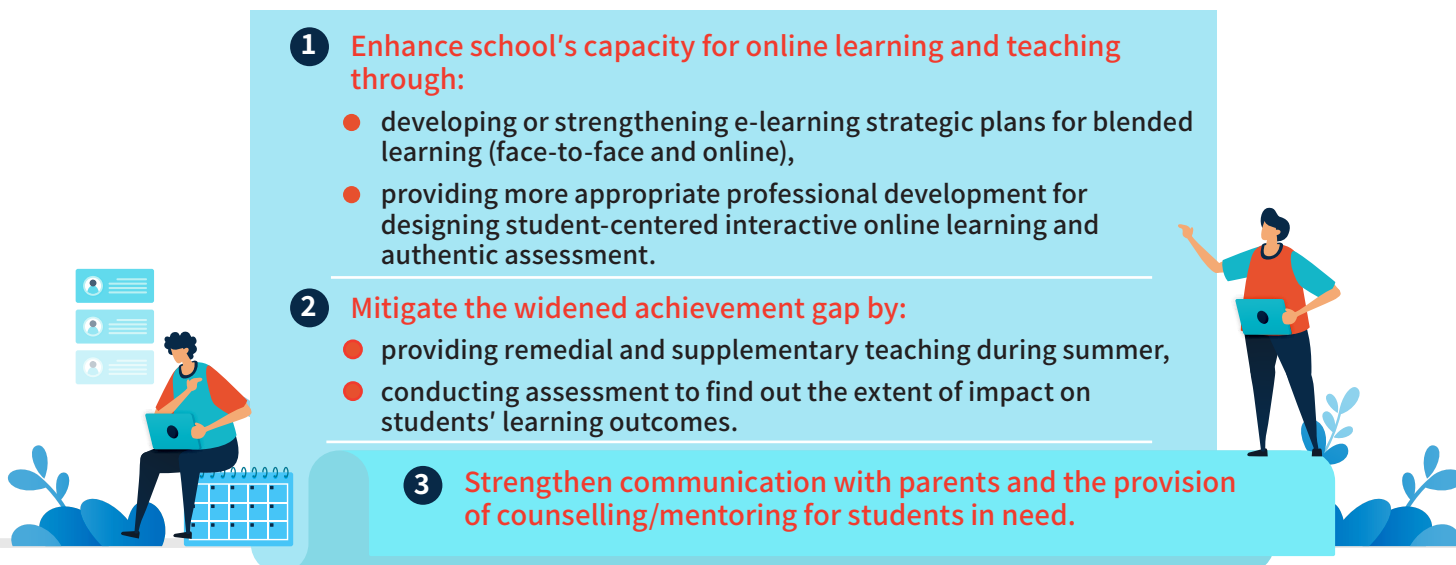

Figure 8. Proportion of student respondents studying in schools with different BYOD status

Priorities after school resumption

School leaders identified three urgent school-level priorities after school resumption:

1 **Enhance school's capacity for online learning and teaching through:**
- developing or strengthening e-learning strategic plans for blended learning (face-to-face and online),
- providing more appropriate professional development for designing student-centered interactive online learning and authentic assessment.

2 **Mitigate the widened achievement gap by:**
- providing remedial and supplementary teaching during summer,
- conducting assessment to find out the extent of impact on students' learning outcomes.

3 **Strengthen communication with parents and the provision of counselling/mentoring for students in need.**

On the teachers' front, they reported requiring more psycho-social support for the transition to online teaching from schools and more ready-made materials suitable for online teaching.

Implications for actions

It should be emphasized again that while the study invited all schools in HK to participate, they do so on a voluntary basis. We are extremely appreciative of the tremendous efforts of participating schools to complete the survey in a remarkably short period of time when schools had so much to attend to when the schools resume. They do so out of their genuine concern for students' learning and a firm belief in the value of evidence-based strategic action. While we do not know how representative the present findings are, they do demonstrate that these schools successfully transitioned to online teaching during the school suspension despite the lack of prior preparation. The pandemic is not yet over. There is an urgent need for schools and the community to **prepare for a New Normal** that is unpredictable by ensuring that learning can happen effectively irrespective of the mode of delivery. Based on the insight gathered from the present study, we recommend the following actions:

ACTIONS

✱ Schools should devise/refine whole-school comprehensive plans incorporating adaptive and flexible online and offline learning and teaching arrangements by referencing and learning from the positive experiences gained before and during school suspension in schools across Hong Kong;

✱ Community efforts should be in place to provide technology access and *other accompanying support* for those students without adequate internet access and appropriate devices for learning at home;

✱ Partnership should be fostered between schools and community organizations to provide support to needy students and their parents/families as appropriate for their specific contexts.

Learning and Assessment for DIGITAL CITIZENSHIP

Hong Kong: Faculty of Education, The University of Hong Kong, 2020.

Copies of this publication can be obtained from:
🌐 https://www.ecitizen.hk/360/
✉ dcitizen@hku.hk

Research Team

Advisor
Prof. Catherine KK CHAN

Project Coordinator and Principal Investigator
Prof. Nancy LAW

Co-Principal Investigator
Dr. TAN Cheng Yong

Co-Investigator
Dr. LAN Min
Dr. PAN Qianqian

In conjunction with research assistants in the *Learning and Assessment for Digital Citizenship Project*