eCitizen Education 360 (2022):
An extension of the Learning and Assessment for Digital Citizenship Project
數碼素養 360 (2022):
數碼世代公民的學習和評估項目的擴展

影響學生福祉與學校網上教學的關鍵因素新洞見
呼籲多方合作共建數碼新常態

New Insights on Key Factors Impacting Students’ Wellbeing and Schools’ Online Teaching
Calling for Collaboration to Establish a Digital New Normal

Presented by the Centre for Information Technology in Education (CITE),
Faculty of Education, The University of Hong Kong
The Final Release of Research Findings

New Insights on Key Factors Impacting Students’ Wellbeing and Schools’ Online Teaching Calling for Collaboration to Establish a Digital New Normal

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About eCitizen Education 360

• First e360 study conducted in June 2020 to understand the impact of extended school suspension (Feb – early June 2020) on students, parents, and schools.

• e360 (2022) builds on the conceptual and methodological foundations of the baseline (2020) – a comprehensive 360-degree, action-oriented survey study

• To understand the impact of multiple waves of prolonged intermittent school suspensions and provide evidence-based recommendations to stakeholders

• Goal: promote equitable quality education for all

• Acknowledgement:
  (1) Support from many community sectors: schools, education professionals, parents, academics, and NGOs, organizations;
  (3) Support from all the participating schools.
  (2) The D. H. Chen Foundation as the Growth Partner and Funder of this project;
### Geographic Distribution of Participating Schools

**Data collection: July – early September 2022**

<table>
<thead>
<tr>
<th></th>
<th>Participating Schools</th>
<th>Students</th>
<th>Parents</th>
<th>Teachers</th>
<th>School Leaders</th>
</tr>
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<tbody>
<tr>
<td>Primary</td>
<td>20 (39%)</td>
<td>2014 (25%)</td>
<td>1125 (35%)</td>
<td>383 (43%)</td>
<td>125 (46%)</td>
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<tr>
<td>Secondary</td>
<td>31 (61%)</td>
<td>6014 (75%)</td>
<td>2093 (65%)</td>
<td>503 (57%)</td>
<td>146 (54%)</td>
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<td>Total</td>
<td>51</td>
<td>8028</td>
<td>3218</td>
<td>886</td>
<td>271</td>
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</table>
The 1st Release of Findings
Cumulative Impact Under New Normal Insights for Positive Actions

The 1st findings was released on November 3, 2022

Finding 1. Students’ online learning and well-being

- More adapted to online learning.
- Primary students reported high levels of online learning self-efficacy and used more online self-regulated learning strategies than secondary students.
- Secondary students experienced more issues with digital well-being.
The 1^{st} Release of Findings
Cumulative Impact Under New Normal Insights for Positive Actions

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Finding 2. Parents and parenting in the New Normal

- Parent-child relationship reported by primary parents is significantly more positive than secondary parents.
- Secondary parents had significantly lower levels of home-based involvement and lower parenting self-efficacy.
- Secondary students are less likely to consult with adults but feel that they need guidance.
The 1st Release of Findings
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Finding 3. Schools’ Adapta in the New Normal

- School-based strategies led to effective adaptation and increased school-based parental involvement in 2022.
- Teachers found the provision of professional development for online T&L and school-based teacher collaboration most useful.
- Community support perceived as most positive external factor.
The 1st Release of Findings
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Finding 3. Schools’ Adaptations in the New Normal

- School-based strategies led to effective adaptation and increased school-based parental involvement in 2022.
- Teachers found the provision of professional development for online T&L and school-based teacher collaboration most useful.
- Community support perceived as most positive external factor.

Key questions addressed in the second release?

Parent-child relationship reported by primary parents is significantly more positive than secondary parents.

Secondary parents had significantly lower levels of home-based involvement and lower parenting self-efficacy.

Secondary students are less likely to consult with adults but feel that they need guidance.
The 2nd Release of Findings

New Insights on Key Factors Impacting Students’ Wellbeing and Schools’ Online Teaching Calling for Collaboration to Establish a Digital New Normal

Self-regulated learning strategies, digital literacy and cognitive emotional regulation strategies as facilitating factors

Parents need holistic approach to their parenting and parent-child relationship is key

Schools’ technology usage and climate promote teachers’ online teaching self-efficacy
Key Questions Addressed in the second release?

1. What are the key risk and protective factors for students’ wellbeing?

2. How are different aspects of parenting related to students’ wellbeing?

3. How do school factors influence teachers’ online teaching self-efficacy?
Students’ final outcomes

- The final outcomes include
  - **Wellbeing (mental health):** students’ views of themselves, emotions, and recent experiences.
  - **Online learning self-efficacy:** students’ self-evaluation of their abilities to concentrate on online learning, complete online learning tasks, and successfully master e-learning materials.
Six intermediate outcomes (protective and risk factors):

- **Digital literacy**: using the Digital Literacy Assessment (DLA), including information and data literacy, communication and collaboration, digital content creation, safety, and problem solving.

- **Cognitive emotional regulation strategies**: strategies used by students to deal with negative or unpleasant events
  - **positive** strategies (i.e., refocus on planning and positive reappraisal)
  - **negative** strategies (i.e., catastrophizing and blaming others).

- **Self-regulated learning strategies**: how students manage their learning activities using different strategies, namely, help-seeking, self-evaluation, and time management.

- **Cyberbullying experiences**: whether or not students experience different kinds of cyberbullying incidents, including perpetration, victimization, and being a bystander.

- **Socialization and entertainment using digital media**: the extent to which students utilize digital media to perform socialization and entertainment activities. Those activities might include chatting with friends using different social media platforms, browse or post things in social media, play games or listen to music.
Research Design

- **Students**
  - SES
  - Self-regulated learning strategy, digital literacy, and cognitive emotional regulation strategy as facilitating factors

- **Home resources**
  - Students
  - Academic capital

- **Digital resources**
  - Parenting
    - Parent-child relationship
    - Digital Parenting
    - Parental home-based involvement
    - Parental school-based involvement

- **Intermediate outcomes**
  - Self-regulated learning strategies
    - Protective and risk factors

- **Digital Literacy**
  - Cognitive emotional regulation strategies (positive/negative)

- **Wellbeing**
  - (mental health)

- **Online learning self-efficacy**

- **Teacher factors**
  - Usage of digital technology for T&L
  - Self-efficacy on designing & implementing online teaching
  - Teacher collaboration

- **School factors**
  - Leaders' usage of digital technology for T&L
  - Energy, trust, and collaboration

- **Student final outcomes**
  - Wellbeing
  - Online learning self-efficacy

**Faculty of Education, The University of Hong Kong**
Students’ Wellbeing Part I

II

Students’ Wellbeing

III

Self-regulated learning strategy, digital literacy and cognitive emotional regulation strategy as facilitation factors.

Parents need holistic approach in their parenting and parent-child relationship is key.

Schools’ technology usage and climate for teachers’ online teaching self-efficacy.
RQ1: What are the key protective and risk factors for students’ wellbeing? (Only focus on student variables)
1.1 How students' intermediate outcomes (protective and risk factors) are related to their final outcomes

- Socialization and entertainment using digital media
- Self-regulated learning strategy
  - Cognitive emotional regulation strategy (positive)
  - Cognitive emotional regulation strategy (negative)
- Cyberbullying experience
- Digital literacy

Student survey

Intermediate outcomes:
- Socialization and entertainment using digital media
- Cognitive emotional regulation strategy (positive)
- Cognitive emotional regulation strategy (negative)
- Self-regulated learning strategy
- Cyberbullying experience
- Digital literacy

Final outcomes:
- Wellbeing (mental health)
- Online learning self-efficacy
Students' intermediate outcomes (protective and risk factors) are related to their final outcomes

- Students’ positive cognitive emotional regulation strategies, self-regulated learning strategies, and digital literacy positively contributed to their wellbeing (mental health).

- Students’ negative cognitive emotional regulation strategies and cyberbullying experience were negatively associated with their wellbeing (mental health).

Note. **p < .01; ***p < .001. No line between variables indicates insignificant. Dashed lines indicate negative relationships.
Students’ intermediate outcomes (protective and risk factors) are related to their final outcomes

Secondary

- The result of most relationships between intermediate outcomes and final outcome were consistent with those of primary students.
- Secondary students with higher frequency of socialization and entertainment using digital media were more likely to have better wellbeing (mental health).

Note. **p < .01; ***p < .001. No line between variables indicates insignificant. Dashed lines indicate negative relationships.
Primary

- A strong predictor of online learning self-efficacy among students is their implementation of self-regulated learning strategy.
- In addition to self-regulated learning strategy, positive cognitive emotional regulation strategy and digital literacy are positively related to online learning self-efficacy.
- More usage of digital media for entertainment, negative cognitive emotional regulation strategies, and encountering more cyberbullying experiences can have negative impacts on students’ online learning self-efficacy.

Note. *p < .05; **p < .01; ***p < .001. No line between variables indicates insignificant. Dashed lines indicate negative relationships.
Students' intermediate outcomes (protective and risk factors) are related to their final outcomes.

Secondary

- Self-regulated learning strategies also exhibit a similar **strong positive** relationship with student’s online learning self-efficacy.
- Secondary students’ online learning self-efficacy is **positively** associated with positive cognitive emotional regulation strategies.
- More digital media usage for socialization and entertainment, negative cognitive emotional regulation strategies, and more cyberbullying experiences would **weaken** students’ online learning self-efficacy.

**Note.** **p < .01; ***p < .001.** No line between variables indicates insignificant. Dashed lines indicate negative relationships.
1.1 Section summary:

Students’ positive cognitive emotional regulation strategies, self-regulated learning strategies, and digital literacy were common intermediate factors contributing to the wellbeing (mental health) of both primary and secondary students.

Students’ positive cognitive emotional regulation strategies and self-regulated learning strategies were common intermediate factors contributing to the online learning self-efficacy of both primary and secondary students.
We next investigated whether digital literacy can promote students’ wellbeing (mental health) and whether digital literacy can prevent students from cyberbullying to have better wellbeing (mental health).
Higher levels of digital literacy were associated with better wellbeing.

Although experiencing cyberbullying has negative impacts on students’ wellbeing, digital literacy can prevent students from cyberbullying perpetration and victimization and thus protect their wellbeing.
Secondary

- Higher levels of digital literacy were also associated with better wellbeing.
- Digital literacy also prevented students from cyberbullying perpetration and victimization and thus protects their wellbeing.
- The fact that higher digital literacy was associated with more experiences of being a bystander is likely due to older students’ increased usage of the Internet and awareness of cyberbullying.

Note. *p < .05; **p < .01; ***p < .001. Dashed lines indicate negative relationships. Gray lines indicate insignificant.
1.2 Section summary:

1. Students’ digital literacy contributed to their wellbeing (mental health).

2. Students’ digital literacy protected them from cyberbullying perpetration and victimization and thus they can have better wellbeing (mental health).
1.3 How SES affects students’ Intermediate outcomes (protective and risk factors)

- Socialization and entertainment using digital media
- Cognitive emotional regulation strategy (positive)
- Cognitive emotional regulation strategy (negative)
- Self-regulated learning strategy
- Cyberbullying experience
- Digital literacy

Students SES

Digital resources

Academic capital

Home resources

Intermediate outcomes

Student survey
Social-economic status (SES) was calculated using item-response theory (IRT) models containing:

- **Academic capital**: the potential academic support available to students at home (i.e., parents’ education levels and the number of possessed books in their home).
- **Home resources**: students’ possession of learning resources that facilitate learning, such as a desk, an own personal room, or a quiet place to study at home.
- **Digital resources**: the extent to which the students have access to digital devices and internet at home.
Primary

• Student SES **positively** contributed to their positive cognitive emotional regulation strategies, self-regulated learning strategies, and digital literacy.

• Student SES **negatively** related to cyberbullying experience.

Note. **p < .01; ***p < .001. No line between variables indicates insignificant. Dashed line indicates negative relationship.
Secondary

- Student SES **positively** contributed to their positive cognitive emotional regulation strategies, self-regulated learning strategies, digital literacy, and socialization and entertainment using digital media.

Note. **p < .01; ***p < .001. No line between variables indicates insignificant. Dashed line indicates negative relationship.
1.3 Section summary:

1. **Student SES positively** contributed to their positive cognitive emotional regulation strategies, self-regulated learning strategies, and digital literacy, in both primary and secondary schools.

2. Secondary students with higher **SES** were more likely to have more socialization and entertainment activities online.
Schools' online teaching
Part III

Parenting
Part II

Students' Wellbeing
Part I

Parenting
RQ2: How are different aspects of parenting related to students' wellbeing?

Parenting
- Parent-child relationship
- Digital Parenting
- Parental home-based involvement
- Parental school-based involvement

Intermediate outcomes

Digital Literacy

Protective and risk factors
- Self-regulated learning strategies
- Cognitive, emotional, and behavioral regulation strategies (positive, negative)
- Cyberbullying, socialization, victimization, bystander, intervention, support, purification

Students
- SES

Academic capital
- Home resources
- Digital resources
Different Aspects of Parenting

- **Parent-child relationship**: the closeness of their relationship
  - understanding of their children’s feelings and learning
  - the frequency of sharing daily lives

- **Digital parenting**: the extent to which the parents:
  - understand what are good digital practices such as how to use online resources productively & minimizing risks,
  - model and set rules about the use of media in the family

- **Parental home-based involvement**: 
  - helping children at home
  - monitoring of children’s activities & behaviors
  - parent-child communication

- **Parental school-based involvement**: 
  - parent-teacher interactions
  - parents’ participation in school activities
All four different aspects of parenting were inextricably related to each other, except for the relationship between parent-child relationship and parental-school involvement.

Note. *** p < .001. No line between variables indicates insignificant.
2.1 The relationship between students’ SES and parenting

**SES positively related** to parent-child relationship, digital parenting, and parental home-based involvement.

Note. *p < .05; ***p < .001. No line between variables indicates insignificant.
2.2 How different aspects of parenting affects students’ Intermediate outcomes

- **Predictor**: Parent-child relationship
- **Intermediate outcome**: Socialization and entertainment using digital media
- **Predictor**: Digital Parenting
- **Intermediate outcome**: Cognitive emotional regulation strategy (positive)
- **Predictor**: Parental home-based involvement
- **Intermediate outcome**: Cognitive emotional regulation strategy (negative)
- **Predictor**: Parental School-based involvement
- **Intermediate outcome**: Self-regulated learning strategy
- **Intermediate outcome**: Cyberbullying experience
- **Intermediate outcome**: Digital literacy
Different aspects of parenting affects students’ Intermediate outcomes

- Parent-child relationship and digital parenting were negatively associated with negative cognitive emotional regulation strategies. (positive result)

- Parental school-based involvement was positively contributed to self-regulated learning strategies, and negatively related to digital literacy.

Note. *p < .05; **p < .01. No line between variables indicates insignificant. Dashed lines indicate negative relationships.
The parent-child relationship was the most influential factor in determining intermediate outcomes for students.

Note. *p < .05; **p < .01; ***p < .001. No line between variables indicates insignificant. Dashed lines indicate negative relationships.
Different aspects of parenting affects students’ intermediate outcomes

- The parent-child relationship was the most influential factor in determining intermediate outcomes for students.
- Digital parenting was negatively associated with student cognitive emotional regulation negative strategy. (positive result)

**Note.** *p < .05; **p < .01. No line between variables indicates insignificant. Dashed lines indicate negative relationships.**
Different aspects of parenting affects students’ Intermediate outcomes

- The parent-child relationship was the most influential factor in determining intermediate outcomes for students.
- Digital parenting was negatively associated with student cognitive emotional regulation negative strategy. (positive result)
- Parental home-based involvement negatively related to students’ digital literacy.

Note. *p < .05; **p < .01. No line between variables indicates insignificant. Dashed lines indicate negative relationships.
Different aspects of parenting affects students’ Intermediate outcomes

Secondary schools

- The parent-child relationship was the most influential factor in determining intermediate outcomes for students.
- Digital parenting was negatively associated with student cognitive emotional regulation negative strategy. (positive result)
- Parental home-based involvement negatively related to students’ digital literacy.
- Parental school involvement positively predicted student cognitive emotional regulation negative strategies and self-regulated learning strategies, but negatively predicted student digital literacy.

Note. *p < .05; **p < .01; ***p < .001. No line between variables indicates insignificant. Dashed lines indicate negative relationships.
2.1 Section summary:

1. SES positively related to parent-child relationship, digital parenting, and parental home-based involvement.

2. Different aspects of parenting were inextricably related to each other, and the good parent-child relationship was the strongest predictor for student learning and well-being.

3. All four different aspects of parenting contributed to students’ intermediate outcomes, especially on cognitive-emotional regulation strategies and self-regulated learning strategies.

4. Digital parenting, parental home- and school-based involvement have little impact on students’ learning and well-being.
Schools' online teaching

Part III

Parenting

Part II

Students' Wellbeing

Part I
RQ3: How do school factors influence teachers’ online teaching?

**School level factors**
- **Usage of digital technology for T&L**: the extent of school leaders using technology for several different purposes, such as:
  - learning assessment
  - support reflection
- **Positive energy, trust & collaboration**: school leaders’ perceptions on
  - teachers’ working status (communication and trust)
  - teachers’ collaboration behaviors

**Teacher level factors**
- **Usage of digital technology for T&L**: teacher’s e-learning practices with multiple purposes, such as:
  - providing feedback
  - facilitate learning
- **Teacher collaboration**: the extent to which teacher collaborate with others for online learning.

**Outcome (Teacher)**
Self-efficacy in designing & implementing online teaching measures teachers’ self-reported confidence in conducting online lessons.
3. Teachers’ online teaching self-efficacy

School leaders’ usage of digital technology for T&L positively related to teachers’ usage of digital technology for T&L, which then strengthened teachers’ online teaching self-efficacy.

Suggests role-modeling by school leaders and mastery experiences from teachers’ increased technology usage.

Note. *p < .05; **p < .01; ***p < .001.
3. Teachers’ online teaching self-efficacy

Positive energy, trust & collaboration in schools positively related to teacher collaboration, which then strengthened teachers’ online teaching self-efficacy.

Suggests trust and collaboration creating a positive climate which then benefits teachers’ online teaching self-efficacy.

Note. *p < .05; **p < .01; ***p < .001.
**Recommendations**

**For Students**

- Students should be equipped with **self-regulated learning strategies** and **positive cognitive emotional regulation strategies** to facilitate their wellbeing.

- Encourage students to participate in activities that can develop their **digital literacy** and master strategies to prevent and respond to cyberbullying.

**For Parents**

- Focus on cultivating a **positive relationship** with their children to support students’ online learning and wellbeing.

- Need a holistic approach in parenting, there is a great deal of scope in **digital parenting, parental home- and school-based involvement** to explore **how to effectively support students’ online learning and wellbeing**.

- Encourage and teach their children to use strategies for managing their emotions and focusing on goals, to develop their abilities of self-regulated learning and cognitive emotional regulation.
Recommendations

For Schools

• Encourage **wider usage of digital technology**, cultivate a **positive school climate** (i.e., positive energy, trust & collaboration), and facilitate **teacher collaboration** so that teachers can be more efficacious in their online teaching.

• Adopt appropriate strategies to enhance students’ **digital literacy** and provide opportunities for them to master **self-regulated learning strategies** and **positive cognitive emotional regulation strategies**.

• Explore with parent-teacher associations and relevant social organizations how parents can be supported to improve **the effectiveness of different aspects of parenting**.

For Community

• The whole community including relevant professionals, community, business and governmental organizations should be involved further to harness their expertise, resources or services not just to provide students with **emotional and social support**, but also to help parents on **effective parenting practices** (including general and digital parenting) as well as to provide support for **school development** especially in student wellbeing.
Project team and Supporting Organizations

Thank you!
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Q&A