



**Growth Partner and Funder**



**Supporting Organizations**



**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***

**Supporting Organizations**



Hong Kong Association of  
the Heads of Secondary Schools



官立小學校長協會





**Growth Partner and Funder**



**Supporting Organizations**



## 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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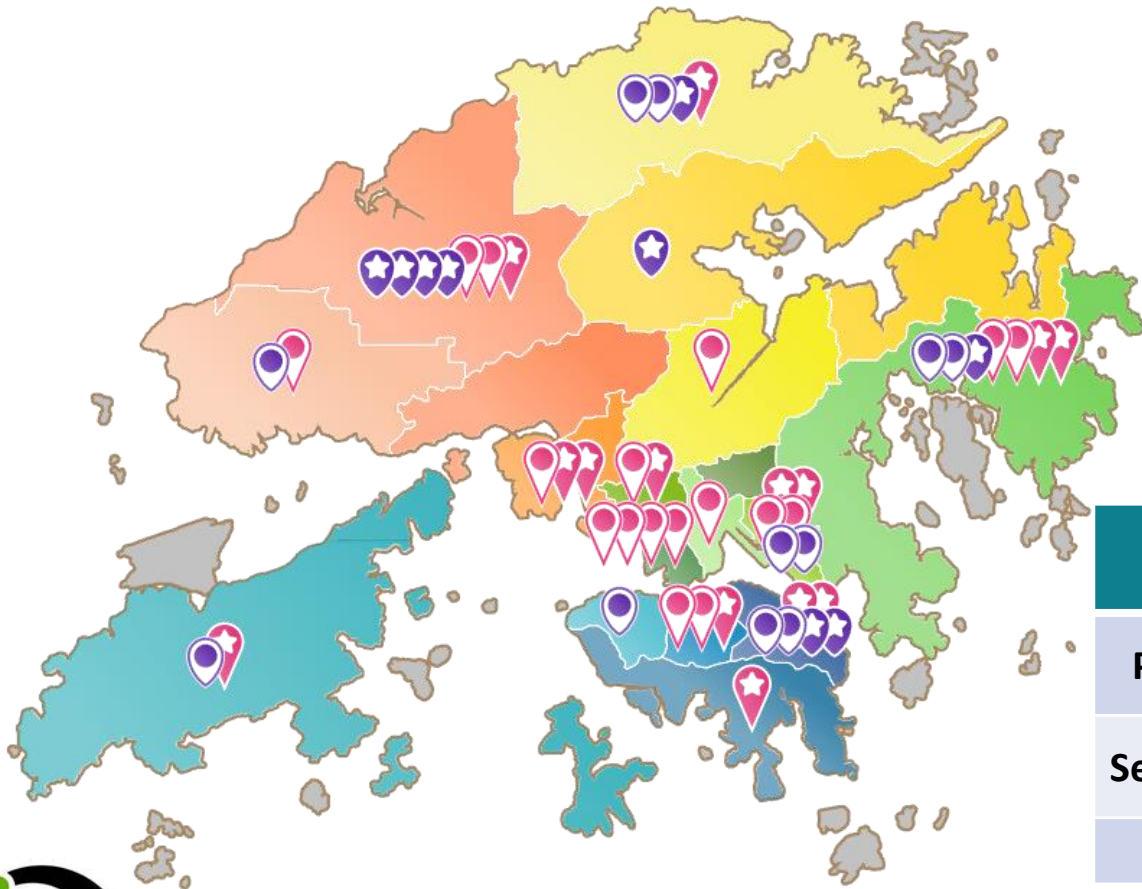


# About eCitizen Education 360





- 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;
  - (2) The D. H. Chen Foundation as the Growth Partner and Funder of this project;
  - (3) Support from all the participating schools.



# Geographic Distribution of Participating Schools



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

-  Secondary school in 2022
-  Primary school in 2022
-  Secondary school in both 2020 and 2022
-  Primary school in both 2020 and 2022

	Participating Schools	Students	Parents	Teachers	School Leaders
Primary	20 (39%)	2014 (25%)	1125 (35%)	383 (43%)	125 (46%)
Secondary	31 (61%)	6014 (75%)	2093 (65%)	503 (57%)	146 (54%)
<b>Total</b>	<b>51</b>	<b>8028</b>	<b>3218</b>	<b>886</b>	<b>271</b>



## Cumulative Impact Under New Normal Insights for Positive Actions



**eCitizen Education 2022**  
**數碼素養 360**

Bulletin 1 (March 2023)  
**Cumulative Impact Under New Normal**  
**Insights for Positive Actions**

**About eCitizen Education 360 (2022)**

Since the onset of the COVID-19 pandemic in late 2019, many schools, families, and students have struggled to cope with the New Normal of teaching and learning. There are widespread concerns in Hong Kong society that student learning and wellbeing may have been adversely affected. It is therefore imperative to take stock of the impacts of the New Normal on students' learning and wellbeing.

Building on the strengths of the eCitizen Education 360 Project (2022) which has yielded valuable findings and practicable actions fruitfully used by stakeholders, this project, e360 (2023), is underpinned by the understanding that teaching and learning opportunities and outcomes during (and after) the fifth wave of school suspension are continuously influenced by different factors at the school, teacher, parent, and student levels. We aim to provide a comprehensive picture of students' learning and wellbeing after multiple waves of school suspension and to support different stakeholder communities including policy-makers in developing evidence-based action plans that build capacity and resilience to support student learning in the New Normal.

We are grateful to all school leaders, teachers, students, and parents for their participation in and support for this study.

An extension of the Learning and Assessment for Digital Citizenship project  
More information is available at <https://ecitizen.hk/360>

Organized by: [Logos of Education Bureau, Education and Youth Services Centre, and Education Research Centre]

Supporting Organizations: [Logos of various educational and research organizations]

**Students**  
More adapted to online learning  
Need more support for cyberwellness, particularly for secondary students

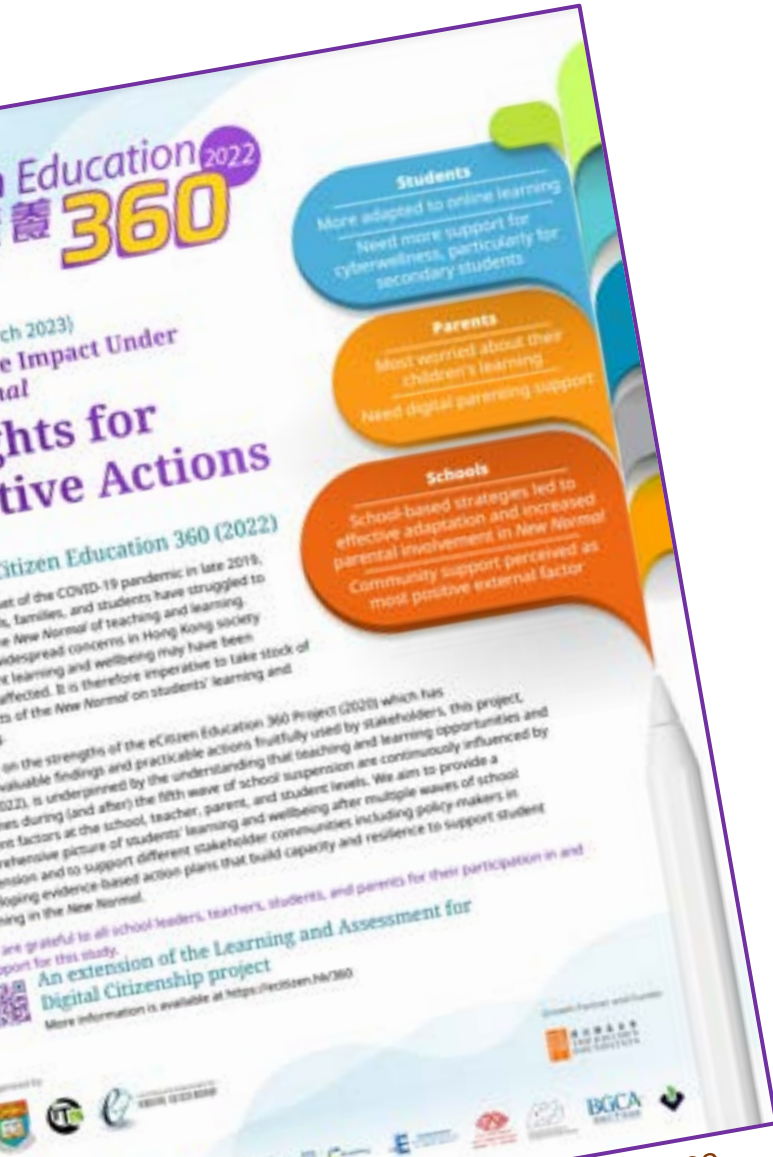
**Parents**  
Most worried about their children's learning  
Need digital parenting support

**Schools**  
School-based strategies led to effective adaptation and increased parental involvement in New Normal  
Community support perceived as most positive external factor

### 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.





### Finding 1. Students' online learning and well-being

- More adapted to online learning.
- Primary students reported higher 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.

### 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.

## Cumulative Impact Under New Normal Insights for Positive Actions

### Finding 1. Students' online learning and well-being

Primary students adapted to online learning.

Primary students reported higher levels of **online learning self-efficacy** and used more **online self-regulated learning strategies** than secondary students.

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### Finding 3. Schools' Adaptation 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.



## Cumulative Impact Under New Normal Insights for Positive Actions

### Finding 2. Parents and Parenting in the New Normal

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

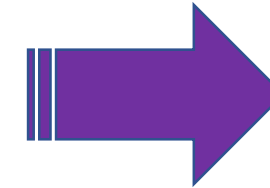
Secondary parents had significantly lower levels of home-based involvement and lower parenting self-efficacy.

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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.
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- **Community support** perceived as most positive external factor.

## Key questions addressed in the second release?



### The 2<sup>nd</sup> Release of Findings





## 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.

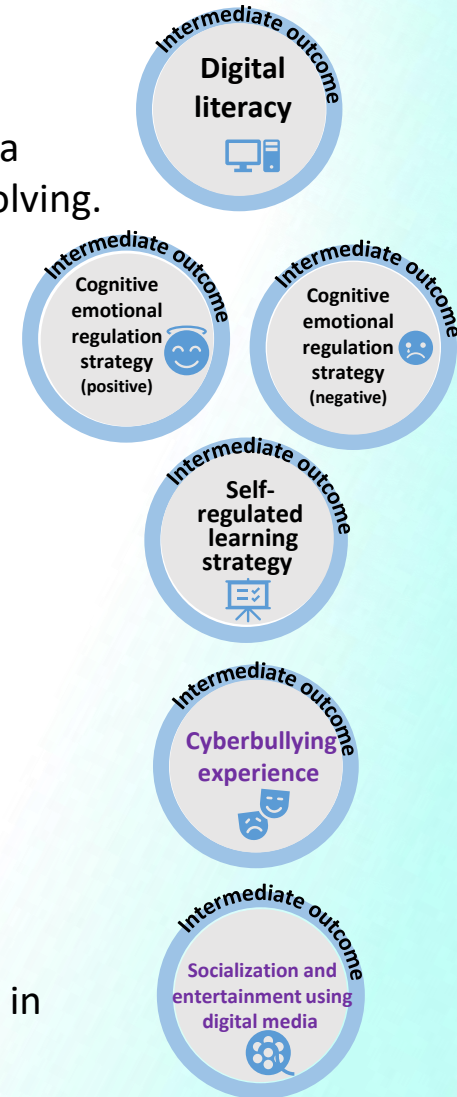




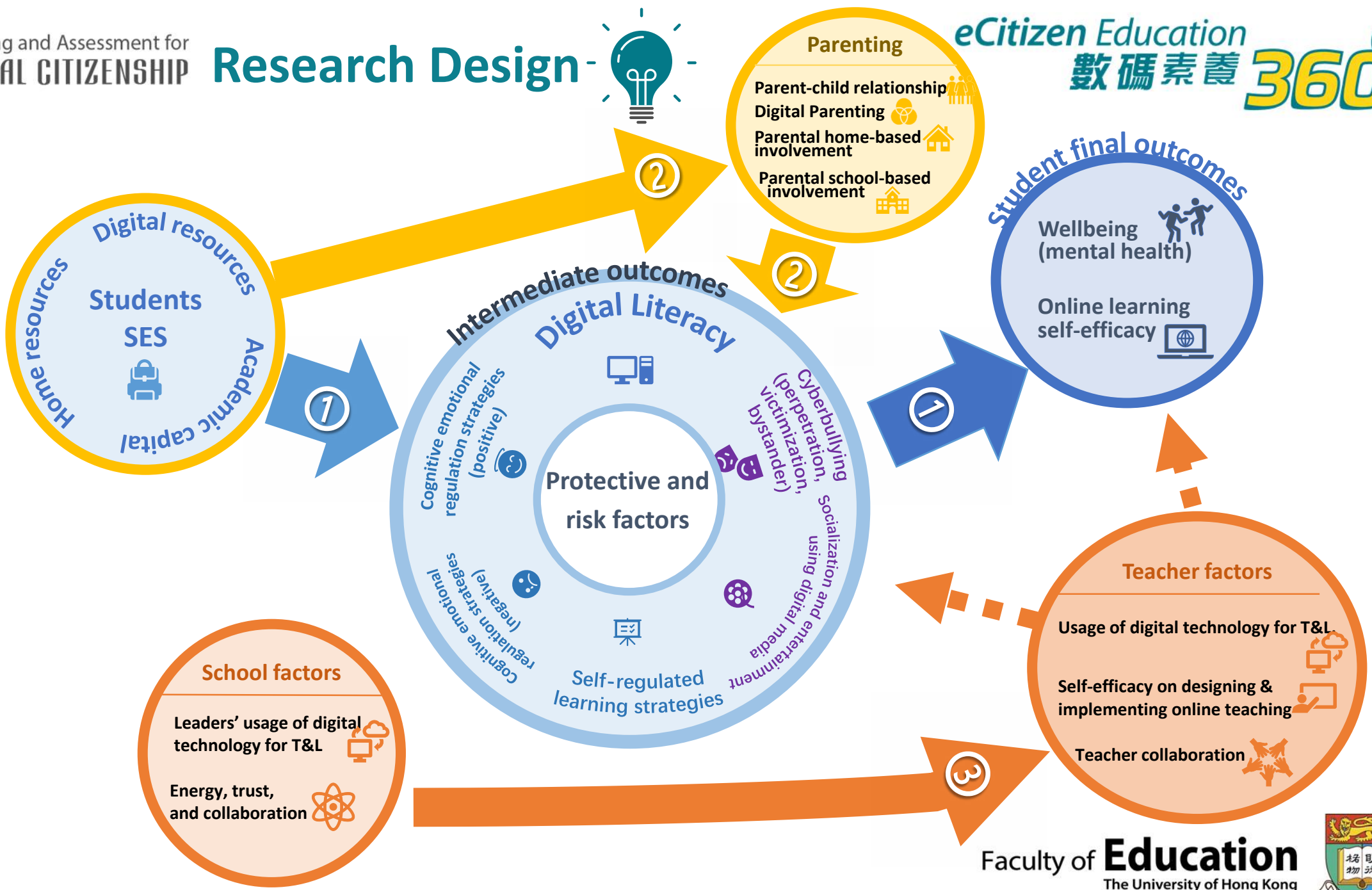
## Intermediate outcomes variables (protective and risk factors)

### 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.







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

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

Schools' technology usage and climate promote teachers' only teaching self-efficacy





## Students' Wellbeing Part I



Students'  
Wellbeing

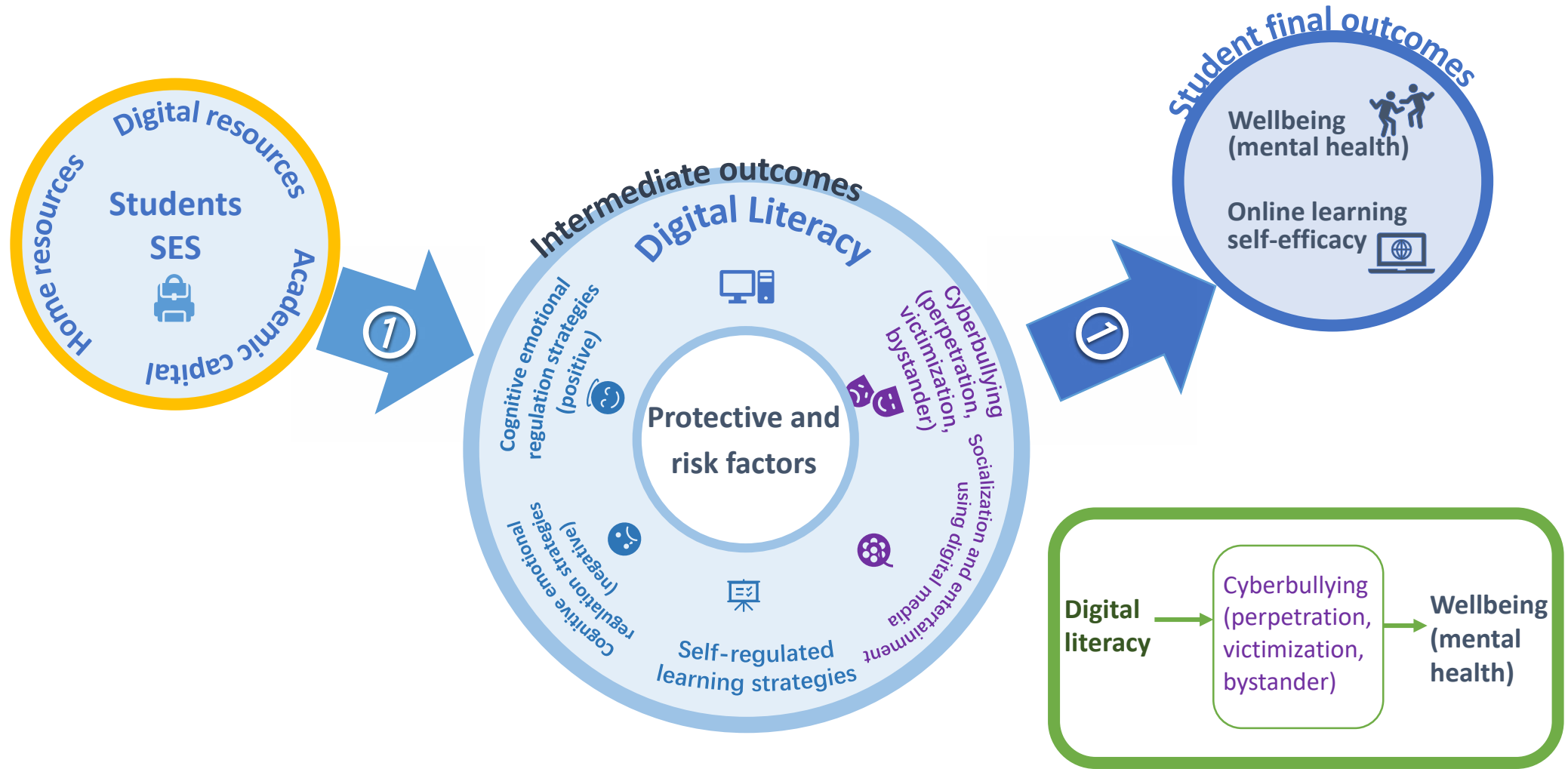


Self-regulated learning strategy, digital literacy and cognitive emotional regulation strategy as facilitation factors

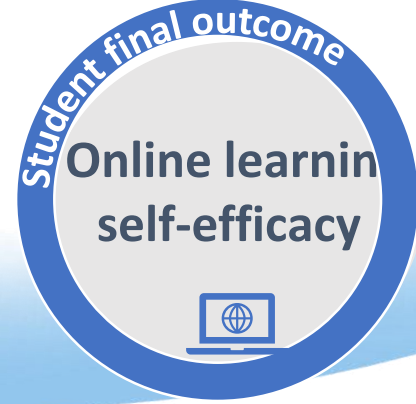
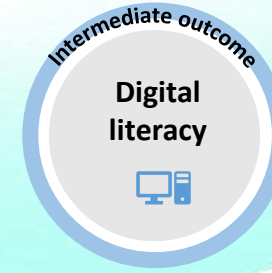
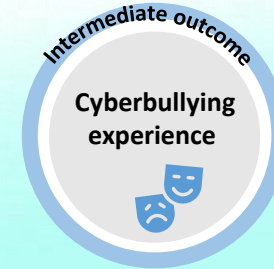
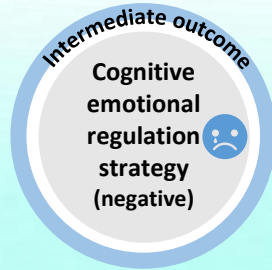
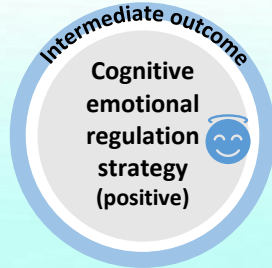
and holistic approach

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)

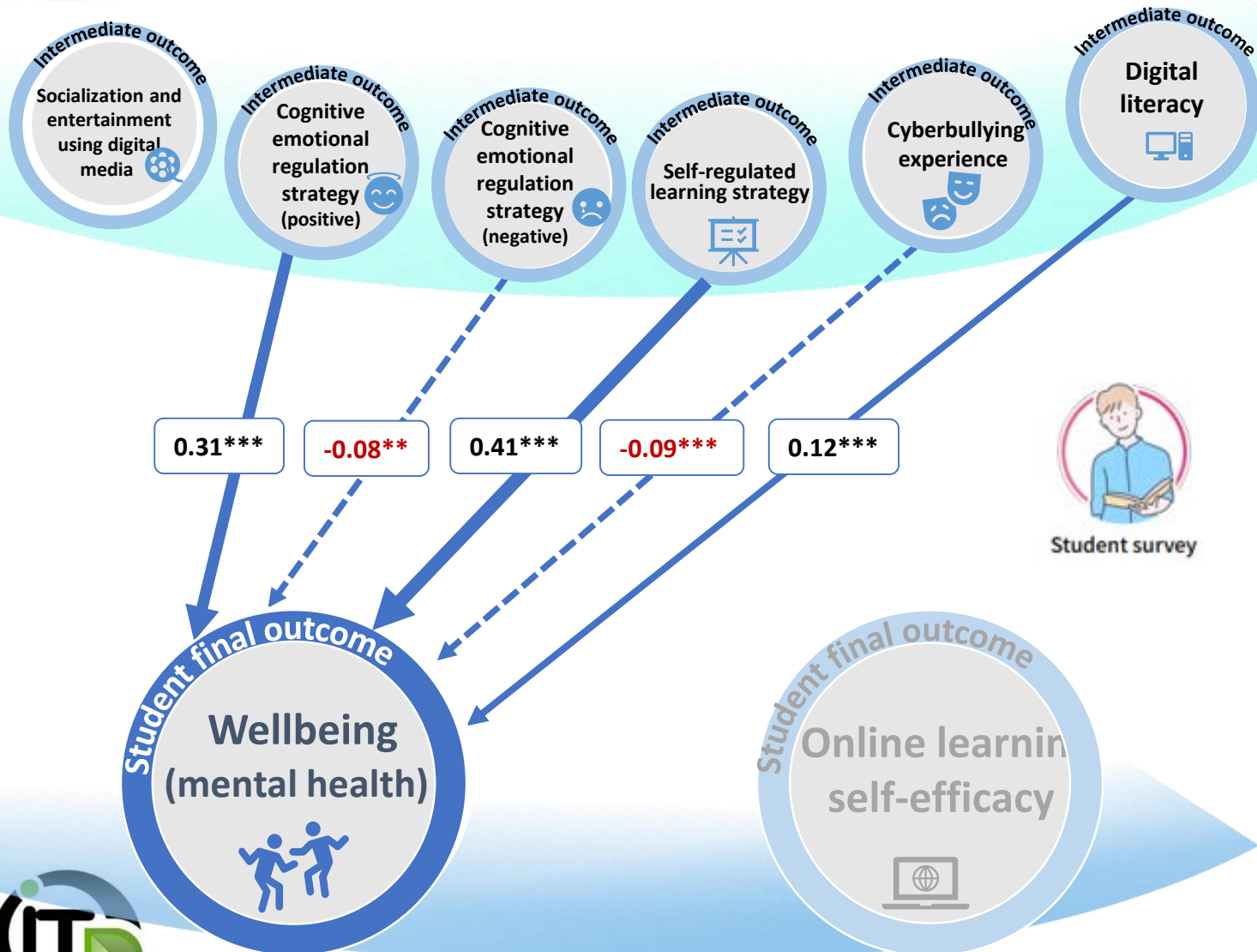


## 1.1 How students' intermediate outcomes (protective and risk factors) are related to their final outcomes





Students' intermediate outcomes (protective and risk factors) are related to their final outcomes

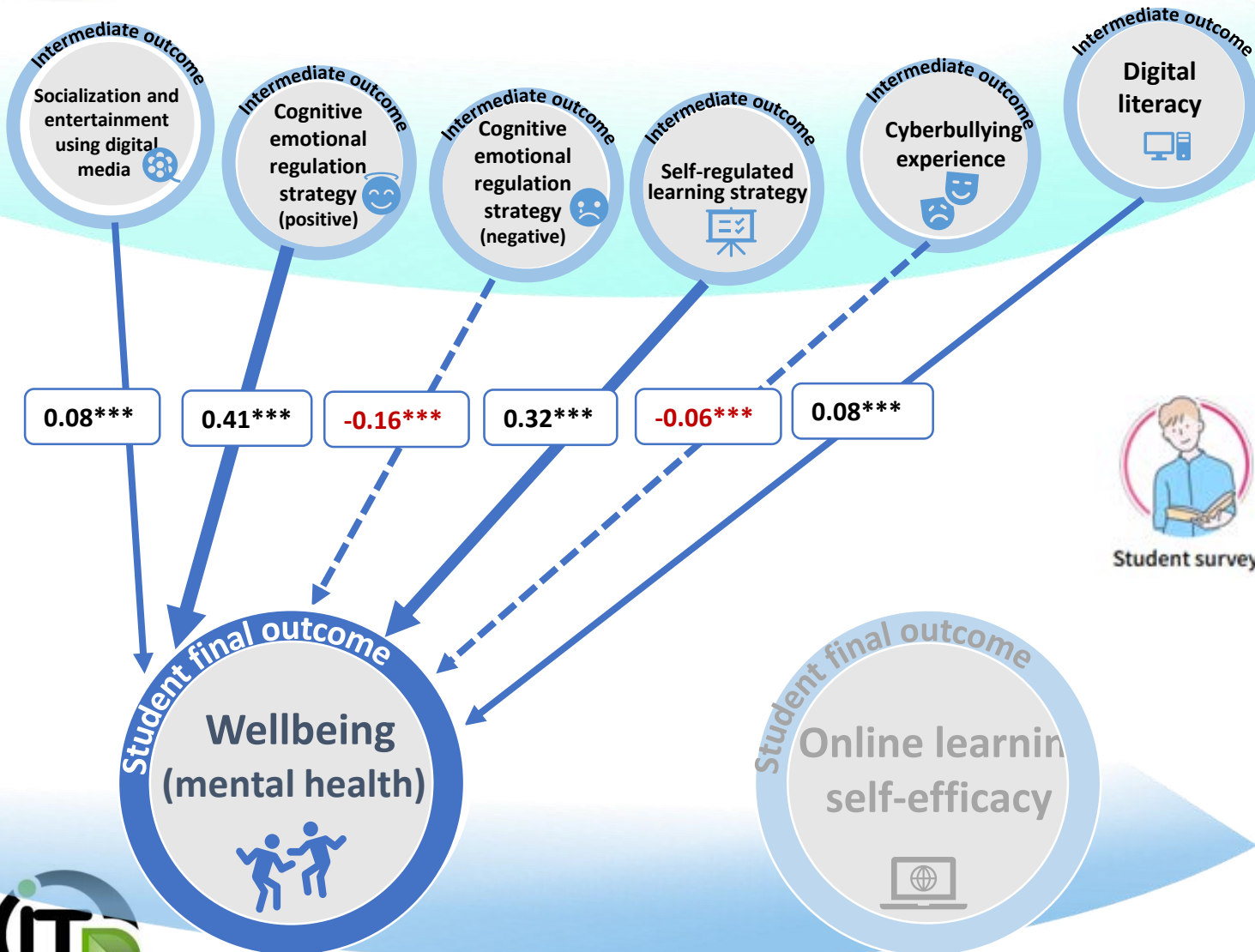


### Primary

- 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

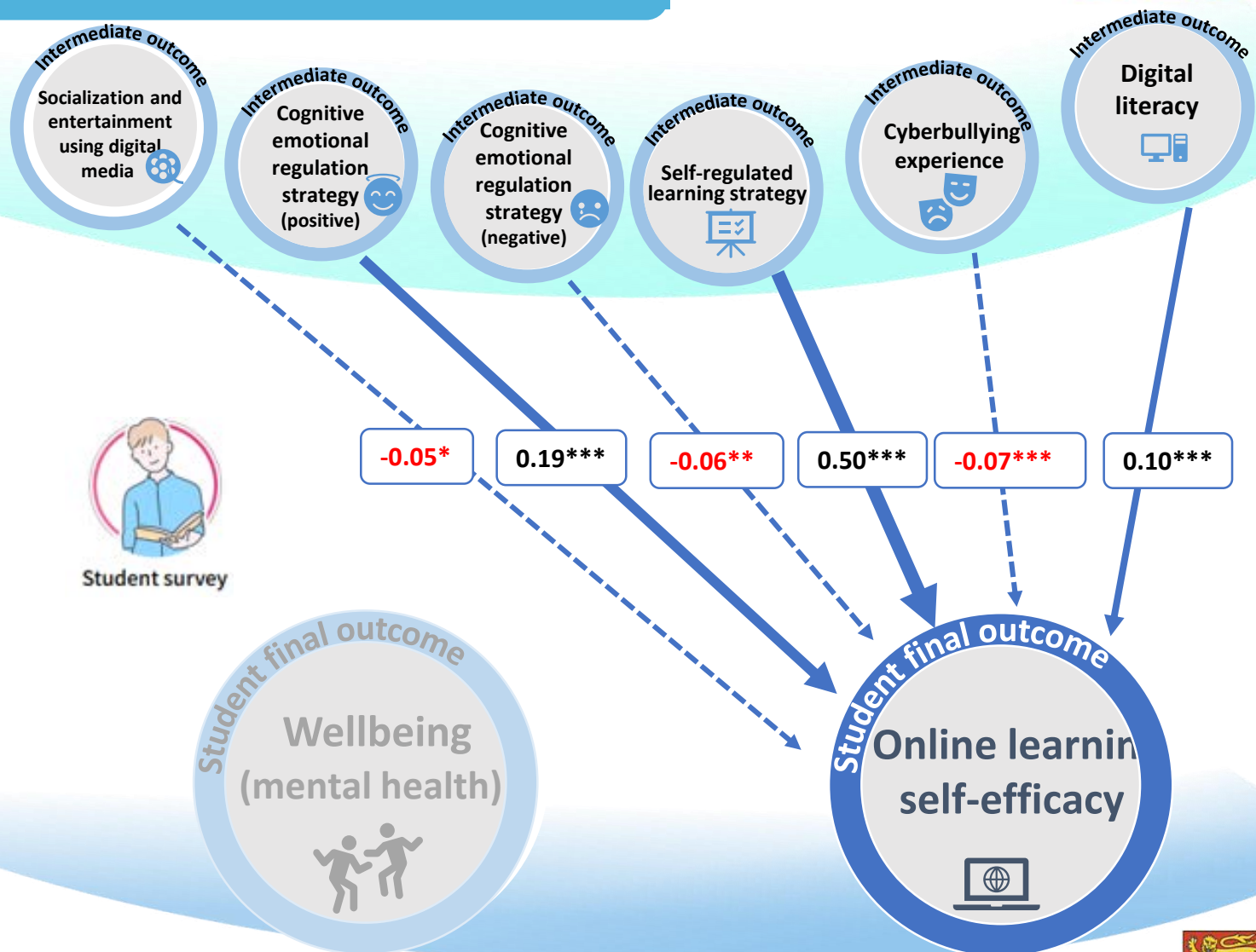
- The result of most relationships between intermediate outcomes and final outcome were consistent with those of primary students.
- Secondary students with **higher** frequency of socialization and entertainment using digital media were more likely to have **better** wellbeing (mental health).

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

Students' intermediate outcomes (protective and risk factors) are related to their final outcomes

## 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.



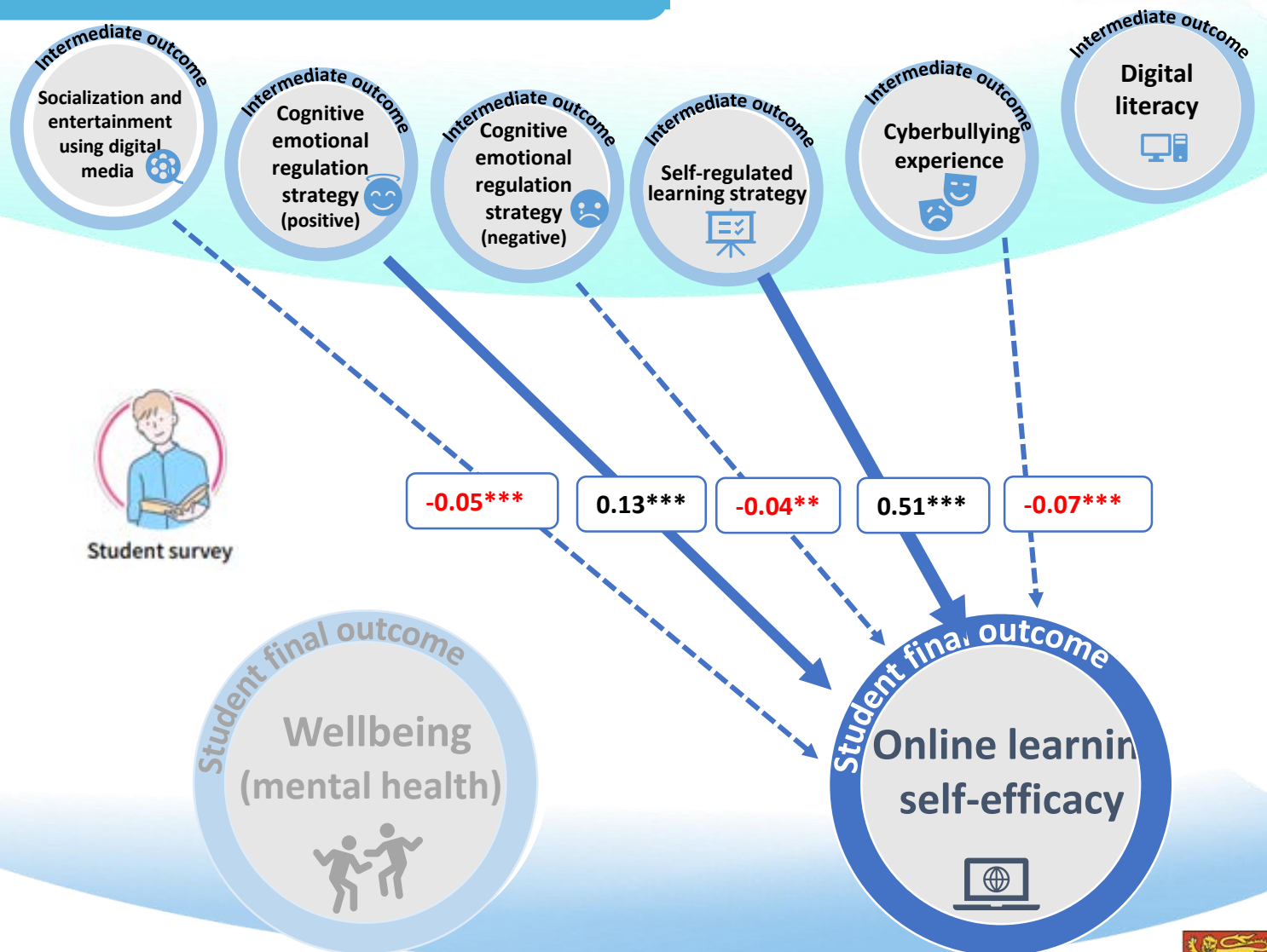
Note. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ . No line between variables indicates insignificant. Dashed lines indicate negative relationships.



Students' intermediate outcomes (protective and risk factors) are related to their final outcomes

## Secondary

- Self-regulated learning strategies also exhibits a similar **strong positive** relationship with student' 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.

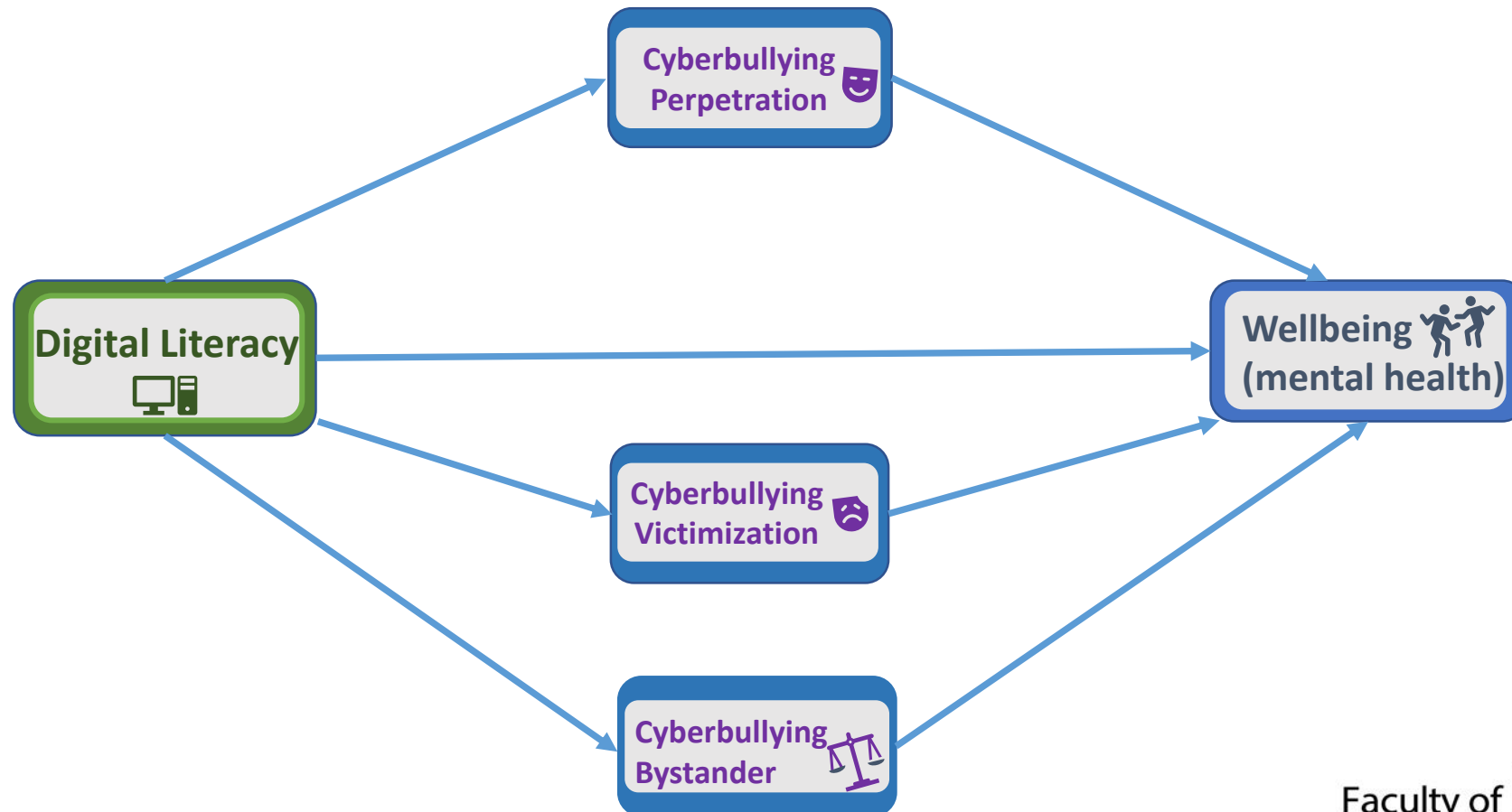
Students' positive cognitive emotional regulation strategies and self-regulated learning strategies were common intermediate factors **contributing** to the **online learning self-efficacy** of both primary and secondary students.

Students'  
Wellbeing



Students'  
Wellbeing

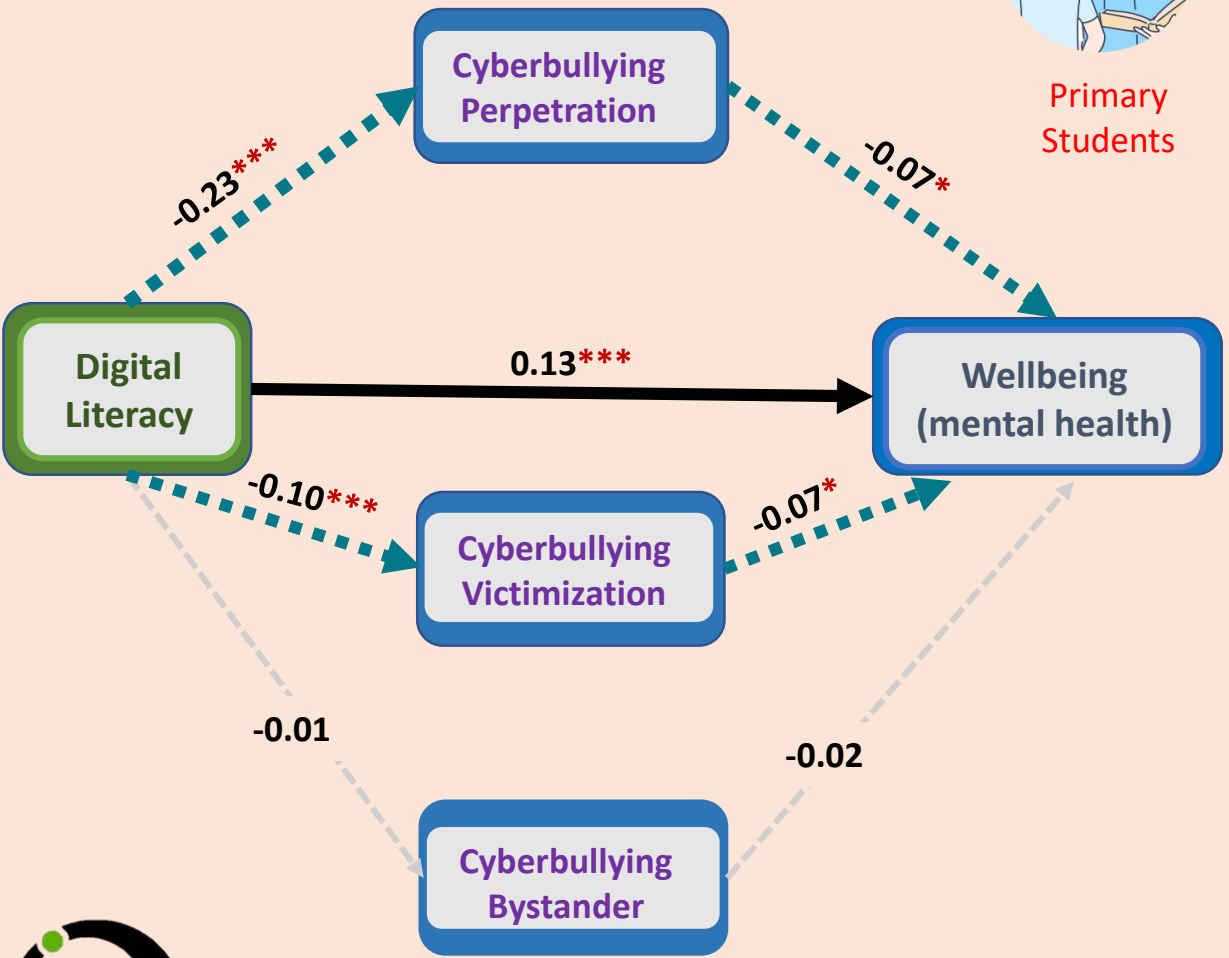
We next investigated whether digital literacy can promote students' wellbeing (mental health) and whether digital literacy can prevent students from cyberbullying to have better wellbeing (mental health).



**Protective role of digital literacy**



Primary Students



**Primary**

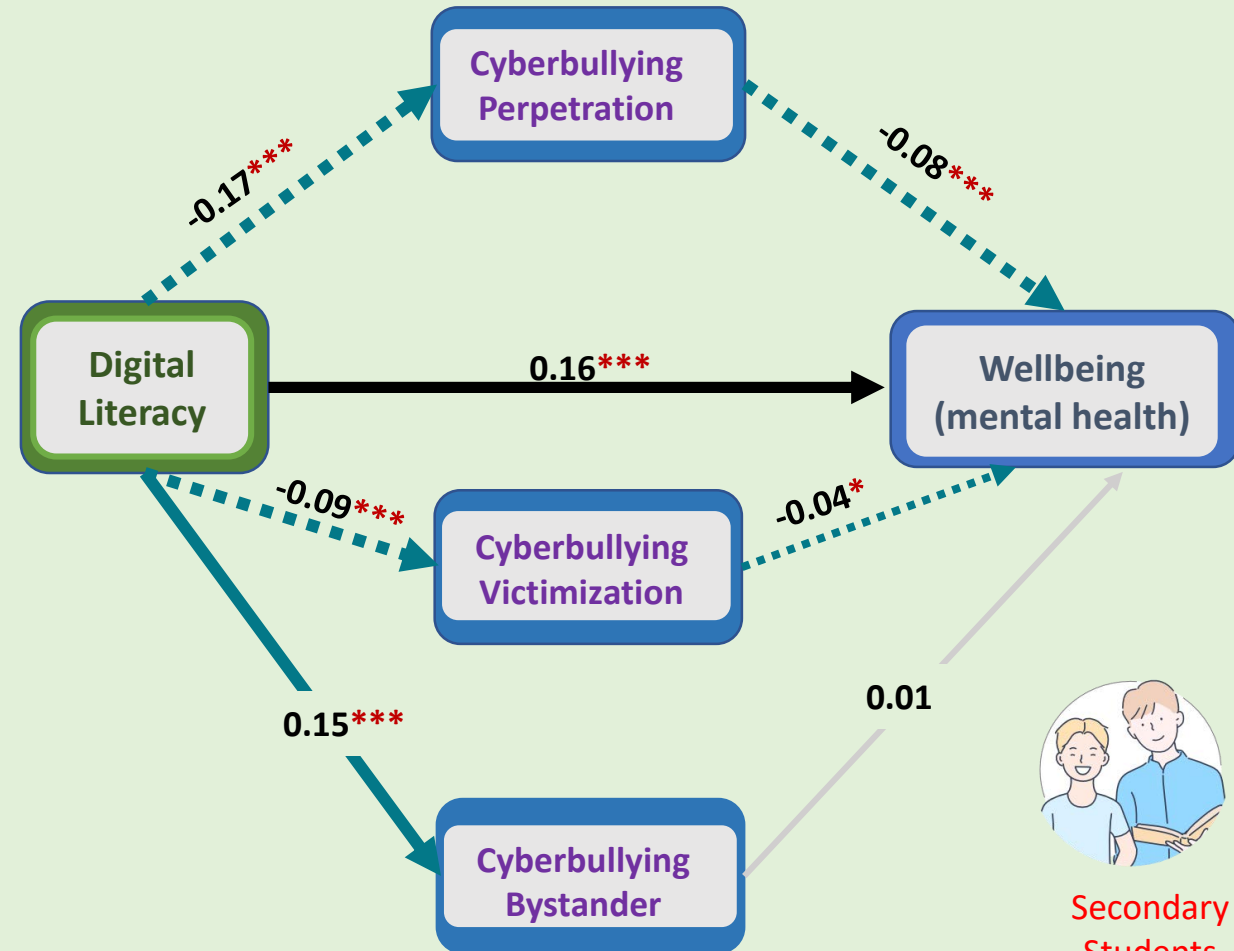
- **Higher** levels of digital literacy were associated with **better** wellbeing.
- Although experiencing cyberbullying has **negative** impacts on students' wellbeing, **digital literacy** can prevent students from cyberbullying perpetration and victimization and thus protect their wellbeing.



Note. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ . Dashed lines indicate negative relationships. Gray lines indicate insignificant.

## 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.



Secondary Students



## 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)**



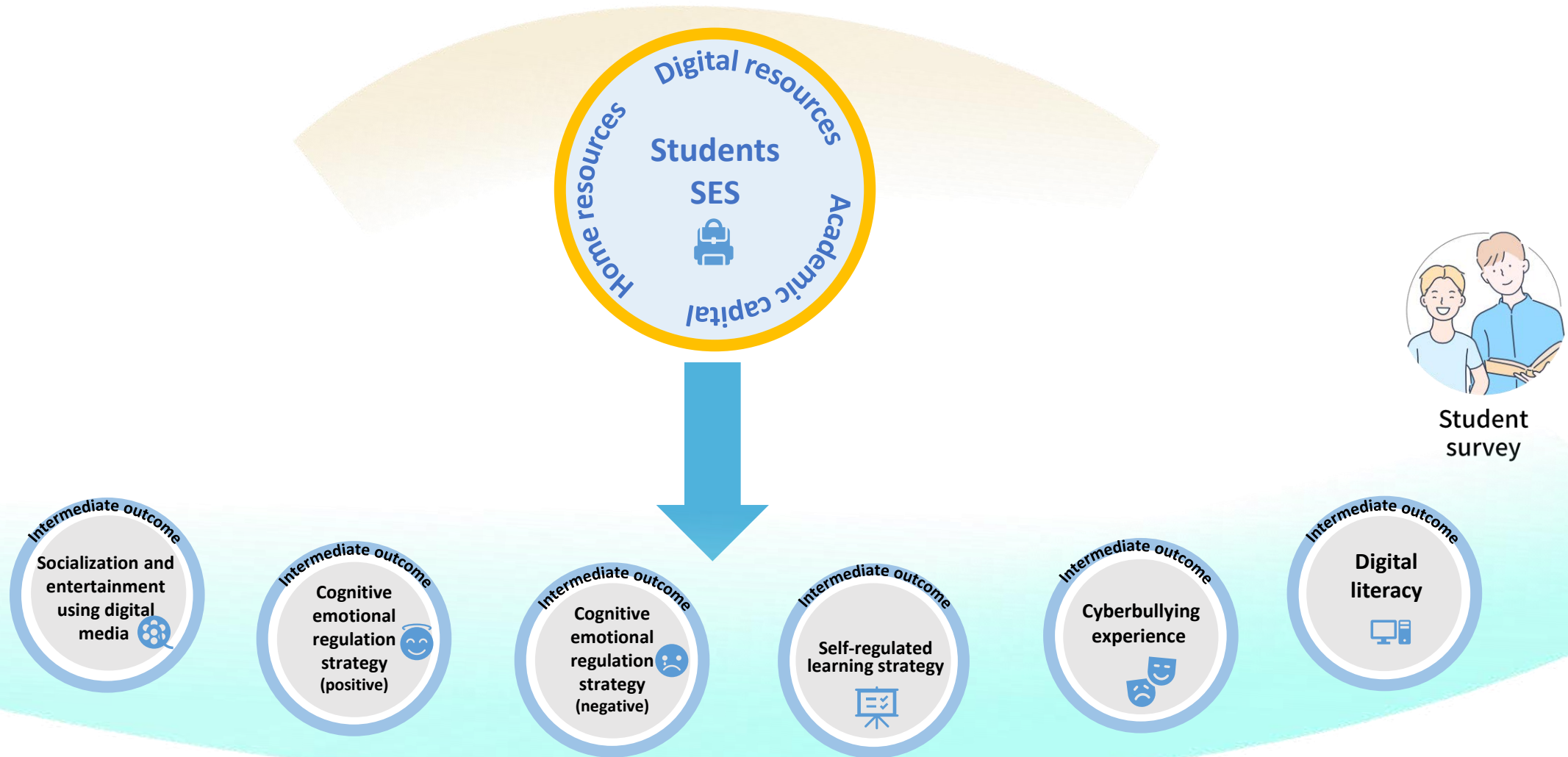
Students'  
Wellbeing



Students'  
Wellbeing



### 1.3 How SES affects students' Intermediate outcomes (protective and risk factors)



## Student SES Indicators

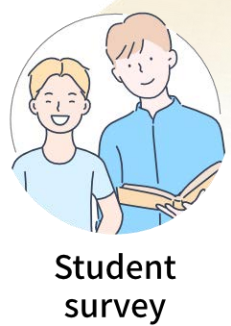
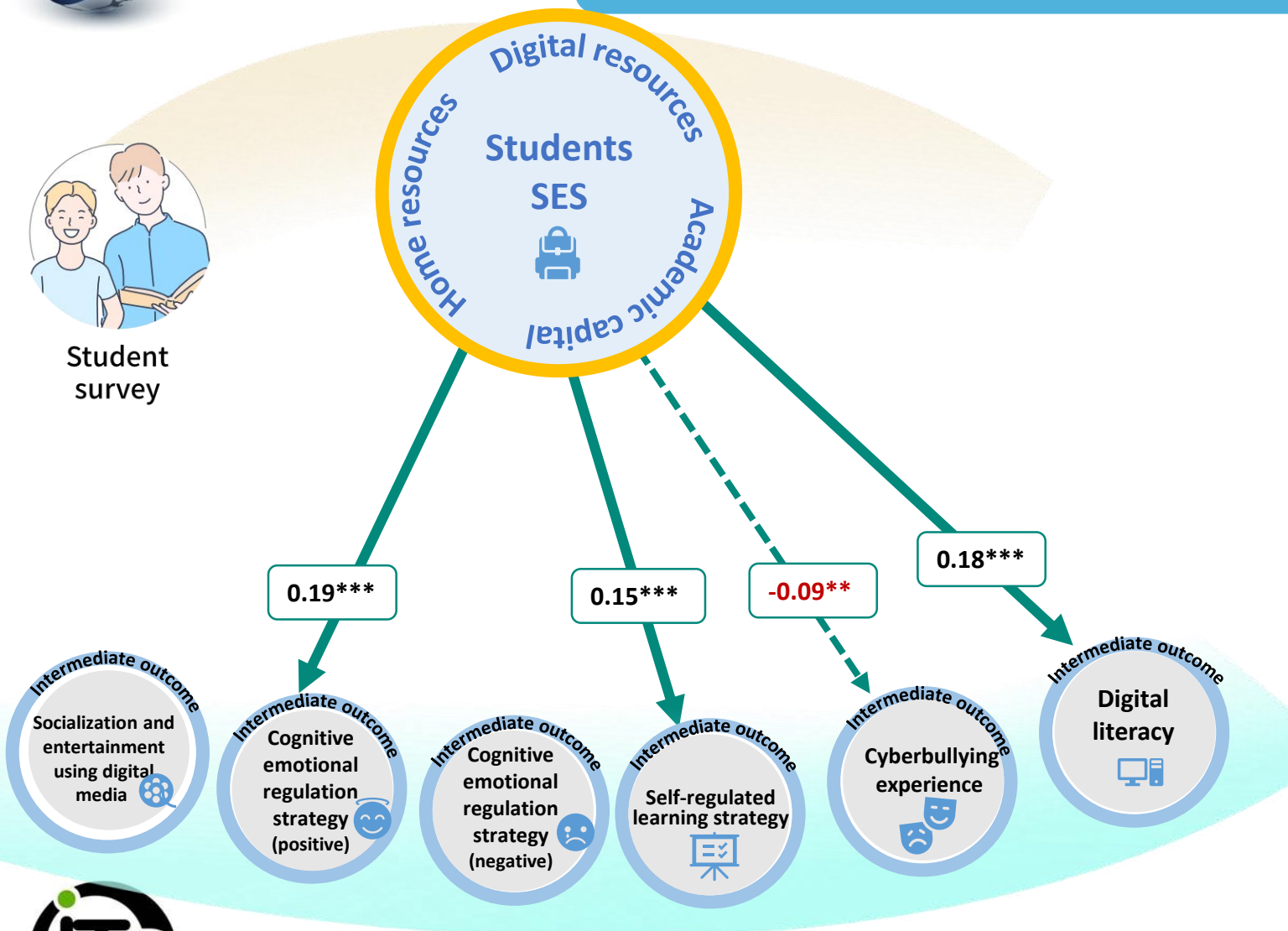
**Social-economic status (SES)** was calculated using item-response theory (IRT) models containing:

- **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.





**How SES affects students' Intermediate outcomes (protective and risk factors)**



### 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.

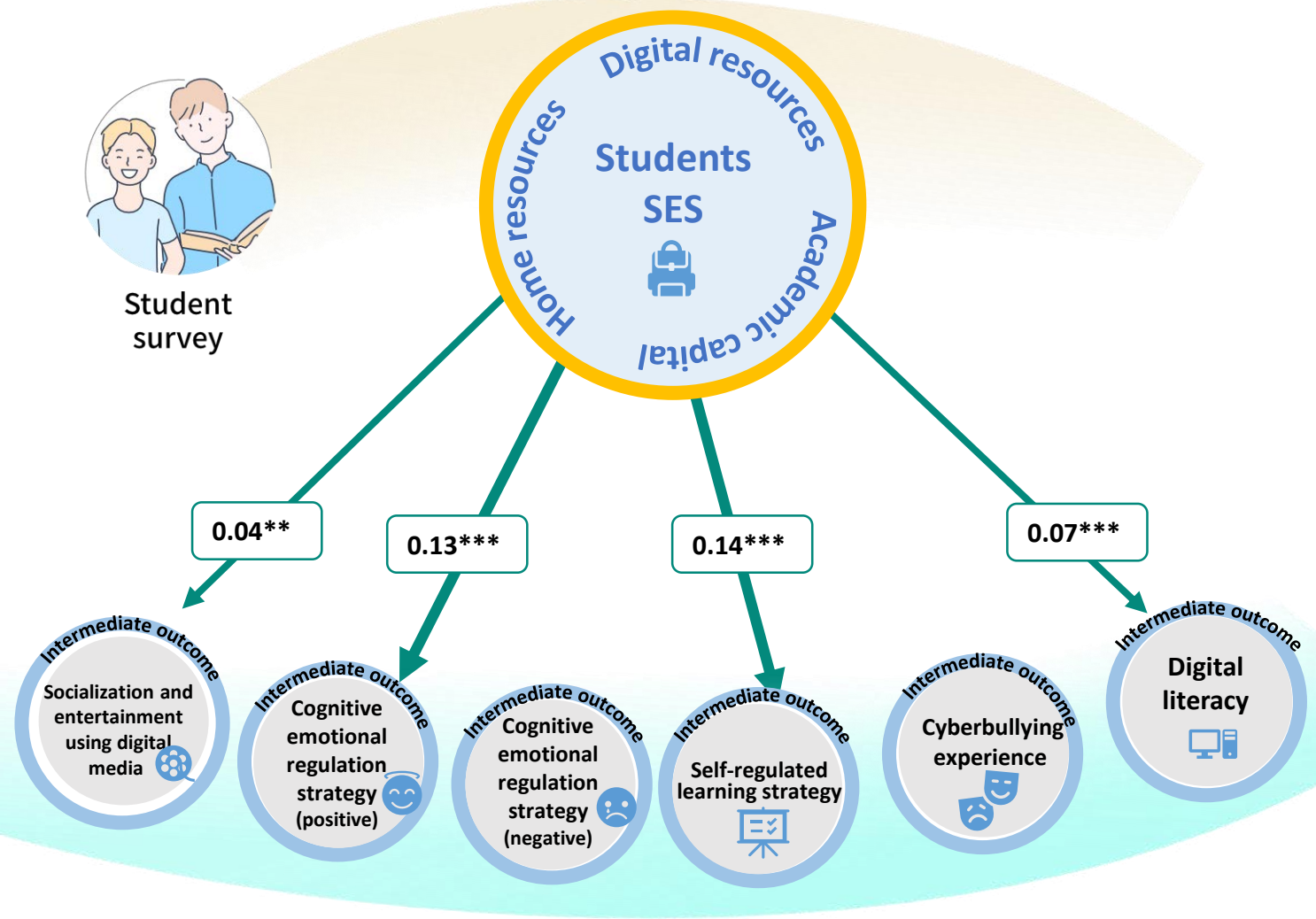


Note. \*\* $p < .01$ ; \*\*\* $p < .001$ . No line between variables indicates insignificant. Dashed line indicates negative relationship.

**How SES affects students' Intermediate outcomes (protective and risk factors)**

## 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.

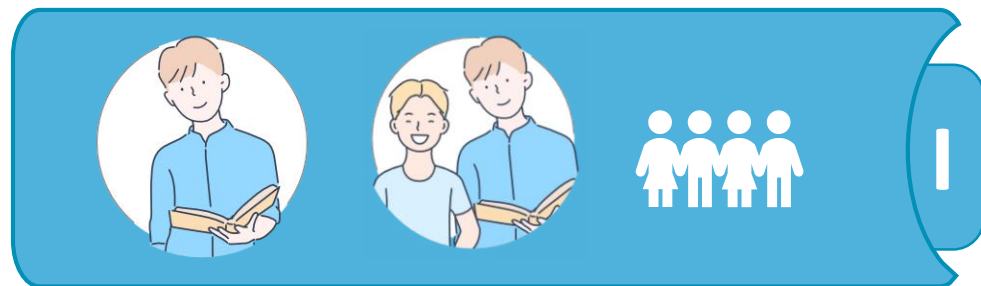
Students'  
Wellbeing



Students'  
Wellbeing

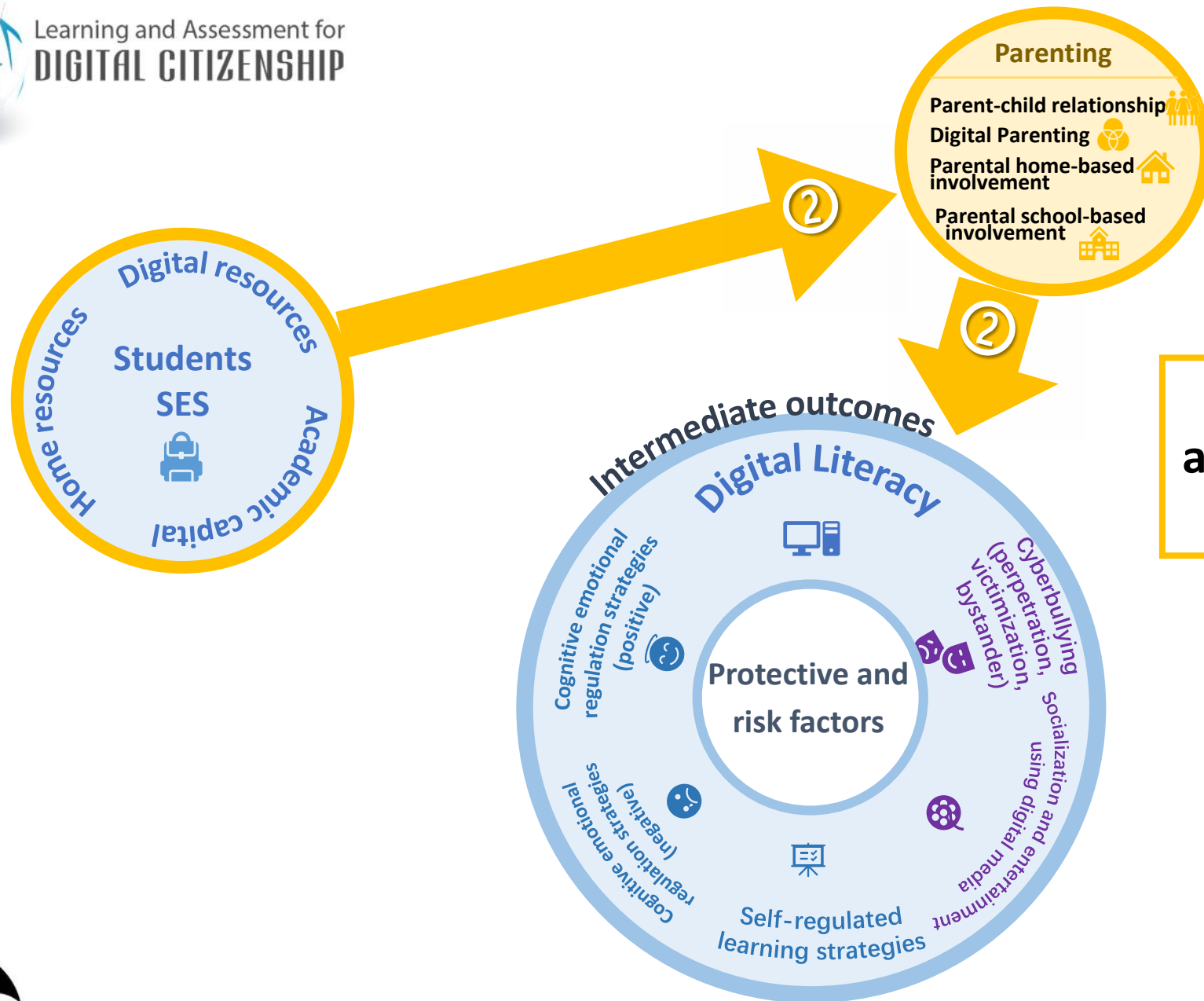










## Parenting Part II

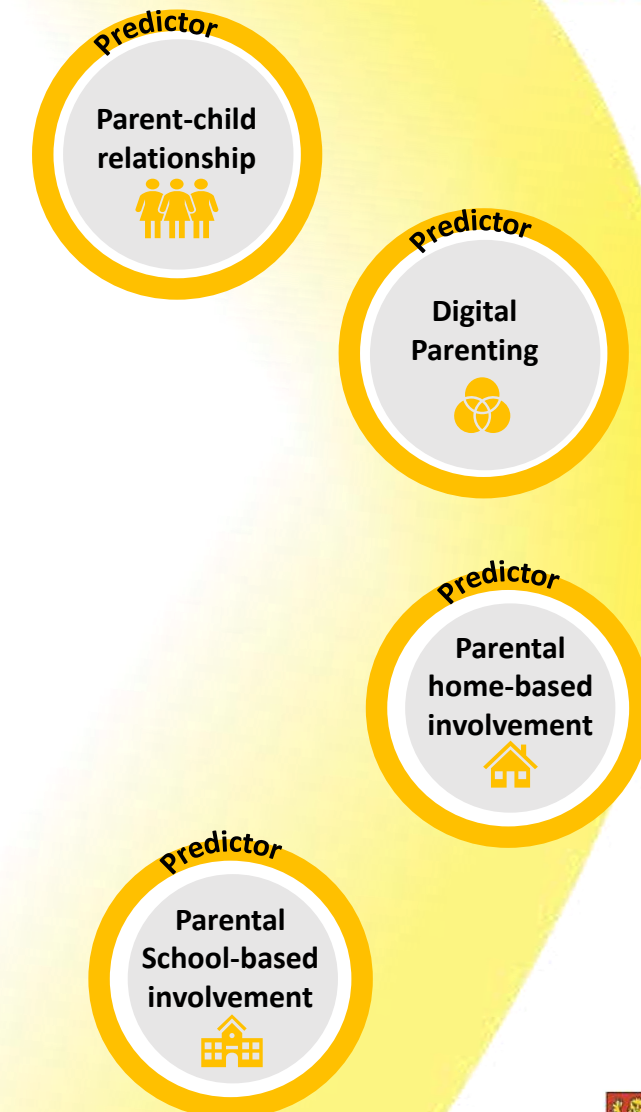




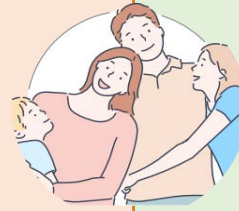
**RQ2: How are different aspects of parenting related to students' wellbeing?**

## Different Aspects of Parenting

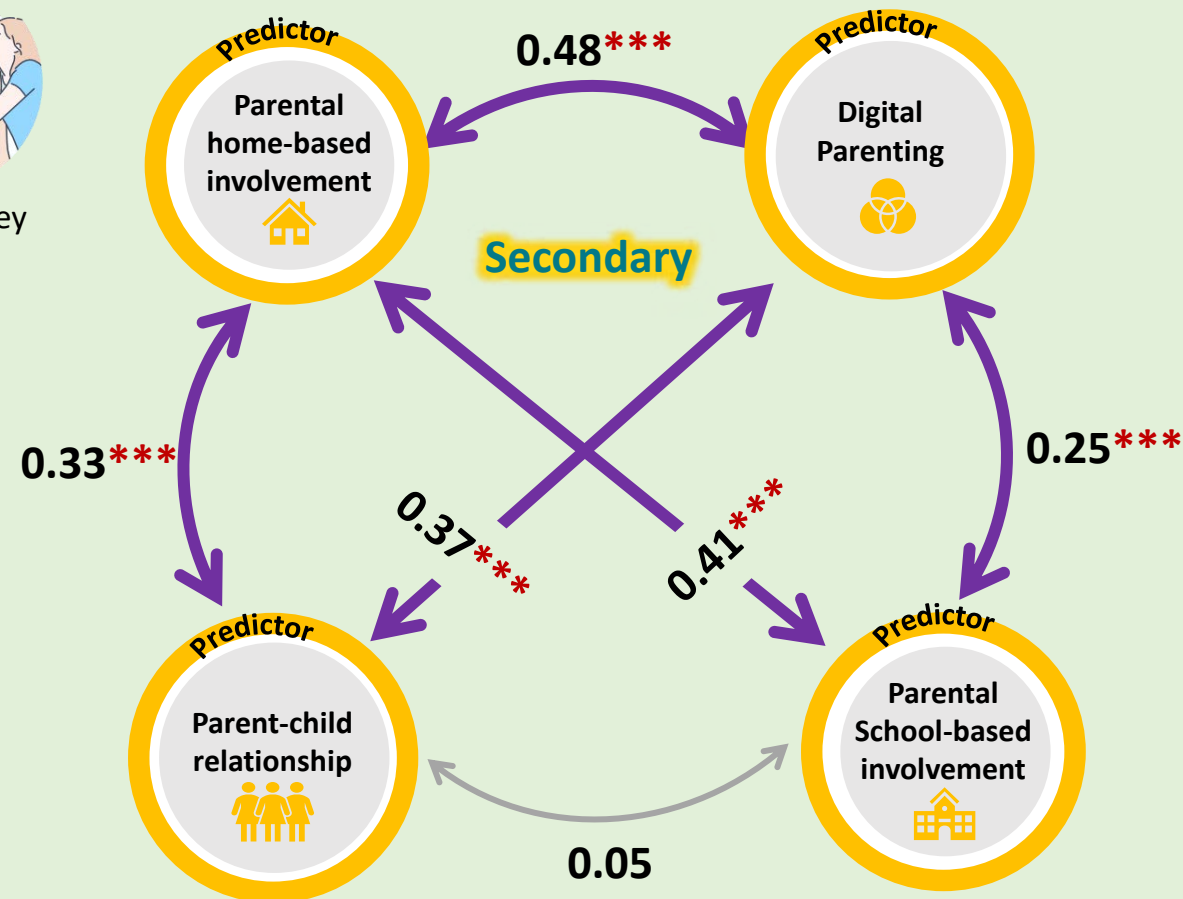
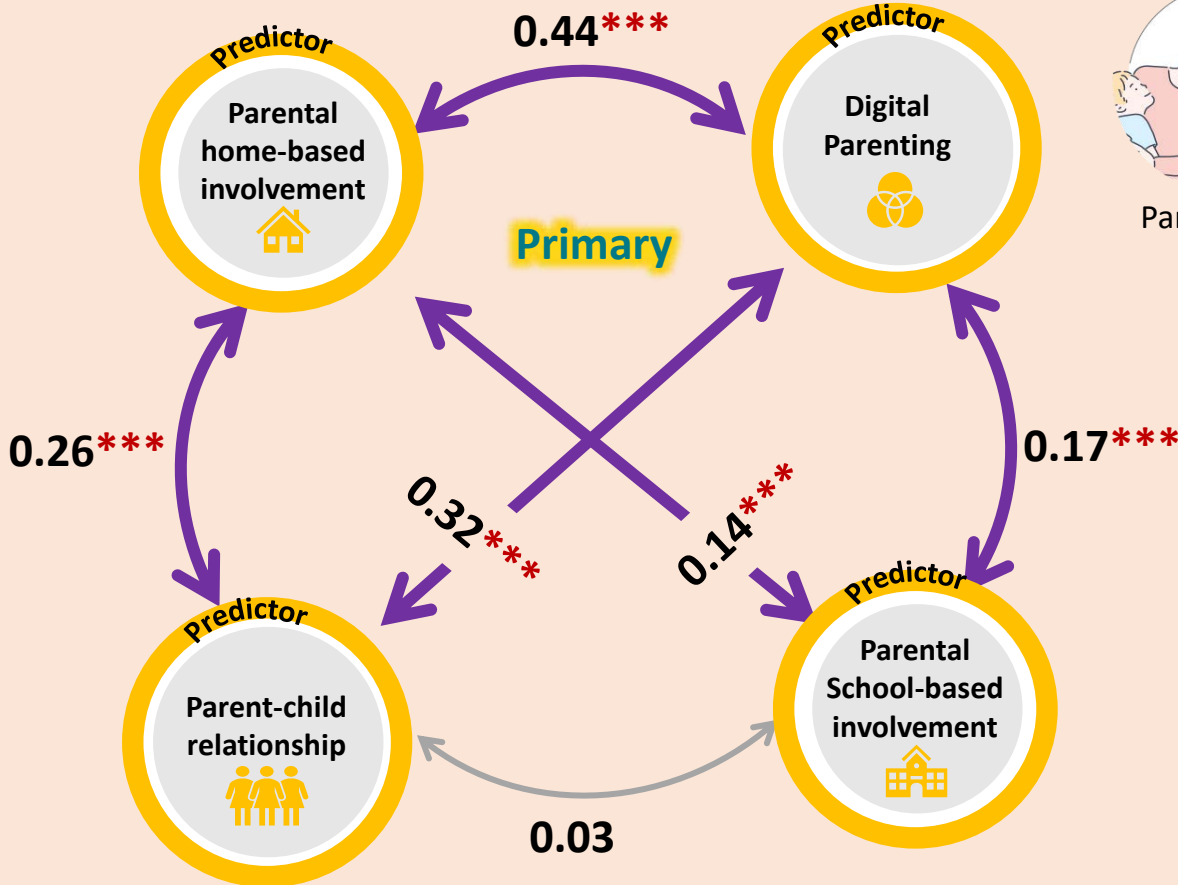
-  • **Parent-child relationship:** the closeness of their relationship
  - understanding of their children's feelings and learning
  - the frequency of sharing daily lives
-  • **Digital parenting:** the extent to which the parents:
  - understand what are good digital practices such as how to use online 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



# Correlations among different aspects of parenting



Parent survey



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



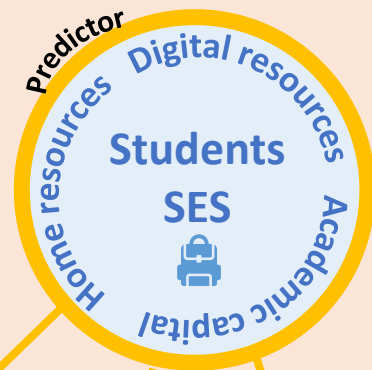
Student survey



Parent survey

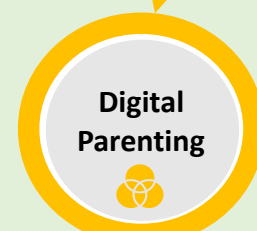
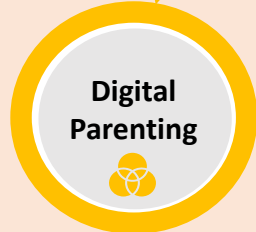
**Primary**

**Secondary**



0.08\*      0.08\*      0.08\*

0.19\*\*\*      0.15\*\*\*      0.11\*\*\*

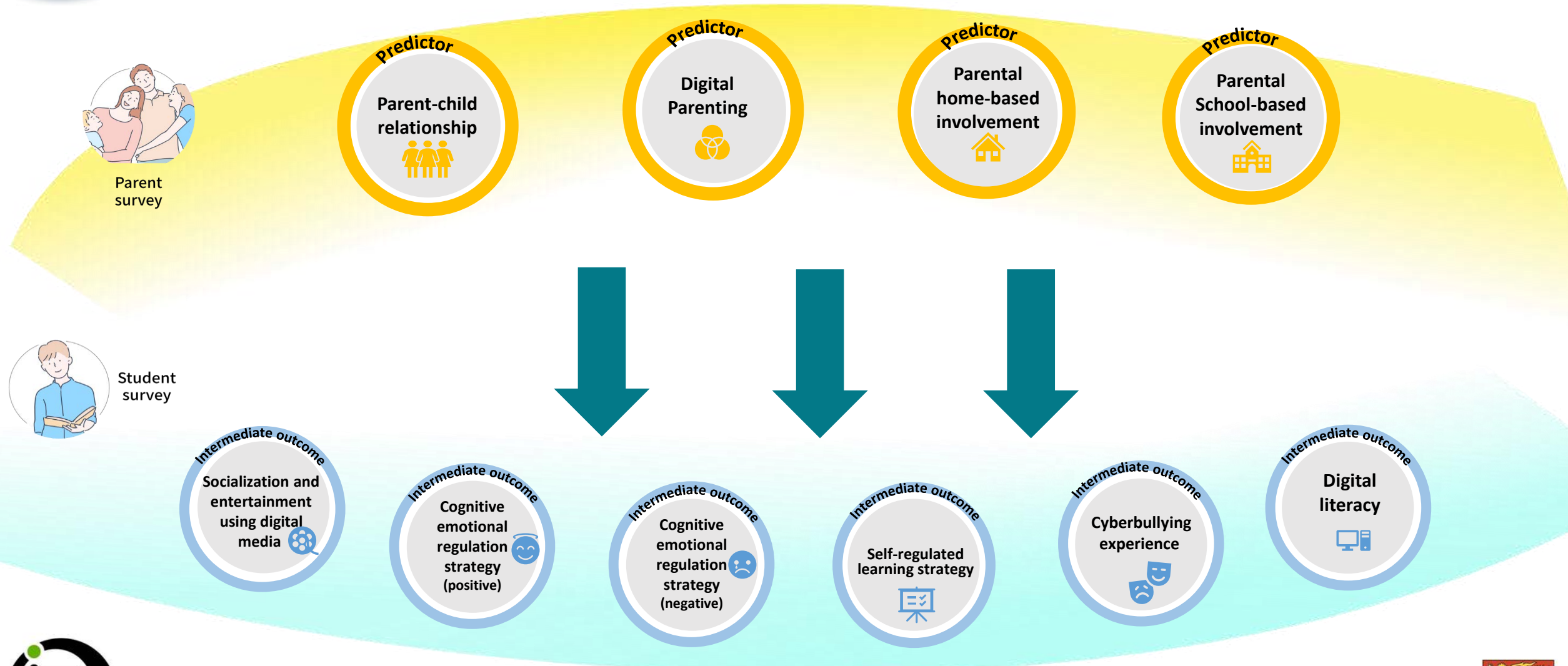


**SES positively related** to parent-child relationship, digital parenting, and parental home-based involvement.

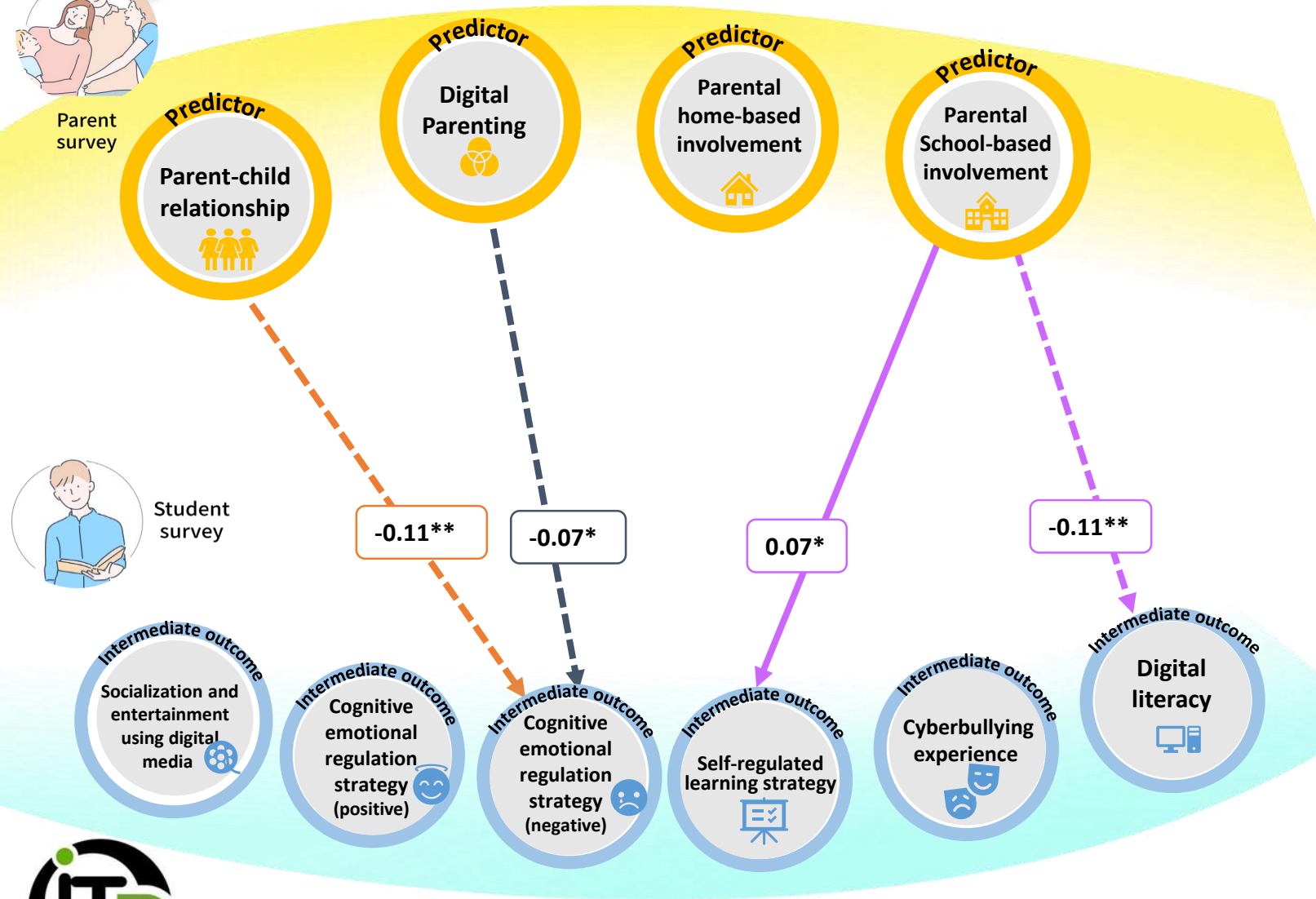
Note. \* $p < .05$ ; \*\*\* $p < .001$ . No line between variables indicates insignificant.



## 2.2 How different aspects of parenting affects students' Intermediate outcomes



## Different aspects of parenting affects students' Intermediate outcomes



### Primary

- 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.

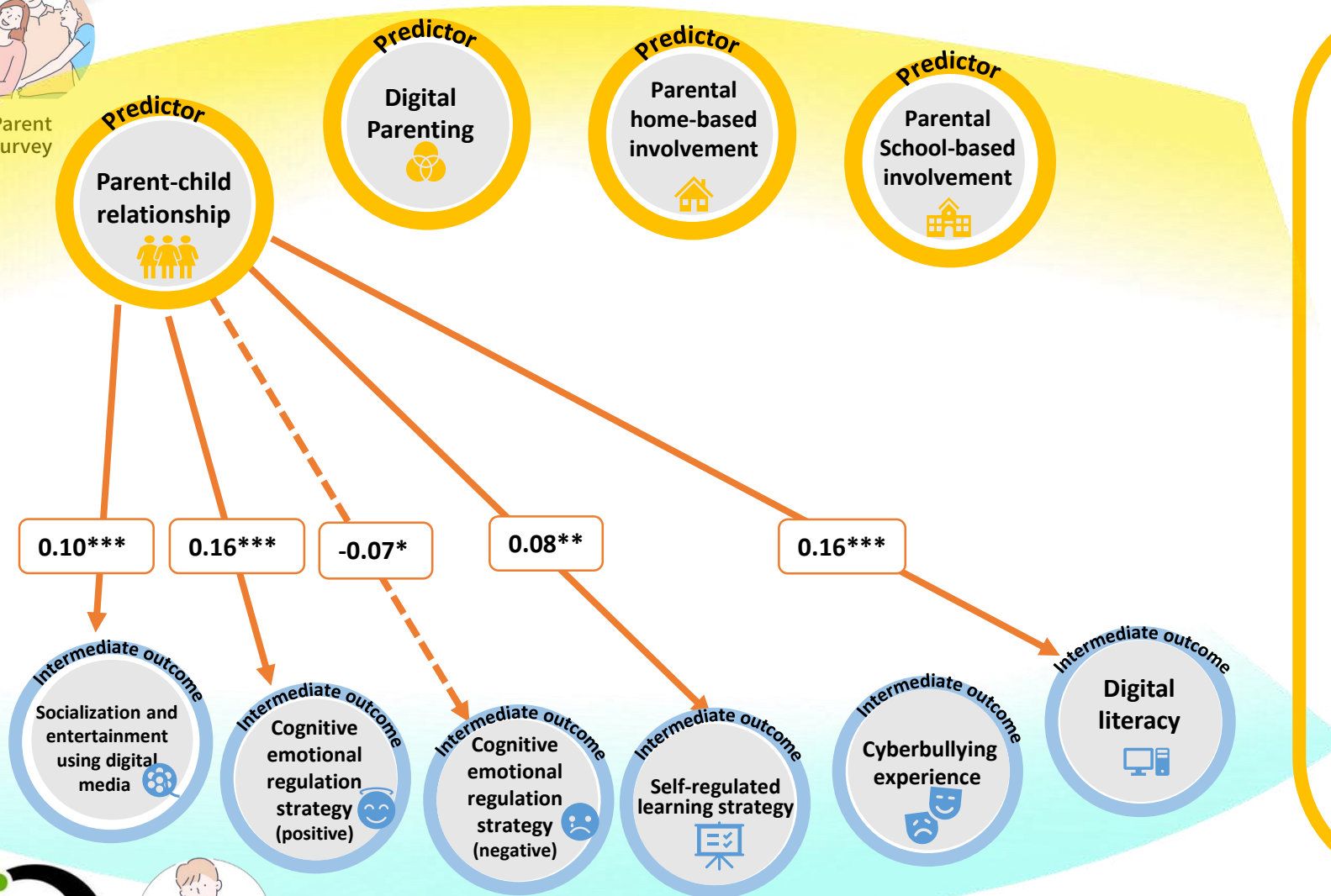
Note. \* $p < .05$ ; \*\* $p < .01$ . No line between variables indicates insignificant. Dashed lines indicate negative relationships.



## Different aspects of parenting affects students' Intermediate outcomes



Parent survey



Student survey

### Secondary

- The parent-child relationship was the most influential factor in determining intermediate outcomes for students.

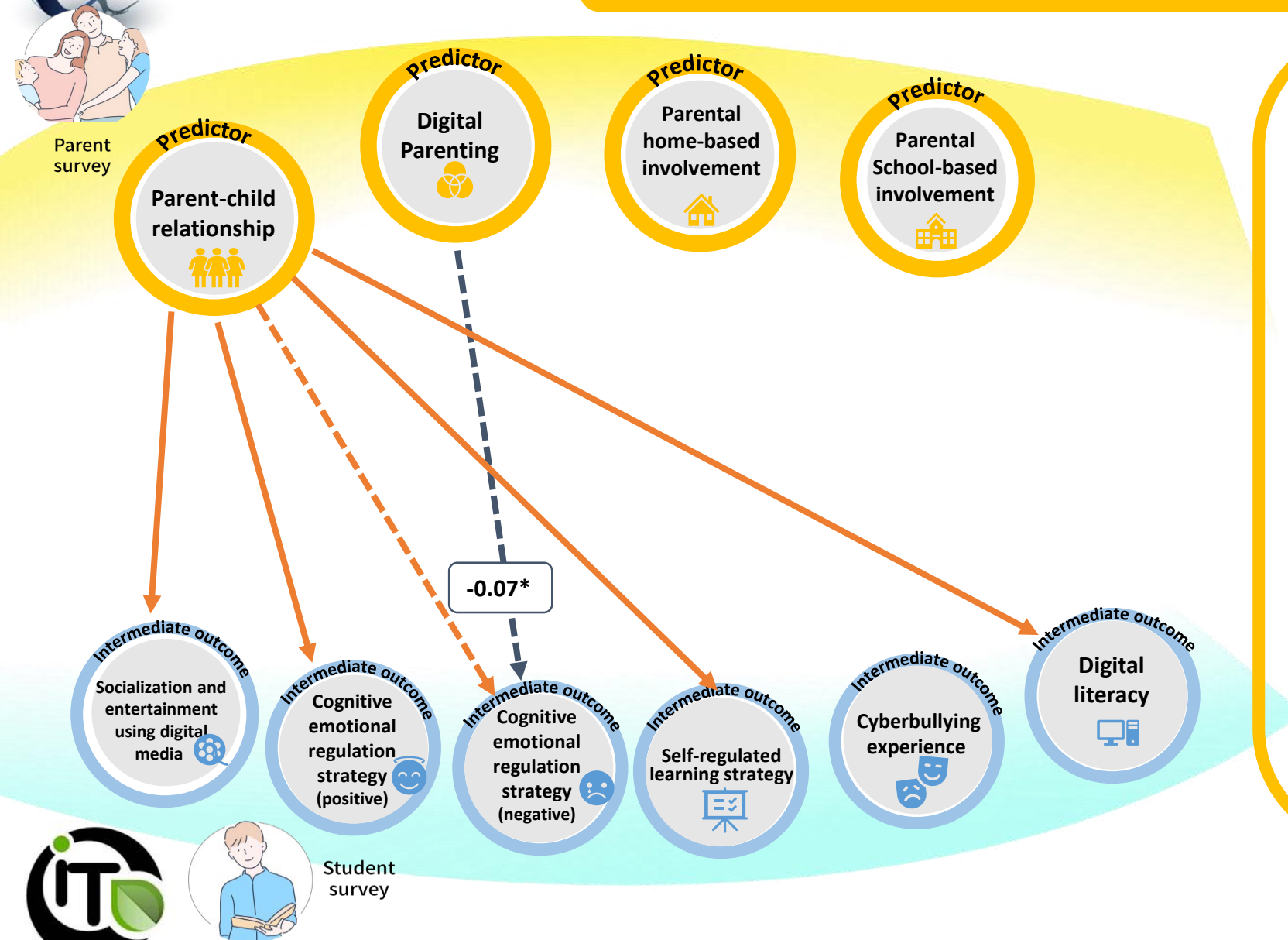


Note. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ . No line between variables indicates insignificant. Dashed lines indicate negative relationships.





## Different aspects of parenting affects students' Intermediate outcomes



### Secondary

- 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)**



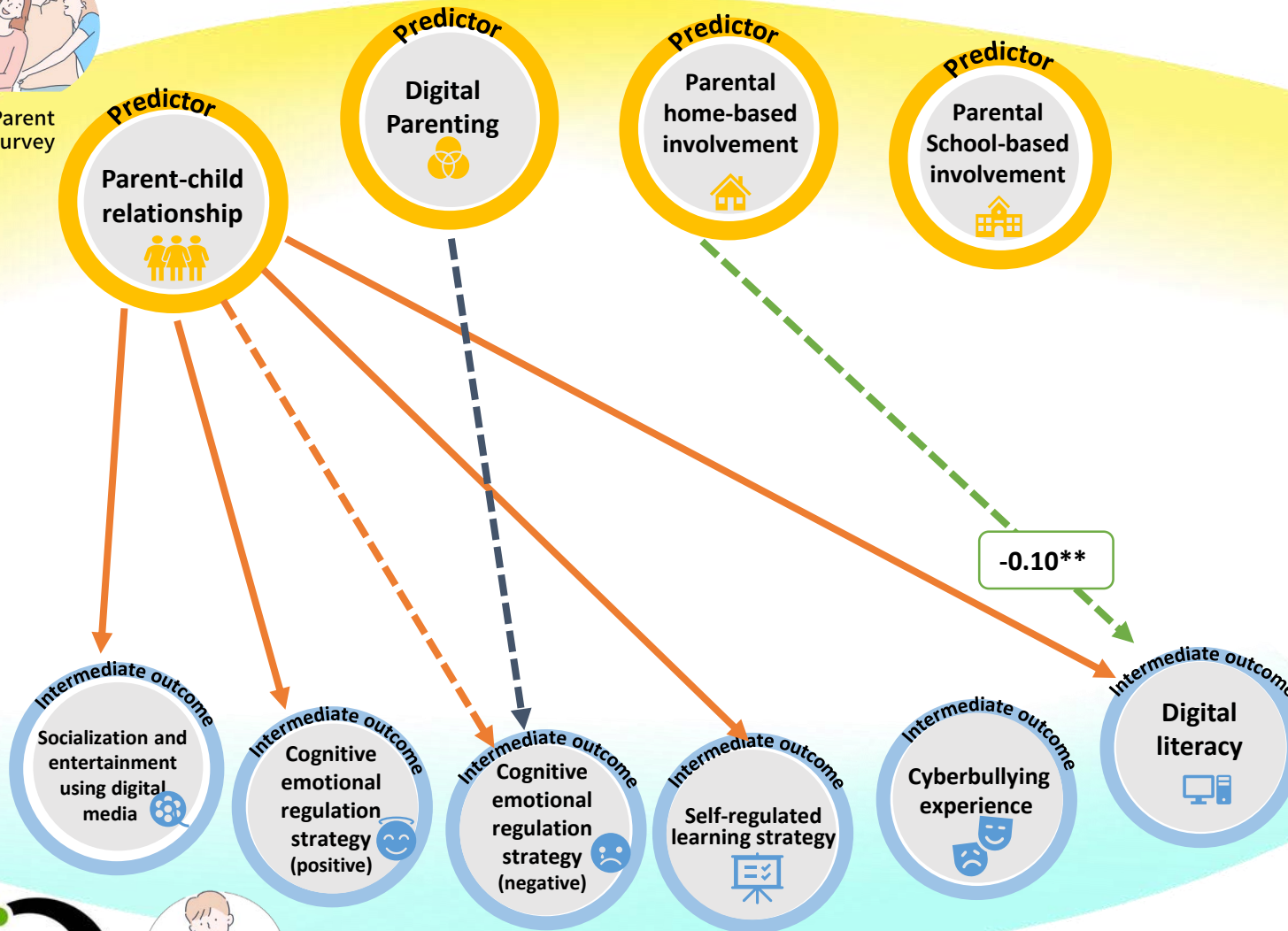
Student survey

Note.  $*p < .05$ ;  $**p < .01$ . No line between variables indicates insignificant. Dashed lines indicate negative relationships.

## Different aspects of parenting affects students' Intermediate outcomes



Parent survey



Student survey

### Secondary

- 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.**

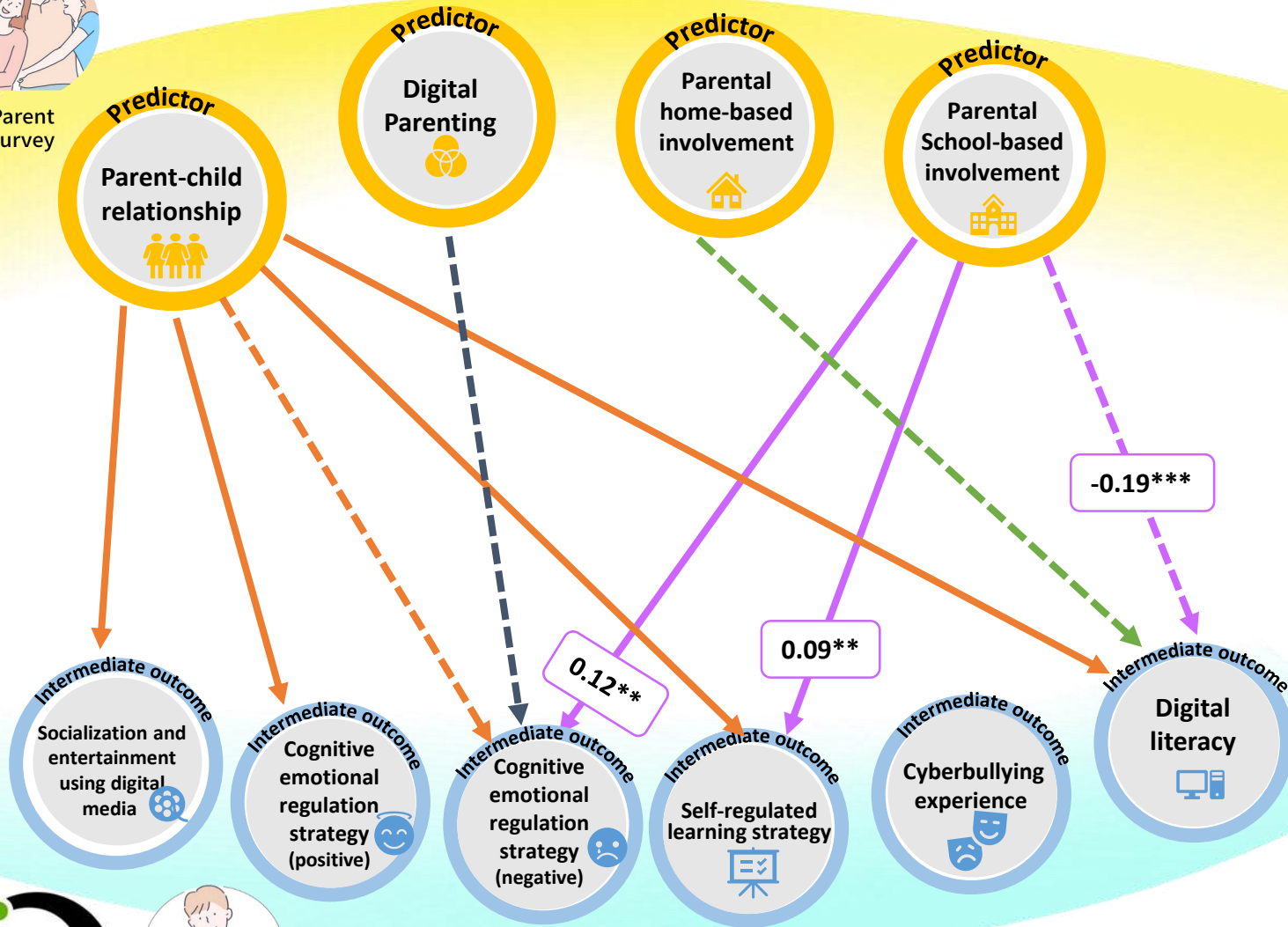


Note. \* $p < .05$ ; \*\* $p < .01$ . No line between variables indicates insignificant. Dashed lines indicate negative relationships.





Parent survey



Student survey

## 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.

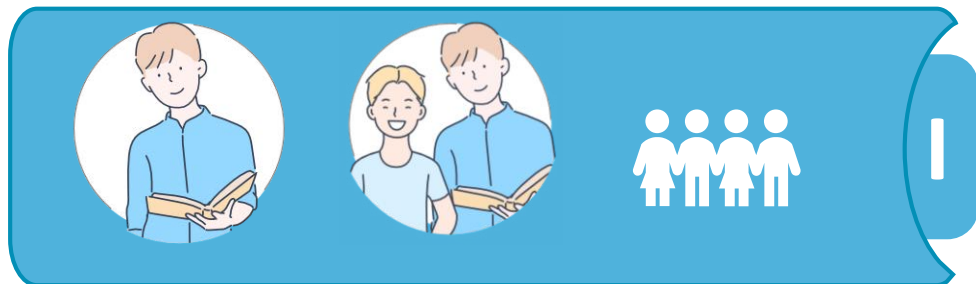
Parenting



Parenting







## Schools' online teaching Part III



## RQ3: How do school factors influence teachers' online teaching?

### School level factors

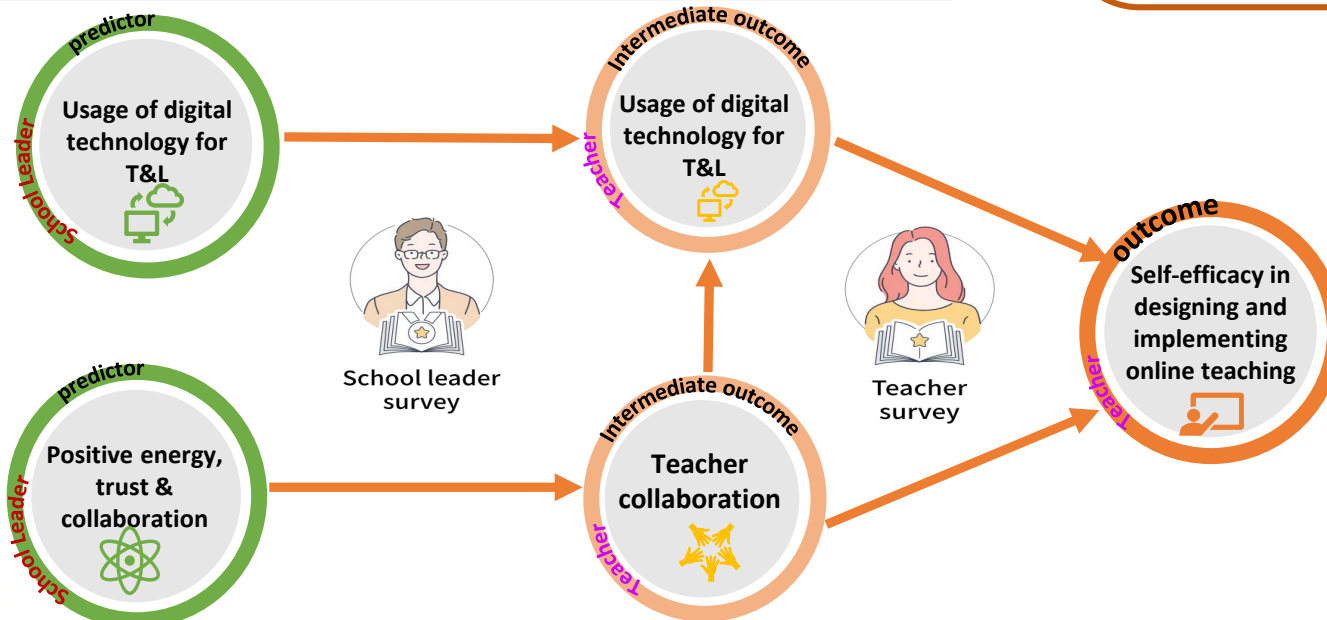
- **Usage of digital technology for T&L:** the extent of school leaders using technology for several different purposes, such as:
  - learning assessment
  - support reflection
- **Positive energy, trust & collaboration:** school leaders' perceptions on
  - teachers' working status (communication and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

### Teacher level factors

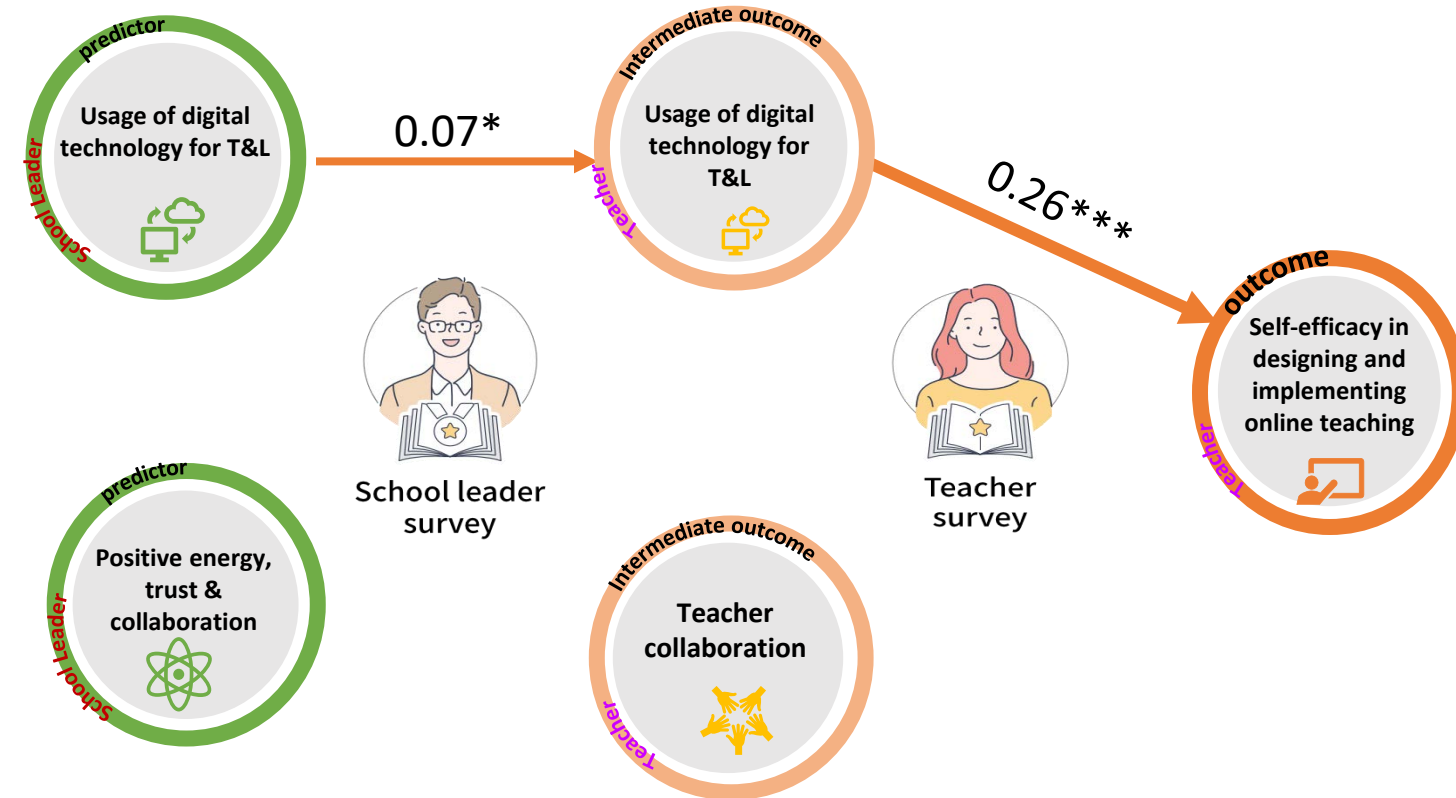
- **Usage of digital technology for T&L:** teacher's e-learning practices with multiple purposes, such as:
  - providing feedback
  - facilitate learning
- **Teacher collaboration:** the extent to which teacher collaborate with others for online learning.

### Outcome (Teacher)

**Self-efficacy in designing & implementing online teaching** measures teachers' self-reported confidence in conducting online lessons



### 3. Teachers' online teaching self-efficacy

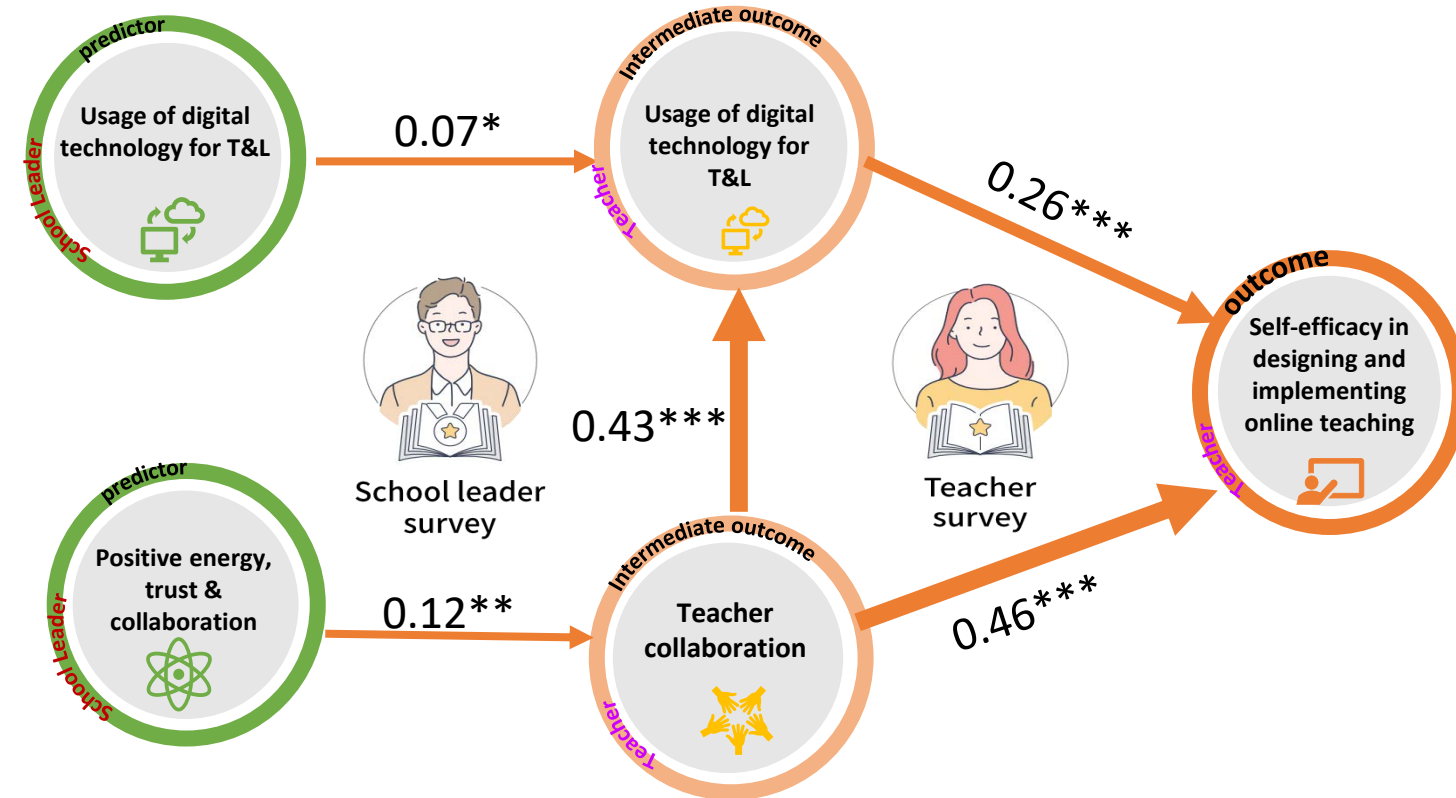


① **School leaders' usage of digital technology for T&L** positively related to **teachers' usage of digital technology for T&L**, which then strengthened teachers' online teaching self-efficacy.

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



② **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. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .





## 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.





## 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.



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Growth Partner and Funder Supporting Organizations



Supporting Organizations



Thank you!





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