



# Singapore student teachers' intentions and practices in integrating technology in their teaching

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# Purpose of the study



- Investigate the development of student teachers' **intentions** and **practices** in integrating Information and Communication Technology (ICT) into teaching

# Literature Review



- New generation of student teachers:
  - higher confidence and self-efficacy in integrating technology in teaching
  - positive intentions to integrate ICT in future teaching
  - most of their ideas about technology integration remained superficial
    - E.g.: using presentation tools and capture their students' attention were effective use of ICT; using flash animations or video clips in teaching
  - gap between the student teachers perceptions and the goals of the Masterplan of IT in Education

# ICT Masterplan 3 in Singapore

One of the Goals:

- Focuses on the need for teachers to have the capacity to plan and deliver **ICT-enabled learning experiences** that will foster **self-directed learning and collaborative learning** among students as well as guide them in using ICT safely and responsibly

# In this study



## ● Intentions:

- An anticipated outcome that guides a person's planned actions or behaviour. It could be a measurement of the likelihood that a person will engage in a given behaviour in the future.
- The student teachers' intention is defined as their **likelihood to integrate ICT** in their future teaching.

## ● Practices:

- The student teachers' **actual behaviours** in integrating technology during their five-week Teaching Assistantship (TA) and ten-week Teaching Practice (TP) attachments.

# Research Questions



1. What are the student teachers' **intentions** to integrate ICT in their future teaching?
2. What are the student teachers' **practices** to integrate ICT in their practicum attachments?
3. What are the **changes** in their intentions and practices?
4. What is their overall **attitudes** towards ICT integration in teaching?

# Participants



- Two-year Diploma in Education programme
- Graduated from secondary schools and/or polytechnics
- Some contract teaching experiences prior to joining the programme
- First semester: required ICT pedagogy course
- End of first year: Five-week TA
  - Observations for two weeks
  - Co-teaching with CTs for three weeks
- End of second year: Ten-week TP
  - Independent teaching for ten weeks

# Data Collection



- 91 participants' data were included out of the cohort of 327 student teachers
- missing data replaced by mean scores
- substantial missing data were omitted

	Research Questions 1, 2, & 3	Research Question 4
Pre ICT course	Intentions to integrate ICT in future teaching	Attitude towards ICT integration
Post ICT course	Intentions to integrate ICT in future teaching	Attitudes
Post TA	Practices in integrating ICT during TA	Attitudes
Post TP	Practices in integrating ICT during TP	Attitudes



# Sample questions



- 4-point Likert Scale
- Intentions:
  - I will use ICT to keep track of my students' performance.
  - I will use ICT to support my explanation of concepts.
  - I will encourage my students to use ICT to work collaboratively.
- Practices:
  - I have used ICT to keep track of my students' performance.
  - I have used ICT to support my explanation of concepts.
  - I have encouraged my students to use ICT to work collaboratively.

# Exploratory Factor Analysis

- Factor one: ICT as administrative tool (5 items)
  - Keeping administrative records, communicate with other teachers and/or students
- Factor two: ICT as teaching support tool (7 items)
  - Explaining complex concepts, present information, capture students' attention
- Factor three: ICT as student learning tool (7 items)
  - Students use ICT to conduct small group learning activities, use ICT to conduct Internet search, present ideas in class

# Data Analysis and Results



Factors	Pre-ICT	Post-ICT	Post TA	Post TP	Wilks' Lambda
Admin tool	2.83 (.54)	3.00 (.58)	2.29 (.67)	2.63 (.69)	25.93**
Teaching support tool	3.05 (.50)	3.11 (.56)	3.29 (.50)	3.40 (.50)	11.16**
Student learning tool	2.74 (.57)	2.91 (.58)	1.72 (.71)	2.17 (.81)	65.50**

# Comparisons between Pre-ICT and Post-ICT intentions

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# Comparisons between Post-ICT intentions and Post-TA Practices

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# Attitudes towards ICT integration

- Attitudes:
  - I would like to use ICT in my teaching in the future.
  - ICT should be used to address students' diverse learning styles.

	Pre-ICT	Post-ICT	Post-TA	Post-TP	Wilks' Lambda
Attitudes	3.30	3.20	3.27	3.27	1.12

# Changes in student teachers' Pre-ICT and Post-ICT intentions

- Significant increases in using ICT as:
  - Student learning tool
    - Expose to integrating various ICT tools such as Web 2.0 tools, WebQuest, asynchronous online discussions during the ICT course
    - Plan lesson activities for their future students
  - Administrative tool
    - Instructors practices



# Changes in student teachers' Post-ICT intentions and Post-TA practices

- Significant decreases in using ICT as:
  - Student learning tool
  - Administrative tool
- Lack of teaching time
  - Observation for two weeks
  - Co-teaching for three weeks
  - Lack of confidence

# Changes in student teachers' Post-ICT intentions and Post-TA practices (con't)

- Significant increase in using ICT as:
  - Teaching support tool
- Student teachers have the opportunities to use ICT as presentation tools, show video clips, and to capture their students' attention in class
- *Post ICT interview with Student teacher C: Before coming to NIE, I used ICT to do PowerPoint, showed the video from the Internet so that the children are interested in the lesson, and used the MOE online resources to teach Chinese Language. I did not know the differences between teacher's use and students' use of ICT.*

# Changes in student teachers' Post-TA and Post-TP practices

- Significant increases in using ICT as:
  - Teaching support tool
  - Student learning tool
  - Administrative tool
- More opportunities to teach
  - 20-24 lesson per week
  - More autonomy to plan their lesson activities

# Challenges in using ICT in teaching:

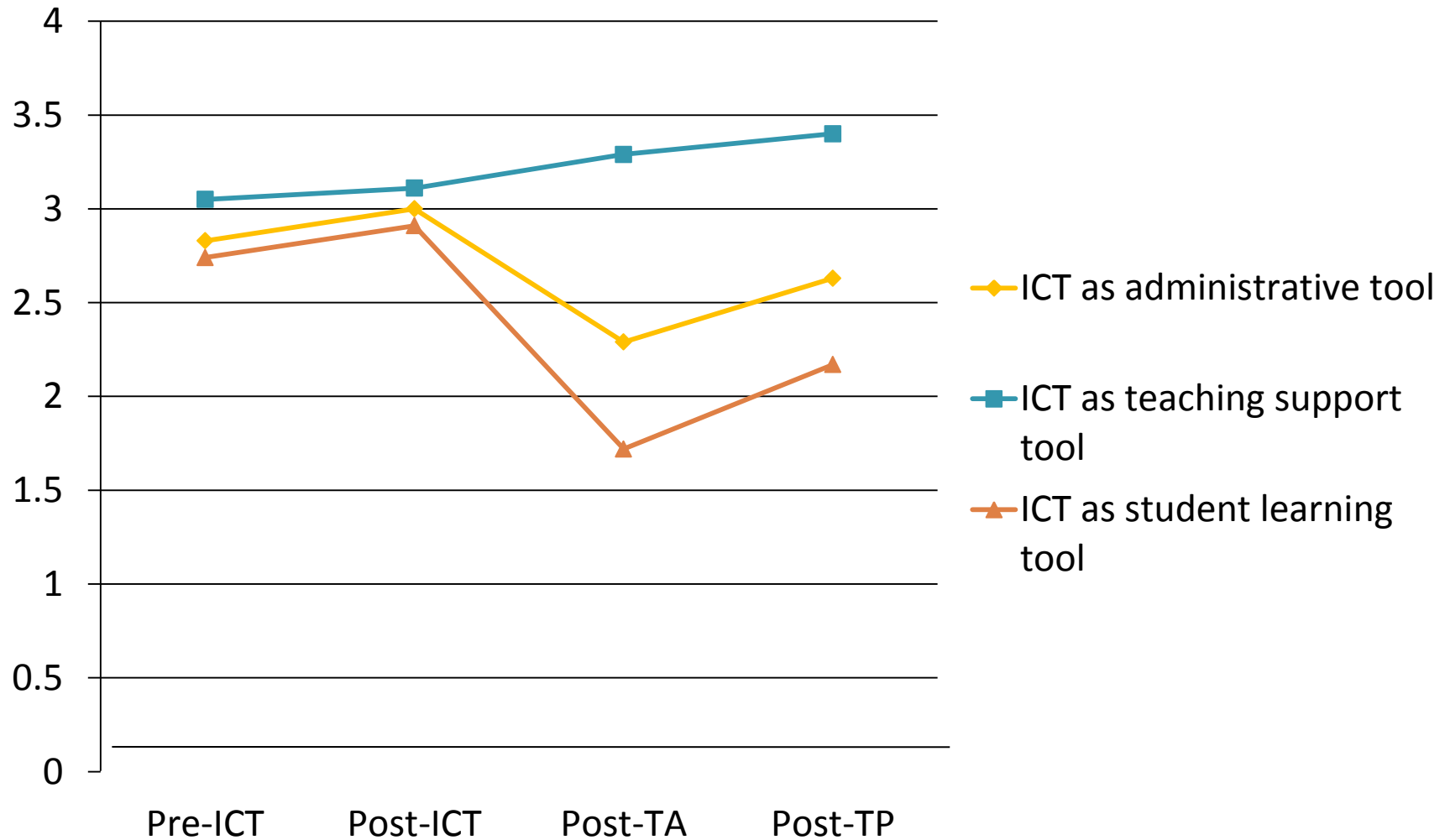
- Lack of time
- Technical difficulties
- Students not focusing on the learning tasks

*Post TP interview with Student teacher C: I used to take students to the computer lab, because many exercises were available online. Usually two periods of teaching is a **constraint of time** for using ICT. ...The students have many things to enjoy in the computer lab. But as of the learning in the computer lab, students might have **many problems**... they enjoy their own **playing** rather than learning. Besides there were some **technical problems**... some PCs might be very slow, some might not work. Some students might have **forgotten the pin number**... So dealing with these things took quite a long time... Students might just rush to finish their assignments and ask for **permission to play** games.*

# Challenges in using ICT in teaching

- Support from School management
- *Post TP-interview with Student teacher D: ...how supportive is the school? I mean, I can tell my HOD, my principal that, "You know I set up this WebQuest for one whole school term (10 weeks)," and then they'll be like, "What? You mean you want to do this for the whole semester?" I think that I need their trust and support first...*

# Conclusion





● Thank you!