Learning new technology tools in pre-service teacher education: A model for instructional approach

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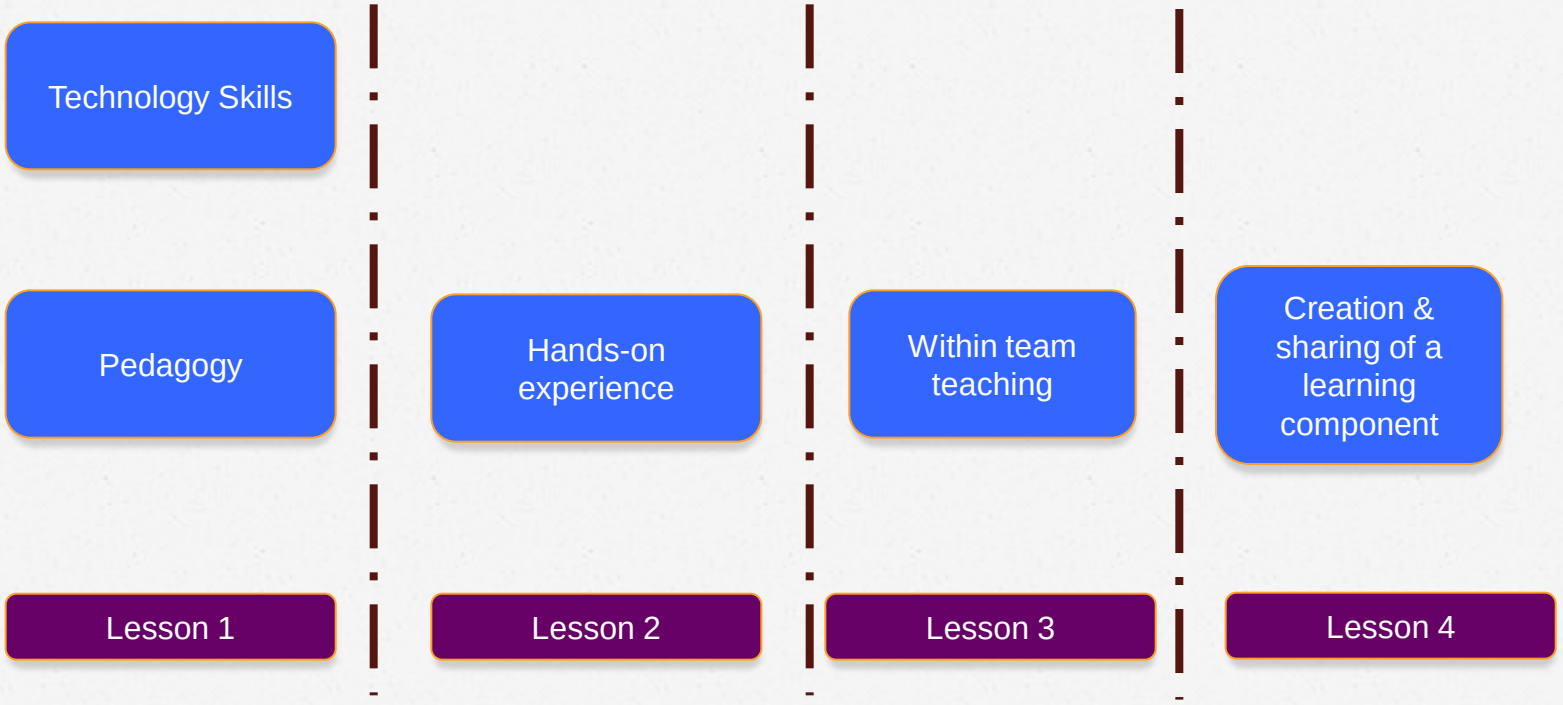
Background to the study

- Pre-service module (2010)
- Core Information and Communication Technology module
- Focus on pedagogy when integrating ICT
- Outcome: pre-service teachers should be able to design ICT integrated learning components

Rationale

- Most studies focus on teachers' learning of new technology tool
- Teachers are content experts and have pedagogical experiences
- Pre-service teachers might be confortable with their subject content or are content experts but lack the experience of expert teachers in the area of pedagogical experiences

Current Approach



Rationale

- To examine the effectiveness of the current instructional approach
- To continually improve pre-service teachers' learning
- To refine the current instructional approach based on feedback

Research Questions

- What are the factors that facilitated pre-service teachers' learning of a new technology tool?
- How pre-service teachers learn a new technology tool introduced in the course?
- What instructional approach should be adopted to facilitate the learning of a new technology tool for pre-service teachers?

Course Structure

- Core Sessions – theoretical underpinnings and ICT Masterplan (4 weeks)
- Technology tool learning sessions (4 sessions each) – a total of 2 technology tools
- Range of tools: IWB, Video Sports games, Facebook, Web Quest, etc

Data collection

- Post Graduate Diploma in Education (PE) pre-service teachers – 6 teams with 5 members in each team
  - ICT tool: Video Sports Games
- Post Graduate Diploma in Education (Secondary) – 12 teams from 2 tutorial groups (each with about 3-4 members)
  - ICT tool: Interactive White Boards
- Total numbers – 18 teams with a total of 89 pre-service teachers

Reflections

- Group reflection
- On Wiki page
- 20 minutes at the end of each lesson
- Tutor observations of groups made during tutorial
  - Their working style
  - Their interaction patterns

Reflection Cycle 1

- How did you and your team members learn the technology tool?
- What difficulties did you face when learning the tool?
- How did you overcome the difficulties?

Reflection Cycle 2

- What were the strengths and weaknesses of learning as a team?
- Suggest ways in which the learning process could be improved.

Reflection Cycle 3

- How did you explore the integration ideas prior to designing the integration of the technology tools?
- Suggest ways in which improvements could be made in the area of pedagogical awareness.

Results and discussion

Description	No. of teams	% of teams
Time to explore	17	94%
Access to resources	16	88%
Team learning	18	100%
Online tutorials	8	44%
Individual exploration	5	27%
Hands-on experience	18	100%

RQ 1

- Factors that facilitated pre-service teachers learning of a new technology tool:
  - Team exploration
  - Time given to explore as a team rather than individuals
- Suggestions for improvement
  - Comfortable with technical skills - priority
  - Followed by exploration of pedagogical exploration
  - More discussion time and team exploration

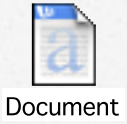
RQ2

- How pre-service teachers learn a new technology tool introduced in the course?
  - Technical skills -> pedagogical exploration
  - Team learning helped overcome apprehension of learning new tool
  - Common goal – final task
  - Working in common subject areas – generated useful discussions

RQ2

- Suggestions for improvement
  - Anytime, anywhere availability of learning resources
  - Within team teaching and learning welcomed
  - Extending to inter-team sharing requested

Proposed instructional approach



Thank you!