

# Exploring the Process of Technology Integration in Physical Education Teaching



Unjong Lee (University of South Carolina, USA) · Okseon Lee (Seoul National University, Korea)

Introduction

Methods

Results

Discussion

## Why is technology integration in PE needed?

### Building core competency

- Self management
- Knowledge information processing
- Creativity
- Aesthetic thinking
- Communication
- Community

### Meeting Diverse Needs of Students

- Familiar with digital technology
- Education for multicultural
- Decreased moderate-vigorous physical activity level

### Overcoming Environment Constraints

- Climatic constraints : Snow, Rain, Fine dust
- Physical education equipment Constraints
- Facility and Space constraints

## Resource-based learning (RBL) theory

### Definition

An approach to pedagogy which actively involves students, teachers and resource providers in the application of a range of resources in the learning process  
(Rakes, 1996)

### Why RBL learning theory is adopted?

- The most widely applied method of using information in school libraries.
  - Nowadays, we usually use technology such as internet and smart equipment to use information.
- Since the aspect of searching information for learning has changed from library to technology, RBL theory is taken as the framework for analysis

## Purpose of research

To explore the adoption process of technology in PE classes with the PE teachers' characters and series of action through RBL theory as a lens.



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## Research design : Qualitative study

Planning stage

(May 2018 ~ Oct 2018)

Research topic selection

Research issues selection

Research plan establishment

In-depth interview

Class observation

Documents

Literature review

Execution stage

(Nov 2018 ~ Feb 2019)

Research participants selection

Collecting data

Data analysis

Result

Result stage

(Nov 2018 ~ Feb 2019)

Conclusion

## Research participants

- PE teachers from South Korea
- 8 PE teachers in secondary school
- They implemented technology integration in PE

## Collecting data

- In-depth interview  
: Semi-structured interview
- Classroom observation  
: Picture and video
- Documents  
: lesson plan and lesson contents
- Literature review  
: Articles, dissertations, and reports

## Data analysis

### Implementing RBL

(Fraser, 1984)

1. Realizing to change the way of teaching method
2. Preparing to implement
3. Content production, organization, and management



### Process of technology Integration in PE

1. Realizing the need for technology integration in PE
2. Preparing technology integration in PE
3. Selecting tools for technology integration in PE

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## Characters of PE teachers who implement technology integration in PE



Early Adopter

Innovator

Explorer

Fashion leader



Positive Energizer

Challenger

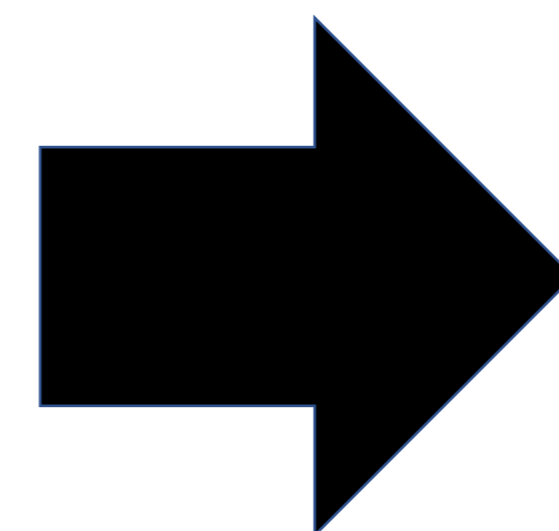
Positive people

Positive perception of PE



Sports Lover

Promoting to life-long sports



## Aims of PE teachers who implement technology integration in PE

### PE to develop future core competencies

- Innovator
  - : Efforts to overcome the negative PE teacher ideology
- Explorer
  - : Exploring PE styles for students who will be members of the future society
- Fashion Leader
  - : Helper to share teaching methods for fellow teacher

### PE to develop positive energizer

- Challenger
  - : Tireless passion for teacher professional development
- Positive people
  - : Overcoming barriers through positive thinking and implementation

### PE to enjoy sports

- Positive perception of PE
  - : Class management with student-centered learning
- Promoting to life-long sports
  - : Inducing to transfer of what learned in PE class into life-long sports

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## Process of technology Integration in PE

### 1. Realizing the need for technology integration in PE

#### ◆ Technology integration in PE for teachers

- PE class to meet the needs of diverse students
  - : Students who avoid PE, Students lacking MVPA, Motivation for PE class
- Professional development for teachers
  - : Exploring ways to immerse students in PE class
- Effective and efficient student evaluation
  - : Feasibility for more opportunities and process-based evaluation for students



#### ◆ Technology integration in PE for students

- PE class to develop future core competencies
  - : Community activity, Collective intelligence, Creativity, etc.
- Increasing MVPA level for students
  - : Overcoming constraints such as climate, equipment, facility and space



### 2. Preparing technology integration in PE

#### ◆ Checking feasibility

- By checking technological advancement
  - : Advanced technology -> Increased teachers' confidence
- By checking promoted teaching expertise
  - : Community of practice, University service learning, conference
- By checking school environment
  - : Designing PE classes to meet the school environment
- By checking possibilities through support
  - : Material support of school and cooperative support of peers

#### ◆ Setting up learning strategy

- Cooperative learning strategy
  - : Smart device portability -> Interaction with teachers & peers ↑
- Individualized learning strategy
  - : Immediate and continuous feedback
- Self-directed learning strategy
  - : Flipped learning, Self diagnosis



### 3. Selecting tools for technology integration in PE



Devices examples

Smart phone

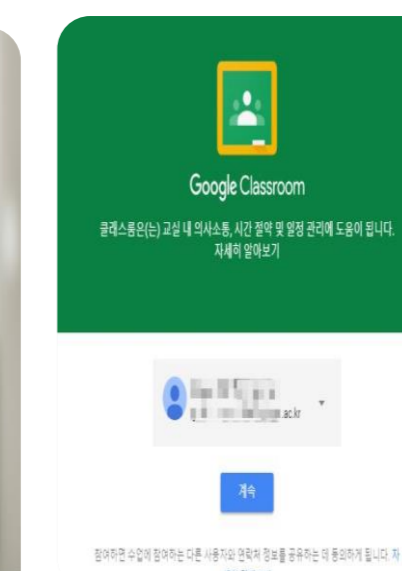
Tablet PC



Technology examples

Cloud

QR code



Application examples

YouTube

Google classroom

SNS

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Positive perception of PE

Expansion to Life-long sports

1. Realizing the need for technology integration in PE

Technology integration in PE for teachers

Technology integration in PE for teachers



2. Preparing technology integration in PE

Checking feasibility

Setting up learning strategy



3. Selecting tools for technology integration in PE

Devices

Technology

Application



## Implication

1. Before implementing technology integration in PE, **accurate understanding** is required.
2. In order to implement technology integration in PE, teachers should continue to **change their teaching style.**
3. For implementing technology integration in PE, **teacher's professional development** should be prioritized.

## Future Directions

1. It is necessary to analyze the practical aspects of **various technology integration in PE.**
2. **The effect of technology integration in PE** should be analyzed with statistical studies for feasibility and acceptability.
3. **The barriers and facilitators** should be studied to promote technology integration in PE with perspective both student and teachers.