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Preparation of a team based learning (TBL) unit on micro skills based on instructional decision model

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Abstract---The present paper is an attempt to prepare a Team Based Learning unit on Micro skills for teacher training. . The TBL was primarily used in health care education. But in the present learning context, especially when the learning situations are flipped in nature it can easily be adopted to any discipline. The TBL unit integrated with the principles of Instructional Decision Model helps the teachers as well as the learners get an idea about the curriculum, the methods of teaching and the assessment techniques

Keywords---team based learning, instructional decision model, micro skills.

Introduction

Team Based Learning developed by Professor Larry Michaelsen (2011) in order to make the classroom interaction engaging. Even though the class size is large, students can give immediate feedback and they are involved in decision making, and they can participate in active small group discussions. As the name indicates, Team- Based Learning is a powerful strategy for small group learning. Team-Based Learning is defined as “an evidence based collaborative learning teaching strategy designed around units of instruction, known as “modules,” that are taught in a three-step cycle: preparation, in-class readiness assurance testing, and application-focused exercise. A class typically includes one module.” (The Team Based Learning Collaborative, 2020). According to Parmelee et.al (2012) TBL is “an active learning and small group instructional strategy that provides students with opportunities to apply conceptual knowledge through a sequence of activities that includes individual work, team work, and immediate feedback”

The TBL was mainly used in health care education. But in the present learning context, especially when the learning situations are flipped in nature it can easily be adopted to any discipline. “The primary learning objective in TBL is to go beyond simply covering content and focus on ensuring that students have the

opportunity to practice using course concepts to solve problems”(Michaelsen & Sweet, 2008). Thankachan (2019) considers learning a journey from one destination to another where the role of instructor is to move learners from little or no proficiency (ignorance/incapability) of knowledge, skills, and attitude to perfect performance (mastery/competency). The Instructional Decision Model (IDM) developed by Thankachan, provides a road map to make decision on what to teach (curriculum), how to teach (instruction), and how to evaluate learning (assessment). The present paper attempts the preparation of a TBL unit on Micro Skills based on Instructional Decision Model.

Team Based Learning (TBL) Unit On Micro Skills – Skill Of Stimulus Variation

Introduction and Overview

Summary: The present module intends to provide a theoretical as well as practical understanding of microteaching to the teacher trainees. It focuses on teaching ‘the skill of stimulus variation’ among the core skills of microteaching. The module helps the trainer to make the lesson transaction logical and sequential. It comprises of the learning objectives to be realised, learning strategies to be incorporated, online and print materials to be used for references. The module is in line with TBL model of instruction. It will help the teacher educator as well the teacher trainee to get a clear cut idea about the phases included in the formation of concept.

Discipline:	Education/ Teacher Education
Learning Domain: (Knowledge, Skill, Attitude)	Knowledge
Competency:	Teaching skills – Micro skills
Course Name:	Teacher Education/ Teacher training
Topic:	Micro Teaching
Subtopics/Keywords:	Skill of Stimulus Variation
Module Title:	Instructional Decision Model on Micro skill development
Targeted Audience:	Teacher trainees
Prerequisite:	Basic knowledge of teaching behavior and teacher behavior
Subject Matter Expert (SME)/Author:	Dr. Durga Lekshmi G S
Instructional Hours:	3 hrs.

Part 1: Curriculum – What to Teach?

Topic Analysis

Topic: Micro teaching/ Skill of Stimulus Variation

Facts	Concepts	Principle/Rule
• It has well	• Teacher	• It is a training

defined components	Movements	procedure
<ul style="list-style-type: none"> It constitutes a variety of verbal and non- verbal cues 	<ul style="list-style-type: none"> Teacher gesture 	<ul style="list-style-type: none"> The skill is practiced under the guidance of an expert
<ul style="list-style-type: none"> It is observable, measurable and controllable by means of guided practice 	<ul style="list-style-type: none"> Change in speech patterns 	<ul style="list-style-type: none"> It is conducted in a simulated environment
<ul style="list-style-type: none"> Focuses on specific teaching behavior 	<ul style="list-style-type: none"> Focusin g 	<ul style="list-style-type: none"> It is a scaled down teaching in terms of time, content and number of students
<ul style="list-style-type: none"> Modifies teacher behavior and teaching behavior 	<ul style="list-style-type: none"> Pausing 	<ul style="list-style-type: none"> The expert as well as the peer group evaluates the class and give necessary feedback
<ul style="list-style-type: none"> Undesirable behaviors are purposely avoided by the teacher trainee during practice and presentation stage 	<ul style="list-style-type: none"> Change in interaction style 	<ul style="list-style-type: none"> The micro teaching cycle repeats until the skill is mastered
<ul style="list-style-type: none"> The simulated environment for practice helps trainees to gain confidence. 	<ul style="list-style-type: none"> Visual/ Aural and Aural/Visual switching 	<ul style="list-style-type: none"> Practicing micro teaching cycle helps the trainees develop core teaching skills
<ul style="list-style-type: none"> It reduces the complexities of macro classes 	<ul style="list-style-type: none"> Physica l involvement of students 	<ul style="list-style-type: none"> It is mainly done in three phases- knowledge acquisition/ skill acquisition and transfer phases

Lower-Level Bloom's Taxonomy Learning Objectives (Knowledge and Comprehension)

No	Objectives
1	To enable the teacher trainees to get an idea about the major teaching skills required for teaching
2	To enable the teacher trainees to understand the components of core skills
3	To enable the teacher trainees to plan micro lessons and practice skills in a controlled environment
4	To enable the teacher trainees to modify their teaching behavior
5.	To enable the teacher trainee to master individual skills

Higher Level Bloom's Taxonomy Learning Objectives (Application, Analysis, Synthesis, and Evaluation)

Sl. No	Objectives
1.	To enable the teacher trainee to understand the components of the skill of stimulus variation
2.	To enable the teacher trainee to prepare and practice micro lesson based on the skill of stimulus variation
3.	To enable the teacher trainees to integrate the core skills in actual teaching
4.	To enable the teacher trainees to perform individualized practice sessions
5.	To enable the teacher trainees to assimilate and accommodate teaching skills and thereby make the teaching process natural
6.	To enable the teacher trainees to judge the performance of peer tutor in actual teaching
7.	To enable the teacher trainees to exclude undesirable teacher behavior in real classes

Instructional Materials

Presentation (Author, Year, Title)	<ol style="list-style-type: none"> https://slideplayer.com/slide/10607160/ Shalini, 2018, Microteaching https://slidetodoc.com/micro-teaching-dr-s-thangarajathi-assistant-professor-department/ Dr. S. Thangarajathi, 2021, Microteaching https://prezi.com/vvlekjaszmf/microteaching/ Janneth Gonzalez Palafox, 2018, Microteaching https://prezi.com/xob9jz1xfb4w/microteaching-technique/ Peter Mendoza, 2014, Microteaching Technique https://www.slideshare.net/mathewvallanamathil/microteaching-self-directed-learning-ppt Mathew Varghese v., 2019, Microteaching and Self-directed Learning
Book Chapters: (Author, Year, Title)	<ol style="list-style-type: none"> D. W. Allen, 1972, Micro Teaching Owen Hargie, 1979, Micro teaching in Perspective Elizabeth Perrot, 1977, Micro Teaching in Higher Education James L. Olivero, 1970, Micro teaching: Medium for Improving Instruction George Brown, 1975, Micro Teaching: A Programme of Teaching Skills
Journal Articles: (Author, Year, Title)	<ol style="list-style-type: none"> Fortune JC, Cooper JM, Allen DW. The Stanford summer micro-teaching clinic. <i>Journal of Teacher Education</i>. 1967; 18(4): 389–93. Perlberg A, Peri JN, Weinreb M, Nitzan E, Shimron J. Microteaching and videotape recordings: a new approach to improving teaching. <i>Acad Med</i>. 1972; 47(1): 43–50. Turney C. Micro-Teaching—A Promising Innovation in Teacher Education. <i>Australian Journal of Education</i>. 1970; 14(2):125–41. Cooper JM. Developing specific teaching skills through micro-teaching. <i>The</i>

	<p><i>High School Journal</i>. 1967; 51(2): 80–5.</p> <p>5. Mergler AG, Tangen D. Using microteaching to enhance teacher efficacy in pre-service teachers. <i>Teaching Education</i>. 2010; 21(2):199–210.</p> <p>6. Perlberg A. Microteaching. <i>International Review of Education</i>. 1972; 18(1): 547–60.</p> <p>7. Allen DW, Eve AW. Microteaching. <i>Theory into practice</i>. 1968; 7(5): 181–5.</p>
Websites: (Author, Year, Title)	<p>1. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3724377/ Ambili Remesh , 2013, Microteaching, an efficient technique for learning effective teaching</p> <p>2. https://doi.org/10.1016/j.linged.2007.04.002 Nancy D. Bell, 2007, Microteaching: What is it that is going on there?</p> <p>3. https://www.researchgate.net/publication/266209119_Micro_Teaching_to_Improve_Teaching_Method_An_Analysis_on_Students'_Perspectives Shahriar Rawshon, 2013, Micro Teaching to Improve Teaching Method: An Analysis on Students' Perspectives</p> <p>4. https://www.arcjournals.org/pdfs/ijhsse/v1-i7/3.pdf Edwin G. Ralph, 2014, The Effectiveness of Microteaching: Five Years' Findings</p> <p>5. https://www.e3s-conferences.org/articles/e3sconf/pdf/2021/27/e3sconf_ictes2021_03077.pdf Jianfei Wang ,2021,The Influence of Micro-teaching on Teaching Abilities of Students Majoring in Physical Education in Physical Schools</p>
Other (Videos)	<p>1. https://www.youtube.com/watch?v=hFNkBsJca0c Ann Gravells, 2013, Delivering an Effective Microteaching Session</p> <p>2. https://www.youtube.com/watch?v=hvsu17iQunM Dr. Nellie Deutsch, 2015, Microteaching</p> <p>3. https://cedar.education.ufl.edu/portfolio/plo-microteaching/ CEEDAR Centre, 2021, Microteaching PLO</p>

Supplementary materials (Lesson Plan)

Material Information (Author, Year, Title)	<p>1. https://gyanshalatips.in/the-skill-of-stimulus-variation-lesson-plan-b-ed-micro-teaching/ Jintu Sonowal, 2021, Microlesson plan on the skill of stimulus variation (Mathematics)</p> <p>2. http://etefmgu.blogspot.com/2012/05/achievement-test-record.html Pratheesh Abraham, 2012, Microlesson plan on skill of stimulus variation (English)</p>
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Reading Guide

Material	Page No/Section headings or titles	Approximate Time	Critical Thinking Questions (optional)
1. Author(s): Dwight W. Allen and Arthur W. Eve http://www.jstor.org/st	Microteaching (Full article) Theory Into	20 minutes	<ul style="list-style-type: none"> Explain the concept

able/1475985	Practice, Vol. 7, No. 5, pp. 181-185 Published by: Taylor & Francis, Ltd. Stable		'microteaching clinic'
2. Blog article by Dr. V K Maheshwari (2011) http://www.vkmaheshwari.com/WP/?p=212	Instructional Skill of Stimulus variation (Full article)	20 minutes	<ul style="list-style-type: none"> What are the desirable behaviours associated with the skill of stimulus variation?
3. Microteaching Manual, National Open University of Nigeria https://nou.edu.ng/sites/default/files/2018-10/Micro-Teaching%20Manual%20EDU216.pdf	Unit 2, Preparing for Microteaching	30 minutes	<ul style="list-style-type: none"> Identify the essential things required to prepare for a successful micro-teaching lesson plan.

Part 2: Instruction – How to Teach?

Instructional strategies

Concepts, Principle/Rule, Procedure	Initial Presentation	Generative Strategies (recall, integration, organization, and elaboration)
Concept: Teaching skills	Teaching skills can be defined as the hard and soft skills that helps the teacher keep the classroom interaction effective Eg: communication skills, mastery of the content.	1. List out the skills you think are essential for a teacher in a teaching- learning environment
Concept: Microteaching – Theoretical background	<ol style="list-style-type: none"> 1. Microteaching is a training program for teacher trainees 2. It is developed by D. W Allen and his associates at Stanford University, USA. 3. It is a scaled down teaching encounter in class size (5-10 students), time (5-10 minutes and content (small content). 4. Only one skill is practiced at a time. 5. The three phases in 	<ol style="list-style-type: none"> 1. Discuss the importance of core skills in teaching. 2. Identify the phases in micro teaching 3. Illustrate microteaching cycle

	microteaching are knowledge acquisition phase, skill acquisition phase and transfer phase 6. Plan/ teach/ feedback/ re-plan/ re-teach/ re-feedback are the phases in microteaching cycle.	
Principle: The evaluation is done with the help of observation schedule	Tally marks are used for occurrences against each of the desirable and undesirable components in each skill.	1. What does the number of tally marks indicate?
Concept: Skill of stimulus variation	The skill of stimulus variation involves purposeful change in attention seeking behavior of the teacher in the classroom so as to seek and sustain students' attention to what is being taught. It implies attracting and focusing students' attention by changing stimuli in the learning environment. The variation in the stimuli generates interest among students in their learning and hence helps in their academic achievement.	
Concept: Major components of the skill of stimulus variation	The major components of the skill of stimulus variation are: 1. Teacher movements 2. Teacher gestures 3. Change in speech patterns 4. Focusing 5. Pausing 6. Change in interaction style 7. Visual/ Aural and Aural/Visual switching 8. Physical involvement of students	1. What undesirable behaviours are likely to occur during the practice of skill of stimulus variation?
Procedure: Teacher presentation	Teacher presents a demo micro lesson for the teacher trainees. Students observe and analyse the major components.	1. List out the most repeated components during the demonstration
Procedure: Discussion among the students	Teacher initiates discussion among students to clarify their doubts regarding the practice of the skill	1. Students clarifies the doubts first with the peer and then with the teacher.
Individual pre-work	Teacher insists the learners to watch videos related to microteaching and plan lessons.	1. Students plan micro lessons and prepare for the presentation in

	peer group
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In Class Event Sequence

Task	Activity Timing	Classroom Management (e.g., lecture-style, small groups)	Learning Technology Requirements	Other
iRAT (Individual Readiness Assurance Test) Qn. 1, Microteaching is a a. Pre-service training b. In-service training c. Both a) and b) d. Neither a) and b) Qn. 2, Micro teaching was developed by a. Allen and his associates b. Bloom and his associates c. Bruner d. None of the above Qn. 3. How many phases are there in micro teaching procedure? a. 3 b. 4 c. 5 d. 6 Qn. 4. Microteaching modifies a. Personality b. Intelligence c. Teaching skills d. Academic performance Qn. 5. Microteaching is practiced in front of a. School students b. Teachers c. Group of experts d. Peer group	7 minutes	Individualised practice	Teacher provides google form in advance to administer iRAT.	
gRAT (Group Readiness Assurance Test) Qn. 1, Microteaching is a e. Pre-service training f. In-service training g. Both a) and b) h. Neither a) and b) Qn. 2, Micro teaching was	10 minutes	Small groups	TBL cards are provided to small groups of teacher trainees	

developed by e. Allen and his associates f. Bloom and his associates g. Bruner h. None of the above Qn. 3. How many phases are there in micro teaching procedure? e. 3 f. 4 g. 5 h. 6 Qn. 4. Microteaching modifies e. Personality f. Intelligence g. Teaching skills h. Academic performance Qn. 5. Microteaching is practiced in front of e. School students f. Teachers g. Group of experts h. Peer group				
Mini lecture Teacher gives a lecture on the following areas a. brief introduction about micro teaching b. Advantages of micro teaching c. Objectives of microteaching d. Phases and microteaching cycle e. Skill of stimulus variation- major components f. Evaluation procedure	7 minutes	Teacher Presentation	PPT	
Application Activities	25 minutes	Small groups / individual	(Online/paper)	
1. Reflect upon the changes that may occur in a teacher trainee after practicing micro teaching.	7		Reflective Journal	
2. Write the major learning outcomes of microteaching procedure	5		Paper	
3. What do you think about your future as a teacher after the training?	7		Paper	

4. In actual teaching, would you be able to integrate the components of the skill of stimulus variation? If so, list out the components.	6		TBL Card	
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Facilitators Guide

The instructors who use this module can ask students a few questions such as

1. What is the role of individual micro skill in actual teaching?
2. What are the three major transitional phases in teaching starting with micro teaching?
3. What are the core micro skills?

Part 3: Assessments – How to Evaluate Learners’ Performance?

Readiness Assurance Test Questions

Instructions

Questions 1 – 10 are multiple-choice questions designed to assess your ability to remember or recall basic and foundational pieces of knowledge related to this module. Please read each question carefully before reading the answer options. When you have a clear idea of the question, find your answer, and mark your selection on the answer sheet.

Learning Objective

1. To enable the teacher trainee to remember the basic facts associated with micro teaching
2. To enable the teacher trainee to understand the core skills in teaching
3. To enable the teacher trainee to get a deeper knowledge of the theoretical aspects of microteaching

Question

1. Microteaching is
 - a. Scaled down teaching
 - b. In-service teaching
 - c. Real teaching
 - d. None of the above

Ans. a) scaled down teaching. It is scaled down teaching encounter in class size and class time. It is for teacher trainees before they go to real classrooms.

2. Choose the right order of the phases in micro teaching
 - a. Knowledge acquisition-skill acquisition-transfer
 - b. Skill acquisition- knowledge acquisition- transfer
 - c. Knowledge acquisition-transfer- skill acquisition
 - d. Transfer-skill acquisition-knowledge acquisition

Ans. a) Knowledge acquisition-skill acquisition-transfer phase. The learner is supposed to acquire knowledge of particular skills and practice the skill and transfer it to real teaching.

3. In micro teaching
 - a. The trainee practices several skills
 - b. The trainee practices one skill
 - c. The teacher educator practices one skill
 - d. The trainee practices two or more skills

Ans. b) The trainee practices one skill. Micro teaching is meant for teacher trainees to practice individual skills a time .

4. During micro teaching session, the number of students will be a group of
 - a. 5-10 students
 - b. 10-20 students
 - c. 30 or above
 - d. None of these

Ans. a) 5-10 students. In micro teaching, the number of students will be very small. It should be limited up to 10.

5. Identify the skill which does not belong to micro skill
 - a. Skill of introduction
 - b. Skill of closure
 - c. Skill of blackboard using
 - d. Skill of drawing

Ans. d) Skill of drawing. It can be considered an inborn skill or practiced one not always essential for teaching.

6. Identify one of the advantages of micro teaching
 - a. It improves intelligence of the trainees
 - b. It develops confidence in the trainee
 - c. It helps the trainee to perform well in exams
 - d. It ensures personality development.

Ans. b) It develops confidence in the trainee. Micro teaching practiced in peer group helps the trainee to develop confidence in the trainee as the trainee is well connected with peers.

7. Identify the component in the skill of stimulus variation
 - a. Presenting interesting example
 - b. Nodding the head
 - c. Pausing
 - d. Using linkers and mediators in teacher talk

Ans. c). Pausing. Pausing is the meaningful stop given by the teacher in between the classroom interaction to seek the attention of the learners to the topic.

8. Identify the major condition necessary for micro teaching
- Simulated environment
 - Observation and feedback
 - Practicing micro teaching cycle
 - All the above

Ans. d) All the above. Microteaching is practiced in a simulated environment where teacher educator and peer group observe the class and give feedback. The trainee completes the cycle so as to attain mastery of the skill

9. Micro teaching is introduced in in India in the year
- 1960
 - 1963
 - 1967
 - 1969

Ans. 1967. D D Tiwari of Govt. Central Pedagogical Institute Allahabad took effort in introducing microteaching to teacher education scenario in India

10. Who introduced the word microteaching?
- D. D. Tiwari
 - D W Allen
 - Charles Allen
 - None of these

Ans. a) DW Allen who put forward the theory of microteaching at Stanford University coined the term.

Application/Final Exam Questions

Instructions

Questions 11 – 17 are multiple-choice questions designed to assess your ability to think critically about the topic. Please read each question carefully before reading the answer options. Be aware that some questions may seem to have more than one right answer, but you are to look for the one that makes the most sense and is the most correct. When you have a clear idea of the question, find your answer, and mark your selection on the answer sheet.

Learning Objective

- To enable the teacher trainee to get a critical understanding of the skill of stimulus variation
- To enable the teacher trainee to apply the various components of the skill of stimulus variation in real teaching
- To enable he teacher trainee to analyse the differences in each components of the skill of stimulus variation
- To enable the teacher trainee to critically evaluate the teacher behaviour and teaching behaviour of peer

Question

11. Identify the major components of skill acquisition phase
- Observe and analyse
 - Observe and prepare
 - Prepare and practice
 - Evaluate and transfer

Ans. c. Prepare and practice (specific choice)

12. While explaining with the help of an illustrated chart which component is frequently used by the trainee?
- Pausing
 - Gestures
 - Movements
 - Aural-visual switching

Ans. d. Aural-visual switching (significant problem)

13. Which component would be more suitable in a situation where the students find the topic boring because of excessive verbalism?
- Giving positive feedback
 - Pausing
 - Physical involvement of the students
 - Teacher- students interaction

Ans. c. Physical involvement of the students (same problem)

14. Which component is more suitable to express the feelings of the protagonist in a drama lesson?
- Movements
 - Gestures
 - Change in speech pattern
 - All the above

Ans. d. all the above (simultaneous reporting)

15. If the teacher wants to point out some specific concepts to the students, which component will be more suitable?
- Pausing
 - Focusing
 - Movements
 - Gestures

Ans. b. Focusing (Same problem)

16. When the teacher introduces a lesson, which type of interaction will be more appropriate?
- Teacher- whole class
 - Teacher- Small group

- c. Teacher- pupil
- d. All the above

Ans. a. Teacher- whole class (simultaneous reporting)

17. When the students are given group work, the teacher trainee can use the following component
- a. Pausing
 - b. Movement
 - c. Gestures
 - d. Focusing

Ans. b. movement (specific choice)

Conclusion

TBL helps students to be active and be professional in their career. It enhances the leadership skills, inter-personal communication and teamwork. As a learning strategy, it enables the students to form small groups irrespective of the large class size and maintain an authentic learning experience throughout the session. The major highlights of TBL framework include the flipped nature of classroom, small groups, testing process, immediate feedback to the students, peer review and development of problem solving skills. TBL unit based on Instructional Decision Model (IDM) helps the teachers as well as the learners get an idea about the curriculum, the methods of teaching and the assessment techniques.

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