The Effectiveness of Microteaching: Five Years' Findings

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Abstract: *The purpose of this study was to examine teacher-candidates' perspectives on the effectiveness of microteaching as a method to help them acquire instructional skills, prior to their placement in the 16-week extended practicum (internship) program in pre-K to grade 12 schools. The author first synthesizes previous research related to the status of microteaching both in the field of teacher education and in other professional disciplines that have used it. He summarizes the views of 134 teacher-candidates regarding the usefulness of microteaching compared to similar research reported in the related literature. The study's results confirm that these beginning teachers highly valued microteaching as an effective pedagogical tool that enhanced their teaching competence and confidence, but that it is most beneficial under certain conditions.*

Keywords: *Microteaching; Teaching effectiveness; Teacher education; Professional development*

1. INTRODUCTION

Microteaching was originally created in the early 1960s at Sanford University as a type of scaled-down simulation activity to help teacher candidates learn to teach (Allen, 1967). It was designed as a brief but structured practical experience in which prospective teachers would begin to bridge the theory-practice gap by planning and presenting a 5- to10-minute lesson, in which they were to apply specific instructional skills or tasks previously studied in class (Allen & Eve, 1968). Teacher candidates conducted the microteaching episode before a small group of their peers, which was typically recorded for subsequent viewing, reflection, and evaluation by the teacher candidate, her/his peers, and the course mentor/instructor (Murtiana, 2012; Trott, 1976).

2. PURPOSE OF THE STUDY

The purpose of the present study was to ascertain teacher-candidates' views regarding the effectiveness of microteaching as a pedagogical method to help them develop their instructional skills. I surveyed teacher candidates who were enrolled in five sections of the curriculum and instruction methods course that I taught in a college of education at one Western Canadian university. I invited the teacher candidates to share their thoughts regarding the value of the microteaching component of the course. I compared these data with similar findings reported in the relevant literature, and I raised implications of these findings.

3. BACKGROUND

A key strength of microteaching has been its provision of a supportive environment in which beginning teachers could practice their instructional skills in manageable portions, receive feedback on their performance, reflect on that feedback, and subsequently use this information to improve their teaching (Benton-Kupper, 2001; Wilkins, Shin, & Ainsworth, 2009). Although microteaching was originally developed, utilized, and researched in teacher education (Merglera, & Tangen, 2010; Richards & Farrell, 2011), it was soon adapted by other disciplinary fields (Ananthakrishnan, 1993; Sana, 2007). The educators in these professions similarly implemented it as an educational tool for assisting their respective cohorts of novice practitioners to acquire/refine and reflect on their unique bodies of professional knowledge and skills, and to critique their own performance and that of their peers (Amobi & Irwin, 2009).

3.1. In Teacher Education

Prompted by the success of the Sanford experience in the 1960s, microteaching's prevalence in teacher education expanded (Clifford & Edwards, 1975), becoming a key component of many teacher preparation programs until the 1990s, when its presence waned (Grossman, 2005).

This moderation in its popularity mirrored the changes in education's evolving trends in theoretical and philosophical foundations (Parkay, Anctil & Hass, 2014). Microteaching had originally emerged during an era when more traditional, conservative, positivistic philosophies predominated (Ornstein & Hunkins, 2013). At that time, behavioural psychology and product-process empirical/quantitative research were in vogue, and interest in the teaching-effectiveness movement flourished (Grossman, 2005).

However, in the late 1970s a trend toward more contemporary, liberal, and existential viewpoints appeared (McMillan, 2012); and this progressivist/reconstructionist perspective was supported by the tenets of cognitive-developmental psychology and the spread of educational practices emphasizing social-constructivist learning and research (Leedy & Ellis Ormrod, 2013, p. 139; Ornstein & Hunkins, 2013, pp. 110-111).

As a consequence, the use of microteaching in teacher education declined, with some researchers questioning its value, impact, and outdated theoretical foundations (Kallenbach & Gall, 1969; Macleod, 1987). Yet despite these criticisms, microteaching did not completely disappear (Jobling & Moni, 2004; Turner, 2003). For example, research on preparing teachers of second-languages (L2) indicated that microteaching in various forms offered a valuable form of simulated instructional practice in programs for L2 teacher-candidates (Wilbur, 2007).

Interest in microteaching soon spread internationally, and it was adopted by teacher educators in Europe and Africa (Aydin, 2013; Klinzing & Floden, 1991). Because some European and African institutions believed that the initial U.S. model was too narrowly focused on technical skills, they broadened the microteaching procedure to include an expanded array of teacher functions such as cognition, creative thinking, decision-making, and professional responsibility (Klinzing & Floden, p. 34). Furthermore, in other fields of professional education the utilization of microteaching and its variants also grew (Remesh, 2013; Tochon, 2008).

3.2. In Related Disciplines

Educators in other disciplines employed microteaching to bolster the instructional and communication skills of students enrolled in their particular programs (Gelula & Yudkowsky, 2002). Furthermore, some of these fields introduced adaptations in the techniques by which the process was applied, such that some programs emphasized peer- and mentor-feedback without video-recording (Napoles, 2008; Ralph, 1995); other programs highlighted the video-playback component (Fowler, 1993; King, 2008; Ralph, 1996a); and still others avoided its name but retained specific practices, such as using video technology to provide learner feedback (Fukkink, Trienekens, & Kramer, 2011; Reynolds, 2013; Ralph, 1996b).

In the following sub-section I present examples of these variations of microteaching in other pre-service and in-service professional development efforts. In the field of medicine, for example, Sana (2007) reported that microteaching was instrumental in helping medical students enhance their medical teaching abilities. Perrott (1976) showed how microteaching could be utilized to help medical teachers refine their instructional ability. Faulkner, Argent, Jones, & O'Keeffe (1995) described using components of microteaching to help doctors enhance how they communicated disturbing information to patients.

Recent research from India showed that microteaching was useful in dental professional education. One study indicated that a majority of instructional personnel expressed a desire to see changes in the ongoing medical education system that had been characterized by the traditional blackboard lecture method (Sharma, Khan, Muzzammil, & Ahmad, 2013). The educators recommended more widespread use of microteaching, multimedia, and video-learning, and incorporation of more student feedback in workshop and seminar settings. A second report advocated the use of microteaching as a focused pedagogical method for honing dental faculty members' emotional intelligence skills, presentation skills, and interpersonal skills—by having them engage in the "teach, critique, reteach" cycle provided through microteaching (Kamboj,

Kamboj, George, & Jha, 2010). These researchers maintained that participants would profit from the immediate feedback and the practice of positive teaching approaches and values.

Another study involving medical students in Spain showed that microteaching was effective in developing participants' self-learning and self-regulation processes (Campos-Sánchez, Sánchez-Quevedo, Crespo-Ferrer, García-López, & Alaminos, 2013). Nursing educators also applied microteaching, or parts thereof (a) to help student nurses develop their communication and interviewing skills (Noordman, van der Weijden, & van Dulmen, 2013), and (b) to enhance nursing instructors' instructional competence (Crosby, 1977; Higgins & Nicholl, 2003; Van Ort, Woodtli, & Hazzard, 1991).

Two investigations from the pharmacy education reported that pharmacology instructors valued microteaching as a key component for developing pharmacy students' performance competencies (Popovich, & Katz, 2009) and for improving pharmacy professionals' communication skills (Diks-Hit, 2007).

Examples of other disciplines that employed microteaching to improve the instructional and/or communication proficiency both among pre-service undergraduates and in-service graduates were: (a) geriatric care (Allen & Belzer, 1997; Roush, 2008); (b) athletics/sports coaching (Reynolds, 2013); (c) psychological counseling (Elsenrath, Coker, & Martinson, 1972); (d) dietetic advising (Fiedler & Beach, 1979); and (e) business/commerce communication and instruction (Ghafoor, Kiani, Kayani, & Kayani, 2012).

3.3. Synthesis of Strengths and Limitations

A synthesis of the considerable body of literature regarding the use of microteaching in professional and occupational education is displayed in Table 1.

[a] The findings reported in these two items were derived primarily from two sources: Higgins & Nicholl (2003) for health care, and Peck & Turner (1973) for teacher education.

The predominance of positive aspects of microteaching does not refute the accuracy of the limiting factors. In my view, debating which side of Table 1 is "correct" simply reignites "the paradigm wars" (Gage, 1989), and would be unwarranted. Such an argument might overlook a key insight that I derived from reviewing the research, which was that each finding is valid within its unique context.

I also contend that viewing microteaching as a pedagogical panacea is untenable, because the related literature synthesized in the present article suggests that it is *one among many* useful methods and techniques that educators/mentors across the disciplines should add to their instructional repertoire. In this light, the proverbial question "Which philosophy/methodology is best?" should be replaced with the more helpful question: "What approach is best suited to meet the learning needs of a particular group at a specific stage in their professional development?" If such a scenario requires novices to engage in concentrated practice of skills in a safe environment with plenty of feedback, then microteaching would be a proven approach to employ in any field of practitioner preparation (Harvard, 2006).

4. METHODOLOGY

In order to ascertain teacher candidates' perceptions of the quality of their microteaching activities in which they engaged in my course, I invited the students from the five cohorts I taught in the past five years to complete a written survey. I collected, collated, and analyzed their responses.

4.1. Respondents

The 134 respondents were representative of the entire population of teacher candidates enrolled in one College of Education at a Western Canadian university in terms of age, sex, and teaching minor. The course introduced students to basic curriculum foundations and core instructional methods, and I taught one section of the course in each academic year. At the conclusion of each term I invited all students to anonymously complete and submit a survey. The ratios of students who completed the written survey compared to the annual class-enrolment were as follows: 32/35

in 2009-2010; 19/22 in 2010-2011; 19/22 in 2011-2012; 31/32 in 2012-2013; and 33/44 in 2013-2014.

Table1. *Strengths and Limitations of Microteaching: A Synthesis of the Research*

	Strengths		Limitations
	Strengths		Limitations
1.	Consistently positive results	1.	Conflicting research results[a]
2.	Experiential, authentic, hands-on task	2.	Based on outdated, unsound theory
3.	Helps learning of basic competencies	3.	Atomistic: restricted to low-level skills
4.	Focuses on practicing discrete skills	4.	Reductionist: teaching is more holistic
5.	Is "reality," but in controlled settings	5.	Distorts reality; not real-world context
6.	Participants did not lose the skills, later	6.	May not transfer skills into practice
7.	Provides for follow-up practice	7.	Performing before peers is stressful
8.	Promotes self-reflection and growth	8.	Peers may be insensitive to each other
9.	Builds confidence and competence	9.	Requires all participants' buy-in
10.	Best if integrated with other methods		
11.	Offers self-, peer-, mentor-feedback		
12.	Self-critique of own video is powerful		
13.	Receive multiple sources of feedback		
14.	Allows practice without distractions		
15.	Peers learn by evaluating each other		
16.	Stimulates collaborative learning		
17.	Rehearse skills in low-risk settings		
18.	Teachers pick up details missed earlier		
19.	Less expensive than other approaches		
20.	Build self-assurance first, then advance		
21.	Best if integrated with other methods		
22.	Participants had higher gains compared to students in traditional courses[a]		

Note. *All items were derived from a synthesis of research literature extracted from the references section of this article.*

The major teaching areas of the teacher candidates in these sections were either music or PAA (professional and applied arts, e.g., home economics, technical/vocational education, shop); whereas their minor teaching areas were distributed across the regular content subjects (e.g., mathematics, sciences, English, social studies/history, art, physical education/health).

4.2 The Microteaching Context

In this course that offered the microteaching activity, teacher candidates learned the fundamentals of curriculum and instruction related to pre-K through grade 12 school settings, and they became

familiar with the theories and essential skills/methods related to effective teaching (e.g., instructional planning, structuring/presenting of content, questioning/responding behaviours, motivation of student learning, classroom management and student conduct, differentiated instruction/learning, employing appropriate strategies/technologies, and evaluating student learning, Burden & Byrd, 2010; Parkay, Hardcastle Stanford, Vaillancourt, Stephens, & Harris, 2012; Stronge, 2012).

A key part of the course required teacher candidates to prepare two formal lesson plans and present two 10-minute microteaching episodes from these plans, the first of which was to be video-recorded before their sub-group of five or six peers; and the second was to be presented one month later in a television studio in the college before the larger class of 25 students. For each microteaching episode, teacher candidates were to design a 45-minute lesson plan and to select any 10-minute portion of the lesson to present before their peers and the camera. In both sessions teachers were to appropriately apply the instructional skills/competencies they had been learning in the course. I and their peers would serve first as their "pupils" in the micro-lesson and then also as their assessors at the end of each session. The common evaluation form we completed for each member was previously examined in class, and it was based on the key teaching skills mentioned above.

To earn course grades, each teacher candidate was to submit a package for each session, which consisted of four components: the formal lesson plan, the DVD recording, the peer- and instructor-evaluation forms they received after each lesson, and their personal self-analysis (maximum two pages) evaluating his/her respective strengths and areas requiring improvement.

The self-evaluations were also to address the peer- and professor-evaluations. The key difference between the two mictoteaching packages was that the self-evaluation for the second session was to be longer, because participants were *also* requested to compare/contrast their second microteaching performance to their first one.

4.3. Survey

The brief printed questionnaire they were invited to complete consisted of two parts, the first of which stated: "One limitation of microteaching, with which we all agreed, was that no actual school pupils were involved." The second part requested respondents to list aspects of microteaching that they considered to be positive.

4.4. Data Analysis

I employed a mixed method research design for the study; and I utilized the constant comparative technique of the qualitative research approach (Leedy & Ellis Ormrod, 2013, pp. 141-150) to collate, analyze, and categorize/re-categorize each of the 451 discrete "meaning units" (p. 146) written on the surveys by the 134 respondents from the five cohorts. I read, re-read, and searched these data for emerging patterns, themes, and categories (Gay, Mills, & Airasian, 2012, p. 16), after which I tabulated the percentages of respondents' views for each category and recorded the values.

5. RESULTS

All respondents in each cohort wrote two or more advantages or positive aspects that they experienced and/or observed in the microteaching exercises. The average number of positive comments that each of 134 respondents wrote was 3.4, and I synthesized these data in Table 2.

Furthermore, as described in the lower portion of the table, respondents were unanimous in their agreement that microteaching's main disadvantage/limitation was that, although they did actively teach human beings in the mini-lessons, the sessions were not authentic teaching/learning encounters with pre-K to grade 12 young people in real-world school contexts.

 Rather, each cohort acknowledged that the microteaching sessions were designed as developmental, graduated simulation activities to help prepare them for their eventual placement to practice and hone their instructional abilities within a school-based environment either in their student-teaching placement, in their four-month extended-practicum, or in their initial employment as a contracted professional.

Table2. *Teacher Candidates' Perceptions of the Effectiveness of the Microteaching Experience*

Category	Percentage
Positive Features	
1. Opportunity for actual practice	26
2. Importance of feedback	19
3. Receipt of personal video-recording	14
4. Safe environment	14
5. Learning from peers' performances	8
6. Positive course climate	7
7. Lesson planning process	6
8. Overcoming initial nervousness	5
Limiting Factors	
1. Not teaching actual pupils	Acknowledged
2. Initial nervousness about teaching one's peers	5

Note. *Respondents (N=134; 86% return rate) wrote a total of 451 distinct comments on their surveys. Values in the upper section of the table do not add up to 100 because of rounding. The lower portion of the table signifies that all respondents acknowledged that the two-episode microteaching activity was a simulation designed that helped prepare them to subsequently teach in school-based settings. Both of the five percent values refer to the same set of responses contributed by the one sub-group.*

5.1. Positive Aspects

The eight positive themes that emerged from the data were similar to those reported in the previous research literature, both for teacher education (Grossman, 2005; Peck & Tucker, 1973) and for other disciplinary fields (Higgins & Nicholl, 2003).

The advantage that was most common within the present study was the benefit of gaining actual teaching practice, in that teacher candidates relished having the opportunity to actively apply the instructional techniques they were learning in the course. Sample verbatim comments drawn from across the five years that illustrated this view were: "I liked that I could practice trying out the principles and methods we learned;" "It allowed me to practice a smooth performance in front of my peers (whose attention I already had) before I had to do so in front of students (whose attention I would have to catch);" "I liked practicing these skills and concepts in front of a supportive atmosphere of our peers;" and

> I found it extremely beneficial, because it was not possible for our section to be partnered with a school and to be able to student-teach there for a week. These microteach exercises were helpful in getting us to figure out how to actually teach and to get more comfortable with it.

The second largest positive category that respondents identified was the benefit of receiving and giving feedback with respect to their and their peers' teaching performance. Subcategories in this area with illustrative comments were: (a) to receive and to offer praise/support for their strengths (e.g., " I developed observation/assessment abilities about teaching strategies by both watching myself and peers having successes and making mistakes;" and "I liked being able to watch my friends teach and then learn something from their successes (and failures), maybe noting things for yourself if you hadn't thought of them before;" and (b) to obtain and to provide suggestions/advice regarding areas to improve (e.g., "I was reviewed by multiple peers who were looking specifically for those errors discussed in class;" and "I had the opportunity to watch others going through the same struggles as me. This allowed me to see in application why certain teaching strategies are more or less effective than others"). Two positive categories of equal size shared third position, namely: respondents' appreciation of receiving their own video recordings of the two sessions, and the advantage of performing in a relatively safe/trusting milieu. Typical comments illustrating the first category were: "I was able to see myself recorded on video and view details of my actions that I would otherwise miss;" and "Was beneficial to see the videos of myself and reflect on it." Remarks exemplifying the safety factor were: "I liked having the controlled environment where we had freedom to take risks;" and "I thought that our peers in this

class were all supportive of each other's presentations when we were willing to learn, while the real kids in schools will not be like that."

Ranked in fifth position in Table 2 was the benefit of respondents being able to learn from observing their peers' teaching. Typical statements supporting this perspective were: "It was good to watch others and learn from their teaching… we got to incorporate some of their creative elements into our own lessons and therefore participate in our friends' creativity;" "I thought it was important to see other teachers 'in action' to give you great ideas of different ways to deal with situations that come up;" "It put you in the role of a pupil and it showed me what could work for handling different types of students;" and "We learned from our peers by watching their reactions, and by also having to evaluate them using the forms."

The sixth largest category promoting the microteaching experience related to respondents' acknowledgements of the supportive atmosphere that many said seemed evident throughout the entire experience. Respondents' comments that exemplified this theme were: "There was a real sense of community in our class. This is the best example of learning from your peers, plus it was so much fun;" "Being encouraged to be creative in our group-work added to the team building aspect, and it strengthened our communication and public speaking abilities in front of our peers. I personally enjoyed my involvement in the microteach activities;" "Our peers were a good audience because they were good evaluators and offered feedback different than a child would;" "[The instructor] really cared about his students and that makes the course enjoyable!" and "I thought we were free to more easily bounce ideas off each other."

The seventh theme emerging from the survey data was related to respondents' recognition of the opportunity to engage in lesson planning. Comments supporting this category were: "I learned how to plan a lesson for a real teaching [*sic*], then I got over my fear of presenting it;" "I found it a fun way to practice lesson planning and then teach it without having to do it in schools, yet;" "It helped us to understand the prep work that goes into a lesson;" and "In the past I had participated in microteaching, I still find that I learn something from doing them…You learn what is needed to prepare for a lesson, and you learn that preparation quickly may need to change during the lesson."

5.2. Limiting Factors

The eighth aspect that was identified both as an advantage and as a limiting factor in Table 2 was mentioned earlier. The five percent categories, which not only identified respondents' initial uncertainty or nervousness about teaching their peers, but which, at the same time also indicated their satisfaction/relief of having been granted the opportunity to overcome this anxiety in the microteaching sessions. Sample comments illustrating this sentiment were: "I felt a bit of pressure, but if you could think and survive under that pressure, you can survive in a classroom;" "Doing two microteaches helped us fix problems in the second, which we may have experienced in our first one;" "I learned how to stay calm in front of the groups and I didn't stress as much;" "At first I was a little intimidated, but I think the microteaching experiences were actually really good. It got rid of some of my fears;" "It helped me learn it is not too nerve-wracking to speak in front of others, and that teaching is fun!!" "These were the first lesson plans I have ever written and had to teach. I found both sessions to be less nerve-wracking than having to go in front of a real [school-based] class;" and "If anything, microteaching for me created a high tension situation for a teacher, which may actually help teachers to feel more comfortable in front of K-12 students."

6. DISCUSSION AND IMPLICATIONS

This study has confirmed earlier research findings regarding the benefits of the microteaching technique in assisting individuals to develop their professional competence and confidence. It also did not dispute the criticism that learning to teach must be conceptualized more broadly than mere skill-training, as previously portrayed in the microteaching literature. Indeed, the present findings suggested that participants all recognized its limitation, but that they also appeared to discern its key advantages, as illustrated by one respondent who wrote:

> When the class began I was a little disappointed because we were having microteaching instead of being placed in the schools for student teaching with school students. Then the

longer I thought about it, I realized that this would benefit me more because…it was great that I was able to grow in my presenting skills in front of my peers without the intimidation factor of doing it in front of a real class.

An inference drawn from this study was that microteaching can be a successful learning experience, provided that it is implemented appropriately, a principle that was articulated four decades ago by Peterson (1973). Indeed, the caution that I also raised previously was: "Any conceptual model or procedural framework in the social sciences…is subject to non-use, misuse, or abuse. Such problems are not inherent in the model as much as they are in how implementers interpret and apply the model" (Ralph, 1998, p. 109). The key is to apply microteaching only where it fits.

Another factor to be considered in interpreting the findings of this study is that the five cohorts surveyed were the only classes in the entire college, who had participated in the microteaching process. Prior to 2009 the college had discontinued microteaching as part of the methods courses, and had instead placed teacher candidates in weekly student teaching sessions within K-12 classrooms in schools that were in proximity to the university. The rationale for this change was that teaching children in authentic settings was more efficacious than engaging in on-campus simulations divorced from "real pipils;" however, the findings from the present study, together with those from previous research (Muyengwa, 2013; Remesh, 2013) offer an alternate perspective. This view accepts the value of both types of experiential learning events, because each contributes an essential component in the spectrum of professional education of prospective practitioners. Student teaching, per se, typically does not provide cycles of short and graduated segments of practice accompanied by intense self- and peer-feedback, and subsequent time to reflect, revise, and re-teach, and be re-evaluated.

In the present article I have asserted that evidence exists across the professions confirming that microteaching has potential to be a powerful instructional approach. I believe that educators filling any mentorship position should not only add microteaching to their pedagogical repertoire, but that they should strive to apply it *appropriately*, as they seek to help their protégés acquire and/or hone their particular professional/occupational knowledge, skills, and dispositions. This caveat was clarified by the respondent in the present study who wrote: "Microteaching is an easy way to transition from teaching your peers to teaching students [in schools], so that you have this 'stepping stone' instead of just being thrown into a classroom unknowingly."

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