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PEDAGOGY

Impact of a Peer-Tutoring Course on Skill Performance, Assessment, and Instruction

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Abstract

The purpose of this study was to investigate how the completion of a peer-teaching course impacted pre-service teachers' ability to perform, teach, and assess motor skills. Central Michigan University (CMU) implemented a required course for physical education teacher education majors in which enrollees were evaluated on how well they performed motor skills, assessed motor skill performances, and taught motor skills to undergraduate students. Students enrolled in the course were pretested on their ability to complete randomly selected sport-specific skills and to assess sport-specific skills from prerecorded trials. Subjects being tutored were pretested on their ability to perform the 15 activity-related skills. Upon conclusion of the semester course, the tutors were posttested on their ability to perform and assess sport-specific motor skills and subjects were posttested on their ability to perform the same motor skills. Results from this investigation determine the course had a modest impact on students' ability to perform, assess, and teach motor skills. This investigation provides a functional model for assessing program impact and guiding improvements in teacher preparation programs.

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This study investigated how the completion of a peer-teaching course in Central Michigan University's physical education teacher education (PETE) program impacted pre-service teachers' ability to perform, assess, and teach motor skills. Central Michigan University's PETE program requires teaching majors and minors to pass a skills competency test upon admission to the program. In PES 405, enrollees who are nearing the end of their teacher training in physical education (PE) serve as peer-tutors to those preparing to take the skills test.

Conceptually, teachers' ability to perform, assess, and teach motor skills is inherent to their quality and effectiveness. Central Michigan University's PETE program enacted a peer-tutoring course that prepares students to demonstrate, assess, and remediate skill performances. Students enrolled in the course (peer-tutors) work directly with students preparing for the entry-level skills test (subjects). The implementation of the peer-tutoring course precipitated this study of the course's effectiveness in meeting program goals.

Case for Teaching Motor Skills in Physical Education

School-based PE is the only universally shared experience of its kind in our culture and has the potential to assume an important role in how we engage in physical activity throughout our lives (Rink & Hall, 2008). The benefits of regular moderate physical activity, such as that from school-based PE, to health and well-being are well documented (Centers for Disease Control, 2011; Seefeldt, 1986; World Health Organization, 2012). A priority of PE programs is to equip students with the skills and resources required for a physically active adult lifestyle.

Motor skill acquisition is central to the National Association for Sport and Physical Education's (NASPE, 2012) definition of a physically educated person. The first component of NASPE's five characteristics of a physically educated person (has, is, does, knows, values) is having the skills necessary to perform a variety of physical activities.

Learning and applying motor skills as children and adults helps shape physically active lifestyles that combat obesity. Learning and applying motor skills benefits people by equipping them with the tools to become physically active. Children who acquire a comprehensive set of motor skill proficiencies and continually engage their skills are more likely to become fit adults (Kalaja, Jaakkola, Luikkonen,

& Watt, 2010; Wallhead & Buckworth, 2004). Several factors play a major role in determining the degree to which children, youth, and adults are inclined to lead physically active lifestyles. Strong factors include competence at performing and confidence in using motor skills, both of which are established through early experiences in physical activity and sport (Rink & Hall, 2008; Solmon, 2003).

Case for Evidencing Teachers' Effectiveness in Teaching Motor Skills

Performing and assessing motor skills effectivley is important for PE teachers. According to Bott and Williams (2011), PETE faculty agree that teacher candidates must demonstrate skill-based competence and a health-enhancing level of fitness to be effective teachers. Without these necessary skills, teachers sacrifice teaching ability and teaching effectiveness and create a liability concern (Gabbei, 2011). When researchers compared tutors, the highest skilled tutors gave more demonstrations and information than did tutors with less skill and ultimately had students with the best skills and higher self-efficacy for improvement (d'Arripe-Longueville, Gernigon, Huet, Cadopi, & Winnykamen, 2002). Chen, Hendricks, and Archibald (2011) asserted that performing skills correctly in isolation and applying skills in recreational or sport settings relate to effective teaching.

Case for Accurate Skill Assessment and Program Effectiveness

For PE to thrive as part of the public educational system, effective program and student assessment must occur. Siedentop, Doutis, Tsangaridou, Ward, and Rauschenbach (1994) asserted that PE is unlikely to achieve prominent status if it continues to be conceptualized and delivered casually. They defined casual teaching practices to include supervision and maintenance of program action that lack program, teacher, and student accountability. The pressure on all educational programs to be accountable and demonstrate effectiveness continues to mount. Recent legislation has mandated accountability of public spending through budget planning where a trickle-down effect mandates assessment of teachers and students.

Perhaps no other subject matter area would benefit more by documenting effectiveness than would PE programs. At a time where obesity and hypokinetic diseases are increasing radically, community expectations for PE programs are remarkably low. The

physical fitness and physical activity industry is flourishing across America, although PE programs are held in low regard. Lund and Kirk (2011) asserted the survival of PE depends on stakeholders' evaluations: educators, students, parents, and administrators. These evaluations yield decisions to build, maintain, or eliminate programs. Assessment and the resulting data become necessities to build a PE program.

As PE professionals, we are unsure the degree to which PE teachers conduct skill assessments or the degree to which those assessments are valid. Currently, teacher assessment practices specific to motor skill development are at the discretion of the teacher. Typically, teachers who conduct assessments report data specific to their students or class and not at a programmatic level. Assessment practices that are established within a school, program, district, or state create concrete information where modifications for program improvement can be established and defended.

Case for Basic Motor Skill Competency in Physical Educators

Finally, teachers' lack of motor skill competency proves to be detrimental to the PE profession. Teacher performance factors, including motor skill competency, need to be defined and measured to determine teachers' effectiveness. Authentic measures may capture the influence of subject matter knowledge regarding student learning (Darling & Snyder, 2000). Studies have shown skill proficiency is more important than knowledge of skills regarding teaching ability (Chen, 2002; Chen, Rovegno, Todorovich, & Babiarz, 2003). Simply understanding the skills needed to teach is not sufficient; teachers are more effective when they are proficient in applying the skills needed (Chen, Archibald, Hendricks, & Boehner, 2010; Gabbei, 2011).

Method

Students completing the peer-tutoring course in the PETE program were asked to participate in the study. Data were collected over two semesters. Students who agreed to participate were asked to complete three tasks in this order: (1) perform randomly selected activity-related skills in isolation, (2) assess videotaped performances of subjects with varying levels of ability as they performed activity-related skills, and (3) tutor undergraduate students with varying levels of ability performing activity-related skills. In all three tasks,

participants were not made aware of what skills would be addressed prior to testing.

Sample

The participants of this study were undergraduate students in Central Michigan University's PETE program. The primary participants, designated as *peer-tutors* in this study were PE majors enrolled in PES 405: Physical Education Peer-Tutor Teaching. This sample consisted of 28 subjects who completed the course over 2 semesters. The students enrolled in PES 405 were within 2 semesters of their planned student teaching experience.

The course syllabus delineates three primary functions in which students who are enrolled in the course perform: (1) use standardized motor skill rubrics provided by the PETE program to accurately preassess skill performance of students seeking to pass the skills test, (2) diagnose performance errors on an ongoing basis as students practice and improve, and (3) prescribe and apply interventions to help students improve their skill performance.

The second participant group, designated as *subjects* in this study, were students who registered to complete the motor skills competency test as a means of gaining admission into the PETE program. These subjects were required to attend a skills testing orientation meeting, be preassessed by trained evaluators, attend a minimum of four tutoring sessions, and meet the minimum criteria during the skills assessment to pass the basic skills test. This sample consisted of 26 students who completed the test in the same semesters.

All participants were informed of the purpose of the study and their specific role within the study. To ensure participant data confidentiality, participants were assigned a designator. Each participant provided written consent to participate within the study and was informed their performances of skills would be videotaped and their confidentiality would be protected.

Prior to the start of the tutoring sessions, peer-tutors who were enrolled in PES 405 met regarding class expectations, teaching methodology, and procedures of the tutoring sessions. Two class meetings occurred in a classroom, and an additional four meetings occurred in a gymnasium. Each class meeting was conducted without subjects. After peer-tutors completed class meetings, 10 tutoring sessions were provided in the gymnasium, where the subjects were tutored.

Each tutoring session consisted of seven tutoring stations. Each station was dedicated to one or two specific motor skills, thus accounting for the 15 skills that made up the skills test. Peer-tutors were evenly distributed across the seven stations. Peer-tutors rotated through skill-specific stations every 2 weeks according to a prearranged pattern the course instructors established. Course instructors supervised and facilitated peer-tutor sessions and rotations.

Subjects attended an orientation meeting at the beginning of the semester to prepare them for the eventual skills test. Subjects were then required to attend a session that was dedicated to pretesting each of the 15 sport-specific skills. Participants received a score for each skill to indicate which skills needed improvement prior to the actual skills test. Subjects were then required to attend at least four practice sessions. During those visits, subjects rotated throughout the stations based on their pretest results to receive skill improvement tutoring.

Skill Performance of Peer-Tutors

Six object control skills were randomly selected to assess the peer-tutors' proficiency in performing activity-related skills: golf swing, soccer drive kick, volleyball forearm pass, pickleball forehand strike, basketball set shot, and softball overhand throw. At the beginning of the semester, peer-tutors were asked to perform three repetitions of each skill in isolation as a pretest. Peer-tutors were then asked to repeat the skills as a posttest at the end of the semester. During each test, performances were videotaped and analyzed at a later date.

Three PE professors independently evaluated the videotaped pretest and posttest skill performances by the peer-tutors. The professors used 4-point rubrics that were developed by Central Michigan University's Department of Physical Education and Sport. Each of the four levels of the rubric is clearly defined, and each level of the rubric is accompanied by pictures and video illustrations.

The professors use these rubrics each semester to assess skills tests, and each semester, tests of interrater reliability are conducted to validate the assessors' accuracy. For this study, the three professors reviewed the rubrics and practiced using them prior to assessing the pretest and posttest performance data. The evaluators assessed the performances independently. The three scores were aggregated, and the mode was assigned to each performance. In isolated cases

where no mode existed across the three raters, the professors met to discuss and agree upon a definitive score for that case.

Wilcoxon's signed-rank test was used to determine whether the skill scores of each peer-tutor improved from pretest taken at the beginning of the semester to posttest completed at the end of the semester.

Skill Assessment by Peer-Tutors

The study also addressed how completing the peer-tutor course impacted students' ability to assess motor skill performances. Peer-tutors were asked to complete an assessment as a pretest at the onset of the course and then complete the procedure as a posttest at the end of the semester.

The procedure required peer-tutors to assess three videotaped performances on six randomly selected skills. The video consisted of three subjects at varying levels of proficiency performing three repetitions of a skill in isolation. Different subjects appeared for each of the six skills. Peer-tutors observed all three repetitions for each subject and then recorded a rubric score on a rating sheet (Figure 1) before moving on to the next skill.

First initial and last four numbers of your social security number: _____

Instructions: Subjects will observe three performers demonstrate three repetitions of each skill. Per each performer, record the rubric score that best represents the three performances.

Golf	**Pickleball**
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
Kick	**Free Throw**
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
Forearm Pass	**Throw**
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____

Figure 1. Sample video analysis sheet.

The performance ratings made by peer-tutors were assessed by comparing their ratings to the definitive ratings assigned to each performance by the three professors who assessed the peer-teachers' skills. Prior to the study, each professor rated the test performances independently and assigned a definitive rating using the same procedure described above for assessing peer-teachers' skill performances.

Spearman's rank-order correlation coefficient was calculated to represent how closely each peer-tutor's rating correlated to the definitive rating the professors provided. Improvements in the ability to assess skill were determined by comparing correlations of peer-teachers' ratings to definitive scores at the onset of the course to the correlations of peer-teachers' ratings to definitive scores upon completion of the course. Mann-Whitney's U was calculated to see whether the correlations were significantly better upon completion of the course.

Instructional Effectiveness of Peer-Tutors

Finally, the study attempted to assess the impact peer-tutors had on the performance of students preparing for the PETE program's required skills competency test. The subjects preparing for the skills test participated in a pretest to identify their deficiencies and accommodate opportunities to prepare effectively to pass the skills test. All subjects were videotaped performing the six randomly selected skills. Subjects were required to attend at least four of the 10 potential tutoring sessions. Subjects then were videotaped as they performed each of the 15 skills in isolation in fulfillment of the skills competency test.

Three PE professors independently evaluated the videotaped pretest and posttest skill performances by the subjects. The professors used 4-point rubrics that were developed by Central Michigan University's PETE faculty.

Wilcoxon's signed-rank test was used to determine whether the skill scores of each subject improved from pretest taken prior to the onset of tutoring sessions, to posttest completed after the they completed tutoring sessions.

Results

Peer-Tutor Skill Performance

Peer-tutors were videotaped while performing six randomly selected motor skills at the onset of PES 405 (pretest) and then upon completion of the course (posttest). Performances were assessed using skill rubrics constructed by Central Michigan University's PETE faculty. A panel of three professors who had been trained using the rubrics and demonstrated an appropriate level of rater reliability independently completed assessments.

The randomly selected skills used for the study included golf swing, soccer drive kick, volleyball forearm pass, pickleball forehand strike, basketball shot, and softball overhand throw. Results from the test appear in Table 1.

Table 1

Changes in Peer-Tutor Skill Performance With Wilcoxon's Signed-Rank Significance

Skill	*N*	Pretest *M*	Posttest *M*	Sig.
Golf swing	11	1.91	1.53	.682
Soccer kick	16	2.31	2.06	.436
Volleyball forearm pass	17	1.76	2.06	.477
Pickleball forehand strike	17	2.47	2.82	.347
Basketball set shot	17	1.71	2.94	.023
Softball/Baseball overhand throw	17	2.94	3.24	.498

The peer-tutors' mean rubric scores on the pretest ranged from a low of 1.76 on the volleyball forearm pass to 2.94 on the overhand throw. Upon completion of the course, the rubric scores of peer-tutors ranged from 1.53 (golf swing) to 3.24 (overhand throw). The mean rubric score increased on four skills: forearm pass, forehand strike, basketball shot, and overhand throw.

Wilcoxon's signed-rank test was used to determine whether the skill scores of each peer-tutor improved from pretest taken at the beginning of the semester to posttest completed at the end of the semester. The statistical significance of the change for each skill appears in the right-most column of Table 1.

Of the six skills, the only skill in which peer-tutors demonstrated a significant improvement from pretest to posttest was the basketball set shot (z = -2.266, $p < .05$). All other scores fall well within the realm of probability.

Peer-Tutor Skill Assessment

The peer-tutors' ability to accurately assess motor skills was assessed by asking peer-tutors to assess prerecorded trials of skills prior to engaging in the peer-tutoring course and then assess the same skills upon completing the course. Peer-tutors' accuracy in assessing was determined by calculating Spearman's rank-order correlation coefficient between each peer-tutor's score and the definitive score content experts assigned. Wilcoxon's signed-rank test was then applied to determine whether those correlations significantly improved upon completion of the peer-tutoring course. Correlation coefficients of peer-tutors' ratings appear in Table 2.

Table 2

Peer-Tutor Assessment Accuracy

Subject	Pretest correlation	Posttest correlation	Subject	Pretest correlation	Posttest correlation
1	.599	.459	12	.378	.469
2	.507	.582	13	.792	.543
3	.567	.474	14	.645	.673
4	.546	.541	15	.589	.669
5	.327	.499	16	.745	.795
6	.584	.584	17	.551	.585
7	.683	.618	18	.544	.686
8	-.165	.397	19	.798	.791
9	.403	.523	20	.501	.493
10	.697	.543	21	.408	.729
11	.870	.564			

Wilcoxon's signed-rank test was applied to determine whether the peer-tutors' assessments of subjects on each individual skill on

the posttest correlated to the ratings of experts more closely than their assessments on the pretest. Results from Wilcoxon's signed-rank test appear in Table 3.

Table 3

Changes in Peer-Tutor Assessment Accuracy

Test	*N*	*M*	*SD*	Min.	Max.
Pretest Correlation	21	.551	.218	-.16	.87
Posttest Correlation	21	.582	.109	.40	.80

On average, the data show a moderately strong relationship between the peer-tutors' ratings of subject skills and the ratings of experts, with a mean correlation coefficient of 0.55. The strength of relationship increased on the posttest to a value of 0.58. Wilcoxon's signed-rank test, which compared each peer-tutor's pretest correlation coefficient to their posttest correlation, failed to result in a statistically significant difference (z = -.149, p > .05). Results appear in Table 4.

Table 4

Peer-Tutor Assessment Performance Ranking[*]

	N	Mean Rank	Sum of Rank
Negative	10	9.70	97.00
Positive	11	12.18	134.00

[*]z = -.643; Asymp. Sig. (2-tailed) = .520.

Instructional Effectiveness of Peer-Tutors

The peer-tutors' effectiveness in improving the skill performances of students was assessed by determining the degree to which those receiving assistance improved from pretest to posttest. Subjects were videotaped while performing 15 motor skills as a pretest before receiving peer-tutoring opportunities. Subjects were then videotaped as they completed the same 15 skills for the skills

competency test after completion of at least four and at most 10 tutoring sessions. Performances were assessed using skill rubrics constructed by Central Michigan University's PETE faculty. A panel of three professors who had been trained using the rubrics and demonstrated an appropriate level of rater reliability completed the assessments independently. Results from the test appear in Table 5.

Table 5

Changes in Subjects' Skill Performance With Wilcoxon's Signed-Rank Significance

Skill	*N*	Pretest Rating *M*	Posttest Rating *M*	Sig.
Golf swing	20	1.12	1.63	.497
Soccer kick	24	1.88	1.88	.930
Volleyball forearm pass	24	1.77	1.96	.469
Pickleball forehand strike	23	1.38	2.29	.016
Basketball set shot	23	2.35	2.75	.356
Softball/Baseball overhand throw	24	1.96	3.08	.050

The data show that the mean rubric score by subjects on the pretest ranged from 1.12 (golf swing) to 2.35 (basketball shot). Upon completion of the tutoring sessions, the rubric scores for subjects ranged from 1.63 (golf swing) to 3.08 (overhand throw). The mean ratings increased on five of the six skills tested.

Wilcoxon's signed-rank test was used to determine whether the ratings of each subject improved from pretest to posttest on each skill. The statistical significance of the change for each skill appears in the right-most column of Table 5.

Of the six skills, the pickleball forehand strike and the overhand throw were the only skills in the peer-tutoring program that could be associated with a statistically significant improvement in performances ($p < 0.05$). Although the mean rubric score increased from pretest to posttest, none of the differences proved to be statistically significant.

Discussion

The purpose of this study was to investigate how the completion of a peer-teaching course in Central Michigan University's PETE program impacted pre-service teachers' ability to perform, assess, and teach motor skills. The study collected data from 26 students enrolled in the peer-tutoring course over 2 semesters.

With regard to improving the motor skill performance of peer-tutors, the data demonstrate little change in the peer-tutors' ability to perform activity-related skills as a result of completing the peer-tutoring course. Data are presented in Table 6. Data indicate that (a) peer-tutors are enrolling in the course with minimal performance levels and (b) the experiences they are having in the course are not resulting in significant changes in their own performances.

In terms of the tutors' skill levels at the onset of the course, the average pretest score for tutors ranged from 1.71 to 2.94 on the department's 4-point rubric. Peer-tutors enrolled for this course had previously passed the skill competency test required by the department. This required them to score an average of 3 or better on the 4-point rubric across 15 sport-related skills, resulting in a composite score of 45 or better as a passing grade. Results on the pretest are disconcerting regarding the current procedure and its impact on habituating motor proficiencies.

Table 6

Mean Rubric Scores on Skills by Tutors

Skill	Pretest		Posttest		
	M	*SD*	*M*	*SD*	Sig.
Golf swing	1.91	1.58	1.53	1.66	0.682
Soccer kick	2.31	1.57	2.06	1.48	0.436
Volleyball forearm pass	1.76	1.27	2.06	1.30	0.477
Pickleball forehand strike	2.47	.87	2.82	1.07	0.347
Basketball set shot	1.71	1.49	2.94	1.39	0.023
Softball/Baseball overhand throw	2.94	1.03	3.24	1.09	0.498

Evidence that peer-tutors applied concepts they were presented within the course and were asked to apply in the tutoring of student subjects to their own skill performance is weak. The average rubric scores on posttests ranged from 1.53 to 3.24. Although the mean rubric score increased on four skills, the increase was statistically significant ($p < .05$) for only the basketball set shot. Five of the six skills resulted in mean rubric scores of less than 3, and two skills (golf and soccer kick) resulted in a decrease in mean rubric scores.

The importance of teachers' ability to perform skills is supported in literature, as it increases the effectiveness of teachers through the display of teaching behaviors and demonstrations (Gabbei, 2011; Haibach, Reid, & Collier, 2011). However, the degree to which PETE students should perform motor skills to become effective teachers is unknown. A standard should be investigated and discussed extensively within organizations that provide the standards of PETE programs and beginning teachers.

In that Central Michigan University's skills test requires students to average a rubric score of 3 across 15 skills, this program should recommend that peer-tutors consistently achieve a 3 across all skills. This level of mastery provides peer-tutors with a performance level slightly above the subjects' skill level, which is critical for effective demonstration specific to long-term learning (Darden, 1997).

The peer-tutors did not show proficiency according to this standard, creating the argument that peer-tutors' teaching behaviors and demonstrations may have compromised subjects' learning during this study. Students are enrolling in this course and are tutoring subjects with inadequate motor skill performance proficiencies, and those proficiencies are not being significantly improved with strategies in the current course format. We recommended peer-tutors' motor skill performances be assessed and feedback regarding performance levels be communicated to peer-tutors prior to the start of tutoring sessions. Peer-tutors should enroll in this course demonstrating motor skill proficiency. Peer-tutors who are not proficient should be subjected to skill remediation. Remediation should be specific to strategies for skill improvement and proficiency should occur before tutoring sessions begin.

The peer-tutoring course is responsible for improving peer-tutors' ability to recognize the level of proficiency within subjects' motor skill performances and to apply teaching strategies to improve skills deemed inadequate. The results from the study indicate the course's impact to improve peer-tutors' ability to accurately assess motor skill performances was insignificant.

Peer-tutors' ratings of motor skill performances based on the use of standardized rubrics demonstrated only moderate correlations when compared to expert ratings. The strength of correlation did not significantly improve from pretest to posttest, indicating that the peers did not improve in their ability to assess motor skill performance as a result of completing the course.

The introduction, practice, and application of assessment rubrics can be effective strategies to improve PETE students' assessment and feedback techniques of motor skill performances. These strategies may not be occurring, suggesting peer-tutors are unprepared when required to recognize varying levels of performances.

We recommend prior to tutoring that peer-tutors be tested on their ability to accurately identify varying levels of motor skill performances and to provide strategies for skill improvement. Adequate practice of motor skill assessments and application of improvement strategies should be administered before tutoring sessions begin and throughout the course. Peer-tutors are provided assessment rubrics, but they may not be consistently applying them when poor motor skill performances are recognized.

Throughout tutoring sessions, skill-specific rubrics were not visually evident for peer-tutors to reference, limiting their ability to apply skill-specific improvement strategies. Additional recommendations include displaying skill-specific rubrics and skill improvement strategies at each station during each tutoring session.

Table 1 reveals tutors did not significantly improve five skills (forearm pass, forehand strike, overhand throw, golf swing, and soccer kick). Table 5 reveals subjects did not significantly improve four skills (golf swing, forearm pass, set shot, and soccer kick). Observing the similarities of low skill improvement between peer-tutors and subjects in the amount of significant motor skill improvement suggests similar instruction and assessment strategies are being employed within the instruction of peer-tutors and the tutoring of subjects. This indicates the course's instructional plan needs to be revised. Peer-tutors and subjects need consistent and effective instruction relative to their roles within the course.

This study focuses on peer-tutors' ability within the interactive domain, suggesting peer-tutors should be instructed on how to interact with subjects and how to adjust plans according to subjects' responses (Reynolds, 1995). With the low proficiencies of the peer-tutors performance of motor skills and ability to locate varying levels of skill performances, peer-tutors are unable to adjust instruction

specific to subject skill level and are inconsistent regarding skill improvement and assessment.

Conclusion

The purpose of this study was to assess the impact implementing a peer-tutoring course in Central Michigan University's PETE program had on the ability of students enrolled in the course to perform motor skills, assess skills of those they tutor, and accommodate improvements in the skill performances of those they tutor. To that end, we pretested pre-service teachers who were enrolled in the course on their ability to perform and assess skills and then posttested them when they completed the course. The impact the peer-tutors had on improving performance of students they tutored was assessed by pretesting those students before receiving instruction and then assessing the students' performances on the mandatory skills test performed near the end of the semester.

Results from this study indicate that the peer-tutoring course has a modest impact regarding peer-tutors' ability to perform skills, accurately assess skills, or positively influence skill performance of those they serve. The absence of significant changes in respect to motor skill performance and assessment ability within this study provides evidence that the objectives of the PES 405 course are not being achieved. Although teachers' effectiveness and motor skill ability should be the focus in PETE environments, the practical applications for pre-service teachers and students in this study produced little to no improvement. Having little to no impact as a course in higher education should result in immediate action to adapt the course procedures to meet its objectives. Data found in this study should be reserved and used to create and validate future modifications.

Perhaps the most significant outcome of this study was the implementation of a relatively simple procedure for monitoring a course's effectiveness on facilitating improvements in performing and teaching motor skills. Standard assessments have been implemented in the course, which allows program implementers to assess the impact of the program. Procedures for pretesting and posttesting are easy to facilitate, thus accommodating a procedure to encourage program modifications based on reliable data and to assess the program's effectiveness on an ongoing basis.

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