Abstract
Evaluating ballet techniques performance level in light of good performance standards for Second Grade Students, Faculty of Physical Education for Girls, Alexandria University

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Introduction:

Ballet is a universal language and of fine theatre arts. It is an integrated art includes many artistic elements, e.g., subject, music, decor, clothing, dance movement, motor performance, motor formations, and lighting. Ballet always expresses and imaginative ideas, it requires long time training to develop strength and ability to motor control to express these ideas. (Mohye Eldin, 1993, p.1)

Ballet is not self-learned subject; it should be learned in specialized schools under supervision of highly experienced trainers. (Rinaldi, Hanley, & D'Amboise, 2010, p. 14)

Ballet is an important motor activity, therefore it included in motor expression curricula at physical education faculties in general, and Faculty of Physical Education for girls, Alexandria University in particular.

Ballet lectures in Faculty of Physical Education for girls, Alexandria University divided into two parts namely, Exercises at the Barre and Center work

Exercises at the Barre:

It is a set of simple exercises performed on the barre, which used to help student to learn ballet performance. Barre exercises help students to maintain balance and develop motor sense. Barre exercises prepare students well for free performance in Center work, as students equally perform these exercises on right and left sides. (Mohye Eldin, 1993, p.1, and Medova & M.-L, 1995, p. 20)

Center work:

It is the second part of ballet lecture, where students move away from the barre to hall center to perform some exercises that already performed on the barre. These exercises in hall to control the balance. In addition to ballet arms and feet positions, basic steps, leaps and turns, which performed in hall center. (Mohye Eldin, 1993, p.1, and Medova & M.-L, 1995, p. 30)

Researcher noticed low ballet technical performance level within second grade students, this conformed by a pilot conducted by the researcher to analyse ballet practical tests marks for second grade students in the period from (2010/2011) (2012/2013) academic years. (Appendix 2)

Three or five members committee from faculty staff specialized in motor expression do students' evaluation in all motor expression branches, the evaluation is subjective according to faculty staff views. This method based on non-standardized observation, as student get a mark for overall performance on barre, and in center work exercises. Researcher believes that this evaluation method do not allow identify students strength and weakness, and identify and the most difficult ballet exercises and techniques.

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Researcher believes that evaluation should in more objective and accurate manner and per specific standards facilitates staff member role in right evaluation and allow difficulties discovery and set required solutions to develop students' artistic performance

Some previous studies focused on motor expression (with all its branches) evaluation, including Nour Eldin, Abdukrazek, & Salahuldin, (2010), which aimed at setting standards as a reference to evaluate students ballet performance in light of students evaluation methods development. Mohammed, S. A., Al-Demrdash, N., Mofreg, A., & Sharaf Eldin, L. (2011), which aimed at develop a proposed form to evaluate innovative modern dance motor performance in light of students' evaluation methods development. Al-Demerdash, N. A. (2014), which aimed at develop a form to evaluate folk dance performance level in student evaluation systems and per quality standards.

The abovementioned make it clear that performance evaluation is of important processes, as information provided by evaluation about a learner contribute to take educational decisions about him, and allow teaching in to identify learners' needs, and guide us to weaknesses to strength. Proper evaluation gives us lot of data that help in raising learners' level. (Bahy & Al-Azhry, 2005, p. 19, Ismail & Radwan, 2009, p. 123, and Shehada, 2009, p. 153) (12:19) (15: 123) (16: 153)

Therefore, researcher students' evaluation in ballet should be per good performance standards for each exercise either in barre or center work exercises, to identify the most difficult ballet exercises and steps, which cause weak performance within students. This called the researcher to conduct this study.

Research aims:

This research aimed at evaluate ballet techniques performance level in light of good performance standards for second grade students, Faculty of Physical Education for Girls, Alexandria University through:

1- Determine the most important technical points and performance standards that must be considered when assessing ballet technical performance level (Exercises at the Barre , and Center work)

2- Develop observation form to evaluate students' ballet technical performance, (Exercises at the Barre , and Center work)

Research hypotheses:

1- There is variance in exercises at the barre technical performance level within second grade students, Faculty of Physical Education for Girls, Alexandria University

2- There is variance in center work exercises technical performance level within second grade students, Faculty of Physical Education for Girls, Alexandria University

Research Methodology:

Descriptive survey used as it suits research nature.

Research sample:

Research sample selected intentionally from (334) represent second grade students and after excluding failed and absent students, they became (204) students, divided to (50) students for pilot study and (154) students for main study.

Research domains:

Spatial domain: Motor expression hall at Faculty of Physical Education for Girls, Alexandria University

Time domain: from (11/05/2015) to (13/05/2015)

Research tools:

I- Experts questionnaire form to explore their opinion about the most important technical points and performance standards that must be considered when assessing ballet technical performance level (Exercises at the Barre , and Center work)

This form aimed at determine the most important technical points and performance standards that must be considered when assessing ballet technical performance level (Exercises at the Barre, and Center work), to fulfil this aim; researcher referred to references and previous studies. (Al-Tohamy, 1991, Al-Azab, 1992, Thomas & Smith, 1992, Al-Azab, 1993, Mohye Eldin, 1993, Qados, 1993, Kassing & Jay, 1998, Medova, 1995 , Ashour, 2000, Hassanien, 2001, Mohye Eldin & Mohammed, Farahat, 2001, 2002, Zayed, 2005, Rinaldi, Barth & Roemer, 2008, Hanley & D'Amboise, 2010, Mohammed, Al-Demrdash, Mofreg, & Sharaf Eldin, 2011, Al-Demerdash, et al 2014). The she presented the questionnaire (appendix 3) to nine motor expression experts (appendix 1). Researched made necessary adjustments as per experts opinion, represented the form, exerted mutually agreed the final form.

II- Observation form to evaluate students' ballet technical performance, (Exercises at the Barre , and Center work)

This research aimed at evaluate students' ballet techniques performance (Exercises at the Barre, and Center work) and identify ballet positions, steps and exercises which is difficult for second grade students, Faculty of Physical Education for Girls, Alexandria University through:

- Form developing steps

1- Identify form content: Researcher referred to experts questionnaire results, where they mutually agreed on the performance standards that must be considered when assessing ballet technical performance level (Exercises at the Barre, and Center work)

2. Determine evaluation level and student's marks calculation method.

Second grade student get 10 marks in total when evaluated in Ballet technical performance divided into 5 Marks for Exercises at the Barre, and Center work and 5 Marks for Center work

To facilitate evaluation process, the researcher multiplied the marks by $\times$ 10 resulting 50 marks Exercises at the Barre and 50 Marks for Center work. Performance levels divided to divided to five (A, B, C, D, E) and each level have specific marks; (A) is the highest performance level, while (E) is the lowest performance level.

3. Marks distribution: The researcher surveyed motor expression faculty staff opinion about marks distribution among Exercises at the Barre, and Center work performance standards. Results for this shown on tables (1) and (2)

Table (1) Marks distribution among "Exercises at the Barre" exercises good performance standards

Exercises at the Barre	Marks	A	B	C	D	E	Percentage
I- Exercises at the Barre							
* Demi plie:							
- Hip joint full rotation, legs to outside during performance.	1	✔	✔	✔	×		

Exercises at the Barre	Marks	A	B	C	D	E	Percentage
- Body COG distributed among feet and body straight during movement.	1	✔	✔	×	×		
- Performance Continuity.	1	✔	×	×	×		
Total marks	3	3	2	1	0		6%
* Grand plie							
- Maintaining hip joint rotation, legs to outside during performance.	1	✔	✔	×	×		
- Raise ankles to reach full landing position and not raising ankles in second position.	1	✔	×	✔	×		
- Movement performance continuity without appearance of movement stopping	1	✔	✔	×	×		
Total marks	3	3	2	1	0		6%
* Battement tendu:							
- Body based on carrying foot throughout the performance.	2	✔	×	×	×		
- Moving from hip joint in a straight line, taking into account knee full extension.	2	✔	✔	×	×		
- Fingers insteps touch land throughout the performance.	2	✔	✔	✔	×		
Total marks	6	6	4	2	صفر		%12
* Battement jete (with angle 20 to 45 degrees):							
- Body based on carrying foot throughout the performance.	2	✔	✔	×	×		
- Moving from hip joint in a straight line, taking into account knee full extension.	2	✔	✔	✔	×		
- Student perform the skill with fast and power keeping leg angle between (20 to 45 degrees)	2	✔	×	×	×		
Total marks	6	6	4	2	0		%12
Grand Battement (with angle of 90 degree or more):							
- Moving from hip joint in a straight line, taking into account knee full extension.	2	✔	×	×	×		
- Student perform the skill with required fast and power keeping, leg angle is 90 degrees or more	2	✔	✔	✔	×		
- Do not directly land to fifth position and passing through Battment Tende	2	✔	✔	×	×		
Total marks	6	6	4	2	0		12%
Rond de jambe							
- Movement of the hip joint.	2	✔	✔	×	✔	×	
- Full knee extension throughout the performance.	2	✔	×	✔	×	×	
- Moving foot touches land throughout performance, passing first feet position passé.	3	✔	✔	×	×	×	
- Held pelvic stable and not moving during performance, movement continuity without stopping.	3	✔	✔	✔	×	×	
Total marks	10	10	8	5	2	0	20%
* Battement Frappe							
- Working feet full extension while leg extended forward, sideward, backward.	2	✔	✔	×	✔	×	
- Touch at (s.c.p) area and maintain full rotation from hip joint	2	✔	✔	×	×	×	
- Working feet extension throughout skill performance	2	✔	✔	✔	×	×	
- Keeping working feet angle at (45 degrees).	2	✔	×	✔	×	×	
Total marks	8	8	6	4	2	0	16%
* Battement Fende						×	
- Bent and extend both working and carrying feet together.	2	✔	×	✔	×	×	
- Touch at (s.c.p) area.	2	✔	✔	×	×	×	
- Both feet full extension while working leg extended forward, sideward, backward.	2	✔	✔	×	×	×	
- Keeping working feet angle at (45 degrees) and maintain both legs full rotation from hip joint to outside.	2	✔	✔	✔	×	×	
Total marks	8	8	6	4	2	0	16%

Exercises at the Barre	Marks	A	B	C	D	E	Percentage
Total exercises at the barre marks	50						100%
To calculate the student's final marks = student's total score ÷ 10	5						

Table (1) show marks distribution among "Exercises at the Barre" exercises good performance standards and each standard share percentage, which ranged between 6% and 20%.

Table (2) Marks distribution among "Center work" exercises good performance standards

Center work	Marks	A	B	C	D	E	Percentage
II- Center work							
Arms positions							
Start position: arms rounded in front, down to body, clear space between arm and body, and index fingers opposite, and do not touch each other.	1	✔	✔	✔	×	×	
First position: arms rounded in front of body, down to chest, clear space between arm and body, and index fingers opposite, and lightly touch each other.	1	✔	✔	×	×	×	
Second position: arms rounded and extended aside in shoulders level, palms forward	1	✔	×	✔	×	×	
Third position: arms up over the head, and index fingers opposite, and touch each other	1	✔	✔	×	✔	×	
Total marks	**4**	**4**	**3**	**2**	**1**	**0**	**8%**
* Sute:							
- Movement begin from pli, feet positions are correct.	2	✔	✔	×	×		
- Knees, feet and insteps extended and down in the air.	2	✔	×	✔	×		
- Landing, insteps touch land first and then arrive to pli and in feet positions as sute started.	2	✔	✔	×	×		
Total marks	**6**	**6**	**4**	**2**	**0**		**12%**
* Changement de pieds							
- Movement begin from fifth feet position in pli	2	✔	×	×	×	×	
- Body, knees and feet extended in the air.	2	✔	✔	×	×	×	
- Legs switch from nearest point and in the air.	2	✔	✔	✔	×	×	
Landing, insteps touch land first and then arrive to pli and in feet positions as sute started.	2	✔	✔	✔	✔	×	
Total marks	**8**	**8**	**6**	**4**	**2**	**0**	**16%**
* Pas de bouree							
Movement begin from fifth feet position in pli and back feet lifted from land	2	✔	×	✔	×	×	
Movement start with back feet	2	✔	✔	×	×	×	
Arrive to second feet position, body extended and on fingertips.	3	✔	✔	✔	×	×	
Arrive to fifth feet position in pli with legs fully rotated outside of hip joint	3	✔	✔	×	✔	×	
Total marks	**10**	**10**	**8**	**5**	**3**	**0**	**20%**
* Glissade:							
- Movement begin from fifth feet position in pli	2	✔	✔	×	✔	×	
- Full rotation from hip joint, knees and feet to outside and movement starts with back foot	2	✔	✔	×	×	×	
- Passing through flight phase, maintaining body shape in air.	2	✔	×	✔	×	×	
- Arrive to final position in pli.	2	✔	✔	✔	×	×	
Total marks	**8**	**8**	**6**	**4**	**2**	**0**	**16%**
* Balance:							
- Starting from feet fifth position.	2	✔	×	✔	×	×	

Center work	Marks	A	B	C	D	E	Percentage
- Full rotation from hip joint, knees and feet to outside and movement starts with back foot	3	✔	✔	×	×	×	
- Working leg fully extended side wards.	2	✔	✔	✔	×	×	
- Exchange body COG to be on feet in fifth feet position in Demi plie	3	✔	✔	×	✔	×	
Total marks	10	10	8	4	3	0	20%
Arabesque:							
- Body weight vertically based on carrying leg.	1	✔	✔	×	×	×	
- Maintain body balance.	1	✔	✔	✔	✔	×	
- Shoulders in a straight line and on same height.	1	✔	✔	✔	×	×	
- Working leg not bent and extended backward.	1	✔	×	×	×	×	
Total marks	4	4	3	2	1	0	8%
Center Work total marks	50						100%
To calculate the student's final marks = student's total score ÷ 10	5						

Table (2) show marks distribution among "Center work" exercises good performance standards and each standard share percentage, which ranged between 8% and 20%.

In light of what the abovementioned, final observation form developed, which will be used by faculty staff while students evaluation in ballet techniques. The form is in two parts The first for Exercises at the Barre, and the second for Center work exercises. Final form shown in tables (3) and (4)

Table (3) Student observation form in ballet techniques (Exercises at the Barre)

Student Number	Plie								Battement tendu 6 marks				Battement jete 6 marks				Rond de jambe 10 marks					Battement Fende 8 marks					Battement Frappe 8 marks					Grand Battement 6 marks				Total Marks 50 marks	Final marks = Total Marks/10 = 5 marks
	Demi plie 3 marks				Grand plie 3 marks																																
	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D		
Marks	3	2	1	0	3	2	1	0	6	4	2	0	6	4	2	0	10	8	6	4	0	8	6	4	2	0	8	6	4	2	0	6	4	2	0		
1																																					
2																																					
3																																					
4																																					
5																																					
6																																					

Technical Performance Standards

- **Demi plie:** - Hip joint full rotation, legs to outside during performance. (1) - Body COG distributed among feet and body straight during movement. (1) - Performance Continuity. (1)

- **Grand plie:** - Maintaining hip joint rotation, legs to outside during performance. (1) - Raise ankles to reach full landing position and not raising ankles in second position. (1) - Movement performance continuity without appearance of movement stopping (1)

- **Battement tendu:** - Body based on carrying foot throughout the performance. (2) - Moving from hip joint in a straight line, taking into account knee full extension. (2) - Fingers insteps touch land throughout the performance. (2)

- **Battement jete:** - Body based on carrying foot throughout the performance. . (2) - Moving from hip joint in a straight line, taking into account knee full extension. . (2) - Student perform the skill with fast and power keeping leg angle between (20 to 45 degrees). . (2)

- **Rond de jambe:** - Movement of the hip joint. (2) - Full knee extension throughout the performance. (2) - Moving foot touches land throughout passing first feet position passé. (3) - Held pelvic stable and not moving during performance, movement continuity without stopping. (3)

- **Battement Fende:** - Bent and extend both working and carrying feet together. (2) - Touch at (s.c.p) area. (2) - Both feet full extension while working leg extended forward, sideward, backward. (2) - Keeping working feet angle at (45 degrees) and maintain both legs full rotation from hip joint to outside. (2)

- **Battement Frappe:** (2) Working feet full extension while leg extended forward, sideward, backward. (2) - Touch at (s.c.p) area and maintain full rotation from hip joint (2) - Working feet extension throughout skill performance. (2) - Keeping working feet angle at (45 degrees). (2) .

- **Grand Battement:** - Moving from hip joint in a straight line, taking into account knee full extension. (2) - Student perform the skill with required fast and power keeping, leg angle is 90 degrees or more. (2) - Do not directly land to fifth position and passing through Battment Tende. (2)

* Student get (A) upon proper performance as per each exercise standards

* Student get (B) upon doing one fault from each exercise standards

* Student get (C) upon doing two faults from each exercise standards

* Student get (D) upon doing three faults from each exercise standards

* Student get (E) upon doing four faults from each exercise standards

Table (4) Student observation form in ballet techniques (Center work)

Student Number	Arms positions 4 marks					Sute 6 marks				Changement de pied 8 marks					Pas de bouree 10 marks					Balance 10 marks					Glissade 8 marks					Arabesque 4 marks					Total Marks 50 marks	Final marks = Total Marks/10 = 5 marks
	A	B	C	D	E	A	B	C	D	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E		
Marks	4	3	2	1	0	6	4	2	0	8	6	4	2	0	10	8	6	3	0	10	8	5	3	0	8	6	4	2	0	4	3	2	1	0		
1																																				
2																																				
3																																				
4																																				
5																																				
6																																				

Technical Performance Standards

Arms positions: Start position: arms rounded in front, down to body, clear space between arm and body, and index fingers opposite, and do not touch each other. (2) First position: arms rounded in front of body, down to chest, clear space between arm and body, and index fingers opposite, and lightly touch each other. (2) Second position: arms rounded and extended aside in shoulders level, palms forward. (2) Third position: arms up over the head, and index fingers opposite, and touch each other. (2)

Sute: - Movement begin from pli, feet positions are correct. (2) - Knees, feet and insteps extended and down in the air. (2) - Landing, insteps touch land first and then arrive to pli and in feet positions as sute started. (2)

Changement de pied: - Movement begin from fifth feet position in pli. (2) - Body, knees and feet extended in the air. (2) - Legs switch from nearest point and in the air. (2) - Landing, insteps touch land first and then arrive to pli and in feet positions as sute started. (2)

Pas de bouree: Movement begin from fifth feet position in pli and back feet lifted from land. (2) Movement start with back feet. (2) Arrive to second feet position, body extended and on fingertips. (3) Arrive to fifth feet position in pli with legs fully rotated outside of hip joint. (3)

Balance: - Starting from feet fifth position. (2) - Full rotation from hip joint, knees and feet to outside and movement starts with back foot. (3) - Working leg fully extended side wards. (2) - Exchange to body COG to be on feet in fifth feet position in Demi plie. (3)

Glissade: - Movement begin from fifth feet position in pli. (2) - Full rotation from hip joint, knees and feet to outside and movement starts with back foot. (2) - Passing through flight maintaining body shape in air. (2) - Arrive to final position in pli. (2)

Arabesque: - Body weight vertically based on carrying leg. (1) - Maintain body balance. (1) - Shoulders in a straight line and on same height. (1) - Working leg not bent and extended backward. (1)

* Student get (A) upon proper performance as per each exercise standards

* Student get (B) upon doing one fault from each exercise standards

* Student get (C) upon doing two faults from each exercise standards

* Student get (D) upon doing three faults from each exercise standards

* Student get (E) upon doing four faults from each exercise standards

Observation form validity, reliability and objectivity
Form Validity

Two methods used to confirm the researcher used to confirm form validity, discrimination validity by comparing highest and lowest quartiles and internal consistency validity by calculating correlation coefficient between each skill and total form. Tables in appendixes (6) and (7) show statistically significant difference between highest and low quartiles for each skill and observation form total marks for "Exercises at the Barre" and "enter work" performance evaluation respectively. Table in appendixes (8) and (9) show statistically significant correlation between each skill and observation form total marks for. This confirms form's validity.

Form reliability:

Tables in appendixes (10) and (11) show overall form high alpha coronach coefficient reliability (close to 1.00). Tables in appendix (12) and (13) show high alpha coronach coefficient between judges. This confirms form reliability

Objectivity:

ANOVA test results shown in tables presented in appendixes (14) and (15) reveal non-significant differences between judges' evaluation in "Exercises at the Barre" and "Center work" skills and total marks. This confirms form objectivity.

Research implementation steps:

1- Researcher presented discussed the final observation form with faculty staff exerts who will judge the evaluation, explained all the important point and answered all the queries.
2- Students' performance evaluation "
   - Second grade students divided to four study groups (A), (B), (C), (D)
   - Pilot study conducted on (5) students in group (D) 27/4/2015
   - Study sample in group (A), (B) and (C) in the period from 11/5/2015 to 13/5/2015 each group in a separate day
   - Each (6) students perform "Exercises at the Barre" and "Center work", they are evaluated by three judges from faculty staff (appendix 1) using the observation form designed by researcher, judges individually evaluate students in same time.

Statistical Processes:

All statistical work carried out using SPSS package and the following used:

- Discrimination validity   - Internal constancy validity
- ANOVA   - Tukey post-hoc test
- NB: While checking ANOVA and Tukey post-hoc; all skills raw marks converted to percentages to make the comparison possible

Will address the researcher in this Partial Results for the assessment of the performance of students in the techniques of ballet (exercises bar Barre Exercises at the ", the center of the hall" Center work ")

Results:

I- Exercises at the Barre

Table (5) Analysis of variance of differences between technical performance for exercises at the barre (n = 154)

Statistics exercises at the barre	Degrees of freedom		Squares sum		Squares mean		(F)
	Between groups	Within groups	Between groups	Within groups	Between groups	Within groups	
Performance level percentage	8	1377	269612.419	948781.922	23701.552	689.021	48.912*

* Significant at 0.05 (F significant = 1.945)

Table (5) results reveal statistically significant differences in technical performance levels of exercises at the barre, without explaining the source of these, therefore Tukey post-hoc test used to indicate source of differences significance as shown in table (6).

Table (6)

Differences Significance between exercises at the barre technical performance means using Tukey post-hoc test

exercises at the barre	Mean	Mean differences															
		Grand Battement		battement frappe		battement fend		Rond de jambe		Battement jete		Battement tendu		Grand plie		Demi plie		المجموع	
		Diff	P	Diff	P	Diff	P	Diff	P	Diff	P	Diff	P	Diff	P	Diff	P	Diff	P
Battement Grand	50.8665			-0.70416	1.000	2.05558	0.999	←-15.93143	0.000*	-0.10851	1.000	1.19006	1.000	19.69753↑	0.000*	36.14675↑	0.000*	0.51013	1.000
battement frappe	50.1623					2.75974	0.992	←-15.22727	0.000*	0.59565	1.000	1.89422	0.999	20.40169↑	0.000*	36.85091↑	0.000*	1.21429	1.000
battement fend	52.9221							←-17.98701	0.000*	-2.16409	0.998	-0.86552	1.000	17.64195↑	0.000*	34.09117↑	0.000*	-1.54545	1.000
Rond de jambe	34.9351									15.82292↑	0.000*	17.12149↑	0.000*	35.62896↑	0.000*	52.07818↑	0.000*	16.44156↑	0.000*
Battement jete	50.758											1.29857	1.000	19.80604↑	0.000*	36.25526↑	0.000*	0.61864	1.000
Battement tendu	52.0566													18.50747↑	0.000*	34.95669↑	0.000*	-0.67994	1.000
Grand plie	70.564															16.44922↑	0.000*	←-19.1874	0.000*
Demi plie	87.0132																	←-35.63662	0.000*
Total	51.3766																		

* Difference statistically significant (P <0.05)

Table (6) results and Figure (1) in appendix (16) reveal the following

- There are significant differences between Rond de jambe skill performance results and all other skills and total skills performance level in direction of other skills

- There are between significant differences between Grand plie skill performance level and Battement Grand, battement frappe, battement fend, Battement jete, Battement tendu and total skills in direction of Grand plie skill.

- There are significant differences between Demi plie skills performance level and all other skills and total skills performance level in direction of Demi plie skill.

Table (7)

Percentile distribution of exercises at the barre technical performance level

Percentiles	Battement Grand	Battement frappe	Battement Fend	Rond de jambe	Battement jete	Battement tendu	Grand plie	Demi plie	Total
5	16.67	0	25	0	0	0	33.33	33.33	17.5
10	16.67	25	25	0	0	16.67	33.33	33.33	24
15	16.67	25	25	0	16.67	50	33.33	66.67	28
20	16.67	25	25	0	16.67	50	66.67	66.67	32
25	50	25	50	0	50	50	66.67	66.67	36
30	50	37.5	50	0	50	50	66.67	100	42
35	50	50	50	20	50	50	66.67	100	44
40	50	50	50	20	50	50	66.67	100	44
45	50	50	50	45	50	50	66.67	100	49.5
50	50	50	50	50	50	50	66.67	100	52
55	50	50	50	50	50	50	66.67	100	54
60	50	50	50	50	50	50	66.67	100	54
65	50	50	50	50	50	50	66.67	100	54
70	50	50	50	50	50	50	66.67	100	54
75	50	50	50	50	50	50	100	100	56
80	50	50	50	50	66.67	50	100	100	64
85	100	100	100	50	100	100	100	100	84
90	100	100	100	70	100	100	100	100	89
95	100	100	100	100	100	100	100	100	100

Table (7) results reveal above average performance level for Demi plie skill (10% of the sample got marks less than the 33.33%, 5% between 33.33% and 66.67%, and 75% between 66.67%, and 100%). Average performance level for Grand plie skill (15% lower than 33.33%, 55% between 33.33% and 66.67%, 30% between 66.67% and 100%), and poor performance for all other skills and total skills.

II- Center work:

Table (8)
Analysis of variance of differences between technical performance for Center work exercises (n = 154)

Center work exercises \ Statistics	Degrees of freedom		Squares sum		Squares mean		(F)
	Between groups	Within groups	Between groups	Within groups	Between groups	Within groups	
Performance level percentage	7	1224	547259.101	813910.194	78179.872	664.959	117.571*

* Significant at 0.05 (F significant = 2.017)

Table (8) results reveal statistically significant differences in technical performance levels of Center work exercises at, without explaining the source of these, therefore Tukey post-hoc test used to indicate source of differences significance as shown in table (9).

Table (9)

Differences Significance between Center work technical performance means using Tukey post-hoc test

Statistics / Center Work	Mean	Arms positions		Balance		Pas de bouree		Glissade		Changement		Sute		Arabesque		Total	
		Diff	P	Diff	P	Diff	P	Diff	P	Diff	P	Diff	P	Diff	P	Diff	P
Arms positions	86.6883			← -31.6558	0.000*	← -67.7273	0.000*	← -52.0130	0.000*	← -56.6558	0.000*	← -47.1857	0.000*	← -15.0974	0.000*	← -44.9481	0.000*
Balance	55.0325					← -36.0714	0.000*	← -20.3571	0.000*	← -25.0000	0.000*	← -15.5298	0.000*	16.5584↑	0.000*	← -13.2922	0.000*
Pas de bouree	18.96100							15.7143↑	0.000*	11.0714↑	0.004*	20.5416↑	0.000*	52.6299↑	0.000*	22.7792↑	0.000*
Glissade	34.6753									-4.6429	0.762	4.8273	0.724	36.9156↑	0.000*	7.0649	0.240
Changement	30.0325											9.4702↑	0.028*	41.5584↑	0.000*	11.7078↑	0.002*
Sute	39.5027													32.0883↑	0.000*	2.2376	0.995
Arabesq-ue	71.5909															← -29.8507	0.000*
Total	41.7403																

* Difference statistically significant (P <0.05)

Table (9) results and figure (2) in appendix (16) reveal the following

- There are significant differences between arms positions skill performance level and all other skills and total skills in direction of arms position skill

- There are significant differences between Balance skill performance level and Pas de bouree, Glissade, Chagement, Sute and total skills performance level in direction of Balance skill.

- There are significant differences between Pas de bouree skill performance level and Glissade, Chagement, Sute, and total skills in direction of other skills

- There are significant differences between Chagement skill performance level and Sute and total skills in direction of other skills

- There are significant differences between Arabesque skill performance level and Balance, Glissade, Chanement, Sute and total skills performance level in direction of Arabesque skill.

   - Pas de bouree, Glissade, Chagement, Sute, and total skills performance level percentage was less than 50%.

Table (10)

Percentile distribution of Center work technical performance level

Percentiles	Arms Position	Balance	Pas de Bouree	Glissade	Changement	Sute	Arabesque	Total
5	50	0	0	0	0	0	25	20
10	50	0	0	0	0	0	50	24
15	50	25	0	0	0	0	50	26
20	50	25	0	0	0	16.67	50	28
25	75	50	0	0	0	16.67	50	30
30	100	50	0	10	0	16.67	50	32
35	100	50	0	20	0	33.33	50	34
40	100	50	0	30	25	50	50	36
45	100	50	0	50	25	50	50	38
50	100	50	0	50	25	50	50	40
55	100	50	20	50	50	50	100	42
60	100	50	20	50	50	50	100	44
65	100	50	20	50	50	50	100	48
70	100	50	30	50	50	50	100	48
75	100	100	50	50	50	50	100	52
80	100	100	50	50	50	50	100	54
85	100	100	50	50	50	50	100	56
90	100	100	50	50	50	50	100	62
95	100	100	50	100	81.25	100	100	70

Table (10) results reveal high performance level for Arms positions skill (75% of the sample got marks between 75% and 100%). Average performance level for Arabesque skill (5% less than 25%, 45% between 25% and 50%, 50% between 50 %, 100%), as well as poor performance for all other skills and total skill.

Discussion:

Table (5) results reveal statistically significant differences in technical performance levels of exercises at the barre, where F = 48.912 greater than F significant at 0.05 (1.945). ANOVA does not explain the source of differences, therefore Tukey post-hoc test used to indicate this source. Table (6) results and figure (1) in appendix (16) reveal significant differences between Rond de jambe skills' performance results and all other skills and total skills performance level in direction of other skills. It also reveal significant differences between Grand plie skill performance level and Battement Grand, battement frappe, battement fend, Battement jete, Battement tendu and total skills in direction of Grand plie skill, and significant differences between Demi plie skills performance level and all other skills and total skills performance level in direction of Demi plie skill. Rond de jambe performance percentage was 34.93%. Battement Grand, battement frappe, battement fend, Battement jete and Battement tendu performance percentage ranged between 50% and 52%. Table (7) results reveal above average performance level for Demi plie skill (10% of the sample got marks less than the 33.33%, 5% between 33.33% and 66.67%, and 75% between 66.67%, and 100%). Average performance level for Grand plie skill (15% lower than 33.33%, 55% between 33.33% and 66.67%, 30% between 66.67% and 100%), and poor performance for all other skills and total skills. So first hypothesis accepted, which states, **"There is variance in exercises at the barre technical performance level within**

second grade students, Faculty of Physical Education for Girls, Alexandria University"

Table (8) results reveal statistically significant differences in technical performance levels of Center work exercises at, without explaining the source of these, therefore Tukey post-hoc test used to indicate source of differences significance. Table (9) and figure (2) in appendix (16) reveal significant differences between arms positions skill performance level and all other skills and total skills in direction of arms position skill. It also reveal significant differences between Balance skill performance level and Pas de bouree, Glissade, Chagement, Sute and total skills performance level in direction of Balance skill. In addition to significant differences between Pas de bouree skill performance level and Glissade, Chagement, Sute, and total skills in direction of other skills. It also revela significant differences between Chagement skill performance level and Sute and total skills in direction of other skills, as well as significant differences between Arabesque skill performance level and Balance, Glissade, Chanement, Sute and total skills performance level in direction of Arabesque skill. Pas de bouree, Glissade, Chagement, Sute, and total skills performance level was less than 50%. Table (10) results reveal high performance level for Arms positions skill (75% of the smple got marks between 75% and 100%). Average performance level for Arabesque skill (5% less than 25%, 45% between 25% and 50%, 50% between 50 %, 100%), as well as poor performance for all other skills and total skill. So second hypothesis accepted, which states, **"There is variance Center work technical performance level within second grade students, Faculty of Physical Education for Girls, Alexandria University**"

Conclusions:

- There is variance in exercises at the barre technical performance level within second grade students, Faculty of Physical Education for Girls, Alexandria University

- There is variance in Center work technical performance level within second grade students, Faculty of Physical Education for Girls, Alexandria University

Recommendations:

- Attention to be given to develop physical and motor abilities, which help to raise Ballet technical performance for students at Faculty of Physical Education for Girls, Alexandria University.

- Attention to be given to use various teaching method aiming to raise Ballet technical performance for students at Faculty of Physical Education for Girls, Alexandria University.

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Appendixes
Appendix (1)

Experts list

Prof. Dr Amal Hamed Al-Batawy: Motor expression professor, curricula and physical education teaching method department, Faculty of physical education for girls, Alexandria University.

Prof. Dr Taragy Abd Elrahman: Motor expression professor, curricula and physical education teaching method department, Faculty of physical education for girls, Alexandria University.

Prof. Dr Afaf Abd Elrahman Zahran: Motor expression professor, curricula and physical education teaching method department, Faculty of physical education for girls, Alexandria University.

Prof. Dr Sawsan And Elkhaleq: Motor expression professor, curricula and physical education teaching method department, Faculty of physical education for girls, Alexandria University.

Prof. Dr Fatma Al-Azab: Motor expression professor, curricula and physical education teaching method department, Faculty of physical education for girls, Alexandria University.

Prof. Dr Hana Affi: Motor expression professor, curricula and physical education teaching method department, Faculty of physical education for girls, Tanta University.

Asst. Prof. Dr. Iman Elsherif: Assistant professor, curricula and physical education teaching method department, Faculty of physical education for girls, Alexandria University.

Asst. Prof. Dr. Swasan Yousuf Abdo: Assistant professor, recreation department, Faculty of physical education for girls, Alexandria University.

Appendix (2)

Practical test means for 2nd grade student in the academic years (2010/2011) to (2012/2013)

Academic year Marks means	2010/2011	2011/2012	2013/2013
Practical test marks mean (maximum 10)	3:5.5 marks	2.5:5 Marks	3:6 marks

Appendix (3)

Alexandria University
Faculty of physical education for girls

Experts' questionnaire about good performance standards in ballet techniques

The researcher is conducting a study titled

" Evaluating ballet techniques performance level in light of good performance standards for Second Grade Students, Faculty of Physical Education for Girls, Alexandria University

This forms aims at identify experts opinion about performance standard that should be included in students' ballet performance evaluation form (Exercises at the barre, and Center work). The researcher would like to benefit from your experience in this field, so please express your opinion about the technical points and evaluation standards.

With most respect

The researcher

Randa Farouk El-Sayed Askar

Ballet Evaluation Standards

	Agree	Disagree
I- Exercises at the Barre		
Demi plie:		
- Hip joint full rotation, legs to outside during performance.		
- Body COG distributed among feet		
- Body straight during movement.		
- Performance Continuity.		
More standards:		
Grand plie		
- Maintaining hip joint rotation, legs to outside during performance.		
- Raise ankles to reach full landing position		
- Do not raising ankles in second position on reaching full landing position in Grand pli.		
Body straight and stance during movement		
- Movement performance continuity without appearance of movement stopping		
More standards:		
Battement tendu:		
- Body based on carrying foot throughout the performance.		
- Moving from hip joint in a straight line, taking		
- Knee full extension		
-Insteps position kept in one direction (Forward, sideward, backward)		
- Fingers insteps touch land throughout the performance.		
- Skill performance with required speed and force		
More standards:		
Battement jete (with angle 20 to 45 degrees):		
- Body based on carrying foot throughout the performance effecting performance level through skill performing.		
- Moving from hip joint in a straight line.		
- Knee full extension		
Keeping feet angle within 20 to 45 degrees		
- Skill performance with required speed and force		
More standards		
Grand Battement (with angle of 90 degree or more):		
- Body based on carrying foot throughout the performance effecting performance level through skill performing.		
- Moving from hip joint in a straight line.		
- Knee full extension.		
- leg angle is 90 degrees or more		
- Do not directly land to fifth position and passing through Battment Tende		
- perform the skill with required fast and power		
More standards:		
Rond de jambe		
- Movement of the hip joint.		
- Full knee extension throughout the performance.		
- Moving foot touches land throughout performance.		
- Held pelvic stable and not moving during performance		
- Movement continuity without stopping.		
- Passing Battment Tende forward, wideward and backkward		
- Passing feet passé position		
More standards		
Battement Frappe		
- Working feet full extension while leg extended forward, sideward, backward.		
- Working feet rotation from hip joint		
- Trunk straight and stance,		
- Keeping working feet angle at (45 degrees).		

	Agree	Disagree
- Touch at (s.c.p) area		
More standards		
* Battement Fende		
- Bent and extend both working and carrying feet together.		
- Both feet full extension while working leg extended forward, sideward, backward.		
- Keeping working feet angle at (45 degrees		
- Maintain both legs full rotation from hip joint to outside.		
- Touch at (s.c.p) area.		
More standards:		
II- Center work		
Arms positions		
Start position: arms rounded in front, down to body.		
clear space between arm and body		
Index fingers opposite, and do not touch each other.		
First position: arms rounded in front of body, down to chest.		
clear space between arm and body		
Index fingers opposite, and lightly touch each other.		
Second position: arms rounded		
Arms extended aside in shoulders level		
palms forward		
Third position: arms rounded		
arms up over the head		
index fingers opposite, and touch each other		
More standards		
* Sute:		
- Movement begin from pli		
- Knees, feet and insteps extended and down in the air.		
- Performed from all feet positions		
- Landing in pli position and in feet positions as sute started.		
More standards		
* Changement de pieds		
- Movement begin from fifth feet position in pli		
- Body, knees and feet extended in the air.		
- Legs switch from in the air.		
Landingin pli position.		
More standards		
* Pas de bouree		
Movement begin from fifth feet position in pli and back feet lifted from land		
Movement start with back feet		
Arrive to second feet position, body extended and on fingertips.		
Arrive to fifth feet position in pli with legs fully rotated outside of hip joint		
More standards		
* Glissade:		
- Movement begin from fifth feet position in pli		
- Full rotation from hip joint, knees and feet to outside and movement starts with back foot		
- Passing through flight phase maintaining body shape in air.		
- Arrive to final position in pli.		
More standards:		
* Balance:		
- Starting from feet fifth position.		
- Full rotation from hip joint, knees and feet to outside and movement starts with back foot		
- Working leg fully extended side wards.		
- Exchange body COG to be on feet in fifth feet position in Demi plie		
More standards		

	Agree	Disagree
Arabesque:		
- Body weight vertically based on carrying leg.		
- Maintain body balance.		
- Shoulders in a straight line and on same height.		
- Working leg not bent and extended backward.		
More standards:		

Appendix (4)

Exercises at the barre good performance standards in its final form

* Demi plie:
- Hip joint full rotation, legs to outside during performance.
- Body COG distributed among feet and body straight during movement.
- Performance Continuity.
* Grand plie
- Maintaining hip joint rotation, legs to outside during performance.
- Raise ankles to reach full landing position and not raising ankles in second position.
- Movement performance continuity without appearance of movement stopping
* Battement tendu:
- Body based on carrying foot throughout the performance.
- Moving from hip joint in a straight line, taking into account knee full extension.
- Fingers insteps touch land throughout the performance.
* Battement jete (with angle 20 to 45 degrees):
- Body based on carrying foot throughout the performance.
- Moving from hip joint in a straight line, taking into account knee full extension.
- Student perform the skill with fast and power keeping leg angle between (20 to 45 degrees)
Grand Battement (with angle of 90 degree or more):
- Moving from hip joint in a straight line, taking into account knee full extension.
- Student perform the skill with required fast and power keeping, leg angle is 90 degrees or more
- Do not directly land to fifth position and passing through Battment Tende
Rond de jambe
- Movement of the hip joint.
- Full knee extension throughout the performance.
- Moving foot touches land throughout performance, passing first feet position passé.
- Held pelvic stable and not moving during performance, movement continuity without stopping.
* Battement Frappe
- Working feet full extension while leg extended forward, sideward, backward.
- Touch at (s.c.p) area and maintain full rotation from hip joint
- Working feet extension throughout skill performance
- Keeping working feet angle at (45 degrees).
* Battement Fende
- Bent and extend both working and carrying feet together.
- Touch at (s.c.p) area.
- Both feet full extension while working leg extended forward, sideward, backward.
- Keeping working feet angle at (45 degrees) and maintain both legs full rotation from hip joint to outside.

Center work good performance standards in its final form

Arms positions
Start position: arms rounded in front, down to body, clear space between arm and body, and index fingers opposite, and do not touch each other.
First position: arms rounded in front of body, down to chest, clear space between arm and body, and index fingers opposite, and lightly touch each other.
Second position: arms rounded and extended aside in shoulders level, palms forward
Third position: arms up over the head, and index fingers opposite, and touch each other
* Sute:
- Movement begin from pli, feet positions are correct.
- Knees, feet and insteps extended and down in the air.
- Landing, insteps touch land first and then arrive to pli and in feet positions as sute started.
* Changement de pieds
- Movement begin from fifth feet position in pli
- Body, knees and feet extended in the air.
- Legs switch from nearest point and in the air.
Landing, insteps touch land first and then arrive to pli and in feet positions as sute started.
* Pas de bouree
Movement begin from fifth feet position in pli and back feet lifted from land
Movement start with back feet
Arrive to second feet position, body extended and on fingertips.
Arrive to fifth feet position in pli with legs fully rotated outside of hip joint
* Glissade:
- Movement begin from fifth feet position in pli
- Full rotation from hip joint, knees and feet to outside and movement starts with back foot
- Passing through flight phase, maintaining body shape in air.
- Arrive to final position in pli.
* Balance:
- Starting from feet fifth position.
- Full rotation from hip joint, knees and feet to outside and movement starts with back foot
- Working leg fully extended side wards.
- Exchange body COG to be on feet in fifth feet position in Demi plie
Arabesque:
- Body weight vertically based on carrying leg.
- Maintain body balance.
- Shoulders in a straight line and on same height.
- Working leg not bent and extended backward.

Appendix (5)

Students' ballet techniques' observation form.

This form used in evaluating 2nd grade students in ballet performance level (Exercises at the barre, and Center work). Evaluation us individual and each student get the mark thet reflect her performance level

Observation form using guides

1- Carefully read goof performance standards.

2- Note that each standard has a specific mark

3- If student fulfill all standards, she gets A (highest evaluation)

4- If student neglect or not fulfill one standard, she gets (B)

5- If student neglect or not fulfill two standards, she gets (C)

6- If student neglect or not fulfill three standards, she gets (D)

7- If student neglect or not fulfill four standards, she gets (E) (The lowest evaluation and equal zero marks)

Marks calculation method

I- Exercises at the Barre total mark calculated (from 50 marks)

II- Actual Exercises at the barre mark calculated by divide the mark in (I) by 10.

III- Center work total mark calculated (from 50 marks)

IV- Actual center work mark calculated by divide the mark in (III) by 10.

V- Final marks calculated by adding actual marks in (II) and (IV).

Student observation form in ballet techniques (Exercises at the Barre)

Student Number	Plie								Battement tendu 6 marks				Battement jete 6 marks				Rond de jambe 10 marks					Battement Fende 8 marks					Battement Frappe 8 marks					Grand Battement 6 marks				Total Marks 50 marks	Final marks = Total Marks/ 10 = 5 marks
	Demi plie 3 marks				Grand plie 3 marks																																
	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D		
Marks	3	2	1	0	3	2	1	0	6	4	2	0	6	4	2	0	10	8	6	4	0	8	6	4	2	0	8	6	4	2	0	6	4	2	0		
1																																					
2																																					
3																																					
4																																					
5																																					
6																																					

Technical Performance Standards

Demi plie:
- Hip joint full rotation, legs to outside during performance. (1)
- Body COG distributed among feet and body straight during movement. (1)
- Performance Continuity. (1)

Grand plie:
- Maintaining hip joint rotation, legs to outside during performance. (1)
- Raise ankles to reach full landing position and not raising ankles in second position. (1)
- Movement performance continuity without appearance of movement stopping (1)

Battement tendu:
- Body based on carrying foot throughout the performance. (2)
- Moving from hip joint in a straight line, taking into account knee full extension. (2)
- Fingers insteps touch land throughout the performance. (2)

Battement jete:
- Body based on carrying foot throughout the performance. . (2)
- Moving from hip joint in a straight line, taking into account knee full extension. . (2)
- Student perform the skill with fast and power keeping leg angle between (20 to 45 degrees). . (2)

Rond de jambe:
- Movement of the hip joint. (2)
- Full knee extension throughout the performance. (2)
- Moving foot touches land throughout passing first feet position passé. (3)
- Held pelvic stable and not moving during performance, movement continuity without stopping. (3)

Battement Fende:
- Bent and extend both working and carrying feet together. (2)
- Touch at (s.c.p) area. (2)
- Both feet full extension while working leg extended forward, sideward, backward. (2)
- Keeping working feet angle at (45 degrees) and maintain both legs full rotation from hip joint to outside. (2)

Battement Frappe:
اللمس *2 - Working feet full extension while leg extended forward, sideward, backward. (2)
- Touch at (s.c.p) area and maintain full rotation from hip joint (2)
- Working feet extension throughout skill performance. (2)
- Keeping working feet angle at (45 degrees). (2)
.

Grand Battement:
- Moving from hip joint in a straight line, taking into account knee full extension. (2)
- Student perform the skill with required fast and power keeping, leg angle is 90 degrees or more. (2)
- Do not directly land to fifth position and passing through Battment Tende. (2)

* Student get (A) upon proper performance as per each exercise standards

* Student get (B) upon doing one fault from each exercise standards

* Student get (C) upon doing two faults from each exercise standards

* Student get (D) upon doing three faults from each exercise standards

* Student get (E) upon doing four faults from each exercise standards

Student observation form in ballet techniques (Center work)

Student Number	Arms positions 4 marks					Sute 6 marks				Changement de pied 8 marks					Pas de bouree 10 marks					Balance 10 marks					Glissade 8 marks					Arabesque 4 marks					Total Marks 50 marks	Final marks = Total Marks/ 10 = 5 marks
	A	B	C	D	E	A	B	C	D	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E		
Marks	4	3	2	1	0	6	4	2	0	8	6	4	2	0	10	8	6	3	0	10	8	5	3	0	8	6	4	2	0	4	3	2	1	0		
1																																				
2																																				
3																																				
4																																				
5																																				
6																																				
Technical Performance Standards	Start position: arms rounded in front, down to body, clear space between arm and body, and index fingers opposite, and do not touch each other. (2) First position: arms rounded in front of body, down to chest, clear space between arm and body, and index fingers opposite, and lightly touch each other. (2) Second position: arms rounded and extended aside in shoulders level, palms forward. (2) Third position: arms up over the head, and index fingers opposite, and touch each other. (2)					- Movement begin from pli, feet positions are correct. (2) - Knees, feet and insteps extended and down in the air. (2) - Landing, insteps touch land first and then arrive to pli and in feet positions as sute started. (2)				- Movement begin from fifth feet position in pli. (2) - Body, knees and feet extended in the air. (2) - Legs switch from nearest point and in the air. (2) - Landing, insteps touch land first and then arrive to pli and in feet positions as sute started. (2)					Movement begin from fifth feet position in pli and back feet lifted from land. (2) Movement start with back feet. (2) Arrive to second feet position, body extended and on fingertips. (3) Arrive to fifth feet position in pli with legs fully rotated outside of hip joint. (3)					- Starting from feet fifth position. (2) - Full rotation from hip joint, knees and feet to outside and movement starts with back foot. (3) - Working leg fully extended side wards. (2) - Exchange to body COG to be on feet in fifth feet position in Demi plie. (3)					- Movement begin from fifth feet position in pli. (2) - Full rotation from hip joint, knees and feet to outside and movement starts with back foot. (2) - Passing through flight maintaining body shape in air. (2) - Arrive to final position in pli. (2)					- Body weight vertically based on carrying leg. (1) - Maintain body balance. (1) - Shoulders in a straight line and on same height. (1) - Working leg not bent and extended backward. (1)						

* Student get (A) upon proper performance as per each exercise standards

* Student get (B) upon doing one fault from each exercise standards

* Student get (C) upon doing two faults from each exercise standards

* Student get (D) upon doing three faults from each exercise standards
* Student get (E) upon doing four faults from each exercise standards

Appendix (6)

Discrimination validity for exercises at the barre observation form

Statistics Exercises At the Barre	Highest quartile n=13		Lowest quartile n=13		Man Whitney test	
	Mean	SD	Mean	SD	U	P
Battement Grand	6.15	2.08	1.85	0.99	3	0
battement frappe	6.15	2.08	1.85	0.99	3.00	0.00
battement fend	6.15	2.08	2.77	1.54	21.00	0.00
Rond de jambe	5.77	1.88	0.00	0.00	0.00	0.00
Battement jete	4.38	1.56	0.92	0.76	3.50	0.00
Battement tendu	3.92	1.44	1.23	0.83	9.00	0.00
Grand plie	3.00	0.00	1.69	0.63	0.00	0.00
Demi plie	3.00	0.00	1.92	0.28	0.00	0.00
Total	4.00	1.41	1.77	1.01	20.00	0.00

The above table results reveal significant differences between highest and lowest quartiles for all skills as well as total skills, the matter which proof validity of exercises at the barre observation form

Discrimination validity for Center work observation form

Statistics Center work	Highest quartile n=13		Lowest quartile n=13		Man Whitney test	
	Mean	SD	Mean	SD	U	P
Arms positions	4.00	0.00	1.77	1.09	6.50	0.00
Balance	7.54	1.20	0.46	0.88	0.00	0.00
Pas de bouree	5.00	0.00	0.00	0.00	0.00	0.00
Glissade	5.00	0.00	0.00	0.00	0.00	0.00
Changement de pieds	4.00	0.00	0.00	0.00	0.00	0.00
Sute:	4.85	1.52	0.08	0.28	0.00	0.00
Arabesque	4.00	0.00	1.92	0.28	0.00	0.00
Total	4.00	0.00	1.77	1.09	6.50	0.00

The above table results reveal significant differences between highest and lowest quartiles for all skills as well as total skills, the matter which proof validity of Center work observation form

Appendix (8)

Internal consistency validity for Exercises at the barre observation form

n=50

Exercises At the Barre	Statistics		Total skills		Correlation with total skills (R)
Skill	Mean	SD	Mean	SD	
Battement Grand	2.94	1.19			0.852*
battement frappe	4.00	1.95			0.824*
battement fend	4.21	1.81			0.757*
Rond de jambe	2.64	2.77	4.17	8.68	0.797*
Battement jete	2.79	1.52			0.871*
Battement tendu	2.79	1.33			0.569*
Grand plie	2.22	0.61			0.607*
Demi plie	2.57	0.56			0.786*

* Significant at 0.05 (R significant = 0.279)

The above table results reveal significant correlation between each skill mark and total skill marks for all skills, the matter which proof internal validity of exercises at the barre observation form

Appendix (9)

Internal consistency validity for Center work observation form

n=50

Center work Skill	Statistics Mean	SD	Total skills Mean	SD	Correlation with total skills (R)
Arms positions	3.41	1.14			0.616*
Balance	3.80	2.74			0.787*
Pas de bouree	2.49	2.25			0.716*
Glissade	3.34	2.32	20.69	5.97	0.538*
Changement de pieds	1.85	1.87			0.708*
Sute	2.45	2.00			0.605*
Arabesque	3.35	0.97			0.656*

* Significant at 0.05 (R significant = 0.279)

The above table results reveal significant correlation between each skill mark and total skill marks for all skills, the matter which proof internal validity of center work observation form

Appendix (10)

Cronbach's Alpha reliability coefficient for exercises at the barre observation form

n=50

Statistics Exercises At the Barre	Mean	SD	Overall form Cronbach's Alpha
Battement Grand	2.94	1.19	
battement frappe	4.00	1.95	
battement fend	4.21	1.81	
Rond de jambe	2.64	2.77	0.767
Battement jete	2.79	1.52	
Battement tendu	2.79	1.33	
Grand plie	2.22	0.61	
Demi plie	2.57	0.56	

The above table shows high Cronbach's Alpha coefficient (near to 1.00), which proof the exercises at the barre evaluation form reliability.

Appendix (11)

Cronbach's Alpha reliability coefficient for Center work observation form

Statistics Cenetr Work	Mean	SD	Overall form Cronbach's Alpha
Arms positions	3.41	1.14	
Balance	3.80	2.74	
Pas de bouree	2.49	2.25	
Glissade	3.34	2.32	0.642
Changement de pieds	1.85	1.87	
Sute	2.45	2.00	
Arabesque	3.35	0.97	

The above table shows high Cronbach's Alpha coefficient (near to 1.00), which proof the center work evaluation form reliability.

Appendix (12)

Cronbach's Alpha reliability coefficient between judges for exercises at the barre observation form

n=50

Statistics / Exercises At the Barre	1st judge		2nd judge		3rd judge		Cronbach's Alpha reliability coefficient
	Mean	SD	Mean	SD	Mean	SD	
Battement Grand	2.94	1.17	2.96	1.18	2.92	1.22	0.905
battement frappe	4.00	1.92	3.96	1.94	4.04	2.00	0.771
battement fend	4.24	1.77	4.20	1.80	4.21	1.86	0.780
Rond de jambe	2.75	2.78	2.53	2.74	2.65	2.78	0.816
Battement jete	2.78	1.54	2.76	1.45	2.81	1.57	0.952
Battement tendu	2.78	1.29	2.84	1.36	2.75	1.33	0.942
Grand plie	2.22	0.61	2.18	0.62	2.27	0.61	0.904
Demi plie	2.59	0.54	2.59	0.57	2.54	0.58	0.769
Total	24.29	8.68	24.02	8.53	24.19	8.84	0.748

The above table shows high Cronbach's Alpha coefficient between judges (near to 1.00), which proof the exercises at the barre evaluation form reliability.

Appendix (13)

Cronbach's Alpha reliability coefficient between judges for Center work observation form

Statistics / Center work	1st judge		2nd judge		3rd judge		Cronbach's Alpha reliability coefficient
	Mean	SD	Mean	SD	Mean	SD	
Arms positions	3.42	1.13	3.38	1.16	3.44	1.15	0.995
Balance	3.84	2.74	3.84	2.71	3.72	2.76	0.994
Pas de bouree	2.50	2.27	2.52	2.22	2.46	2.25	0.995
Glissade	3.34	2.35	3.40	2.29	3.28	2.32	0.997
Changement de pieds	1.84	1.89	1.84	1.86	1.86	1.86	0.997
Sute	2.44	2.00	2.48	2.02	2.42	1.98	0.997
Arabesque	3.36	0.96	3.34	1.00	3.36	0.94	0.993
Total	20.74	5.98	20.80	6.03	20.54	5.90	0.997

The above table shows high Cronbach's Alpha coefficient between judges (near to 1.00), which proof the center work evaluation form reliability.

Appendix (14)

Analysis of variance (ANOVA) between judges evaluation for exercises at the barre

n=50

Statistics exercises at the barre	Degrees of freedom		Squares sum		Squares mean		(F)
	Between groups	Within groups	Between groups	Within groups	Between groups	Within groups	
Grand Battement	2	147	0.048	208.412	0.024	1.418	0.017
battement frappe	2	147	0.162	559.838	0.081	3.808	0.021
battement fend	2	147	0.041	481.132	0.020	3.273	0.006
Rond de jambe	2	147	1.189	1125.371	0.594	7.656	0.078
Battement jete	2	147	0.057	339.116	0.028	2.307	0.012
Battement tendu	2	147	0.221	258.373	0.110	1.758	0.063
Grand plie	2	147	0.222	55.518	0.111	0.378	0.293
Demi plie	2	147	0.071	46.623	0.035	0.317	0.112
Total	2	147	1.952	11076.881	0.976	75.353	0.013

* Significant at 0.05 (F significant = 3.058)

The above table results reveal that differences between judges in evaluating exercises at the barre are not significant, the matter that proof observation form's objectivity

Appendix (15)

Analysis of variance (ANOVA) between judges evaluation for center work

n=50

Statistics exercises at the barre	Degrees of freedom		Squares sum		Squares mean		(F)
	Between groups	Within groups	Between groups	Within groups	Between groups	Within groups	
Arms positions	2	147	0.093	192.280	0.047	1.308	0.965
Balance	2	147	0.480	1101.520	0.240	7.493	0.968
Pas de bouree	2	147	0.093	743.400	0.047	5.057	0.991
Glissade	2	147	0.360	791.300	0.180	5.383	0.967
Changement de pieds	2	147	0.013	513.460	0.007	3.493	0.998
Sute	2	147	0.093	588.980	0.047	4.007	0.988
Arabesque	2	147	0.013	138.260	0.007	0.941	0.993
Total	2	147	1.853	5242.040	0.927	35.660	0.974

* Significant at 0.05 (F significant = 3.058)

The above table results reveal that differences between judges in evaluating center work are not significant, the matter that proof observation form's objectivity
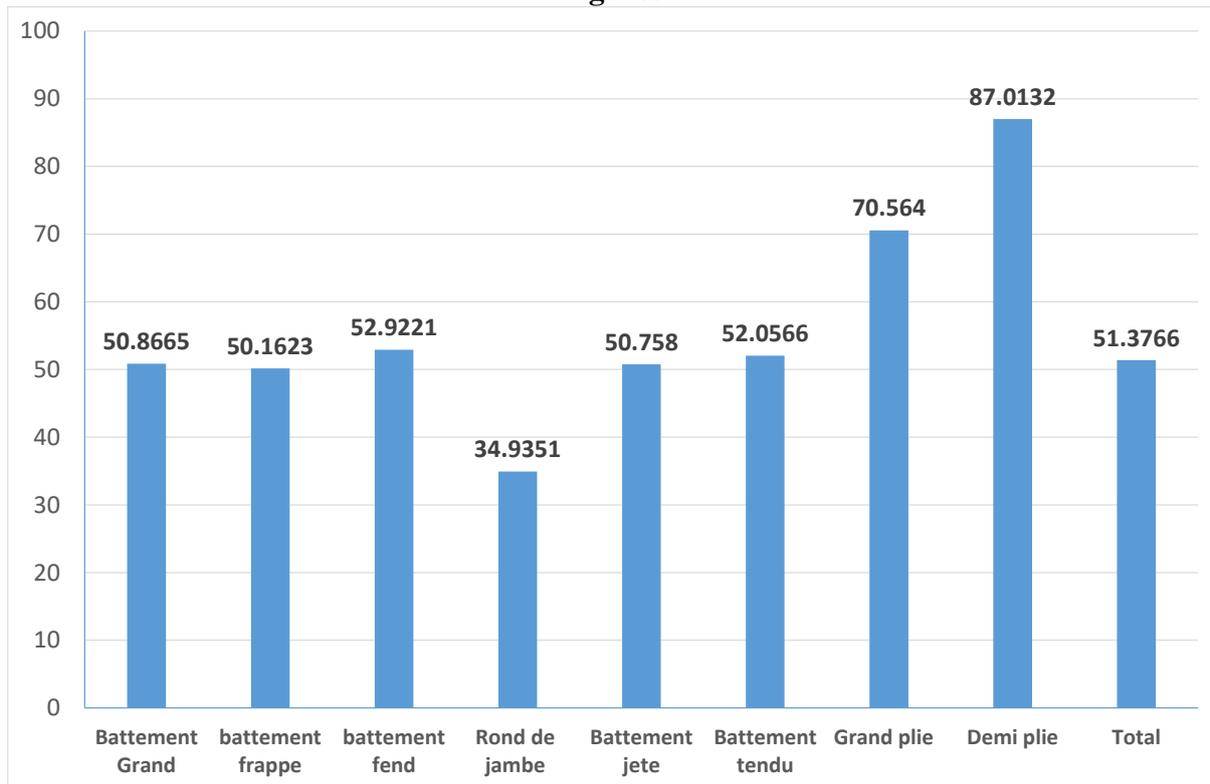
Figures

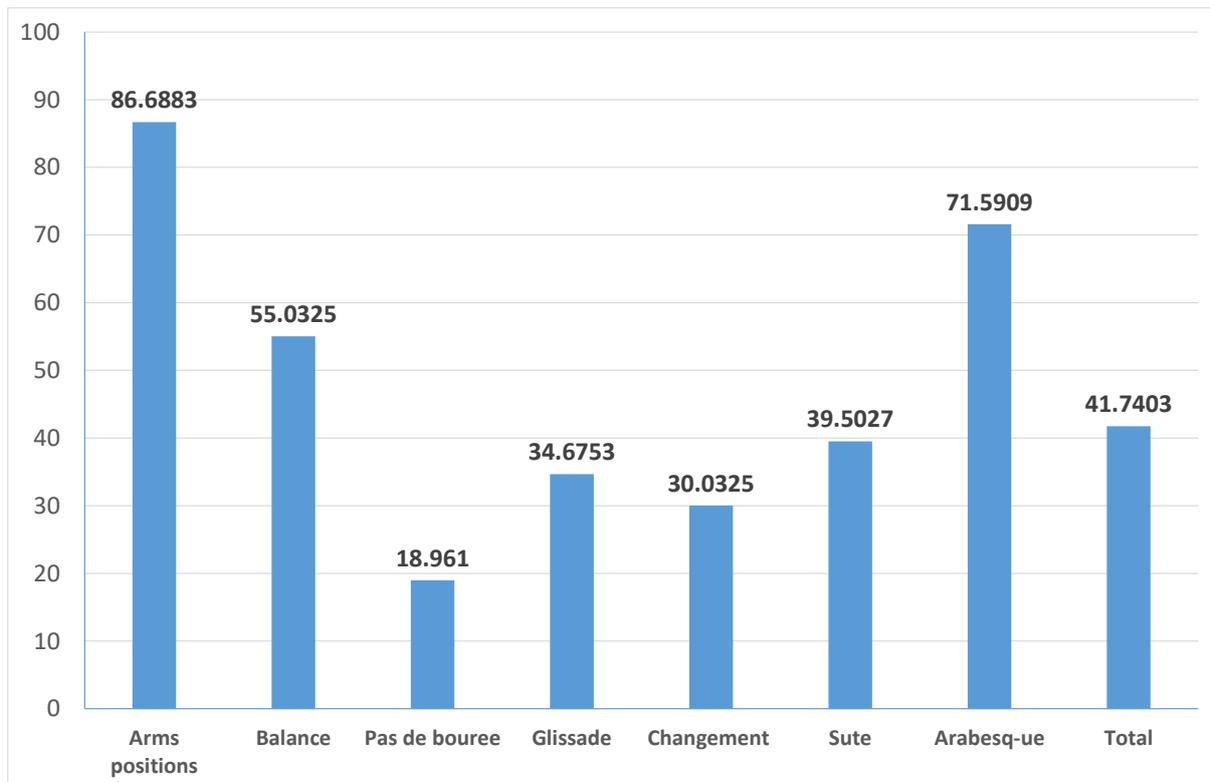**Figure (1) technical performance means for exercises at the barre**

Figure (2) technical performance means for center work