Journal of Sports Sciences
ISSN: 2074 - 6032 ISSN-e: 2710 - 5016
Journal Homepage: https://pessj.uodiyala.edu.iq

Information Article

Effects of Attentional Focus-Modulated Instruction on Fundamental Motor Skill Acquisition on the Balance Beam in Female Artistic Gymnasts

Hadeel Yahya Mohammed
University of Diyala / College of Dentistry

ARTICLE INFO

Keywords: Attentional Control, Balance Beam, Women's Artistic Gymnastics.

ABSTRACT

This study aims to determine the effect of an instructional curriculum based on attentional control on learning selected fundamental balance beam skills in women's artistic gymnastics among female collegiate students. The significance of the study lies in enhancing motor performance on the balance beam through active learning modalities, which have proven effective across individual and team sports, by examining their pedagogical efficacy in female artistic gymnastics. The research problem centers on the technical complexity of balance beam skills, which require intricate motor coordination, elevated cognitive processing, focused task engagement, reduced anxiety and distraction, and enhanced kinesthetic-proprioceptive awareness.

The researcher employed a two-group pretest-posttest experimental design ($N = 20$), with female students randomly allocated into an experimental group ($n = 10$) and a control group ($n = 10$). Data were processed using SPSS.

The findings revealed that attentional control—facilitated through dynamic balance drills and multimodal perceptual strategies such as the "Listening Triangle" (integrating acoustic, visual, and somatosensory feedback)—significantly enhanced fundamental balance beam skill acquisition. Marked improvements were observed in performance stability, error reduction, and postural proprioception, leading to more precise and confident execution. The study recommends structuring instruction around sensory input channeling, skill segmentation, motor imagery, internal and external visual focus optimization, and audiovisual feedback to accelerate acquisition and long-term retention of core skills (e.g., front and back supports) while utilizing auxiliary tools such as balance discs to enhance learning outcomes.

hadeely.yahya@uodiyala.edu.iq

Corresponding Author
E-mail address:
DOI: https://doi.org/10.26400/Sep./69/16
This work is licensed under a Creative Commons Attribution 4.0 International License

Journal of Sports Sciences
ISSN: 2074 - 6032 ISSN-e: 2710 - 5016
Journal Homepage: https://pessj.uodiyala.edu.iq

1. Introduction

Scientific research in recent years has revealed numerous insights into the human brain regarding scientific understanding and cognition. This knowledge has fostered fundamental shifts in how the brain is utilized in learning processes and instructional program development, rendering them more effective, rapid, and accessible. Educational calls have increasingly urged a reconsideration of instructional content, objectives, tools, and strategies to enable individuals to acquire knowledge grounded in the human brain in terms of cognition and motor suggestion. Bahi and Gad (2004) state that "mental training enables the nervous system to register motor and sensory patterns, aids in concentration, reorganizes images of optimal motor execution, and is emphasized by several scientists as having a pronounced effect in overcoming excessive emotional arousal and achieving optimal motor performance for athletes, particularly elite performers" (Bahi & Gad, 2004). The use of motor imagery encourages learners toward visualization, perception, imitation, and emulation, while affording them freedom of movement, creativity, and diversified activity. Among the learning approaches that facilitate the practical implementation of this instructional framework is the mental approach, as its execution relies heavily on mental and cerebral visualization prior to performing a specific skill. Al-Naqeeb notes that the learner employs mental training to consolidate performance by mentally reviewing the skill, which entails eliminating errors by visualizing correct motor execution; individuals with a clear conceptualization of the core aspects of a skill can, through mental practice, compare their responses to optimal performance and correct erroneous executions (Al-Naqeeb, 1990, p. 223).

Artistic gymnastics is among the most demanding sports regarding physical, psychological, and neurological capacities. The balance beam apparatus represents the most prominent challenge due to its narrow base of support, which does not exceed 10 cm. Consequently, acquiring basic skills on this apparatus demands high dynamic balance, psychological stability, and precise mental orientation. Gymnastics instruction for female students is inherently challenging; moreover, the balance beam involves complex movements that require instructors to implement active learning approaches that stimulate cognitive engagement and motivate students toward correct execution. Hence, the fundamental significance of this research lies in employing modern strategies based on "attentional control" within the educational process. This significance is manifested in overcoming psychological barriers, as attentional control assists female gymnasts in directing their focus toward correct biomechanical execution, thereby mitigating fear and hesitation associated with training at elevated heights. It also accelerates skill acquisition; an attentional control-based instructional curriculum facilitates information processing and execution, enabling learners to master complex skills (such as swings, walking, and holds) with proper form while avoiding common errors. Furthermore, it bridges physical and cognitive performance by enhancing the learner's kinesthetic awareness in space, which is indispensable for executing movements with fluidity and confidence.

The research problem centers on the difficulties encountered by female students when executing skills on the balance beam, primarily stemming from attentional distractibility, fear of falling, and reliance on traditional instructional methods. Employing attentional control strategies serves as an effective tool for optimizing students' concentration, regulating motor performance, and mastering difficult skills

This work is licensed under a Creative Commons Attribution 4.0 International License

Journal of Sports Sciences
ISSN: 2074 - 6032 ISSN-e: 2710 - 5016
Journal Homepage: https://pessj.uodiyala.edu.iq

accurately. Among the prominent dimensions of this problem is performance instability, as students struggle with neuromuscular coordination due to the narrow surface of the beam, resulting in fluctuating proficiency and delayed learning rates. Additionally, performance anxiety and fear of recurrent falls or balance loss generate psychological apprehension that distracts attention and impedes proper execution. Furthermore, conventional instructional methods suffer from limitations, leading to repeated motor errors due to the failure to direct students' attentional focus toward the critical phases of movement at the appropriate time. Through the researcher's experience in physical education pedagogy and gymnastics, it was observed that female students' performance levels in specific balance beam movements (such as walking on the beam, dismounting, maintaining postural stability, and the scale/arabesque test) fall short of expectations. This prompted the researchers to develop a suitable pedagogical approach to enhance students' cognitive processing during the execution of difficult movements, leading to the experimental design of an instructional curriculum based on attentional control for learning fundamental balance beam skills in gymnastics.

Research Objectives

1. To design an instructional curriculum based on attentional control for learning select fundamental balance beam skills in gymnastics for female students.
2. To determine the effect of the attentional control-based instructional curriculum on learning select fundamental balance beam skills among female students.

Research Hypotheses

1. There are statistically significant differences between the pre-test and post-test scores of the experimental group in learning select fundamental balance beam skills using attentional control in favor of the post-test.
2. There are statistically significant differences between the pre-test and post-test scores of the control group in learning select fundamental balance beam skills using attentional control in favor of the post-test.
3. There are statistically significant differences between the post-test scores of the experimental and control groups in learning select fundamental balance beam skills using attentional control in favor of the experimental group.

Research Scope

- **Human Domain:** Third-year female students, Department of Physical Education and Sports Sciences, College of Basic Education, University of Diyala.
- **Temporal Domain:** The period from December 2, 2025, to January 25, 2026.
- **Spatial Domain:** The indoor female gymnastics halls at the College of Basic Education, University of Diyala.

Definition of Terms

- **Instructional Curriculum:** A structured collection of instructional materials, which may comprise a study syllabus or designated readings for students, encompassing instructional media and diversified learning activities (Al-Jamal, 1996, p. 41).
- **Attentional Control:** The capacity to direct full cognitive focus toward maintaining postural stability and somatic balance during the execution of complex, sequential movements on an extremely narrow base of support. This requires profound composure, precise activation of core and extremity musculature, and continuous visual fixation forward or on an anchor point to

This work is licensed under a Creative Commons Attribution 4.0 International License

Journal of Sports Sciences
ISSN: 2074 - 6032 ISSN-e: 2710 - 5016
Journal Homepage: https://pessj.uodiyala.edu.iq

manage the center of gravity and overcome challenges associated with beam height and narrow width (Thanaa Abdul-Wadood, 2015).

- **Gymnastics Balance Beam Skills:** A set of technical movements (leaps, jumps, turns, tumbling elements) executed by female gymnasts on an elevated, narrow wooden beam (10 cm width) to demonstrate balance, agility, and neuromuscular coordination in a continuous routine, relying on high precision and focus, and culminating in a dismount from the apparatus. This includes basic locomotor movements (walking, running, balances, and simple jumps to enhance stability), advanced elements (forward/backward handsprings, handstands, rotations, and aerial leaps), and dismounts (technical elements executed to conclude the routine and safely exit the apparatus) (Abdul-Sattar, 1991).

2. Research Methodology and Procedures

2.1Research Method

The researcher utilized an experimental design using two equivalent groups (experimental and control) with pre- and post-tests, in accordance with the nature of the research problem (Obeidat, 2000).

2.2Population and Sample

The research population comprised third-year students in the College of Physical Education and Sports Sciences at the University of Diyala for the 2025–2026 academic year, totaling 160 students distributed across four sections. The researcher purposively selected one section consisting of 40 female students.

The sample—defined as the representative subset of the target population upon which the researcher conducts the investigation (Marwan Abdul-Hamid, 2002)—was selected randomly and consisted of 20 female students: 10 assigned to the experimental group and 10 to the control group. An additional pilot sample of 5 female students was drawn from the original population outside the main sample. The research sample represented 25% of the total target population.

Table 1. Experimental Design of the Study Sample

Groups	Pre-test	Independent Variable	Post-test	Intra-group Difference	Inter-group Difference (Experimental vs. Control)
Experimental Group	Balance beam tests	Instructional program based on attentional control	Attentional control program and balance beam tests	Pre-to-post test difference for each group	Difference between both groups on post-tests
Control Group	Balance beam tests	Conventional instruction method	Attentional control program and balance beam tests	Pre-to-post test difference for each group	

Table 2. Equivalence Between the Experimental and Control Groups in Age, Height, Weight, and Balance Beam Skill Performance

Variable	Unit	Control		Experimental		Calculated t-value	Tabulated t-value	Significance Level
		(X(¯	(SD(	(X(¯	(SD(			
Age	Years	19.80	1.80	19.60	1.600	1.42	1.724	*NS*
Height	cm	158.74	1.654	158.88	1.741	0.254	1.724	*NS*
Weight	kg	60.55	0.895	60.62	0.965	0.642	1.724	*NS*
Balance Beam Skill Performance	Score	4.341	0.471	4.534	0.665	1.037	1.724	*NS*

Tabulated t-value at α 0.05=significance level and degrees of freedom (df (18=is 1.724.

Table 2 demonstrates that the calculated t-values are smaller than the tabulated t-value at the 0.05 significance level, confirming baseline equivalence between the experimental and control groups.

This work is licensed under a Creative Commons Attribution 4.0 International License

Journal of Sports Sciences
ISSN: 2074 - 6032 ISSN-e: 2710 - 5016
Journal Homepage: https://pessj.uodiyala.edu.iq

2.3 Instruments, Devices, and Tools Used in the Study

- Arabic and foreign literature.
- Internet information network.
- Personal interviews.
- Scientific sources and references.
- High-density landing foam mats. Balance beam.
- Electronic stopwatches (measuring seconds and fractions of a second).
- Balance beam apparatus.
- Balance beam skill tests (tiptoe standing, front scale).

2.4 Research Instruments

.1Attentional Control Scale

Following a review of psychological measurement literature, the scale developed by Hawraa Salman (2017)—and subsequently utilized by Dhafer Abd Hur Fatlawi and Ghada Muayyad Shehab (2022) in their study titled *"The Effect of the Accelerated Learning Style for (Surface–Deep) Learners on Attentional Control and Learning the Dribbling Skill in Soccer"* at the College of Physical Education and Sports Sciences, University of Baghdad—was adopted. The scale comprises three subscales: Attentional Focusing, Attentional Shifting, and Attentional Flexibility. It consists of 37 items scored on a 5-point Likert scale, yielding a maximum score of 185 and a minimum score of 37.

.2Balance Beam Tests Used in the Study (Ali Salman Abd Al-Tarafi, 2013)

Test 1: Beam Walking Test

- **Test Name:** Beam Walking.
- **Purpose:** To measure dynamic balance.
- **Equipment:** Balance beam (10 cm width, 4 m length, 3–5 cm thickness), flat ground surface, stopwatch.
- **Administration:** Upon the start signal, the participant walks along the beam to the opposite end, executes a pivot turn, and returns to the starting position at maximum speed without any body part contacting the floor off the beam.
- **Scoring:** The time taken to traverse the beam is recorded to the nearest 0.10 second. If any body part contacts the floor off the beam, a one-second penalty is added to the total time.

Test 2: Postural Stability on Landing Test

- **Test Name:** Postural Stability on Landing.
- **Purpose:** To measure landing control and rhythm.
- **Administration:** The participant drops from a 1-meter-high wooden vaulting box onto the floor and must maintain postural equilibrium without displacement.
- **Scoring:** Scored on a rating scale from 1 to 4 points across three trials.

Test 3: Front Scale (Arabesque) Test

- **Test Name:** Front Scale.
- **Purpose:** To measure static balance and postural control.
- **Administration:** Standing on a single supporting leg with the foot pointed forward, the contralateral leg is elevated backward-upward with the toe pointed outward. The torso is aligned horizontally and perpendicular to the supporting leg with an arched back, arms extended upward-forward or sideward-forward, and gaze directed forward-upward with slight cervical extension.

This work is licensed under a Creative Commons Attribution 4.0 International License

Journal of Sports Sciences
ISSN: 2074 - 6032 ISSN-e: 2710 - 5016
Journal Homepage: https://pessj.uodiyala.edu.iq

- **Evaluation:** Scored on a scale of 1 to 10 points in accordance with the International Gymnastics Federation (FIG) Code of Points.

Technical Performance Evaluation of Balance Beam Skills

Technical execution was assessed for the tucked front salto, standing straight back salto, and front handspring on the balance beam. The researcher recorded participants' performances via video and presented them on video displays to expert gymnastics judges. This facilitated repeated performance review and analytical evaluation of specific movement phases as well as whole-skill execution, scored out of a maximum of 10 points.

2.5 Scientific Authenticity of the Instruments

. 1Validity

Face validity reflects what a test appears to measure superficially rather than what it measures substantively, based on an initial appraisal of item phrasing, clarity, instructions, and alignment with the target construct (Farouk Al-Rousan, 1978). Face validity was established by presenting the instruments to panels of experts and specialists, relying on expert consensus percentages.

.2 Reliability

Reliability refers to the stability of measurement instruments across repeated administrations under identical conditions. Reliability was calculated using the split-half method based on the pilot study sample for the Attentional Control Scale, corrected using the Spearman–Brown prophecy formula, which demonstrated high reliability. The balance beam tests were also subjected to test-retest reliability under standardized conditions (Abdul-Hamid Jaber & Khairi Ahmad Kazem, 1978), as detailed in Table 3.

Table 3. Reliability and Validity Coefficients for the Study Instruments

No.	Instruments	Reliability Coefficient	Validity Coefficient	Significance
1	Attentional Control Scale	0.80	0.88	Significant
2	Balance Beam Tests	0.81	0.89	Significant

2.6 Pilot Study

The researcher conducted the pilot study on Wednesday, December 24, 2025, administering the balance beam skill tests to a sample of 5 third-year female students excluded from the main study sample. The tests were readministered after a 7-day interval to ensure experimental control over research variables.

2.7 Pre-tests

The researcher conducted the pre-tests for balance beam gymnastics skills on Wednesday, January 14, 2026, for both study groups (N 10=students per group). Procedural instructions regarding execution techniques for standing, walking, and balancing were clarified under the supervision of the researcher and the assistant work team.

Table 4. Means, Standard Deviations, and Calculated and Tabulated t-values for Pre-test Scores Between the Study Groups

Group	N	Mean (X(¯	Standard Deviation (SD(	Calculated t-value	Tabulated t-value
Control	10	12.1	0.66	1.977	1.833
Experimental	10	11.2	0.74	1.952	1.833

Table 4 indicates no statistically significant difference between the two research groups in the pre-test scores for balance beam gymnastics skills, as the calculated t-values for the control group (1.977) and experimental group (1.952) did not demonstrate significance against critical criteria, indicating equivalence between both groups in this variable.

This work is licensed under a Creative Commons Attribution 4.0 International License

Journal of Sports Sciences
ISSN: 2074 - 6032 ISSN-e: 2710 - 5016
Journal Homepage: https://pessj.uodiyala.edu.iq

2.8 Main Intervention

The researcher, supported by the assistant team, administered 6 instructional units across a 6-week period at a rate of 2 units per week, with each unit lasting 30 minutes for the experimental group. During implementation, the total session duration extended to 45 minutes, structured around 30 minutes of targeted skill practice supplemented by instructional videos, photographic demonstrations, data-show computer projections, and colored floor markers to illustrate movement mechanics. Each unit began with technical instruction followed by structured pedagogical drills and instructional feedback during the practical application phase.

The experimental group was divided into ability-based small groups. This organizational structure enabled the instructor to provide increased repetitions and targeted feedback to the lower-performing group until skill proficiency was attained, whereas the intermediate and advanced groups received calibrated repetitions and feedback. Advanced peers were consulted to assist lower-performing peers, enhancing self-confidence. Corrective and individualized pedagogical techniques were utilized until the experimental group achieved high proficiency across the required skills.

2.9 Post-tests

Post-tests for the Attentional Control Scale and artistic gymnastics balance beam skills were administered to the study sample (N (10=on January 21, 2026. Data were collected, tabulated, and statistically analyzed.

2.10 Statistical Analysis

Statistical processing was carried out using the Statistical Package for the Social Sciences (SPSS).

.3 Presentation, Analysis, and Discussion of Results

3.1Presentation and Analysis of Results

Table 5. Mean Differences, Standard Deviations of Differences, and Calculated and Tabulated t-values for Post-test Measures of the Control Group in Balance Beam Tests and the Attentional Control Scale

Variables	Unit	X̄d	SDd	Calculated t-value	Tabulated t-value / Sig.	Significance
Attentional Control Scale	Score	2.600	1.343	4.333	0.012	Significant
Balance Beam Tests	Score	2.000	1.000	4.472	0.011	Random / Significant

At df 8=and α 0.05=significance level.

Table 5 indicates statistically significant differences between the pre- and post-tests across learning variables. The magnitude of improvement in the control group's post-test scores serves as an index of skill progression, corroborating Khaled Farid (2008), who noted that post-test comparisons between study groups form the baseline for establishing relative progress. Although the control group showed improvement, it did not match the gains achieved by the experimental group. The researcher attributes this difference to the instructional style employed. Play and skill drills contain developmental value, foster cooperation, and refine sensory execution (Adnan Abd Kader, 2017).

Table 6. Mean Differences, Standard Deviations of Differences, Calculated and Tabulated t-values, and Statistical Significance for Post-test Measures of the Experimental Group in Balance Beam Tests and the Attentional Control Scale

Variables	Unit	X̄d	SDd	Calculated t-value	Tabulated t-value / Sig.	Significance
Attentional Control	Score	1.200	0.837	3.207	0.033	Significant
Balance Beam Tests	Score	0.800	0.447	1.000	0.037	Significant

At df 8=and α 0.05=significance level.

This work is licensed under a Creative Commons Attribution 4.0 International License

Journal of Sports Sciences
ISSN: 2074 - 6032 ISSN-e: 2710 - 5016
Journal Homepage: https://pessj.uodiyala.edu.iq

Table 6 reveals statistically significant improvements in the balance beam tests and the Attentional Control Scale for the experimental group. This demonstrates the efficacy of the instructional curriculum, aligning with Fathi (1992, p. 98) and Al-Hila (1999, p. 23), who established that subjecting learners to structured educational interventions enhances cognitive and psychomotor performance through cumulative learning experiences.

The attentional control curriculum yielded superior outcomes compared to conventional instruction due to its foundation on sound pedagogical principles that optimize learning rate, effort, time, and student engagement (Zaghloul, 2021, p. 61). Attentional control mitigates apprehension and hesitation by directing focus toward correct movement cues, reducing execution errors during balances, steps, and tumbling skills on the balance beam. Directing focus toward biomechanical alignments—such as arm extension, trunk stabilization, and visual fixation—promotes postural equilibrium. This corroborates Laila Zahran (1997), who highlighted that targeted physical conditioning exercises enhance specific motor skills across sports activities. The observed improvements are also attributed to the curriculum's emphasis on lower-limb strength development and full joint range of motion, facilitating technical proficiency.

.4 Conclusions and Recommendations

4.1 Conclusions

- The implemented instructional curriculum exerted a positive effect on developing trunk flexibility and explosive leg strength in the experimental group.
- The instructional exercises enhanced the technical execution level of the target gymnastics skills in the experimental group compared to the control group.
- Significant improvements in balance beam skill performance were observed across both groups, with superior gains achieved by the experimental group due to the integration of instructional aids and attentional control strategies.
- External attentional focus (directed toward the apparatus or target points) facilitated body alignment and natural, automated balance maintenance during locomotion and skill execution on the balance beam.
- Proper attentional direction minimized technical errors across mounts, locomotion, scales, and rolling elements on the balance beam.

4.2 Recommendations

- Directing learners' external attentional focus toward external environmental reference points (e.g., the distal end of the beam) to enhance postural stability during walking and skill execution.
- Focusing on internal kinematic cues, such as maintaining core and extremity tension and head alignment, to promote equilibrium.
- Integrating cognitive and mental training protocols to develop static and dynamic balance, thereby accelerating the acquisition of fundamental balance beam skills (mounts, walks, scales, rolls).
- Training female students to focus on technical motor execution cues rather than fear of falling.
- Developing dynamic balance by directing attention toward the precise displacement of the center of gravity during locomotion (e.g., weight transfer between feet).

This work is licensed under a Creative Commons Attribution 4.0 International License

Journal of Sports Sciences
ISSN: 2074 - 6032 ISSN-e: 2710 - 5016
Journal Homepage: https://pessj.uodiyala.edu.iq

- Utilizing attentional feedback through explicit instructional cues (e.g., "gaze forward," "engage abdominal muscles") to rectify common technical errors such as postural collapse.

References

- Abdul-Majeed, M. (2001). *The scientific encyclopedia of volleyball* (1st ed.). Al-Warraq Publishing and Distribution Institution.
- Al-Abbadi, A. J. (2019). *The effect of using an accelerated learning curriculum on attentional focus and the acquisition and retention of selected fundamental tennis skills for beginners* [Doctoral dissertation, College of Physical Education and Sports Sciences – University of Baghdad].
- Al-Hilah, M. M. (1999). *Instructional design: Theory and practice* (1st ed.). Dar Al-Maseera for Publishing and Distribution.
- Al-Laqqani, A. H., & Al-Jamal, A. (1996). *Dictionary of cognitive education terms in curriculum and teaching methods*. Alam Al-Kutub.
- Al-Naqeeb, Y. K. (1990). *Sports psychology*. King Saud University, Youth Welfare Press.
- Al-Nuaimi, A. J., & Hussein, A. A. (1991). *Contemporary gymnastics for girls*. Dar Al-Hikma for Printing and Publishing.
- Al-Rousan, F. (1978). *Measurement and diagnostic methods in special education* (1st ed.). Dar Al-Fikr for Printing, Publishing, and Distribution.
- Al-Shammari, T. A. A. (2015). *Cognitive interference and attentional control in relation to test anxiety among university students* [Unpublished doctoral dissertation, Ibn Rushd College of Education – University of Baghdad].
- Al-Tarafi, A. S. A. (2013). *Applied tests in physical education (physical, motor, and skill-based)*. Al-Nibras Press.
- Bahi, M. H., & Gad, S. A. (1999). *Psychology of athletic excellence: Development of mental skills*. Al-Nahda Al-Arabiyya Bookshop.
- Ezzat, K. F. (2014). *The effect of instructional units using practice schedule variations on selected physical and skill variables for novice judo athletes* [Doctoral dissertation, College of Physical Education – Benha University].
- Hamada, M. I. (1998). *Modern athletic training* (1st ed.). Dar Al-Fikr Al-Arabi.
- Jaber, A. H., & Kazem, K. A. (1978). *Research methods in education and psychology* (2nd ed.). Dar Al-Nahda Al-Arabiyya.
- Jasim, H. S. (2017). *Epistemic curiosity and its relationship to attentional control and information processing among university students* [Doctoral dissertation, College of Education for Women – University of Baghdad].
- Khairi, S., & Kazem, S. (2010). Multidimensional anxiety and its relationship to the execution of tuck and straddle forward rolls. *Journal of Physical Education Sciences*, *3*(2), College of Physical Education – University of Babylon.
- Khayoun, Y. (2002). *Motor learning between principle and practice*. Al-Sakhra Printing Press.
- Mahjoub, W. (2001). *Learning and athletic training scheduling* (1st ed.). Dar Wael for Publishing.
- Obeidat, D. (2000). *Scientific research: Concept, tools, and methods*. Al-Namouthajiyah Printing Press.
- Rateb, O. K. (1997). *Sports psychology* (2nd ed.). Dar Al-Fikr Al-Arabi.
- Zaghloul, M. S., et al. (2001). *Technology and instructional methods in physical education* (1st ed.). Book Publishing Center.
- Zahran, L. (1997). *Scientific and practical foundations of artistic and calisthenic exercises*. Dar Al-Fikr Al-Arabi.

This work is licensed under a Creative Commons Attribution 4.0 International License

Journal of Sports Sciences
ISSN: 2074 - 6032 ISSN-e: 2710 - 5016
Journal Homepage: https://pessj.uodiyala.edu.iq

Appendix 1
Attentional Control Scale

No.	Items	Always Applies to Me	Often Applies to Me	Sometimes Applies to Me	Rarely Applies to Me	Never Applies to Me
1	I constantly remember to carry out my assigned duties.					
2	My attention wanders to my surroundings when I attempt to complete my academic assignments.					
3	I experience difficulty completing assignments within their designated deadlines.					
4	I find it difficult to concentrate on my work because my mind wanders to other matters.					
5	I lack concentration regarding the content presented during lectures.					
6	My attention is easily distracted by minor details.					
7	I find it easy to accomplish tasks when required of me.					
8	I face difficulty organizing my time with respect to exam preparation and performance.					
9	It is not easy for my thoughts to become distracted while performing tasks.					
10	When drawing during a lecture, I ignore sensations of hunger and thirst.					
11	I adhere to established rules to accomplish required tasks.					
12	I tend to work and complete tasks without straining myself through excessive thinking.					
13	I require sufficient time to think through a task before commencing it.					
14	I can rapidly shift my attention from one task to another.					
15	I can find solutions to multiple problems simultaneously.					
16	When an interruption occurs and distracts my attention, I can quickly refocus.					
17	I find it difficult to accomplish more than one task at the same time.					
18	I find it difficult to divide my attention between listening and note-taking during class.					
19	I can accomplish multiple assignments simultaneously.					
20	When I begin a task and am concurrently assigned another, I cannot accomplish both together.					
21	I can transition to another task while maintaining attention on the primary task.					
22	Being assigned an unexpected task does not affect my completion of the preceding one.					
23	I develop my responses while performing a specific task in light of its primary objective.					
24	I interact with everyone around me efficiently and smoothly.					
25	I modify my responses to situations according to the reinforcement received during task execution.					
26	I am able to perform proficiently on an exam when the instructor administers an					

This work is licensed under a Creative Commons Attribution 4.0 International License

Journal of Sports Sciences
ISSN: 2074 - 6032 ISSN-e: 2710 - 5016
Journal Homepage: https://pessj.uodiyala.edu.iq

	unannounced pop quiz.					
27	I prefer that the course instructor remains unchanged throughout the academic semester.					
28	I find it difficult to adapt to a lecture room other than my designated classroom.					
29	I prefer to remain in my current class rather than transfer to another.					
30	I make decisions in emergency situations easily and smoothly.					
31	I can reach the college despite the closure of some access routes leading to it.					
32	I do not experience boredom during a lecture even if it exceeds its scheduled end time.					
33	When speaking before students, I can distribute my attention among them without embarrassment.					
34	I can compile the required examination material even in the absence of a designated textbook.					
35	I can prioritize my interests and tasks according to prevailing circumstances.					
36	I can select an appropriate response to a task by generating alternative strategies.					
37	I organize my required duties in a logical sequence.					

Appendix 2
Sample Instructional Unit Plan

- **Total Duration: 45–40 minutes**
- **Unit Objective: Teaching movement activities and skills on the balance beam**

Instructional Unit Phases	Duration (min)	Content and Exercises	Formations / Organization	Instructional Notes
Applied / Practical Phase	2:30 2:45 3:50 4:50	•Dividing female students into two groups, with each group assigned distinct tasks regarding skill execution and application. Demonstrating an integrated motor model. 1. Complete execution of movement sequences on the balance beam. 2. Execution of stationary stands combined with simple walking patterns. 3. Execution of stationary stands with right leg abduction-elevation accompanied by coordinated arm swings. 4. Alternating single-leg leaps: knee flexion at take-off while driving the contralateral leg in the opposite direction; arms positioned laterally with single-leg landing balance. 5. Complete skill execution, technical error correction, and augmented feedback.		•Emphasizing group homogeneity. •Ensuring active student participation and autonomy during performance.

This work is licensed under a Creative Commons Attribution 4.0 International License