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INTEGRATING SAFETY, COMMUNICATION, AND SELF-REGULATION COMPETENCIES INTO ACROBATIC INSTRUCTION FOR 5–6-YEAR-OLD GYMNASTS

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ABSTRACT

This conference thesis proposes a model for integrating safety, communication, and self-regulation competencies with motor-technical instruction in acrobatic exercises for 5–6-year-old gymnasts. The model is derived from the competency-based programme implemented at the Nafis Sports School in Bukhara and combines progressive instruction, lead-up exercises, play and circuit methods, safe landing, protective rolling, verbal cueing, and child self-monitoring. In the experimental group, dynamic strength increased by 33.8%, speed-strength by 32.8%, and static strength by 31.4%. These descriptive findings indicate that safety and communication tasks need not compete with physical development; instead, they can help children understand, control, and reproduce movement more consciously. As the source study did not report injury-incidence data, the thesis argues for the programme’s pedagogical capacity to teach safe behaviour rather than claiming a demonstrated reduction in injuries.

Keywords: acrobatic instruction, safety competence, communication competence, self-regulation, children aged 5–6, rhythmic gymnastics, progressive teaching.

1. Introduction

Acrobatic instruction for preschool-aged gymnasts requires the simultaneous solution of two pedagogical tasks: developing movement quality and teaching the child how to participate safely and consciously in the learning process. At the age

of 5–6, children are capable of learning basic rolls, supports, bridges, balances, jumps, and body positions, but their technical control, risk perception, attention, and ability to verbalise discomfort are still developing. A purely command-based lesson may produce short-term imitation without ensuring that the child understands when, why, and how an action is safe.

Competency-based pedagogy treats safety, communication, and self-regulation as observable learning outcomes. A competent young gymnast waits for the signal, checks the landing space, follows a sequence, asks for clarification, reports pain or fear, accepts assistance, and stops when a movement becomes unsafe. These behaviours are part of technical learning, not additions to it. The purpose of this thesis is to present an age-appropriate instructional algorithm for integrating these competencies into acrobatic training.

2. Literature Review

International evidence indicates that structured educational gymnastics can improve postural control and motor coordination in young children (Anderson et al., 2022; Biino et al., 2023). At the same time, gymnastics injury literature emphasises supervision, progressive skill acquisition, correct landing, suitable equipment, and balanced conditioning (Caine & Nassar, 2005). The FIG Age Group Programme links long-term development with gradual and safe progressions, while the FIG Academy framework places athlete-centred coaching, health, ethics, and safeguarding within coach education (FIG, 2023; FIG, n.d.).

From a competence perspective, a skill is learned when the child can mobilise knowledge, movement, attitudes, and communication in context. Thus, the criterion for a successful bridge or roll is not only its external form. The child should also know the starting position, follow the sequence, understand the stop signal, use the mat correctly, and communicate uncertainty. This interpretation is

compatible with physical-literacy and quality-physical-education frameworks, which connect physical competence with confidence, motivation, understanding, and responsibility (UNESCO, 2015; Whitehead, 2010).

3. Research Methodology

The thesis is based on the pedagogical experiment conducted with young female gymnasts at the Nafis Specialized Sports School for Rhythmic Gymnastics in Bukhara. The source programme used 90-minute sessions three to four times per week and combined general physical, special physical, special motor, and special technical preparation. For the 5–6-year-old experimental group, these components accounted for 17%, 18%, 28%, and 37% of training time, respectively.

The methodological synthesis focused on four teaching stages: preparation and shared safety rules; demonstration and verbal coding; guided performance with assistance; and reflection with transfer to a modified task. Explanation, demonstration, lead-up exercises, spotting, games, circuit stations, repetition, and individual feedback were used. Group-level pre- and post-training means for dynamic strength, speed-strength, static strength, and flexibility were analysed descriptively. No injury-incidence data or participant-level observations were available; therefore, the model is evaluated as a pedagogical safety framework rather than an injury-prevention trial.

3.1. Four-stage instructional algorithm

Table 1. Age-appropriate algorithm for competency-based acrobatic instruction.

Stage	Coach action	Observable child competence
1. Prepare and agree	Coach checks equipment and space, introduces one or two safety rules, and connects the task with a familiar image or game.	Child identifies the safe area, waits for the signal, and repeats the key rule.
2. Demonstrate and verbalise	Coach demonstrates the whole action and then its critical positions; short cues name the body parts, direction, and landing.	Child names or shows the starting position, movement direction, and finish.
3. Perform with guidance	Child completes lead-up tasks, then the skill with spotting or adapted equipment; the coach provides immediate concise feedback.	Child follows the sequence, accepts assistance, communicates discomfort, and corrects one priority error.
4. Reflect and transfer	Coach asks what was safe, what was difficult, and what should change; the task is repeated in a slightly different game or sequence.	Child gives a simple self-assessment and transfers the safety cue to the new situation.

4. Analysis and Results

The programme's competency orientation was reflected in three practical mechanisms. First, complex skills were divided into preparatory and lead-up actions, which reduced cognitive and physical overload. Second, safety was verbalised and practised through routines such as correct mat use, safe landing, protective rolling, waiting for a signal, and reporting discomfort. Third, play and circuit tasks maintained emotional engagement while providing repeated opportunities to apply the same rule in different movement situations.

Table 2. Descriptive change in the experimental group of 5–6-year-old gymnasts. Values are mean ± SD.

Physical-quality score	Pre-training	Post-training	Relative change
Dynamic strength	6.80 ± 1.20	9.10 ± 0.50	+33.8%
Speed-strength	6.70 ± 1.40	8.90 ± 0.50	+32.8%
Static strength	6.85 ± 1.50	9.00 ± 0.40	+31.4%
Flexibility / joint mobility	7.90 ± 1.10	9.00 ± 0.50	+13.9%

Strength-related outcomes increased by approximately 31–34%, while flexibility increased by 13.9%. In the control group, the corresponding improvements were 25.8%, 20.9%, 24.6%, and 14.5%. The largest additional advantage of the experimental programme concerned speed-strength. These results suggest that integrating short verbal tasks, safety routines, guided reflection, and play did not reduce the physical-training effect. On the contrary, clear sequencing and progressive practice may have supported more organised and consistent movement learning.

The findings should not be interpreted as evidence that the programme reduced injuries, because no injury frequency, exposure hours, or adverse-event records were reported. Its defensible contribution is pedagogical: it provides a structure for teaching the behaviours that precede safe participation. Future studies should maintain a prospective injury log and assess safety knowledge, communication, confidence, and self-regulation with age-appropriate instruments.

5. Conclusion and Recommendations

Safety, communication, and self-regulation should be taught within the technical content of acrobatics. For 5–6-year-old gymnasts, the most effective learning unit

is not "perform the element" alone, but "prepare, understand, perform with guidance, and explain the safe finish." This sequence makes the child an active participant in training while preserving the coach's responsibility for supervision and spotting.

Coaches are recommended to use no more than one or two safety cues per new task, teach landing and protective rolling before flight or inversion, provide adapted equipment and progressive support, invite children to report pain or fear without punishment, and include a brief reflection at the end of each session. Assessment should record both movement quality and safe behavioural indicators. Parent communication should reinforce attendance, recovery, appropriate clothing, and timely reporting of health concerns.

A future controlled study should report sample sizes by age, randomisation or allocation procedures, intervention fidelity, exposure hours, adverse events, and parental consent. Such reporting would allow the pedagogical model to be evaluated not only for motor outcomes but also for its effect on safety behaviour, confidence, enjoyment, and retention.

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