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FROM IMITATION TO INQUIRY: A STAGED APPROACH TO DEVELOPING INDEPENDENT THINKING SKILLS IN PRIMARY SCHOOL PUPILS

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Abstract. The paper addresses the problem of developing independent thinking skills in pupils of grades 1–4 in general secondary schools of Uzbekistan. Independent thinking is treated as an integrative quality with motivational, operational and reflective components that develop unevenly in primary school age. A staged approach is proposed in which the share of teacher guidance gradually decreases while the complexity of thinking tasks increases. Brainstorming, the Six Thinking Hats technique and the research method are justified as the main instructional tools, and their sequence across grades is shown with classroom examples. The paper also outlines the pedagogical conditions under which the approach is most effective.

Keywords: independent thinking, primary education, brainstorming, Six Thinking Hats, research-based learning, reflection, pedagogical conditions, Uzbekistan.

Introduction.

Education reform in Uzbekistan increasingly emphasises learners who can reason, make decisions and act on their own. The Concept for the Development of the Public Education System until 2030 sets the goal of shifting from knowledge transmission to teaching that develops pupils' ability to think and act independently [2]. This goal is reinforced by the Law "On Education" [1] and by the National Programme for the Development of Public Education for 2022–2026 [3]. Since 2018, Uzbekistan has also taken part in international assessments of educational quality, including PIRLS and TIMSS at primary level [4]. These studies measure not the reproduction of facts but the ability to interpret information, compare, draw conclusions and justify them.

Primary school is decisive in this respect. Between the ages of seven and ten, children form study habits that they carry into lower secondary school. Classroom observation shows, however, that teachers often pose the question, suggest the way to solve it and summarise the result themselves, leaving pupils the role of performers. Uzbek researchers have likewise pointed to the need to develop critical thinking in primary pupils, for example in reading lessons [10]. International evidence confirms that thinking skills can be taught deliberately: a meta-analysis of 341 effect sizes found a positive average effect of explicit instruction in critical thinking [5]. The research question of this paper is therefore: how can independent thinking skills be developed step by step within an ordinary primary school lesson?

Theoretical background.

In psychology, thinking is understood as a process that starts from a problem situation and is directed at discovering something new [17]. J. Dewey described reflective thinking as a sequence of steps: sensing a difficulty, defining it, suggesting a possible solution, reasoning about it and testing it in practice [8]. P.Ya. Gal'perin showed that mental actions are formed in stages, from actions supported by external aids to actions performed "in the mind" [9]. Together these ideas suggest that independent thinking cannot be demanded from a child at once; it has to be built up gradually.

On this basis, three components of independent thinking are distinguished in the present study:

– motivational: curiosity and the wish to find an answer oneself rather than receive a ready one;

– operational: mastery of analysis, comparison, generalisation, and proposing and testing hypotheses, which correspond to the higher levels of the revised Bloom's taxonomy – analysing, evaluating and creating [6];

– reflective: the ability to judge whether the chosen path is correct and to change it if necessary.

These components develop unevenly in young learners: curiosity is usually high, while reflection is weak. M. Lipman demonstrated that children's reflection grows best through shared dialogue in which the class works as a "community of inquiry" [15]. A methodology for primary school should therefore start from pupils' natural curiosity and lead them gradually towards reflection.

The approach consists of three stages, each tied to a grade band and to a leading method. At the guided stage (grades 1–2) pupils learn to voice ideas freely within a safe structure set by the teacher. At the supported stage (grades 2–3) they examine a problem from different viewpoints using a ready-made scheme. At the independent stage (grades 3–4) they formulate questions and hypotheses and test them themselves. The design of each lesson follows the principle that pedagogical technology should be planned in advance and not left to improvisation [14]. Interactive methods, including brainstorming, are well established in Uzbek pedagogical literature [12], which makes them familiar to teachers. Table 1 summarises how the methods are distributed.

Table 1. Distribution of methods by grade and component of independent thinking

Method	**Grades**	**Main component developed**	**Sample classroom task**
Brainstorming	1–2	Motivational: readiness to voice ideas	"How can our class use less paper?" – collect ideas, then sort them into "we can do it ourselves" and "we need adults"
Six Thinking Hats	2–4	Operational: analysing a situation from several viewpoints	Discussing the folk tale "Zumrad and Qimmat" through the white, red, black, yellow, green and blue hats
Research method	3–4	Reflective: testing one's own hypothesis	"What keeps ice from melting longer: a woollen cloth or foil?" – hypothesis, experiment, record table, conclusion

Brainstorming was introduced by the American advertising executive A.F. Osborn, who set out the method most fully in Applied Imagination (1953). It rests on two principles – deferring judgement and striving for quantity – and on four rules: no criticism, wild ideas are welcome, quantity is wanted, and ideas may be combined and improved [16]. For young pupils, a short three-step version works well: the teacher states the problem in simple words (1–2 minutes); children name ideas in turn while a "secretary" writes all of them down (5–7 minutes); the class then groups the ideas and chooses the best, always explaining why (5–10 minutes).

Experimental studies have questioned the effectiveness of group brainstorming. S.G. Isaksen and J.P. Gaulin concluded that the method works when it is used as a complete process led by a trained facilitator rather than reduced to four formal rules [11]. In grades 1–2, therefore, the teacher acts as facilitator; in grades 3–4 the role is gradually handed over to pupils. The expected result is that children stop fearing a "wrong" answer and begin to justify their choices.

Six Thinking Hats: looking from several sides.

The technique was developed by E. de Bono and is based on "parallel thinking": all participants look at a problem from the same position at the same time instead of arguing [7]. Each position is marked by a colour: white for facts, red for feelings, black for risks, yellow for benefits, green for new ideas and

blue for organising the discussion and summing up. N. Jozičić adapted the technique for third-graders interpreting fairy tales and reported that pupils were more engaged than in an ordinary discussion [13].

In the proposed approach the hats are introduced gradually: two hats (white and red) in grade 2, all six from grade 3. For example, after reading the Uzbek folk tale "Zumrad and Qimmat", the "white" group lists what happened to each girl, the "red" group describes their feelings, the "black" group explains what Qimmat's rudeness led to, the "yellow" group names the rewards of Zumrad's kindness, the "green" group invents a different ending, and the "blue" group, led by the teacher, formulates the main idea. Pupils learn to separate facts from opinions and to see one situation from several sides.

Research method: testing one's own ideas.

A.I. Savenkov regards exploratory behaviour as a natural need of the child and recommends including research tasks in regular lessons, not only in extracurricular work [18]. Research follows a simple sequence: topic – question – hypothesis ("I think that…") – observation or experiment – conclusion – presentation. To prevent pupils from getting lost, the teacher provides a worksheet with a box for each step, an observation table and sentence starters such as "I suppose…", "I noticed…", "So…".

In a grade 4 science lesson, pupils investigate which material keeps an ice cube from melting longer: a woollen cloth or kitchen foil. Pairs write down their hypotheses, wrap identical ice cubes, check them every ten minutes and record the results. Many children expect the warm wool to melt the ice faster and are surprised to find the opposite, which leads to a new question about how insulation works. The child thus goes through a full cycle of independent inquiry and sees that a conclusion must rest on collected evidence rather than on an adult's opinion.

Conclusion.

Independent thinking in primary school pupils is a unity of motivational, operational and reflective components and is formed in stages. The proposed approach moves pupils from guided idea generation through structured analysis to independent inquiry, matching each stage with a leading method: brainstorming, the Six Thinking Hats and the research method. Its effectiveness depends on the gradual withdrawal of teacher support and on regular reflection. Further research will involve an experimental test of the approach in grades 2–4 of general secondary schools in the Andijan region of Uzbekistan.

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