Comparative Study

on Azerbaijani Primary School Science Curriculum with Curricula of High Performing Countries and

TIMSS 2015 Science Curriculum Framework

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About The Research

The research question:

"To what extent national primary school "Life Knowledge" curriculum is relevant to be a pre-requisite for the provision of quality science education in Azerbaijan at the level of primary education?"

The term "relevant curriculum": "…*the curriculum should have relevance for students entering higher education or the labor market, by equipping their students with sufficient knowledge, life skills and/or practical skills*" (UNESCO, 2014, p.33).

A comparative analysis of three primary school science curricula of: (i) the Azerbaijan Republic and (ii) the Russian Federation, as well as (iii) TIMSS 2015 Science Curriculum Framework.

About The Research

The research seems to be useful and timely due to four main reasons.

- Plans to participate in future TIMSS Studies
- Importance of Science Subject
- Regular curriculum revision. TIMSS uses the curriculum as the main organizing concept in considering how educational opportunities are provided to students.
- The State strategy on education development (2013) in Azerbaijan: a strategic importance of development of competitive, and a need to attune education quality indicators with European standards (Presidential Office of the Republic of Azerbaijan, 2013).

Methodology

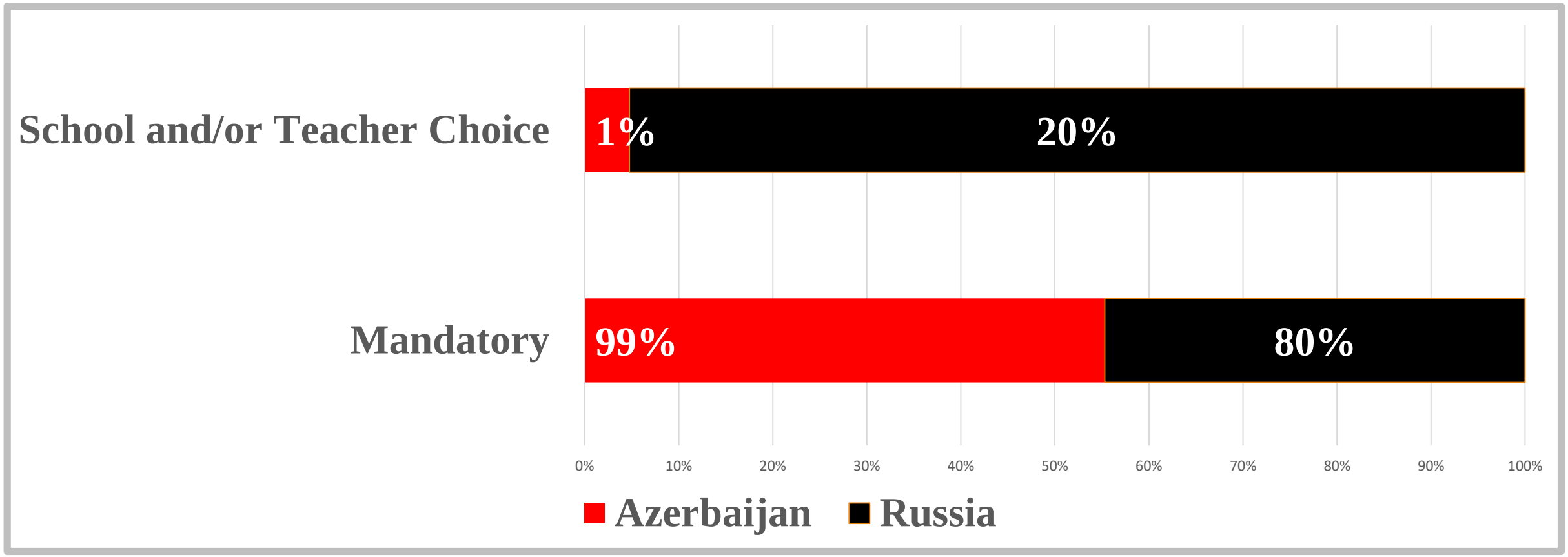
A small-scale desk-research

Curriculum comparison approaches: a deductive content analysis and the taxonomy of Bloom as a curriculum analysis tool.

Curricula were analyzed against three main criteria:

- importance of the science subject and subject curricula goals, as they were stated in the reviewed documents
- instructional time dedicated to teaching science subject
- a level of compliance of curricula taught cognitive skills with higher-order thinking skills repertoire in general, and the Bloom taxonomy, particularly.

Teaching Science as an Integrated Subject and Interdisciplinary Subject



Curricular Aims of the Science Education in Primary School

AZERBAIJAN

"I" and the World

"I" to find my place in the world

RUSSIA

"I" living in the world

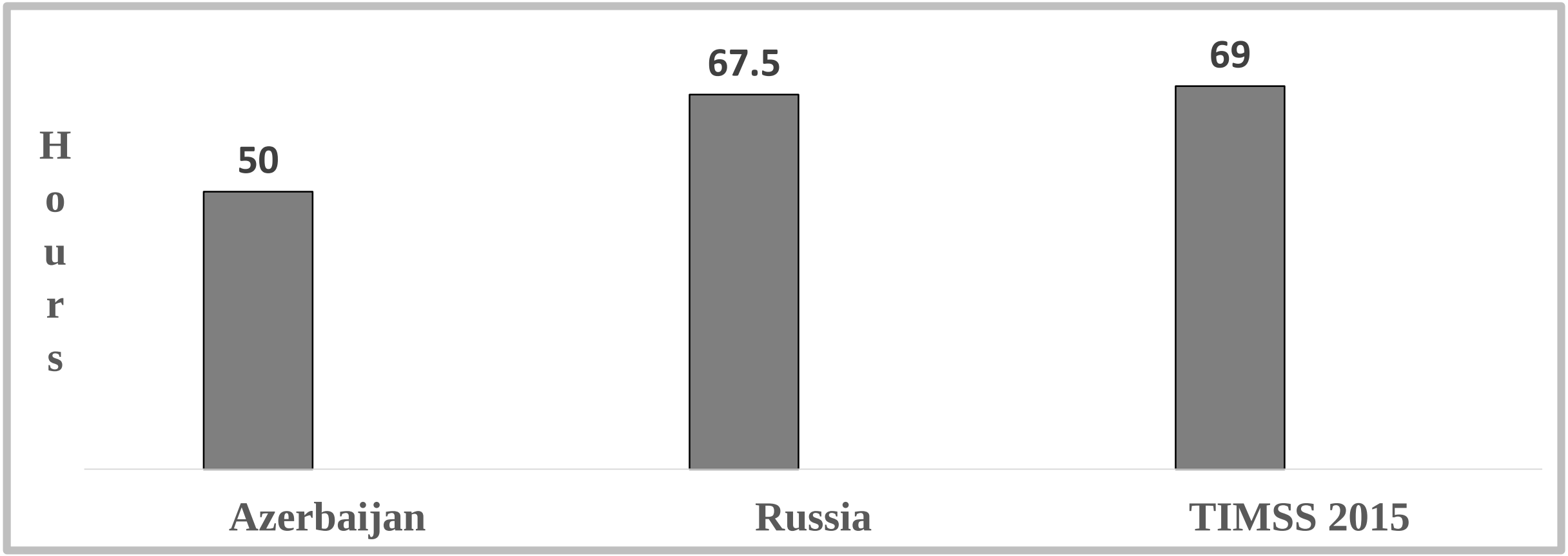
"I" as a citizen of Russia

TIMSS 2015

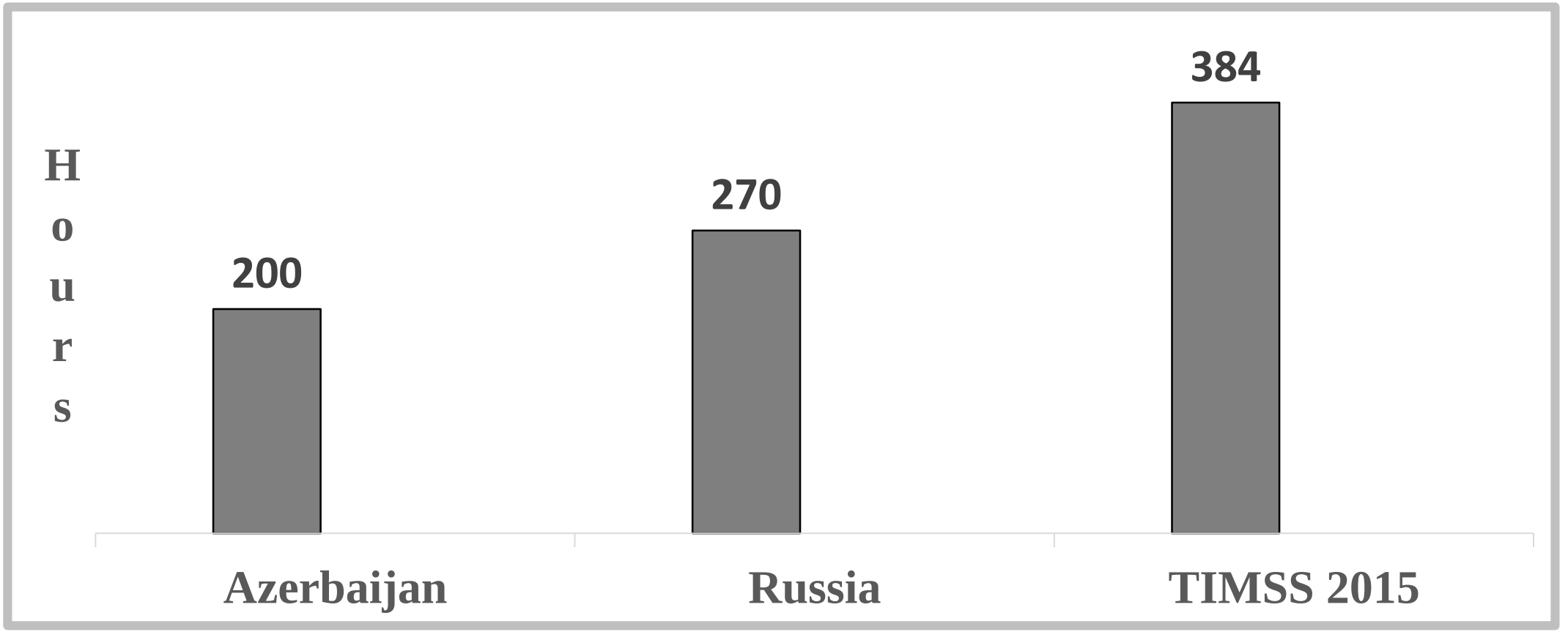
"I" being a citizen of the World

"I" making informed decisions about him/herself and the world

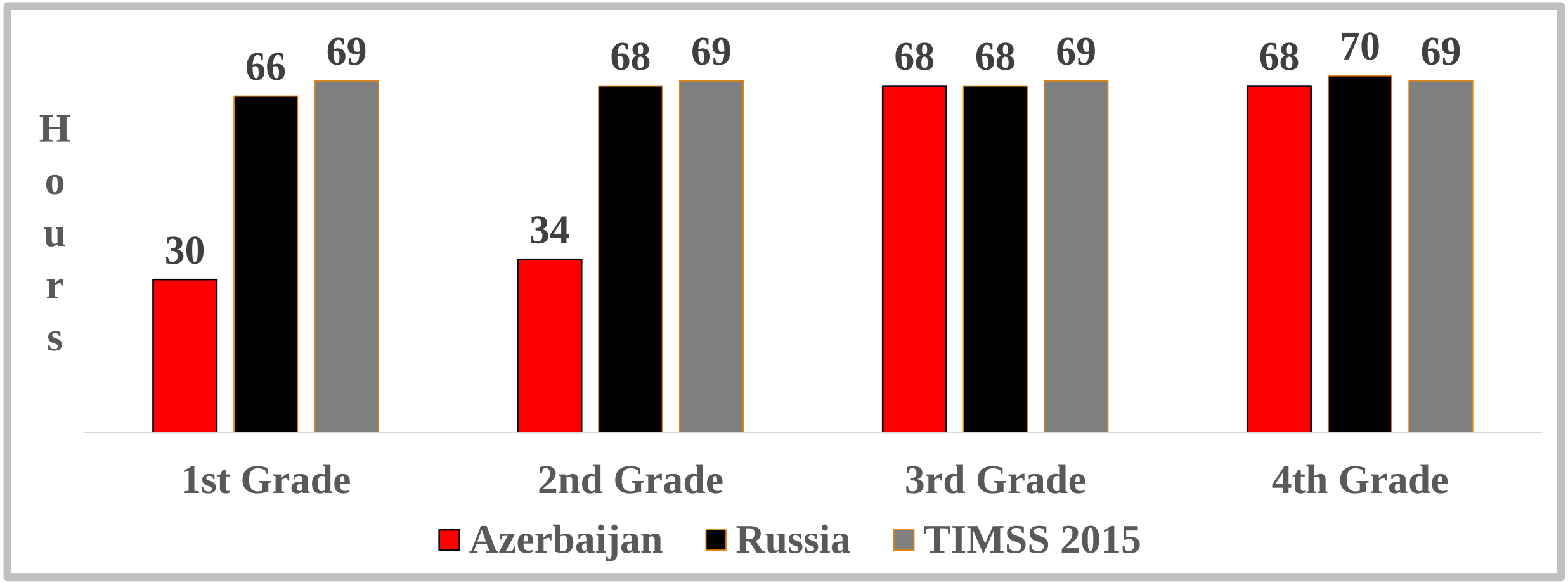
Average Annual Instructional Time Dedicated to Teaching Science in Primary School



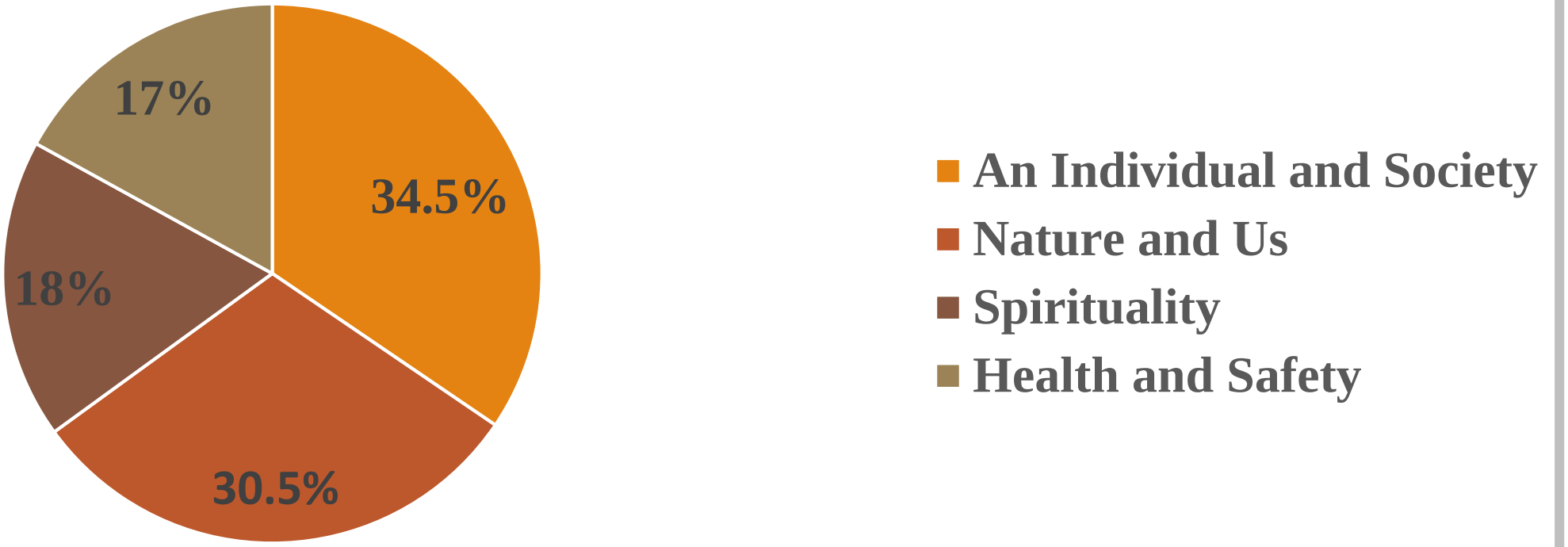
Total Instructional Time Dedicated to Teaching Science in Primary School



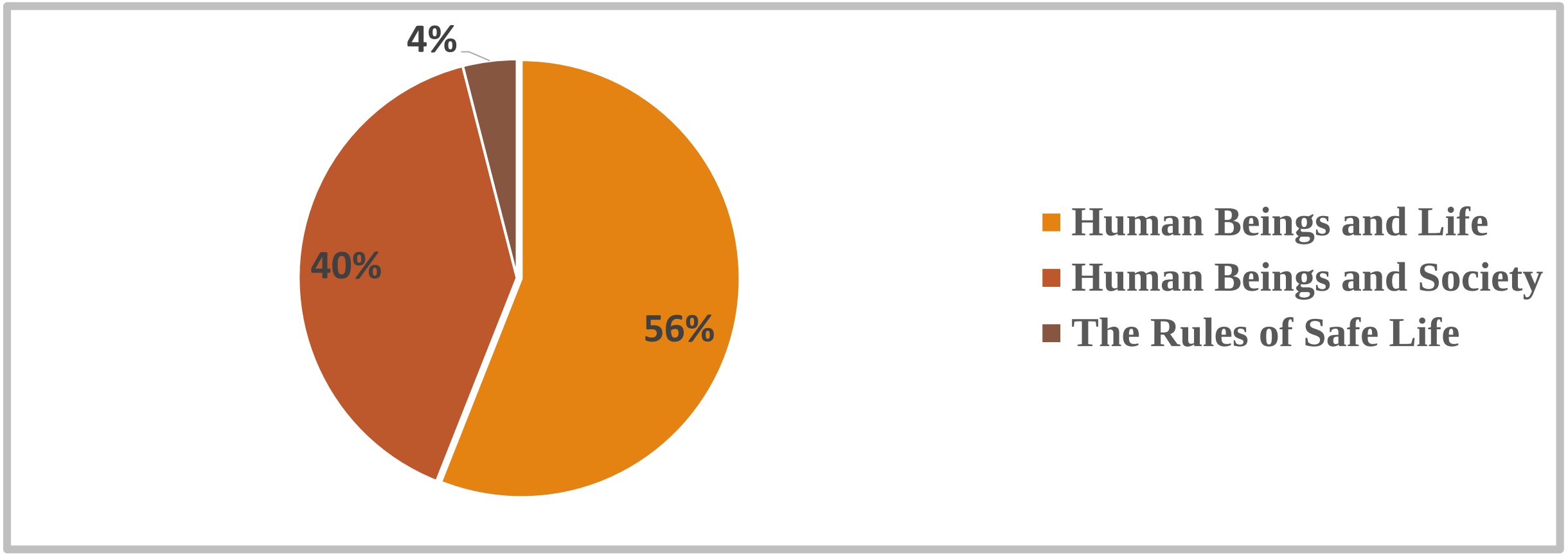
Annual Instructional Time Dedicated to Teaching Science in Primary School Grades



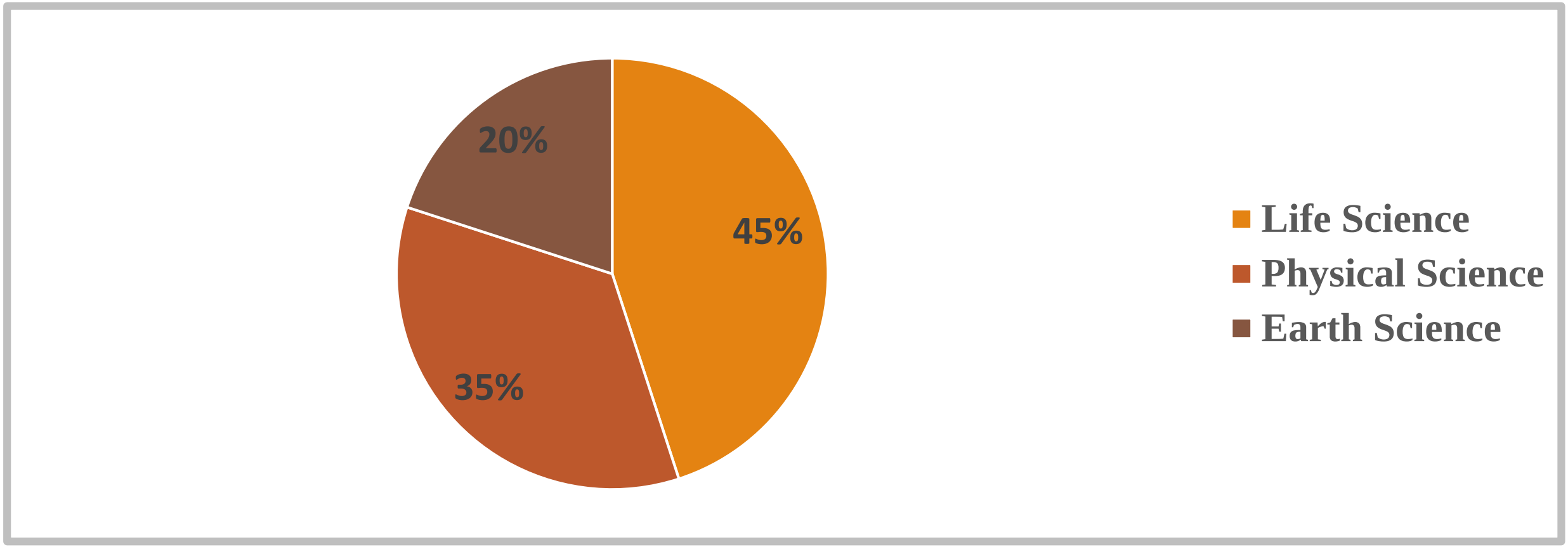
Science Curriculum Components in Azerbaijan



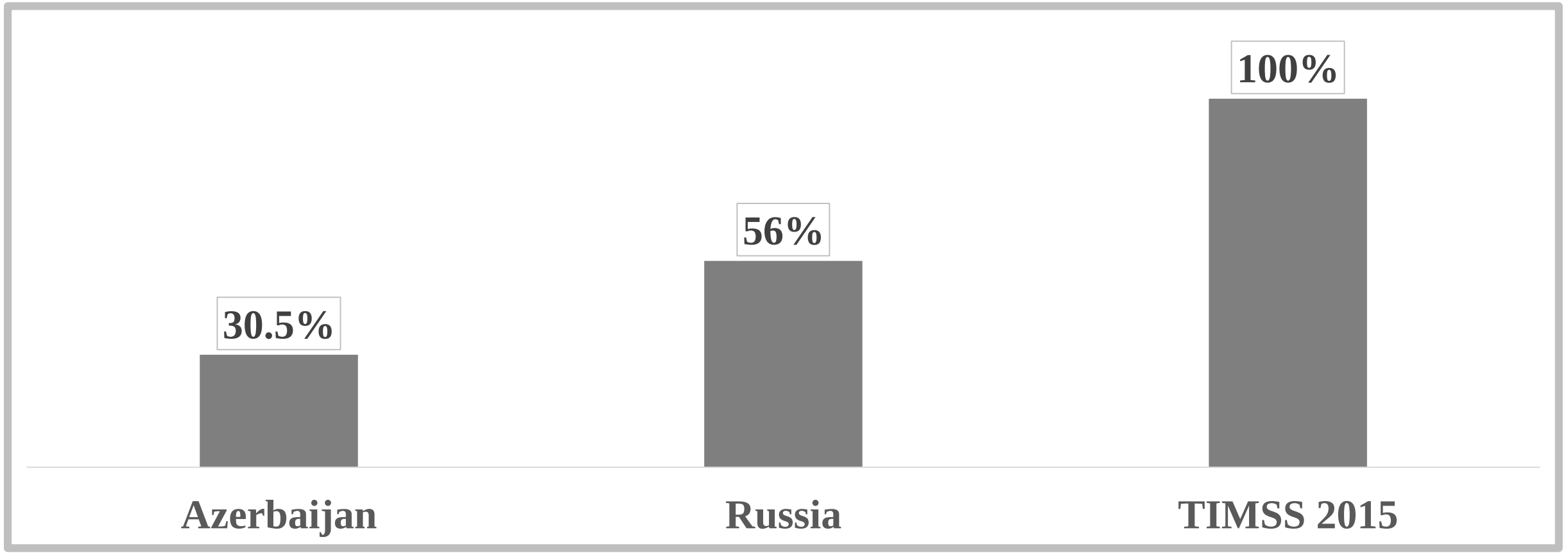
Science Curriculum Components in Russia



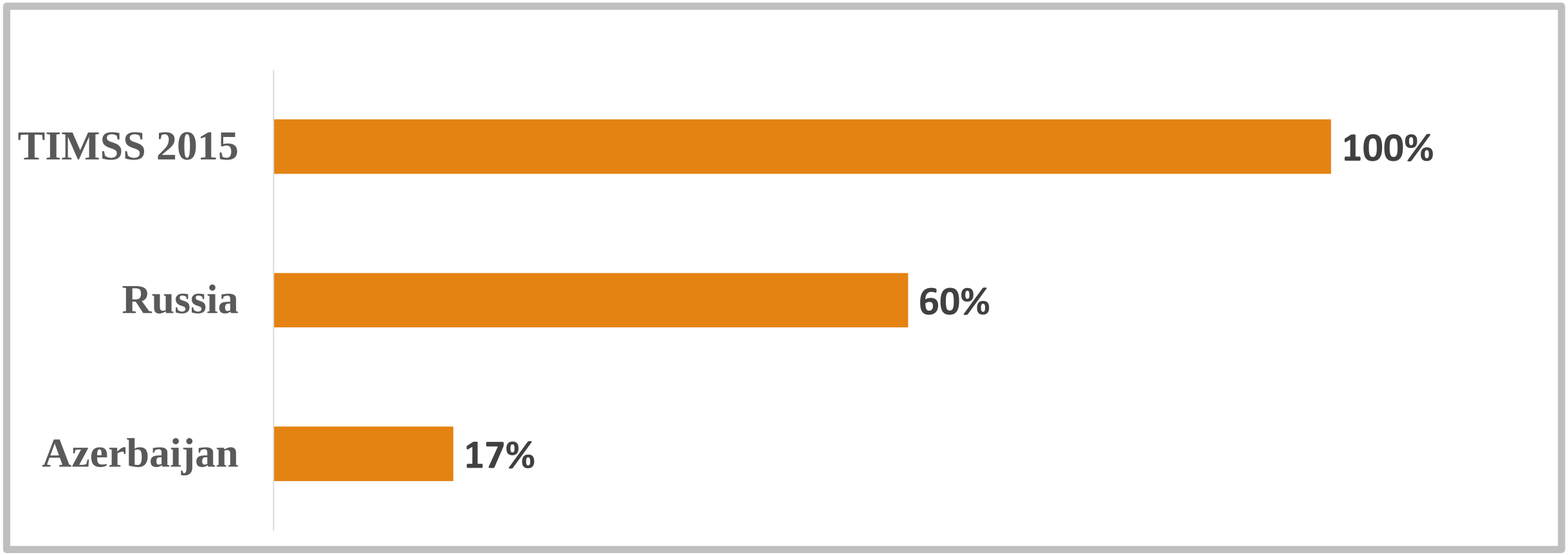
Science Content Domains in TIMSS 2015



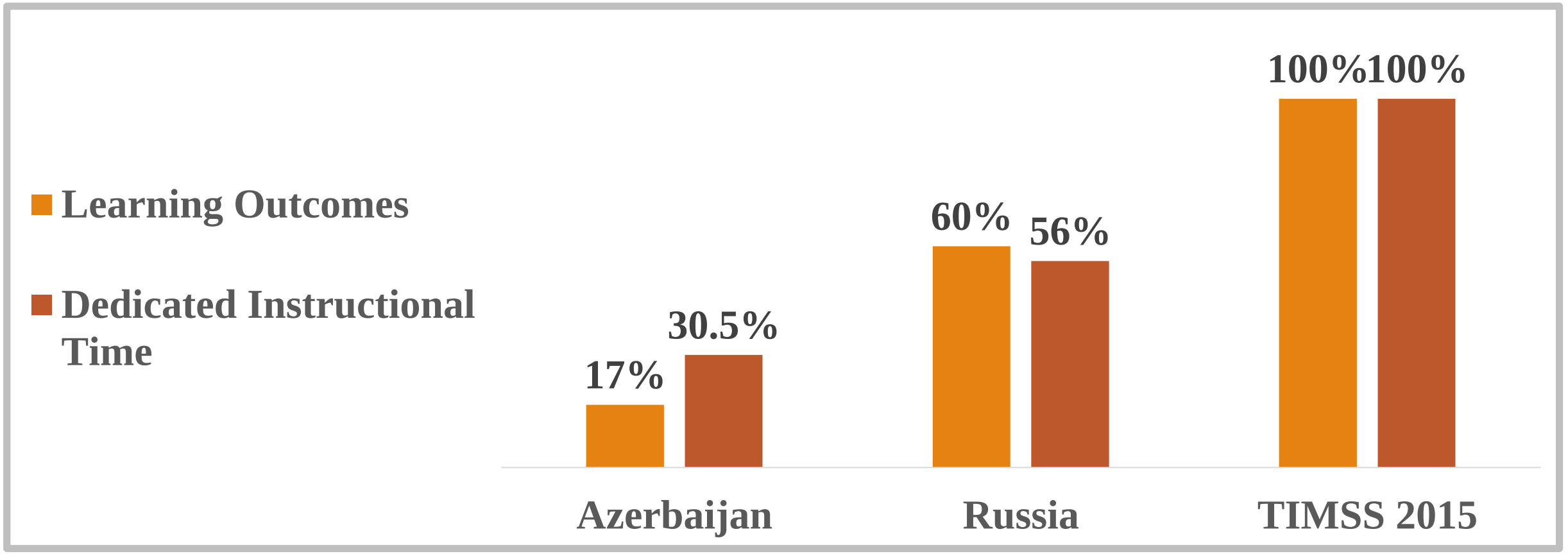
Science Curriculum Content Domains: Instructional Time Dedicated to Nature and Us Component in Primary School Science Curricula



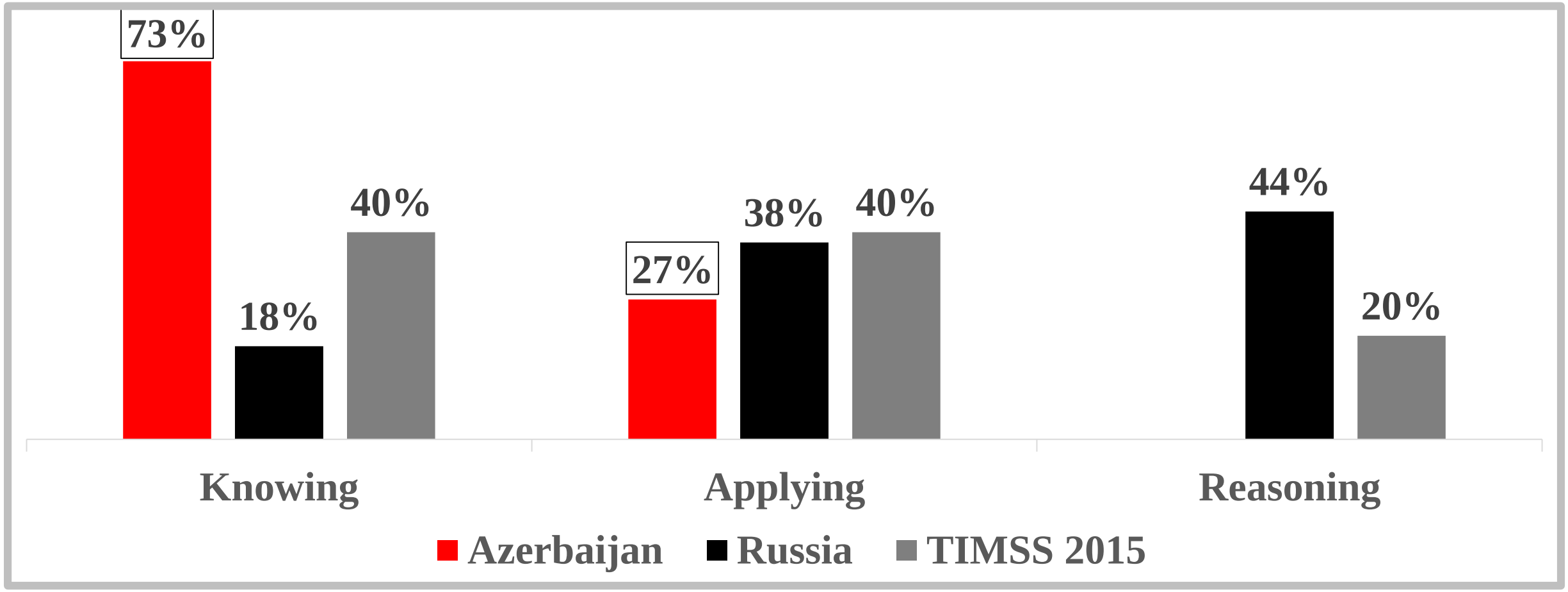
Natural Sciences Related Objectives in Teaching Science in Primary Education



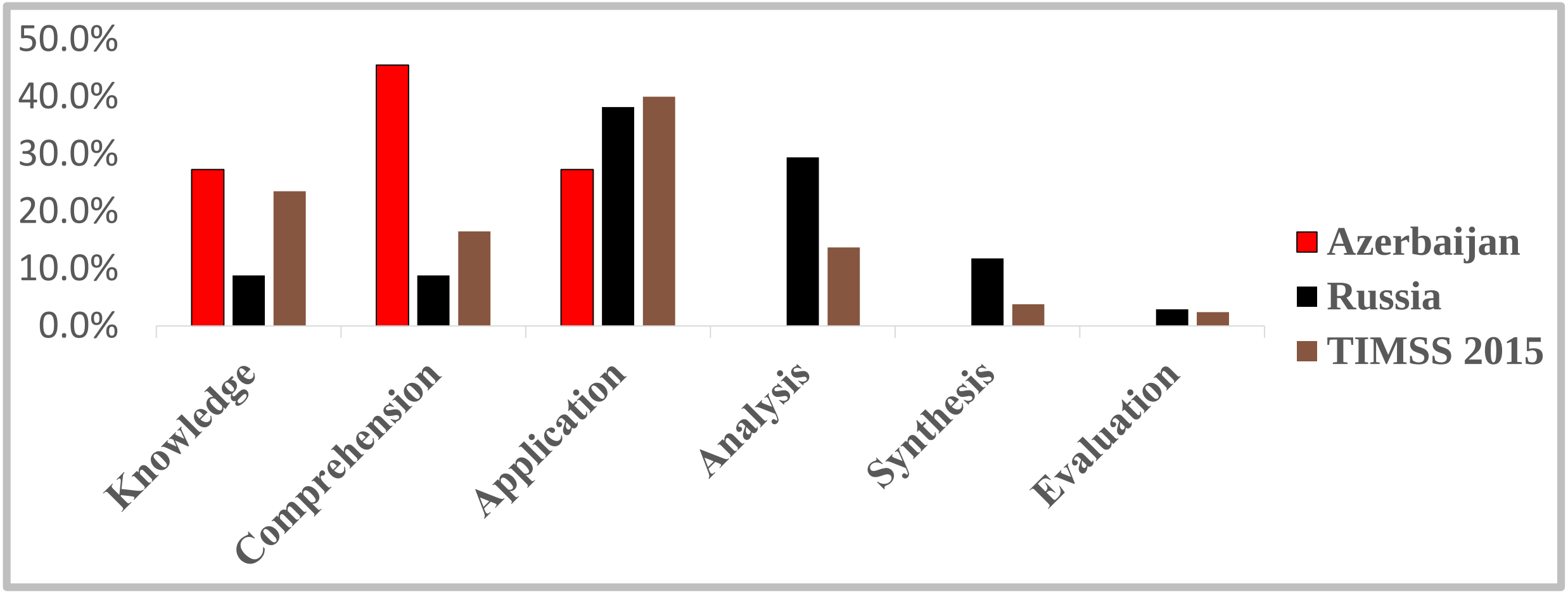
Teaching Natural Science Content: Dedicated Instructional Time vs. A number of relevant learning outcomes



Target Percentage of Cognitive Domains



Distribution of Competencies on the Levels of Bloom's Taxonomy



Conclusion

Curriculum is not the only factor influencing quality of education.

But curriculum could be considered as one of the most important inputs, as a starting point for ensuring quality of teaching and learning.

The research findings as initial results of a larger study and will need for further comprehensive and in-depth analysis.

Preliminary findings: a low relevance of many aspects of our national “The Life Knowledge” (“science”) curriculum to internationally agreed TIMSS Science Assessment Framework including instructional time, content and cognitive domains.

Following our state’s strategic goal of development of internationally competitive human capital, our science curriculum probably need for further improvement to be aligned with evolving TIMSS assessment framework.

Hopefully, the presented findings may assist our policy makers and curriculum developers in this improvement.