

Fen Eğitiminde Astronomi Konu Alanında Yayınlanan Ulusal Makalelerin İncelenmesi*

Analysis of National Articles Published in Astronomy Subject Areas

DOI=[10.17556/jef.02610](https://doi.org/10.17556/jef.02610)

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Extended Summary

Purpose: Astronomy is one of the oldest sciences (Bailey and Slater, 2004) and its mysteries have created a great curiosity and also research area. Studies are executed on different purposes and perspectives for the subjects in the curriculum and researches are done on the basis of teaching the necessity of this issue, adequacy, teaching and learning situation and so on. In this context, the aim of this study is to examine the articles in detail which made after the year 2000 in the field of astronomy and determine disposition in thematic issues. In this manner, the following questions were asked:

1. How is the distribution of studies by years?
2. How is the distribution of studies according to focus subject area?
3. How is the distribution of studies according to investigated concepts/celestial body?
4. How is the distribution of methodologies (sampling/working group, data collection tools, analysis methods, etc.) used in the studies?
5. Are the magazines that published studies are indexed ULAKBİM?

* Bu çalışma KÜ-BAP01/2015-24 proje numarasıyla Kastamonu Üniversitesi Bilimsel Araştırma Projesi Koordinatörlüğü tarafından desteklenmiştir.

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As a result of investigating data bases (ULAKBİM, Google/Scholar), the researchers search articles related to basic astronomy concept (star, world, sun, moon, universe, etc.). As a result of search, 39 articles have been reached related to astronomy. Thus the present study is limited to reaching researches and analyzes.

Method: Document analysis carried out by the method in this research. In the content of this study, the studies related to the basic astronomy concepts were found through literature survey by the researchers, each source was read carefully and the required information were noted. All studies' (i) topic, (ii) research methods, (iii) sample, (iv) data collection, (v) data analysis, (vi) distribution by years and (vii) by indexing the status of the journals which published ULAKBİM were examined through thematic analysis and classification. Analyses were performed with the participation of all researchers and the researchers provided consensus in the analysis process.

Results: Out of the studies, it has been seen that most of the studies published in 2012 and over the years, studies in the subject field has increased. It is understood that the 12 different subject field in the studies examined. The most frequently recurring subject areas are 'conceptual understanding (f=11), level of understanding (f=8) and misconceptions (f=6)'. It can be said that 16 basic concepts/celestial body are focused in the studies examined. Especially, 'basic astronomy concepts and the solar system and space' concepts/issues have been studied more. Studies were conducted using from 14 different research methods; 'quasi-experimental and case study' methods are used the most. Furthermore, in 10 studies, it was found that the methodology was not stated. According to findings, 2 studies were conducted with pre-school, 24 studies were conducted with primary education, 1 studies were conducted with secondary education, 9 with higher education and 4 studies were conducted with teachers. Among the studies, 16 different data collection methods were used. It is noticeable that the achievement test was used approximately 38.5% of the entire study. Studies were conducted using from 15 different analysis methods; especially percent, frequency, classification, t-test and content analysis methods are used the most. While a majority of the journals that published the study are located at ULAKBİM, some of them which can be considered important are not located in there.

Discussion and Conclusion: From the results achieved within the scope of the research, it can be expressed that most of the studies published in 2012, but after this year it can be said that researchers interested in the subject has decreased. Although there are a lot of new development such as new developments in space technology, the discovery of new planet or establish human settlements on other planets, it is seen that such issues don't take part in astronomy education research. When western literature examined, it has been found to studies which research modern astronomy and cosmology topics (Pasachoff, 2002; Wallace, Prather &

Duncan, 2012a, 2012b; Trouille et al., 2013). When the results are evaluated, it was suggested that identification dispositions of studies in the subject area and barely studied topics. In this way, there will be guidance for new studies.