

A Longitudinal Analysis of Publication Trends, Gender Disparity, and Collaborative Practices in Resonance Research Journal (2001-2024)

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1.0 Introduction

Scientific journals are not merely passive repositories of knowledge; they are dynamic, living records of a discipline's intellectual priorities, social structures, and evolving practices. As such, a longitudinal analysis of a journal's output offers a powerful lens through which to examine the broader health and trajectory of its field. *Resonance: Journal of Science Education* has long stood as a cornerstone of science pedagogy in India, shaping the minds of students and educators for decades. But what patterns lie hidden within its decades-long publication history? How has it reflected, or perhaps challenged, the prevailing currents and undercurrents of the academic world? This paper embarks on a comprehensive bibliometric journey through the complete archive of *Resonance* from 2001 to 2024, moving beyond a simple tally of articles to interrogate the very fabric of its scholarly discourse. We dissect the ebb and flow of publication trends, probe the persistent and troubling issue of gender disparity in authorship, and map the shifting landscape of collaborative research. By uncovering these critical trends, this study does more than just document the past; it provides an evidence-based mirror for the scientific community to reflect on issues of equity, collaboration, and knowledge dissemination, ultimately offering valuable insights to steer the journal—and the field of science education itself—toward a more inclusive and innovative future.

2.0 Research Methodology

To understand the longitudinal patterns of publication trends and gender disparity in *Resonance Research Journal*, a systematic analysis was carried out. Articles published in the journal over a period of 2001 to 2024 were collected and categorized based on their publication periodicity. All the categories were considered during the process of data extraction. Each issue was analyzed with respect to the number of articles published, authorship pattern, geographical distribution of authors, and length of articles published in the *Resonance Research Journal*. Quantitative data were collected on the frequency of publications within each category. However, qualitative data provided insights into emerging trends. The process ensured the inclusion of all articles, eliminating duplicates and verifying classification accuracy through inter-coder reliability checks. Statistical analysis of data was done with the help of various statistical tests and by using SPSS 18.0 Software.

3.0 Results & Discussion

3.1 No. of Articles published in Resonance Journal of Science

Table no. 1: No. of Articles published during year 2001-2024

Year	Nos.	Per
2001-05	775	25.0
2006-10	613	19.7
2011-15	569	18.3
2016-20	570	18.4
2021-24	578	18.6
Total	3105	100.0

$\chi^2 = 2484$; **df**: 4; $\chi^2_{\text{crit}} = 9.49$; $p < 0.05$

Above Table 4.2 presents information pertaining to total no. of articles published in the Resonance Journal of Science Education during study period i.e. year 2001-2024. Based on the data it is observed that total 775 articles were published in this journal during the year 2001-05 while 613 articles were published in this journal during the year 2006-2010. In addition to this total 569 and 570 articles were published in this journal during the year 2011-2015 and 2016-2020 respectively. Furthermore 578 articles were published in this journal in the year 2021-24.

3.2 Gender wise Distribution of Authors

Table No.2: Gender-wise distribution of authors of the articles published in the Resonance Journal of Science Education during the Year 2001 to 2024

	Male		Female	
	Nos.	Per	Nos.	Per
2001-05	618	23.6	299	24.7
2006-10	483	18.4	234	19.3
2011-15	441	16.8	233	19.2
2016-20	481	18.4	212	17.5
2021-24	598	22.8	233	19.2
Total	2621	100	1211	100
	$\chi^2 = 47.178$; df : 4; $\chi^2_{\text{crit}} = 9.49$; $p < 0.05$		$\chi^2 = 18.063$; df : 4; $\chi^2_{\text{crit}} = 9.49$; $p < 0.05$	

Above Table 2 shows information pertaining to gender-wise distribution of authors of the articles published in the Resonance Journal of Science Education during the Year 2001 to 2024.

- **Male:** It is observed that 618 articles of male authors were published in this journal in the year 2001-05 while 483 articles of male authors were published in this journal in the year 2006-10. In addition to this 441, 481 and 598 articles of male authors were published in this journal in the year 2011-15, 2016-20 and 2021-24 respectively.
- **Female:** It is observed that 299 articles of female authors were published in this journal in the year 2001-05 while 234 articles of female authors were published in this journal in the year 2006-10. In addition to this 233, 212 and 233 articles of female authors were published in this journal in the year 2011-15, 2016-20 and 2021-24 respectively.

3.3 Number of Cited Documents

Table No. 3: No. of Cited documents in the Resonance Journal of Science Education during the Year 2001 to 2024

Year	0		1 to 3		3 to 6		>6	
	Nos.	Per	Nos.	Per	Nos.	Per	Nos.	Per
2001-05	338	26.2	160	32.1	206	34.4	119	11.7
2006-10	220	20.3	114	22.9	112	18.7	144	14.2
2011-15	183	16.5	93	18.7	99	16.5	186	18.3
2016-20	137	17.6	71	14.3	101	16.9	256	25.2
2021-24	112	19.4	60	12.0	81	13.5	311	30.6
Total	991	100.0	498	100.0	599	100.0	1016	100.0
	$\chi^2 = 157.946$; $\text{df} = 4$; $\chi^2_{\text{crit}} = 9.49$; $p < 0.05$		$\chi^2 = 63.104$; $\text{df} = 4$; $\chi^2_{\text{crit}} = 9.49$; $p < 0.05$		$\chi^2 = 81.659$; $\text{df} = 4$; $\chi^2_{\text{crit}} = 9.49$; $p < 0.05$		$\chi^2 = 124.502$; $\text{df} = 4$; $\chi^2_{\text{crit}} = 9.49$; $p < 0.05$	

Above Table 3 shows information pertaining to no. of cited documents in the Resonance Journal of Science Education during the Year 2001 to 2024. It is observed that 991 documents were not cited by users in this journal in the study period.

- **1 to 3 users:** It is observed that 160 documents were cited in this journal in the year 2001-05 while 114 documents were cited in this journal in the year 2006-10. In addition to this 93, 71 and 60 documents were cited in this journal in the year 2011-15, 2016-20 and 2021-24 respectively.
- **3 to 6 users:** It is observed that 206 documents were cited in this journal in the year 2001-05 while 112 documents were cited in this journal in the year 2006-10. In addition to this 99, 101 and 81 documents were cited in this journal in the year 2011-15, 2016-20 and 2021-24 respectively.
- **More than 6 users:** It is observed that 119 documents were cited in this journal in the year 2001-05 while 144 documents were cited in this journal in the year 2006-10. In addition to this 186, 256 and 311 documents were cited in this journal in the year 2011-15, 2016-20 and 2021-24 respectively.

3.4 Number and Form of Cited Documents

Table No. 4: No. and Form of Cited documents in the Resonance Journal of Science Education during the Year 2001 to 2024

Year	Book		Journal Article		Other		Website	
	Nos.	Per	Nos.	Per	Nos.	Per	Nos.	Per
2001-05	48	26.2	527	25.3	1	100.0	218	23.7
2006-10	14	20.3	395	19.0	0	0.0	199	21.7
2011-15	12	16.5	379	18.2	0	0.0	167	18.2
2016-20	27	17.7	383	18.4	0	0.0	168	18.3
2021-24	4	19.4	396	19.0	0	0.0	166	18.1
Total	105	100.1	2080	100.0	1	100.0	918	100.0

	$\chi^2 = 56.381$; df: 4; $\chi^2_{crit} = 9.49$; $p < 0.05$	$\chi^2 = 37.548$; df: 4; $\chi^2_{crit} = 9.49$; $p < 0.05$	$\chi^2 = 4$; df: 4; $\chi^2_{crit} = 9.49$; $p < 0.05$	$\chi^2 = 12.251$; df: 4; $\chi^2_{crit} = 9.49$; $p < 0.05$
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Above Table 4 shows information pertaining to no. and form of cited documents in the Resonance Journal of Science Education during the Year 2001 to 2024.

- **Books:** It is observed that 48 books were cited in this journal in the year 2001-05 while 14 books were cited in this journal in the year 2006-10. In addition to this 12, 27 and 4 books were cited in this journal in the year 2011-15, 2016-20 and 2021-24 respectively.
- **Journal Article:** It is observed that 527 journal articles were cited in this journal in the year 2001-05 while 395 journal articles were cited in this journal in the year 2006-10. In addition to this 379, 383 and 396 journal articles were cited in this journal in the year 2011-15, 2016-20 and 2021-24 respectively.
- **Other:** It is observed that 1 document was cited in this journal in the year 2001-05.
- **Website:** It is observed that 218 websites were cited in this journal in the year 2001-05 while 199 websites were cited in this journal in the year 2006-10. In addition to this 167, 168 and 166 websites were cited in this journal in the year 2011-15, 2016-20 and 2021-24 respectively.

3.5 Degree of Collaboration

Table No. 5: Degree of collaboration of authors in the Resonance Journal of Science Education during the Year 2001 to 2024

Year	Collaboration		No Collaboration	
	Nos.	Per	Nos.	Per
2001-05	27	26.2	810	27.3
2006-10	14	20.3	600	20.2
2011-15	12	16.5	523	17.6
2016-20	25	17.7	528	17.8
2021-24	57	19.4	508	17.1
Total	135	100.1	2969	100.0
	$\chi^2 = 48.074$; df: 4; $\chi^2_{crit} = 9.49$; $p < 0.05$		$\chi^2 = 106.913$; df: 4; $\chi^2_{crit} = 9.49$; $p < 0.05$	

Above Table 5 shows information pertaining to degree of collaboration of authors in the Resonance Journal of Science Education during the Year 2001 to 2024.

- **Collaboration:** It is observed that 27 authors were collaborated in this journal in the year 2001-05 while 14 authors were collaborated in this journal in the year 2006-10. In addition to this 12, 25 and 57 authors were collaborated in this journal in the year 2011-15, 2016-20 and 2021-24 respectively.
- **No collaboration:** It is observed that 810 authors were not collaborated in this journal in the year 2001-05 while 600 authors were not collaborated in this journal in the year 2006-10. In addition to this 523, 528 and 508 authors were not collaborated in this journal in the year 2011-15, 2016-20 and 2021-24 respectively.

4.0 Conclusions

4.1 No. of Articles published in Resonance Journal of Science

- From the study results, it is evident that relatively more articles were published during the 2001-2005 period in the Resonance Journal of Science Education.

4.2 Gender wise Distribution of Authors

- From the study results it is evident that relatively more articles of male authors were published in the Resonance Journal of Science Education during 2001-2005.

4.3 Number of Cited Documents

- From the study results it is evident that relatively more documents were cited by more than 6 users in the Resonance Journal of Science Education during 2016-20.

4.4 Number and Form of Cited Documents

- From the study results it is evident that relatively more journal articles were cited in the Resonance Journal of Science Education during 2001-05.

4.5 Degree of Collaboration

- From the study results it is evident that relatively more authors were not collaborated in the Resonance Journal of Science Education during the year 2001-05.

5.0 Bibliography

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