

Science Teachers of Higher Secondary Schools in Mizoram: Demographic Profiles

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Abstract

Science plays a significant role in our everyday life. It has massive impacts and makes our daily lives easier and manageable. Therefore, it deserves to have a special place in our general education. Since formal education necessitates the service of teachers, it is also important to have good human resource in this field. Especially at the higher secondary school level, a good supply of science teachers is a must in order to prevent the structure of science education from collapsing. The present study aims to have a profile of science teachers of higher secondary schools in Mizoram in terms of gender, professional status, educational qualifications, age group and teaching experience. Data was collected from primary sources and findings have been analysed carefully in a qualitative manner. In terms of gender, majority of districts had higher percentage of male science teachers in both government and private higher secondary schools level of Mizoram. Government school had cent per cent trained science teachers while majority of private science teachers in higher secondary school were untrained. Regarding the educational qualifications of science teachers, unqualified teachers are still teaching in higher secondary schools of Mizoram. In terms of their age group, government schools teachers had higher percentage in lower age group while private school teachers had higher percentage in higher age group. In terms of teaching experience, different districts exhibited the existence of science teachers with varying lengths of experience.

Keywords: Science, Teachers, Higher secondary schools, Mizoram, Biology, Chemistry, Physics, Mathematics.

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Introduction

Science gives knowledge and promotes problem solving skills. It boosts the critical thinking ability of a person and also cultivates a passion for learning to those who are learning. Science education uplifts many disciplines in various fields and individual lives. It also holds the key to the success or failure for the future. No one can deny the importance of science education nowadays whether we like it or not.

In Mizoram, science education at higher secondary level is divided into Biology, Physics, Chemistry and Mathematics. Therefore any profile study should encompass all these subjects.

Rationale of the study

Science plays a vital role in our lives. Since the inception of the world, the importance of the activities and utility of science subject also began. No one can downgrade the importance of science education in the schools and our everyday lives. Teachers and students need to know the importance of science subject in our lives. Even parents need to know the impact of science education in the world. We need to encourage students to develop interest in science subject for their future. If we have too many students from backgrounds other than Science, development could be chaotic. A study of the profile of science teachers at secondary school level is important because it will enable us to understand the present status of human resources available. It will also enable us to predict to a certain extent the situation of human resources in the near future.

Objectives of the study

1. To examine the district wise profile of science teachers at higher secondary schools in Mizoram in terms of Gender.
2. To assess the district wise profile of science teachers at higher secondary schools in Mizoram in terms of professional training.
3. To study the district wise profile of science teachers at higher secondary schools in Mizoram in terms of educational qualification.
4. To evaluate the district wise profile of science teachers at higher secondary schools in Mizoram in terms of age group.
5. To measure the district wise profile of science teachers at higher secondary schools in Mizoram in terms of teaching experience.

Population and Sample

The population consists of 219 science teachers teaching in eight districts of Mizoram. No sampling was done and the whole population was studied for a most reliable data.

Statistical treatment of data

For analysis of the collected data, descriptive statistics like percentages are used.

Analysis and interpretation of data

For identifying the profiles of science teachers at higher secondary level, data collection was done from eight districts of Mizoram.

Data tabulated and arranged using percentage were qualitatively analysed to give a clear meaning to each area of people studied.

Analysis and Interpretation of data

Different data collected from various districts in Mizoram for science teachers profile in secondary schools were analysed and interpreted so that each objective would be met in the following ways:-

1. To examine the district wise profile of science teachers at higher secondary schools in Mizoram in terms of Gender.

Table-1

Profile of HSS Science Teachers in terms of Gender

DISTRICTS	GOVERNMENT				TOTAL	PRIVATE				TOTAL	GRAND TOTAL
	MALE		FEMALE			MALE		FEMALE			
	No.	%	No.	%		No.	%	No.	%		
Aizawl	27	57.45%	20	42.55%	47	57	75%	19	25%	76	123
Champhai	5	62.50%	3	37.50%	8	2	66.67%	1	33.33%	3	11
Kolasib	0		0		0	5	38.46%	8	61.54%	13	13
Lawngtlai	2	40%	3	60%	5	3	75%	1	25%	4	9
Lunglei	4	50%	4	50%	8	19	70.37%	8	29.63%	27	35
Mamit	3	60%	2	40%	5	0	0.00%	0	0.00%	0	5
Siaha	3	50%	3	50%	6	2	66.67%	1	33.33%	3	9
Serchhip	4	66.67%	2	33.33%	6	8	100%	0	0.00%	8	14
TOTAL	48	56.48%	37	43.52%	85	96	71.64%	38	28.36%	134	219

Source : Field Survey

As seen in table-1, Aizawl district had 57.45% male and 42.55% female science teachers in government secondary schools whereas there were 75% male and 25% female science teachers in private higher secondary schools. 62.50% male and 37.50% female in government and 66.67% male and 33.33% female science teachers in Champhai district. Kolasib district

had science teachers in private schools that is 38.46% male and 61.54% female teachers. Lawngtlai district had 40% male and 60% female in government and 75% male and 25% female science teachers in higher secondary schools. Lunglei district had both 50% male and female science teachers in government and 70.37% male and 29.63% female science teachers in private higher secondary schools. 60% male and 40% female in government schools are only found from Mamit district. Siaha district had both 50% in terms of gender in government schools and 66.67% male and 33.33% female science teachers in private higher secondary schools. Serchhip district also had 66.67% male and 33.33% female science teachers in government and 100% male teachers in private higher secondary schools.

2. To assess the district wise profile of science teachers at higher secondary schools in Mizoram in terms of professional training.

Table-2

Profile of HSS Science Teachers in terms of Professional Training

DISTRICTS	GOVERNMENT				TOTAL	PRIVATE				TOTAL	GRAND TOTAL
	Trained		Untrained			Trained		Untrained			
	No.	%	No.	%		No.	%	No.	%		
Aizawl	47	100%	0	0	47	19	25%	57	75%	76	123
Champhai	8	100%	0	0	8	0	0	3	100%	3	11
Kolasib	0	0.00%	0	0	0	13	100%	0	0	13	13
Lawngtlai	5	100%	0	0	5	1	25%	3	75%	4	9
Lunglei	8	100%	0	0	8	20	74.07%	7	25.93%	27	35
Mamit	5	100%	0	0	5	0	0	0	0	0	5
Siaha	6	100%	0	0	6	2	66.67%	1	33.33%	3	9
Serchhip	6	100%	0	0	6	8	100%	0	0	8	14
TOTAL	85	100%	0	0	85	63	47.01%	71	52.99%	134	219

Source : Field Survey

Table-2 explains the profile of science teachers in higher secondary schools of Mizoram in terms of professional training and in district wise manner. Aizawl district had 100% trained teachers in government schools while it had 25% trained and 75% untrained science teachers in private schools at higher secondary level. Champhai district had 100% trained science teachers in government schools and 100% untrained teachers in private schools. Kolasib district had only private science teachers i.e 100% trained science teachers in the private schools. 100% trained teachers in government schools whereas 25% trained in government

schools and 75% untrained science teachers in private higher secondary schools of Mizoram. Also 100% trained in government and 74.07% trained and 25.93% untrained science teachers in private higher secondary schools. Only government higher secondary school was found in Mamit district and they had 100% trained teachers in science subject. 100% trained teachers in government and 66.67% trained and 33.33% untrained science teachers in higher secondary schools of Siaha district. Serchhip district also had 100% trained teachers in government and private schools at higher secondary level.

3. To study the district wise profile of science teachers at higher secondary schools in Mizoram in terms of educational qualification.

Table-3

Profile of HSS Science Teachers in terms of Educational Qualifications

[illegible]

Science Teachers of Higher Secondary Schools in Mizoram: Demographic Profiles

TOTAL	B.Sc General	B.Sc Chemistr	B.Sc Maths	M.Sc Genetics	M.Sc Biotechn
47 (55.30%)					
76 (56.71%)					
8 (9.41%)					
3 (2.23%)					
0					
13 (9.70%)					
5 (5.88%)				0 (100%)	1 (100%)
4 (2.98%)				1 (100%)	0
8 (9.41%)	0	0	0		
27 (20.14%)	1 (100%)	1 (100%)	2 (100%)		
5 (5.88%)					
0					
6 (7.06%)					
3 (2.23%)					
6 (7.06%)					
8 (5.97%)					
85 (100%)	0	0	0	0 (100%)	1 (100%)
134 (100%)	1 (100%)	1 (100%)	2 (100%)	1 (100%)	0

Source : Field Survey

As mentioned in table-3, Aizawl district had the highest numbers of science teachers who had degrees in M.Sc (Physics) at both government and private higher secondary schools while no M.Sc (Physics) teachers were found in Kolasib government and Mamit private schools. Aizawl district had M.Sc (Biochemistry) degree holder teachers in both government and private higher secondary schools. M.Sc (botany) degree holder teachers were not found from private secondary schools in Lawngtlai, Mamit, Siaha and Serchhip districts meanwhile private science teachers in Aizawl district had the highest percentages of teachers with this degree. Aizawl district also had the highest percentages of science teachers who held degrees in M.Sc (Zoology) at government schools and no twacher held this degree in Lawngtlai district, Lunglei government school, Mamit private school, Serchhip government school, Champhai private school and Kolasib government school. Science teachers who had degree in M.Sc (Botany, Ph.D) in government was only found in Aizawl district (i.e. 100%) and both 50% teachers were found from Aizawl private and Serchhip private higher secondary schools. Only 1 each M.Sc (Geology) holder teachers were only found from Lunglei district in both government and private higher secondary schools. Lunglei private secondary schools had only 1 M.Sc (Environmental Studies) holder teacher among all 6 districts of Mizoram. Serchhip private secondary school had only 1 teacher who had a degree in M.Sc (Chemistry, Ph.D) at higher secondary level. Science teachers who had degrees in M.Sc (Biochemistry) was only found from government school in Lawngtlai district. Science teacher who had degree in M.Sc (Genetics) was found only from private school in Lawngtlai district. B.Sc (mathematics), B.Sc (Chemistry) and B.Sc (General) degree holder science teachers were only found from private schools in Lunglei district within Mizoram.

4. To evaluate the district wise profile of science teachers at higher secondary schools in Mizoram in terms of age group.

Table-4
Profile of HSS Science Teachers in terms of Age Group

Age Group	Aizawl		Champhai		Kolasib		Lawngtlai		Lunglei		Mamit		Siaha		Serchhip		Total	
	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P
20-24	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1
25-29	3 (33.33%)	6 (25%)	1 (11.11%)	3 (12.50%)	0	3 (12.50%)	2 (22.23%)	4 (16.66%)	0	7 (28.17%)	3 (33.33%)	0	1 (4.17%)	0	0	0	9 (100%)	24 (100%)
30-34	11 (57.89%)	28 (84.85%)	0	0	0	2 (6.06%)	2 (10.53%)	0	3 (15.78%)	3 (9.09%)	1 (5.27%)	0	0	2 (10.53%)	0	0	19 (100%)	33 (100%)
35-39	9 (56.25%)	18 (72%)	2 (12.50%)	0	0	1 (4%)	1 (6.25%)	0	1 (6.25%)	4 (16%)			2 (8%)	2 (12.50%)	0	16 (100%)	25 (100%)	25 (100%)
40-44	15 (85.22%)	9 (50%)	3 (13.05%)	0	0	3 (16.66%)			2 (8.69%)	4 (22.23%)			2 (8.69%)	1 (4.35%)	2 (11.11%)	23 (100%)	18 (100%)	18 (100%)
45-49	8 (61.54%)	11 (55%)	2 (15.39%)	0	0	1 (5%)			1 (7.69%)	7 (35%)			1 (7.69%)	0	1 (5%)	13 (100%)	20 (100%)	20 (100%)
50-54	1 (25%)	2 (25%)			0	1 (12.50%)			1 (25%)	1 (12.50%)			2 (50%)	0	4 (50%)	4 (100%)	8 (100%)	8 (100%)
55-59	0 (40%)	2 (40%)			0	2 (40%)								0 (20%)	1 (20%)	0 (100%)	5 (100%)	5 (100%)
Total	47 (55.30%)	76 (56.72%)	8 (9.42%)	3 (2.24%)	0	13 (9.70%)	5 (5.88%)	4 (2.98%)	8 (9.42%)	27 (20.14%)	5 (5.88%)	0	6 (7.05%)	3 (2.24%)	6 (7.05%)	8 (5.98%)	85 (100%)	134 (100%)

Source : Field Survey

Table-4 mentions the profile of science teachers in the higher secondary schools of Mizoram against their age groups in district wise manner. In the age group of 20-24 years Lunglei private schools and Mamit government schools only had science teachers at higher secondary levels. In the 25-29 years age group, government schools in Aizawl and Mamit districts had the highest percentages while zero percentage was found from government schools in Kolasib, Lunglei, Siaha and Serchhip districts; zero percentage was also found from private schools in Mamit and Serchhip districts at higher secondary school levels. Highest percentage was found from private schools in Aizawl district and lowest percentage was found from

Champhai district in both government and private schools, government Kolasib district, private Lawngtlai district, private Mamit district, Siaha district both government and private schools and private Serchhip district in the age group of 30-34 years of age at higher secondary school level in science teachers of Mizoram. Aizawl private schools had the highest percentage in the 35-39 years age group, while zero percentage was found from Champhai private school, government school Kolasib, private school Lawngtlai, Mamit district and private school in Serchhip district at higher secondary levels in Mizoram. In the 40-44 years age group government schools in Aizawl district had the highest percentage and the lowest percentage was found from private school Champhai, government school Kolasib, Lawngtlai district both government and private school, Mamit district both private and government schools and private school in Siaha district science teachers in higher secondary level of Mizoram. Government school in Aizawl district had the highest percentage of science teachers in 45-49 age group while no science teachers were found from Champhai private schools, Kolasib government school, Lawngtlai district, Mamit district both private and government schools and Siaha private school at higher secondary level. Within the age group of 50-54 years science teachers who had the highest percentage were found from government Siaha and private Serchhip districts while zero percentage was found from Champhai district both private and government schools, Lawngtlai district both private and government schools, Mamit district both private and government schools and private Siaha school and government Serchhip school in higher secondary schools of Mizoram. Science teachers are mostly between the age group of 55-59 years was 40% in private schools at Aizawl and Kolasib districts while 20% was found from Serchhip private secondary school and the rest of the schools/districts had no teachers in higher secondary schools of Mizoram.

5. To measure the district wise profile of science teachers at higher secondary schools in Mizoram in terms of teaching experience.

Table-5

Profile of HSS Science Teachers in terms of Teaching Experience

Teaching Experience	Aizawl		Champhai		Kolasib		Lawngtlai		Lunglei		Mamit		Siaha		Serchhip		Total	
	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P
1-5	12 (52.18%)	23 (54.77%)	1 (4.35%)	3 (7.15%)	0	4 (9.52%)	5 (21.74%)	2 (4.76%)	0	9 (21.42%)	5 (21.73%)	0	0	1 (2.38%)	0	0	23 (100%)	42 (100%)
6-10	11 (64.70%)	28 (73.68%)	0	0	0	3 (7.89%)	0	2 (5.27%)	3 (17.64%)	4 (10.52%)			1 (5.88%)	1 (2.64%)	2 (11.77%)	0	17 (100%)	38 (100%)
11-15	8 (47.06%)	12 (60%)	4 (23.53%)	0	0	2 (10%)		2 (11.76%)	5 (25%)				0	0	3 (17.65%)	1 (5%)	17 (100%)	20 (100%)

Total	26-30	21-25	16-20
47 (55.30%)	0	3 (50%)	13 (61.90%)
76 (56.72%)	2 (33.33%)	7 (36.84%)	4 (44.45%)
8 (9.41%)			3 (14.28%)
3 (2.24%)			0
0	0	0	0
13 (9.70%)	2 (33.33%)	1 (5.26%)	1 (11.11%)
5 (5.88%)			
4 (2.99%)			
8 (9.41%)	0	0	3 (14.28%)
27 (20.15%)	1 (16.67%)	6 (31.58%)	2 (22.22%)
5 (5.88%)			
0			
6 (7.06%)	1 (100%)	2 (33.34%)	2 (9.53%)
3 (2.23%)	0	0	1 (11.11%)
6 (7.06%)	0	1 (16.66%)	0
8 (5.97%)	1 (16.67%)	5 (26.32%)	1 (11.11%)
85 (100%)	1 (100%)	6 (100%)	21 (100%)
134 (100%)	6 (100%)	19 (100%)	9 (100%)

Source : Field Survey

Table-5 analyses the profile of science teachers in higher secondary schools of Mizoram in terms of teaching experience in district wise manner. Private school Aizawl district had the highest percentage in 1-5 years of teaching experience and zero percentage was found from government Kolasib school, government Lunglei school, private Mamit school, government Siaha school and Serchhip district at higher secondary schools of Mizoram. Between 6-10 years of teaching experience, Aizawl district private school had highest percentage while lowest percentage (i.e. 0.00%) were found from Champhai district, government Kolasib district, government Lawngtlai district, Mamit district and private school in Serchhip district. Private schools in Aizawl district had highest percentage in 11-15 years of teaching experience and no one was found from Champhai district in private school, Kolasib district in government school, Lawngtlai district, Mamit district and Siaha district. Government schools in Aizawl district had highest percentage between 16-20 years of teaching experience and lowest percentage was found in Champhai district private school, Kolasib district government school, Lawngtlai district, Mamit district and government school in Serchhip district at higher secondary school of Mizoram. Government school in Aizawl district had highest percentage of science teachers who had teaching experience between 21-25 years of age and lowest percentage was found from Champhai district, Lawngtlai district, Mamit district, government school in Kolasib district, government school in Lunglei district and private school in Siaha district. Government school in Siaha district had highest percentage in teaching experience between 26-30 years of age and zero percentage was found from Champhai district, Lawngtlai district, Mamit district, government school in Aizawl district, Kolasib district, Lunglei district and Serchhip district while private school in Siaha district also had zero percentage.

Discussion

To conclude, it may be said that disparities in terms of various variables do still exist among different districts in Mizoram when it comes to science teachers teaching at the higher secondary level of education. There were more male science teachers in government and

private higher secondary schools at the time the study was done. Government had 100% trained teachers while private schools had only 47.10% trained science teachers. In terms of educational qualifications, both kinds of secondary schools showed that they still had unqualified science teachers in their schools. Age group of science teachers showed that more teachers were found in lower age group for private schools than government schools; strangely, only private schools had teachers in the highest age group. Not only that surprisingly, private secondary schools had more science teachers in lower and higher teaching experiences. The higher percentage of younger group of teachers in private higher secondary schools could be because these teachers may have just passed out and are employed in these schools while waiting for better positions. The study also found a higher number of higher secondary schools offering science subject. While this may not look bad at first glance, a deeper speculation brings to mind that while more privately managed higher secondary schools may be offering science at a higher secondary schools level, they may not necessarily have the right kind of equipment that are considered to be an important part of science education. Therefore a deeper study regarding the various aspects of science education besides the profile of the teachers needs to be done in order to have a clearer picture of science education at this level of education.

Conclusion

Science education is an important and truly relevant subject which has an impact in our everyday lives regardless of our educational pursuits. Therefore more and more science graduates and post graduates need to be produced in order to ensure a confined and stable provision of human resource in this area. Since the advancement of scientific knowledge is one major goal of National Education Policy (NEP, 2020), it is high time that the state government looks into the profile of science teachers at this level and make amendment where it needs to be made. If this is done, science education will flourish and the nation will certainly become a global knowledge super power in the not far away future.

References:

- Albert, B. (2022). Why science education is more important than most scientist think. *FEBS Letters*/596(2), 149-159. <https://febs.onlinelibrary.wiley.com/doi/10.1002/1873-3468.14272>
- Ministry of Human Resource Development, Government of India. (2020). *National Education Policy 2020*. https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf
- Singh, A. (2021). *Importance of science education in schools*. <https://www.theasianschool.net/blog/importance-of-science-education-in-schools/#:~:text=Science%20education%20gives%20students%20the,the%20reasons%20for%20complicated%20systems>
- Timonen, J., & Kivimäki, P. (2020). *Why is science education important?* <https://jyunity.fi/en/thinkers/why-is-science-education-important/>