Chapter III
Data Description, Analysis and Interpretation

3.1 Introduction

This chapter presents the analysis and interpretation of the data collected for the study on teachers' awareness about assistive devices used in inclusive settings. The preceding chapters have laid the foundation for this analysis. Chapter 1 provided a comprehensive introduction to the study, including its background, significance, objectives, and delimitations. Chapter 2 detailed the methodology adopted for the study, including the research design, population, sampling methods, data collection tools, and analysis techniques.

The current chapter, Chapter 3, systematically analysed the data using descriptive and inferential statistics. The findings are interpreted in relation to the research objectives and hypotheses, providing insights into the current state of teachers' awareness and the use of assistive devices in inclusive settings.

3.2 Description of data and data analysis

The data collected through the questionnaire administered to teachers in inclusive settings were subjected to statistical analysis. The sample included teachers from both primary and secondary levels of education, with representation from urban and rural settings within Bhopal. The analysis focuses on the following aspects:

3.2.1 Awareness of Low-Tech, Mid-Tech, and High-Tech Assistive Devices among Teachers in different schools

Understanding teachers' awareness of different types of assistive devices is crucial for their effective use in classrooms. This section explores the levels of awareness regarding low-tech, mid-tech, and high-tech assistive devices among teachers in both government and private schools, as well as in rural and urban areas. The data provides insights into the disparities and similarities in awareness across different educational settings and geographic locations.

The table below presents Awareness of Low tech Assistive Devices among Teachers according to the type schools.

Table 3.1.1 Awareness of Low tech Assistive Devices among Teachers in Government and Private Schools

Assistive Device	Government (N=25)	Percentage %	Private (N=25)	Percentage %
Abacus Frame	24	96%	25	100%
Non-optical Low Vision devices	11	44%	10	40%
Geometry Kit	25	100%	25	100%
Magnifiers	25	100%	25	100%
Taylor Frame	20	80%	12	48%
Snellen Chart	21	84%	19	76%

Table 3.1.2 Awareness of Low tech Assistive Devices among Teachers of Rural and Urban schools

Assistive Device	Rural (N=25)	Percentage %	Urban (N=25)	Percentage %
Abacus Frame	16	64%	25	100%
Non-optical Low Vision devices	6	24%	18	72%
Geometry Kit	25	100%	25	100%
Magnifiers	21	84%	23	92%
Taylor Frame	11	44%	19	76%
Snellen Chart	7	28%	9	36%

The **Table 3.1.1** and **3.1.2** depicts that Low-tech assistive devices such as the Abacus Frame, Geometry Kit, and Magnifiers are widely available across all school types. However, there is a noticeable gap in the availability of non-optical low vision devices and Taylor Frames, particularly in rural and government schools. Urban and private schools show higher availability of these devices, indicating better resource allocation.

The table below presents Awareness of mid tech Assistive Devices among Teachers according to the type schools.

Table 3.2.1 Awareness of Mid tech Assistive Devices among Teachers in Government and Private Schools

Assistive Device	Government (N=25)	Percentage%	Private (N=25)	Percentage %
Braille systems for reading and writing	25	100%	25	100%
Embossed Maps	24	96%	23	92%
Large print books	24	96%	24	96%
Talking calculators	25	100%	25	100%
White canes	25	100%	25	100%
Slate and stylus	24	96%	22	88%
Type writers	25	100%	25	100%
Talking computers	25	100%	25	100%
Wheel chairs	25	100%	25	100%
Adjustable tables	24	96%	25	100%

Table 3.2.2 Awareness of Mid tech Assistive Devices among Teachers of Rural and Urban schools

Assistive Device	Rural (N=25)	Percentage %	Urban (N=25)	Percentage %
Braille systems for reading and writing	23	92%	25	100%
Embossed Maps	21	84%	24	96%
Large print books	21	84%	23	92%
Talking calculators	24	96%	25	100%
White canes	25	100%	25	100%
Slate and stylus	14	56%	16	64%
Type writers	25	100%	25	100%
Talking computers	25	100%	25	100%
Wheel chairs	25	100%	25	100%
Adjustable tables	23	92%	24	96%

Table 3.2.1 and 3.2.2 depicts Mid-tech assistive devices show high availability across both government and private, as well as rural and urban schools. However, rural schools lag slightly behind in devices like embossed maps, large print books, and slates and styluses, indicating a need for targeted resource distribution.

The table below presents Awareness of high tech Assistive Devices among Teachers according to the type of schools.

Table 3.3.1 Awareness of High tech Assistive Devices among Teachers in Government and Private Schools

Assistive Device	Government (N=25)	Percentage %	Private (N=25)	Percentage %
Screen Reader	19	76%	18	72%
Screen Magnifier	7	28%	5	20%
Braille translation	8	32%	6	24%
Talking clocks/Wrist watch	24	96%	25	100%
Braille Embosser	6	24%	3	12%
Daisy player	5	20%	3	12%
Software	11	44%	10	40%

Table 3.3.2 Awareness of High tech Assistive Devices among Teachers of Rural and Urban schools

Assistive Device	Rural (N=25)	Percentage %	Urban (N=25)	Percentage %
Screen Reader	11	44%	13	52%
Screen Magnifier	3	12%	8	32%
Braille translation	7	28%	9	36%
Talking clocks/Wrist watch	22	88%	25	100%
Braille Embosser	2	8%	6	24%
Daisy player	4	16%	7	28%
Software	10	40%	16	64%

Table 3.3.1 and 3.3.2 shows High-tech assistive devices are less common compared to low and mid-tech devices, especially in rural and government

schools. Devices such as screen readers, braille embossers, and specialised software are less available in these settings. Urban and private schools have better access to high-tech devices, but overall, there is a need for improved provision of these advanced technologies across all schools.

The analysis of low-tech, mid-tech, and high-tech assistive devices highlights disparities in availability across different school types and locations. While low and mid-tech devices are fairly common, high-tech devices are less accessible, particularly in rural and government schools. Addressing these gaps requires targeted efforts to ensure equitable distribution of resources, enhanced training for teachers, and support systems to facilitate the effective integration of assistive devices in inclusive educational settings.

3.2.2 Overall Awareness Level of Assistive Devices

The table below presents Awareness of Assistive Devices among Teachers according to the type schools.

Table 3.4 Awareness Level of Assistive Devices among teachers of Government and Private schools and Teachers of rural and urban schools

Awareness Level	Government (N=25)	Percentage %	Private (N=25)	Percentage %	Rural (N=25)	Percentage %	Urban (N=25)	Percentage %
Very much	8	32%	10	40%	6	24%	12	48%
Much	10	40%	8	32%	7	28%	11	44%
Little Knowledge	5	20%	5	20%	8	32%	2	8%
No knowledge	2	8%	2	8%	4	16%	0	0%

The following figure indicates awareness levels between teachers of different types of schools

Diagram 3.1 Bar graph comparing the awareness levels between teachers of Government and Private Schools
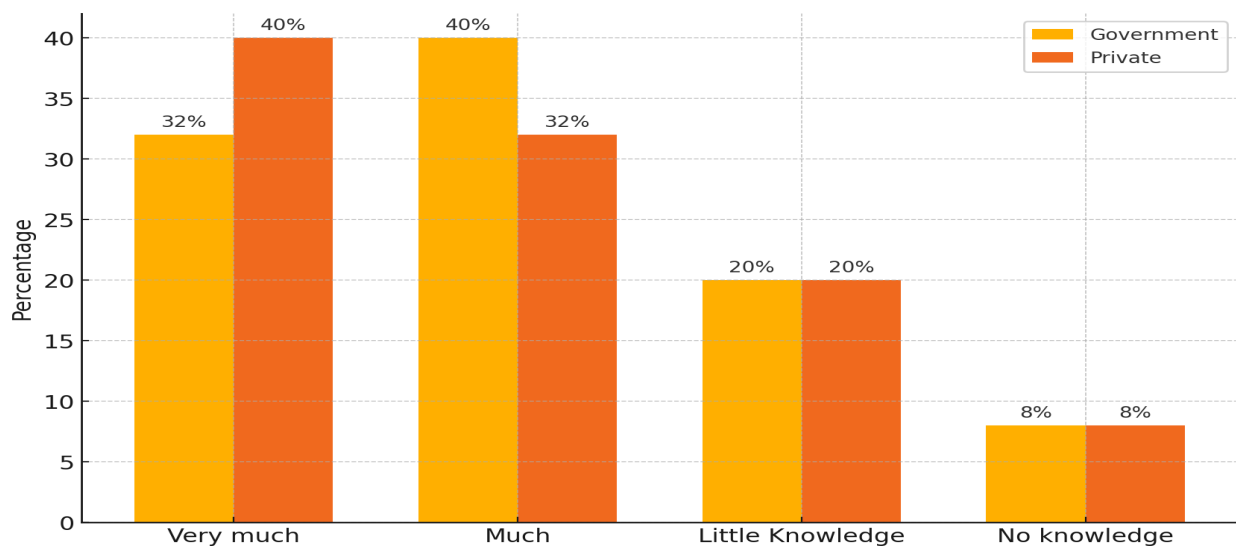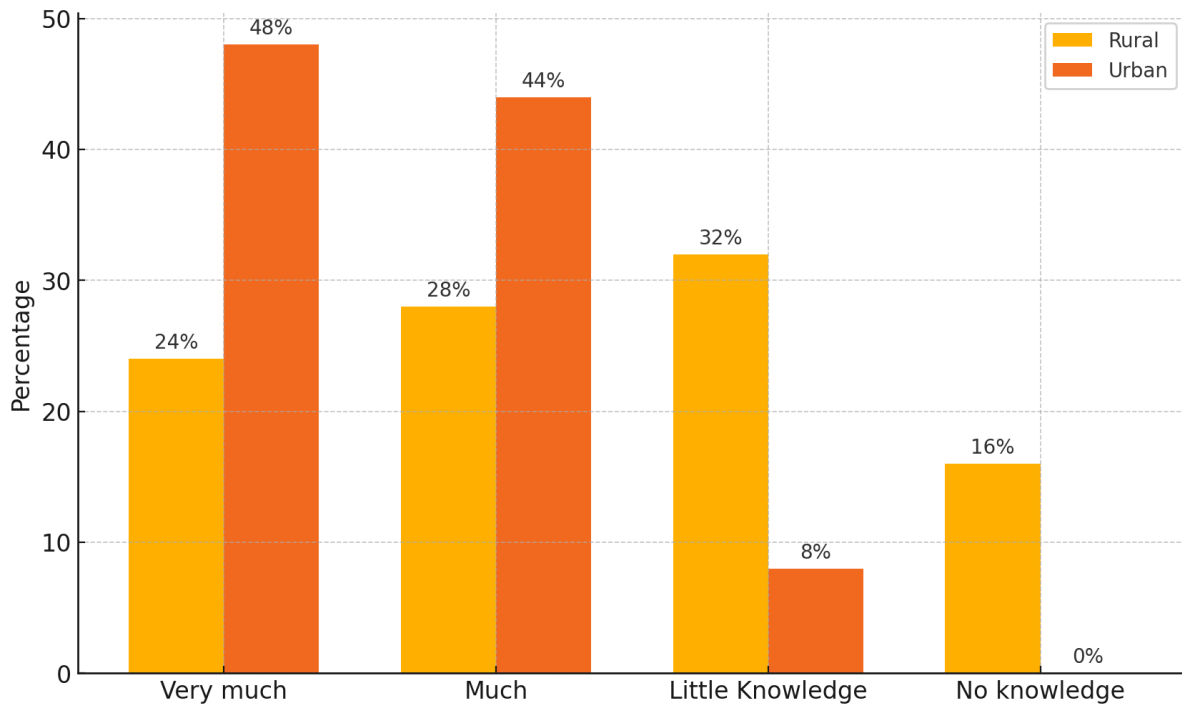
Diagram 3.2 Bar graph comparing the awareness levels between teachers of Rural and Urban area

The **Table 3.4 and Diagram 3.1** and **3.2** reveals varying levels of awareness about assistive devices among teachers in different school settings:

- **Government Schools**: 72% of teachers have awareness, meaning they are either very much or much aware of assistive devices. In contrast, 28% of teachers have little or no knowledge about these devices.

- **Private Schools**: 72% of teachers have awareness, with 28% having little or no knowledge.

- **Rural Areas**: 52% of teachers have awareness, while 48% have little or no knowledge.

- **Urban Areas**: 92% of teachers have awareness, with only 8% having little or no knowledge.

Interpretation: Teachers in urban areas and private schools tend to have higher awareness of assistive devices compared to their counterparts in rural areas and government schools. This disparity may be due to better training facilities, resources, and exposure in urban and private settings.

3.2.3 Types of Assistive Devices Used in Government and Private Schools, and in Rural and Urban Schools

The types of assistive devices used by teachers can vary widely depending on the resources and support available in their schools. This section presents an analysis of the types of assistive devices currently in use in government versus private schools, and in rural versus urban schools. The data helps to identify which devices are most commonly used and where gaps in usage may exist, offering a clearer picture of the current landscape of assistive technology in education.

The tables below present the types of assistive devices used by teachers according to the type schools.

Table 3.5 Types of Assistive Devices Used in Government and Private Schools, and in Rural and Urban Schools

Type of Assistive Device	Government (N=25)	Percentage %	Private (N=25)	Percentage	Rural (N=25)	Percentage	Urban (N=25)	Percentage %
Visual aids	20	80%	23	92%	18	72%	25	100%
Audio aids	15	60%	18	72%	14	56%	19	76%
Tactile Aids	12	48%	14	56%	10	40%	16	64%
Communication aids	8	32%	10	40%	6	24%	12	48%
Mobility aids	10	40%	12	48%	8	32%	14	56%
Other	5	20%	7	28%	4	16%	8	32%

The figures below indicate the types of assistive devices used by teachers according to the type schools.

Diagram 3.3 Bar graph comparing the types of assistive devices used in Government and Private Schools
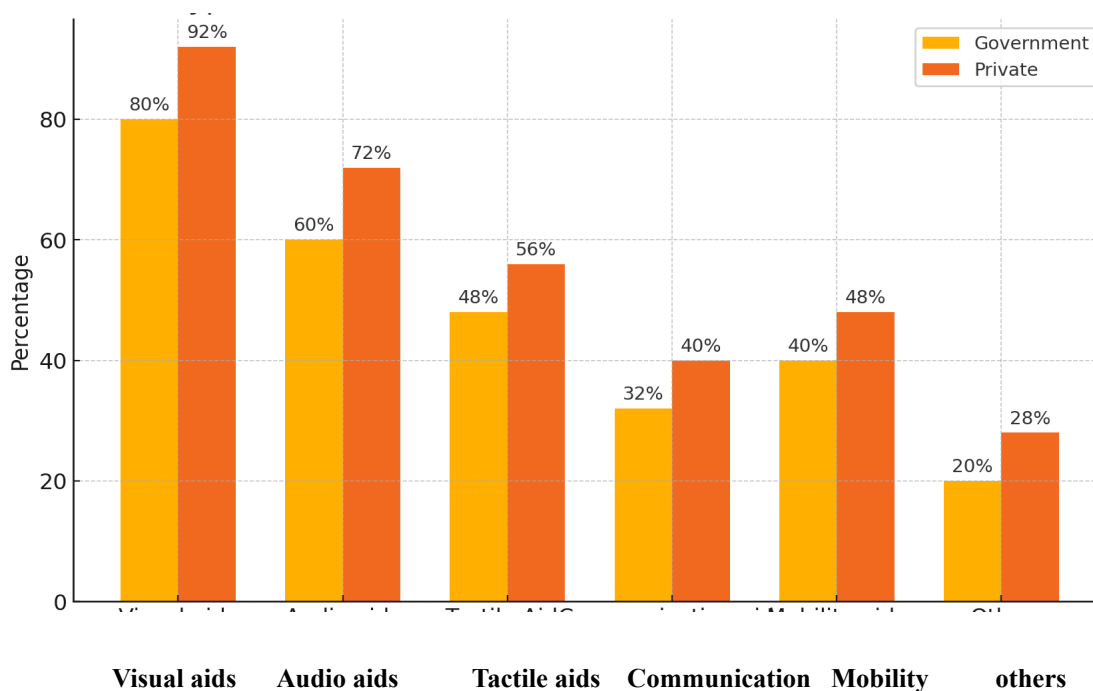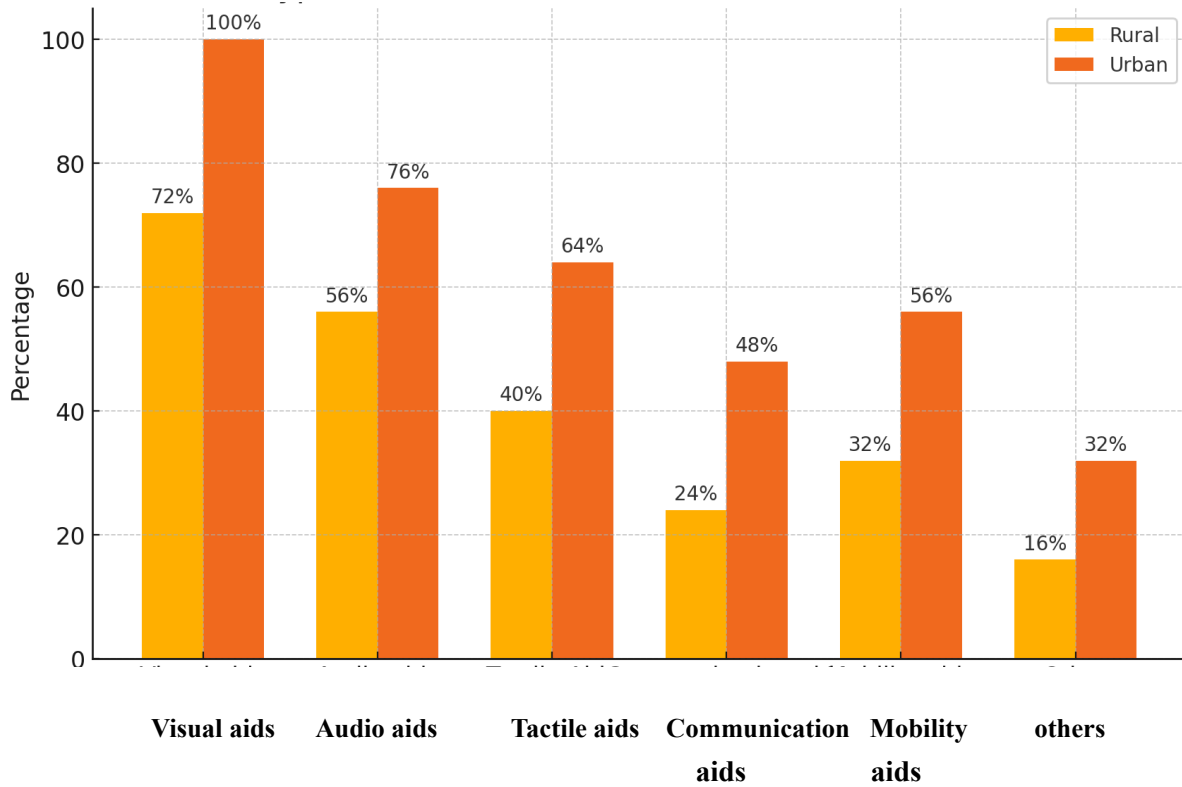
Diagram 3.4 Bar graph comparing the types of devices used by teachers of Rural and Urban area

As the **Diagram 3.3** and **3.4** shows the usage of different types of assistive devices varies across school settings:

- **Visual Aids**: These are the most commonly used assistive devices, with 80% of teachers in government schools, 92% in private schools, 72% in rural areas, and 100% in urban areas reporting their use.

- **Audio Aids**: These devices are moderately used, with 60% of teachers in government schools, 72% in private schools, 56% in rural areas, and 76% in urban areas using them.

- **Tactile Aids**: These are less commonly used, with 48% of teachers in

government schools, 56% in private schools, 40% in rural areas, and 64% in urban areas reporting their use.

- **Communication Aids**: These are the least used devices, with 32% of teachers in government schools, 40% in private schools, 24% in rural areas, and 48% in urban areas using them.

- **Mobility Aids:**

Mobility aids are moderately used, with 40% of teachers in government schools, 48% in private schools, 32% in rural areas, and 56% in urban areas reporting their use. This highlights a gap in the availability or use of mobility aids in rural areas compared to urban areas.

- **Other Assistive Devices:**

Other types of assistive devices show the least usage overall, with 20% of teachers in government schools, 28% in private schools, 16% in rural areas, and 32% in urban areas reporting their use.

Interpretation: Urban and private schools are more likely to use a variety of assistive devices compared to rural and government schools. Visual aids are the most commonly used, reflecting their versatility and ease of use in inclusive settings.

3.2.4 Challenges in Integrating Assistive Devices

Integrating assistive devices into everyday teaching practices presents several challenges. This section examines the various obstacles that teachers face when incorporating assistive devices in their classrooms. Issues such as lack of training, insufficient resources, and technical difficulties are explored in detail. By understanding these challenges, the study aims to identify potential solutions and strategies to improve the integration of assistive technology in schools. Challenges in Integrating Assistive Devices is presented in the table below

Table 3.6 Challenges in Integrating Assistive Devices

Challenge	Govt. (N=25)	Percentage %	Private (N=25)	Percentage %	Rural (N=25)	Percentage	Urban (N=25)	Percentage %
Lack of training and support	15	60%	10	40%	18	72%	7	28%
Limited access to resources	12	48%	12	48%	15	60%	9	36%
Resistance from students	8	32%	5	20%	6	24%	7	28%
Resistance from authorities	10	40%	7	28%	8	32%	9	36%
Others	5	20%	3	12%	4	16%	4	16%

Table 3.6 depicts Teachers face several challenges in integrating assistive devices in classrooms:

- **Lack of Training and Support**: This is a major challenge, with 60% of

teachers in government schools, 40% in private schools, 72% in rural areas, and 28% in urban areas reporting it as an issue.

- **Limited Access to Resources**: This is a challenge, reported by 48% of teachers in both government and private schools, 60% in rural areas, and 36% in urban areas.

- **Resistance from Students**: This is a moderate challenge, with 32% of teachers in government schools, 20% in private schools, 24% in rural areas, and 28% in urban areas reporting it as an issue.

- **Resistance from Authorities**: This is a notable challenge, with 40% of teachers in government schools, 28% in private schools, 32% in rural areas, and 36% in urban areas reporting it as an issue.

Interpretation: Lack of training and support, especially in rural and government schools, is the biggest challenge. Urban and private schools face fewer challenges due to better resources and support systems.

3.2.5 Perceived Effectiveness of Assistive Devices

The table below indicates the perceived effectiveness of Assistive devices among teachers of different types of schools

Table 3.7   Perceived Effectiveness of Assistive Devices among teachers of government and private schools and Teachers of urban and rural areas

Effectiveness	Government (N=25)	Percentage	Private (N=25)	Percentage	Rural (N=25)	Percentage	Urban (N=25)	Percentage
Very effective	15	60%	18	72%	12	48%	21	84%
Moderately effective	8	32%	6	24%	10	40%	4	16%
Not effective at all	2	8%	1	4%	3	12%	0	0%

The figures below shows the perceived effectiveness of assistive devices among teachers of different schools

Diagram 3.5 Perceived Effectiveness of Assistive Devices among teachers of Government and private schools
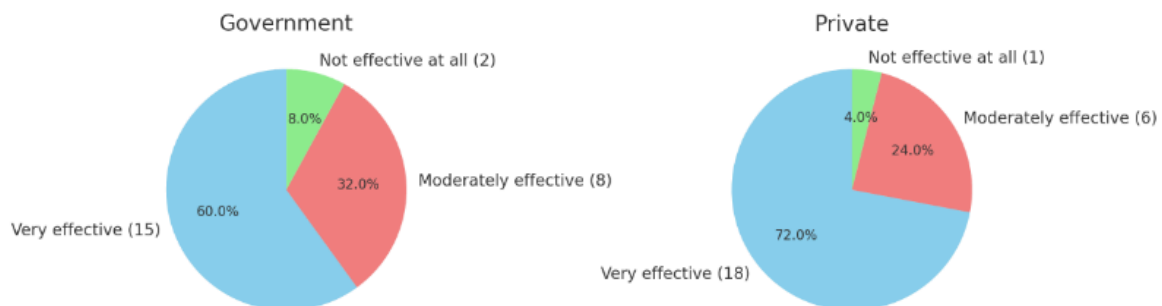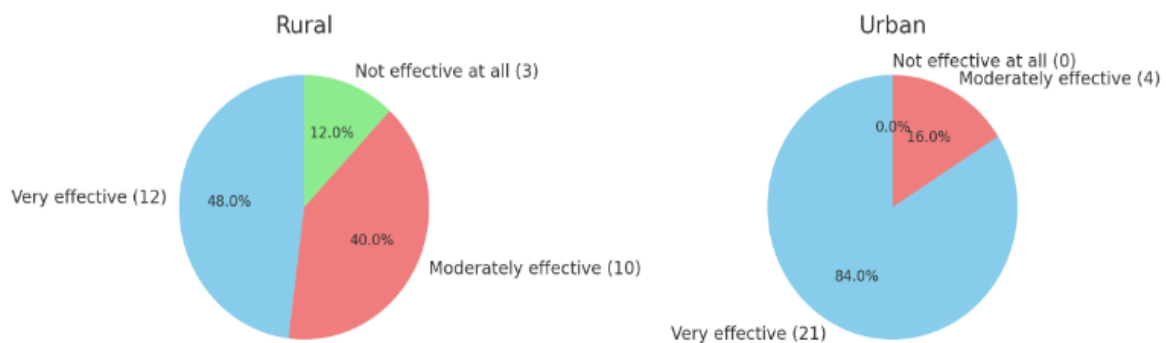
Diagram 3.6 Perceived Effectiveness of Assistive Devices among teachers of rural and urban areas

The perceived effectiveness of assistive devices varies among teachers:

- **Government Schools**: 60% of teachers find assistive devices very effective, 32% find them moderately effective, and 8% do not find them effective at all.

- **Private Schools**: 72% of teachers find assistive devices very effective, 24% find them moderately effective, and 4% do not find them effective at all.

- **Rural Areas**: 48% of teachers find assistive devices very effective, 40% find them moderately effective, and 12% do not find them effective at all.

- **Urban Areas**: 84% of teachers find assistive devices very effective, 16% find them moderately effective, and none find them ineffective.

Interpretation: Most teachers perceive assistive devices as effective, particularly in private and urban schools. This positive perception can drive further adoption and integration of these devices.