

Perception of Secondary Schools Student about Effectiveness of Modern Teaching Learning Aids

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ABSTRACT

In the last 2 or 3 decades many English medium schools were started in India and Maharashtra in particular. Many educational trusts and Institutions have also opened the new opportunities of Marathi and Semi English Medium School. The networks of all these schools are slowly trying to penetrate in rural part of the country also. As a result a great competition apart from infrastructure, library and laboratory, qualified staff is also observed. In teaching methods, many schools have already started and few are on the way to make proper mix of traditional teaching methods and modern teaching aids.

In the present paper effectiveness of 14 Modern Teaching Aids is investigated as a perception of secondary schools student in Amravati District. The study conclude with the observation that Black Board , Charts, Audio clips, Video Clips, Experiments, Language Lab gives good memorizing effects. Charts increases creativity. Charts, Photos and Experiments create interest in the subjects. Black board, Charts photos and Experiments improve confidence level.

Keyword: Chi-square test, modern teaching aids, two stage sampling

Introduction

Black Board is most traditional teaching aid but now a day's audio-visual aids are widely in use. Images, diagrams are also easily depicted through Charts, Photos. 3D Model gives the clear view of object. Language Lab and Experiment are participative teaching learning aids. Internet is a popular avenue used by students to collect variety of data information. Therefore a wide range modern teaching aids becoming more and more popular. This method saves time and passes the message very effectively. In the present study effectiveness of modern teaching learning is investigated as a perception of secondary student from Amravati District.

Objectives

The present study is planned with the following objectives,

1. To investigate the association between class and modern teaching aids with respective effectiveness.
2. To order the difference Modern Teaching Learning aids as per effectiveness.

Material and Methods

The present study is based on 1200 sampled students of 8th, 9th and 10th standard classes in Amravati, Chikhaldara and Dharani Taluka. The data on availability and usage of 14 Modern Teaching Aids viz. Separate Study Room, Study Table, Table Lamp, Television, Blackboard, Whiteboard, Internet, Computer, Laptop, Educational CD's, Cassettes, Glass Board, 3D Models, Digital Classroom is collected through questionnaire. Amravati District consists of 14 Talukas out of which literacy wise Amravati taluka is quite ahead of other talukas whereas Chikhaldara and Dharni are lagging behind. Amravati is a district place having good network of communication and transportation with other parts of state and country, whereas Chikhaldara and Dharni are remote places having very less access with other parts. Even Chikhaldara and Dharni differs from Amravati in terms of cultural, socio economic, industrialization, education and many other aspects in order to account effects of all these difference on student empowerment through Modern Teaching Aids, therefore, it is decided to collect primary data from secondary schools of Amravati, Chikhaldara and Dharni Talukas. For data collection two stage sampling is adopted. In Amravati and Chikhaldara-Dharni, numbers of schools are 150 and 50 respectively. In the first stage 15 % schools i.e. 22 from Amravati and 8 from Chikhaldara and Dharni are selected by Simple Random Sampling Method. From each of the selected school an aggregate of around 30 to 50 students from 8th, 9th and 10th standard are selected as second sample. The overall sample consists of 1200 students out of which 110 are from 8th class, 495 from 9th class and 595 from 10th class. While data collection data on 14 Modern teaching aids and 9 effectiveness scale is collected from students. The effectiveness scale used for data collection are Not at all effective, Good memorizing effect, Increase creativity, Increase curiosity, Creates interest in the subject, Improve the confidence level, Improve reading habits, Curious to do and practice, Improve overall performance.

Analysis

The collected data is analyzing using SPSS 17.0 software. Effectiveness scale wise association between class and modern teaching learning aids is investigated by Chi-Square test of association. In general first hand analysis provides 126 tables of ordered 2 x 3 (Where

126 means 14 modern teaching aids x 9 effectiveness scale and 2x3 means opinion ‘yes’ or ‘No’ verses class 8, 9, 10)

In the present paper further summarized tables are provided one for each effectiveness scale.

The table gives percentage of affirmative response by the respective class student.

The analysis is presented in the Table no. 1 to Table no.9.

Table 1: Effectiveness Scale: Not at all Effective

| Teaching Tools | 8 | 9 | 10 | Total | P value |
|--------------------|-------|-------|-------|-------|---------|
| Black Board | 5.45 | 13.33 | 15.97 | 13.92 | 0.012* |
| Glass Board | 20.00 | 35.35 | 31.76 | 32.17 | 0.007** |
| White Board | 20.91 | 25.45 | 32.61 | 28.58 | 0.006** |
| Charts | 11.82 | 6.26 | 8.40 | 7.83 | 0.112 |
| Photos | 6.36 | 14.95 | 14.12 | 13.75 | 0.057 |
| 3D Models | 14.55 | 15.56 | 14.29 | 14.83 | 0.838 |
| Audio Clips | 14.55 | 16.36 | 14.29 | 15.17 | 0.624 |
| Video Clips | 6.36 | 12.12 | 10.08 | 10.58 | 0.177 |
| Experiments | 15.45 | 4.44 | 6.22 | 6.33 | 0** |
| Internet | 17.27 | 15.96 | 10.92 | 13.58 | 0.027* |
| Language Lab | 20.00 | 22.42 | 14.96 | 18.50 | 0.006** |
| Films | 28.18 | 24.44 | 22.69 | 23.92 | 0.434 |
| Demonstration | 14.55 | 20.40 | 11.09 | 15.25 | 0** |
| Digital Class Room | 11.82 | 24.65 | 20.17 | 21.25 | 0.008** |

* Means significance at 5%LOS and ** means at 1%LOS

Source: Primary Data

Table 1 gives no effect of various modern teaching aids. It is observed that opinion about no effect of Blackboard, Glass Board, White Board, Experiment, Internet, Language Lab, Demonstration and Digital Classroom is class dependent. Whereas that of Charts, Photos, 3D Models, Audio Video Clips and Films is class free. Table -01 also indicate that 32.17 % students says that there is no effect of Glass Board and 28.58 % says there is no effect of White Board. Maximum 32.61 % student from 10th standard mentioned that white board is not at all effective. The smallest % 4.44 from 9th class mentioned that experiments are not at all effective.

Table 2: Effectiveness Scale: Good Memorizing Effects

| Teaching Tools | 8 | 9 | 10 | Total | P-value |
|--------------------|-------|-------|-------|-------|---------|
| Black Board | 68.18 | 63.64 | 64.54 | 64.50 | 0** |
| Glass Board | 4.55 | 12.32 | 9.58 | 10.25 | 0.039* |
| White Board | 7.27 | 20.61 | 14.62 | 16.42 | 0.001** |
| Charts | 35.45 | 29.70 | 33.78 | 32.25 | 0.268 |
| Photos | 14.55 | 20.81 | 23.87 | 21.75 | 0.075 |
| 3D Models | 10.00 | 9.90 | 11.76 | 10.83 | 0.588 |
| Audio Clips | 29.09 | 15.96 | 15.46 | 16.92 | 0.002** |
| Video Clips | 32.73 | 23.84 | 20.84 | 23.17 | 0.468 |
| Experiments | 31.82 | 25.05 | 26.39 | 26.33 | 0.345 |
| Internet | 8.18 | 15.56 | 18.15 | 16.17 | 0.03* |
| Language Lab | 25.45 | 13.13 | 9.08 | 12.25 | 0** |
| Films | 7.27 | 13.13 | 17.98 | 15.00 | 0.005** |
| Demonstration | 7.27 | 15.76 | 17.65 | 15.92 | 0.024* |
| Digital Class Room | 6.36 | 16.97 | 9.58 | 12.33 | 0** |

* Means significance at 5%LOS and ** means at 1%LOS

Source: Primary Data

From Table 2 it is seen that opinion about Modern teaching aids regarding good memorizing effects is class dependent for Black Board, Glass Board, White Board, Audio Clips, internet, Language Lab, Films, Demonstration and Digital Classroom. Whereas opinion about Charts, Photos, 3D Model, Video Clips and experiments does not depend upon class. Table-02 also shows that 64.50% student agrees that Black Board provides good memorizing effects. In terms of the same effectiveness the black board is quite ahead than all other modern teaching learning aids. Next to blackboard, Charts, Experiments, Video Clips also gives good memorizing effects. The maximum 68.18% students from 8th class agrees that Black Board provide good memorizing effect at the same time from the same class only 4.55% agreed that Glass Board provides good memorizing effects.

Table 3: Effectiveness Scale: Increased Creativity

| Teaching Tools | 8 | 9 | 10 | Total | P value |
|--------------------|-------|-------|-------|-------|---------|
| Black Board | 12.73 | 11.31 | 9.41 | 10.50 | 0.432 |
| Glass Board | 0.00 | 6.46 | 3.87 | 4.58 | 0.007** |
| White Board | 5.45 | 9.29 | 8.91 | 8.75 | 0.428 |
| Charts | 18.18 | 16.57 | 17.48 | 17.17 | 0.884 |
| Photos | 1.82 | 14.75 | 14.45 | 13.42 | 0.001** |
| 3D Models | 1.82 | 16.57 | 7.56 | 10.75 | 0** |
| Audio Clips | 4.55 | 9.90 | 7.73 | 8.33 | 0.14 |
| Video Clips | 4.55 | 9.49 | 8.40 | 8.50 | 0.241 |
| Experiments | 7.27 | 18.18 | 17.48 | 16.83 | 0.018* |
| Internet | 1.82 | 11.52 | 14.62 | 12.17 | 0.001** |
| Language Lab | 4.55 | 4.04 | 5.21 | 4.67 | 0.659 |
| Films | 3.64 | 9.70 | 6.39 | 7.50 | 0.032* |
| Demonstration | 4.55 | 8.08 | 7.06 | 7.25 | 0.42 |
| Digital Class Room | 11.82 | 24.65 | 20.17 | 21.25 | 0.008** |

* Means significance at 5%LOS and ** means at 1%LOS

Source: Primary Data

From Table 3 it is seen that opinion about increase creativity due to the used of glass board, photos, 3d models, experiments, internet, films and digital class room is class dependent. In increasing the creativity Digital Class room is quite ahead and glass board is lagging behind. Maximum of 24.65 % students from 9th class are of the opinion that digital class room increase creativity where as there is no one from 8th class who indicated increased creativity due to glass board.

Table 4: Effectiveness: Increased Curiosity

| Teaching Tools | 8 | 9 | 10 | Total | P value |
|--------------------|------|-------|-------|-------|---------|
| Black Board | 0.91 | 3.43 | 3.36 | 3.17 | 0.365 |
| Glass Board | 0.00 | 3.43 | 2.86 | 2.83 | 0.145 |
| White Board | 5.45 | 9.29 | 8.91 | 0.00 | 0.428 |
| Charts | 2.73 | 9.90 | 10.25 | 9.42 | 0.041* |
| Photos | 4.55 | 8.08 | 10.92 | 9.17 | 0.057 |
| 3D Models | 3.64 | 10.10 | 6.89 | 7.92 | 0.032* |
| Audio Clips | 6.36 | 4.24 | 8.57 | 6.58 | 0.016* |
| Video Clips | 1.82 | 4.24 | 9.92 | 6.83 | 0** |
| Experiments | 3.64 | 3.43 | 11.93 | 7.67 | 0** |
| Internet | 1.82 | 4.85 | 14.12 | 9.17 | 0** |
| Language Lab | 1.82 | 6.67 | 3.03 | 4.42 | 0.005** |
| Films | 1.82 | 7.27 | 6.89 | 6.58 | 0.104 |
| Demonstration | 0.91 | 5.25 | 6.05 | 5.25 | 0.085 |
| Digital Class Room | 0.00 | 7.27 | 4.03 | 5.00 | 0.002** |

* Means significance at 5%LOS and ** means at 1%LOS

Source: Primary Data

From Table 4 it is seen that perception regarding increasing curiosity by used of charts, 3d model, audio video clips, experiments, internet, Language Lab and Digital Class room is class dependent from 10th standard 10.25%, 10.92%, 11.93% and 14.12% students expressed that curiosity increases due to charts photos, experiments and internet respectively in 9th standard 10.10% student feels that 3D Model increases curiosity. Opinion regarding increasing curiosity by other modern teaching aids is not class dependent.

Table 5: Effectiveness: Creates Interest in the Subject

| Teaching Tools | 8 | 9 | 10 | Total | P value |
|--------------------|-------|-------|-------|-------|---------|
| Black Board | 7.27 | 15.15 | 14.45 | 14.08 | 0.093 |
| Glass Board | 2.73 | 4.65 | 2.52 | 3.42 | 0.144 |
| White Board | 3.64 | 6.26 | 4.54 | 5.17 | 0.33 |
| Charts | 10.91 | 22.02 | 23.53 | 21.75 | 0.013* |
| Photos | 10.00 | 17.78 | 18.15 | 17.25 | 0.106 |
| 3D Models | 7.27 | 12.12 | 13.61 | 12.42 | 0.174 |
| Audio Clips | 8.18 | 11.31 | 17.31 | 14.00 | 0.003** |
| Video Clips | 3.64 | 18.38 | 20.34 | 18.00 | 0** |
| Experiments | 15.45 | 21.01 | 24.87 | 22.42 | 0.058 |
| Internet | 3.64 | 9.90 | 17.14 | 12.92 | 0** |
| Language Lab | 0.00 | 7.68 | 5.88 | 6.08 | 0.009** |
| Films | 2.73 | 12.32 | 12.94 | 11.75 | 0.008** |
| Demonstration | 0.91 | 12.53 | 14.45 | 12.42 | 0** |
| Digital Class Room | 0.00 | 5.66 | 10.76 | 7.67 | 0** |

* Means significance at 5%LOS and ** means at 1%LOS

Source: Primary Data

From Table 5 it is seen that use of charts , Audio Clips, Video Clips , Internet, Language Lab films, demonstration and digital classroom creates in the subjects and that to perception is class dependent. A group of 23.53%, 17.31%, 20.34%, 17.14%,12.94%,14.45% and 10.26% students from 10th standard express their opinion that charts audio-video clips internet films demonstration and digital classroom creates interest in the subject. 22.02% students from 9th standard and 10.91% from 8th standard also expressed that charts creates interest in the subjects. According to 12.32 % and 12.53% students of 9th standard Films and demonstration creates interest in the subject. Whereas only 2.73% and 0.91% students of 9th standard expressed the same opinion about films and demonstrations.

Table 6: Effectiveness: Improve Confidence Level

| Teaching Tools | 8 | 9 | 10 | Total | P value |
|--------------------|-------|-------|-------|-------|---------|
| Black Board | 16.36 | 6.26 | 20.50 | 14.25 | 0** |
| Glass Board | 0.00 | 0.40 | 1.51 | 0.92 | 0.92 |
| White Board | 0.91 | 1.41 | 3.53 | 2.42 | 0.043* |
| Charts | 12.73 | 3.64 | 8.24 | 6.75 | 0** |
| Photos | 10.91 | 6.06 | 6.39 | 6.67 | 0.17 |
| 3D Models | 0.91 | 7.07 | 5.38 | 5.67 | 0.037* |
| Audio Clips | 1.82 | 4.65 | 3.87 | 4.00 | 0.381 |
| Video Clips | 3.64 | 8.89 | 8.57 | 8.25 | 0.179 |
| Experiments | 11.82 | 10.30 | 18.82 | 14.67 | 0** |
| Internet | 0.91 | 5.25 | 11.43 | 7.92 | 0** |
| Language Lab | 0.91 | 3.84 | 8.74 | 6.00 | 0** |
| Films | 0.91 | 4.85 | 8.24 | 6.17 | 0.004** |
| Demonstration | 2.73 | 10.71 | 14.45 | 11.83 | 0.001** |
| Digital Class Room | 0.00 | 6.67 | 6.39 | 5.92 | 0.022** |

* Means significance at 5%LOS and ** means at 1%LOS

Source: Primary Data

From Table 6 it is seen that except Glass Board, Photos, Audio, Video Clips, all other modern teaching aids improves confidence level. It is further seen that according 16.36% students from 8th standard 6.26% from 9th, 20.50% from 10th Standard Black Board is effective improving confidence level. Similarly 12.73%, 3.64% and 8.24% students of the respective classes also feel that Charts are effective in improving confidence level. Whereas 11.82%, 10.30% and 18.82% of the respective classes are of the opinion that experiments improve confidence level. Demonstration is effective in improving confidence level according to 2.73% from 8th, 10.71 % from 9th and 14.45 and from 10th.

Table 7: Effectiveness: Improve Reading Habits

| Teaching Tools | 8 | 9 | 10 | Total | P value |
|--------------------|------|-------|-------|-------|---------|
| Black Board | 0.00 | 8.08 | 6.89 | 6.75 | 0.009** |
| Glass Board | 0.00 | 1.82 | 0.50 | 1.00 | 0.051 |
| White Board | 2.73 | 3.43 | 1.34 | 2.33 | 0.072 |
| Charts | 2.73 | 10.91 | 7.90 | 8.67 | 0.014* |
| Photos | 0.91 | 2.83 | 1.85 | 2.17 | 0.345 |
| 3D Models | 0.91 | 3.43 | 0.84 | 1.92 | 0.006** |
| Audio Clips | 0.91 | 3.84 | 3.70 | 3.50 | 0.298 |
| Video Clips | 0.00 | 3.23 | 0.84 | 1.75 | 0.004** |
| Experiments | 1.82 | 2.83 | 5.04 | 3.83 | 0.085 |
| Internet | 3.64 | 4.04 | 8.40 | 6.17 | 0.006** |
| Language Lab | 5.45 | 7.27 | 10.08 | 8.50 | 0.123 |
| Films | 2.73 | 1.01 | 2.35 | 1.83 | 0.197 |
| Demonstration | 0.00 | 5.05 | 3.36 | 3.75 | 0.032* |
| Digital Class Room | 3.64 | 1.82 | 2.52 | 2.33 | 0.475 |

* Means significance at 5%LOS and ** means at 1%LOS

Source: Primary Data

From Table 7 it is seen that Blackboard, Charts, 3D Model, Experiment, internet and demonstration improve reading habits and the opinion is class dependent. Yet from table it is seen that only 10.91 % from 9th and 10-08% from the 10th standard express that Charts and language lab are respectively effective in improving reading habits for all other teaching aids in these classes very less % of student agreed that different modern teaching aids are effective in improving reading habits.

Table 8: Effectiveness: Curious to Do Practice

| Teaching Tools | 8 | 9 | 10 | Total | P value |
|--------------------|------|-------|-------|-------|---------|
| Black Board | 3.64 | 9.90 | 10.42 | 9.58 | 0.081 |
| Glass Board | 0.00 | 1.21 | 2.02 | 1.50 | 0.22 |
| White Board | 0.00 | 2.42 | 3.36 | 2.67 | 0.121 |
| Charts | 0.91 | 2.83 | 4.54 | 3.50 | 0.093 |
| Photos | 0.91 | 2.42 | 3.53 | 2.83 | 0.243 |
| 3D Models | 0.00 | 2.42 | 3.87 | 2.92 | 0.06 |
| Audio Clips | 0.00 | 3.64 | 1.01 | 2.00 | 0.002** |
| Video Clips | 0.00 | 5.05 | 5.04 | 4.58 | 0.055 |
| Experiments | 3.64 | 10.30 | 12.94 | 11.00 | 0.013* |
| Internet | 0.91 | 3.43 | 3.53 | 3.25 | 0.347 |
| Language Lab | 0.00 | 3.64 | 3.53 | 3.25 | 0.13 |
| Films | 0.00 | 3.43 | 4.20 | 3.50 | 0.088 |
| Demonstration | 0.00 | 6.06 | 11.60 | 8.25 | 0** |
| Digital Class Room | 2.73 | 3.23 | 3.70 | 3.42 | 0.839 |

* Means significance at 5%LOS and ** means at 1%LOS

Source: Primary Data

From Table 8 it is seen that opinion regarding curious to do practice due to Audio Clips, Experiments and demonstration is class dependent. Further it is seen that from 10th standard 10.42%,12.94% and 11.60% students feel that due to use of Black Board, Experiment and Demonstration they are curious to do and practice from 9th class 10.30 % student are curious to do and practice due to experiments in respective of the cases % of student is less than 10.

Table 9: Effectiveness Scale: Improves Overall Performance

| Teaching Tools | 8 | 9 | 10 | Total | P value |
|--------------------|------|-------|-------|-------|---------|
| Black Board | 2.73 | 8.08 | 19.50 | 13.25 | 0** |
| Glass Board | 0.00 | 1.21 | 1.34 | 1.17 | 0.479 |
| White Board | 0.00 | 0.00 | 0.84 | 0.42 | 0** |
| Charts | 0.00 | 2.22 | 8.91 | 5.33 | 0** |
| Photos | 1.82 | 3.03 | 2.02 | 2.42 | 0.506 |
| 3D Models | 1.82 | 2.83 | 5.38 | 4.00 | 0.048* |
| Audio Clips | 1.82 | 5.05 | 10.08 | 7.25 | 0** |
| Video Clips | 0.00 | 7.27 | 10.92 | 8.42 | 0** |
| Experiments | 2.73 | 7.68 | 14.79 | 10.75 | 0** |
| Internet | 0.00 | 6.26 | 10.76 | 7.92 | 0** |
| Language Lab | 0.00 | 1.62 | 5.21 | 3.25 | 0.001** |
| Films | 0.00 | 5.45 | 7.23 | 5.83 | 0.011* |
| Demonstration | 0.91 | 9.09 | 11.09 | 9.33 | 0.003** |
| Digital Class Room | 5.45 | 14.34 | 9.75 | 11.25 | 0.007** |

* Means significance at 5%LOS and ** means at 1%LOS

Source: Primary Data

From Table 9 it seen that except Glass Board and Photos opinion regarding improving overall performance due to the use of different modern teaching aids is class dependent. Further it is seen that from 10th standard 19.50%, 10.08% , 10.92 % for 10.79%, 10.76% and 11.09% students observed that use of Blackboard, Audio Clips, Video Clips, Experiment, Internet and Demonstration improves overall performance from 9th standard 14.34 % admitted that

used of digital class room improves overall performance. In all other cases % of students is very less.

Conclusion

In conclusion it can be stated that out of 14, 12 Modern Teaching Aids are effective in overall performance whereas only 3 are effective improving reading habits . It is also seen that out of 14, 10 Modern Teaching Aids helps to improve Confidence Level, whereas 9 Modern Teaching Aids creates Good Memorizing Effects. Among the different Modern Teaching Aids Internet seems to maximum effective that creates impact on every aspect except curiosity to do practice whereas Photos are least effective that creates only creativity. In short, it is seen that it is a high time to undertake special efforts to improve reading habits and curious to do self-practice among the students.

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