Research Article

Evaluating the Effectiveness of Songs-Based Recall Strategies Correlated with Short-Term Memory Retention of Mind Rubrics of Repertory in 1st Year BHMS Students

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Abstract

Background: Effective learning and retention of Mind rubrics are important in homoeopathic education. First-year BHMS students may experience difficulty recalling abstract repertorial concepts when taught through conventional lecture-based methods. Song-based recall strategies using rhythm, repetition, and emotional association may provide an engaging alternative teaching approach.

Aim: To evaluate the effectiveness of song-based recall strategies in improving short-term memory retention of Mind rubrics of Repertory among first-year BHMS students compared with conventional lecture-based teaching.

Materials and Methods: An interventional, comparative educational study using a pre-test and post-test design was conducted among first-year BHMS students at Ashokrao Mane Homoeopathic Medical College and Hospital, Peth Vadgaon, Maharashtra. A total of 100 students were enrolled and divided into two groups according to roll numbers. Group A received song-based teaching, whereas Group B received conventional lecture-based teaching. A common multiple-choice questionnaire based on 10 selected Mind rubrics from Kent's Repertory was administered before and after the respective teaching interventions. Pre-test and post-test scores were analyzed to compare the teaching methods. A crossover session was subsequently conducted solely to ensure equitable exposure to both teaching methods; it was not included in the comparative outcome analysis. Student feedback was collected to assess engagement, interest, and perceived recall.

Results: Data from 44 students in Group A and 39 students in Group B were included in the analysis. The mean score in Group A increased from 5.84 to 7.50, a mean improvement of 1.66 marks. In Group B, the mean score increased from 5.95 to 6.56, a mean improvement of 0.61 marks. The reported within-group improvements were statistically significant (Group A: $p < 0.001$; Group B: $p = 0.021$). The difference in mean improvement between groups was reported as statistically significant ($p = 0.0049$). Feedback was received from 98 students, with the majority reporting greater interest, engagement, and recall with song-based learning.

Conclusion: Song-based recall strategies demonstrated greater improvement in post-test scores than conventional lecture-based teaching in this study. The crossover session ensured that all participating students had an opportunity to experience both teaching methods, while comparative analysis focused on the initial teaching interventions. Song-based learning may be a useful adjunct to conventional teaching for learning Mind rubrics in homoeopathic education. Further studies with larger samples and delayed retention assessments are recommended.

Keywords: Song-based learning; Short-term memory; Mind rubrics; Repertory; Homoeopathic education; BHMS students; Active learning/

Introduction:

Medical education requires not only the acquisition of knowledge but also effective retention and recall of complex concepts. In homoeopathic education, Repertory, particularly the study of Mind rubrics, plays a vital role and demands accurate memorization and recall. First-year BHMS students often face difficulty due to the abstract nature and vastness of psychological rubrics. [4,6–8,10]

Traditional lecture-based teaching methods mainly promote passive learning and short-term memorization, which may be insufficient for efficient recall during examinations and clinical practice. Hence, there is a need for innovative, learner-centred teaching strategies that enhance memory retention and student engagement. [4,9]

Educational psychology highlights that song-based and mnemonic learning strategies improve short-term memory by engaging multiple sensory pathways through rhythm, repetition, and emotional involvement. Such approaches can facilitate better encoding and recall of structured content like repertory mind rubrics. [6–8] Therefore, the present study titled "Evaluating the Effectiveness of Songs-Based Recall Strategies Correlated with Short-Term Memory Retention of Mind Rubrics of Repertory in 1st Year BHMS Students" was undertaken to assess the effectiveness of song-based learning in comparison with traditional teaching methods using pre-test and post-test assessment and student feedback.

Need: -

The subject of Repertory, particularly the study of Mind rubrics, forms the foundation of homoeopathic clinical practice and requires accurate understanding, retention, and recall. However, first-year BHMS students often experience difficulty in memorizing and recalling these abstract psychological rubrics due to their conceptual complexity and extensive content. [5]

Conventional teaching methods predominantly rely on didactic lectures, which may lead to passive learning and limited short-term memory retention. This often results in inadequate recall during examinations and reduced confidence in applying mind rubrics clinically. Hence, there is a need to explore innovative teaching strategies that actively engage students and enhance memory retention. [4,9]

Educational research suggests that song-based recall strategies can improve short-term memory by utilizing rhythm, repetition, and emotional engagement, thereby strengthening recall mechanisms. Despite their proven effectiveness in other educational fields, such strategies have been minimally explored and scientifically evaluated in homoeopathic medical education, especially in the teaching of repertory. [2,3,6–8]

Therefore, this study was undertaken to evaluate the effectiveness of song-based recall strategies in improving short-term memory retention of mind rubrics among first-year BHMS students and to compare their effectiveness with traditional teaching methods. The findings of this study may help in designing more effective, learner-centred teaching approaches in homoeopathic education. [2,3,6,7]

REVIEW OF LITERATURE

Learning and memory form the core of medical education, especially in subjects requiring extensive recall of conceptual and abstract information. Educational psychology emphasizes that short-term memory (STM) plays a crucial role in initial learning, rehearsal, and transfer of information to long-term memory. Efficient recall strategies are therefore essential for improving academic performance. [6,10]

Several studies in educational sciences have demonstrated that active learning strategies are superior to passive lecture-based teaching. Methods that engage multiple sensory modalities—auditory, visual, and emotional—have been shown to enhance attention, comprehension, and memory retention. Among these, music- and song-based learning strategies have gained attention due to their ability to utilize rhythm, repetition, and structured patterns, which aid in encoding and recall of information. [4,9]

Research in cognitive psychology suggests that songs function as mnemonic devices, improving recall by creating strong associative links. Studies conducted among school and undergraduate students have reported that song-based learning significantly improves short-term recall and conceptual understanding, particularly for content that requires memorization of lists, sequences, or terminologies. [2,3,6–8]

In medical and allied health education, innovative teaching methods such as mnemonics, storytelling, and audio-visual aids have been found to improve student engagement and learning outcomes. However, most existing studies are concentrated in modern medical education, nursing, and basic sciences, with limited application in homoeopathic medical education.[1,4,9]

The subject of Repertory, especially Mind rubrics, is known to be conceptually demanding due to its abstract psychological terminology and the need for precise recall. Literature indicates that students often struggle with memorization and application of mind rubrics when taught solely through traditional lectures. Despite this, there is a lack of systematic research evaluating alternative recall strategies, such as song-based learning, in the teaching of repertory. [5]

Furthermore, available literature reveals a scarcity of studies correlating song-based recall strategies with short-term memory retention in first-year BHMS students. Most existing research focuses either on teaching methodology or on memory enhancement independently, without integrating both aspects in the context of repertory education. [6–8,10] [2,3,6–8]

Thus, a review of existing literature highlights the potential benefits of song-based learning while also revealing a clear research gap in homoeopathic education. This justifies the need for the present study to scientifically evaluate the effectiveness of song-based recall strategies in improving short-term memory retention of mind rubrics of repertory. [1–4,6–9]

Aim: -

To evaluate the effectiveness of songs-based recall methods in enhancing the understanding, retention, engagement, and participation of 1st Year BHMS students in learning Mind rubrics of Repertory. [5–8]

OBJECTIVES: -

1. To assess the impact of songs-based recall methods on the understanding and retention of Mind rubrics.
2. To observe student engagement and participation during songs-based recall strategies**.**

METHODOLOGY

Study Design

An interventional, comparative crossover educational study with a pre-test and post-test design.

Study Population
The study was conducted among 1st Year BHMS students of Ashokrao Mane Homoeopathic Medical College & Hospital, Peth Vadgaon, Dist. Kolhapur.

Sample Size and Grouping
A total of 100 students were included and divided based on roll numbers:
Group A (Roll No. 1–50): Songs-based teaching method
Group B (Roll No. 51–100): Conventional lecture-based teaching

Study Procedure
Phase 1 – Orientation and Pre-test:
Students were informed about the study and written consent was obtained. A common pre-test consisting of MCQs based on 10 selected mind rubrics from Kent's Repertory was administered to assess baseline knowledge and recall. [5]

Phase 2 – Teaching Intervention:
Group A was taught using songs-based recall strategies, integrating mind rubrics with simple rhythmic songs and interactive discussion.
Group B received conventional lecture-based teaching using blackboard or PowerPoint.
The intervention was conducted over one to two classroom sessions.

Phase 3 – Post-test:
A common post-test using the same MCQ paper was administered to assess improvement in understanding and recall.

Phase 4 – Crossover Phase:
Groups were crossed over to ensure equal exposure:
Group A received conventional teaching
Group B received songs-based teaching
No further testing was conducted during this phase.
Phase 5 – Feedback:
A structured feedback form was administered to assess student perceptions regarding interest, engagement, understanding, recall ability, and effectiveness of songs-based learning.

Data Analysis
Quantitative analysis: Pre-test and post-test scores were analyzed using paired and unpaired t-tests.
Qualitative analysis: Student feedback was analyzed descriptively to assess engagement and acceptability.

Data Collection Procedure:
After obtaining permission from the institutional authorities, the study was conducted among 1st Year BHMS students. The students were informed about the purpose of the study and written informed consent was obtained prior to data collection.
Baseline data were collected by administering a common pre-test consisting of structured multiple-choice questions based on 10 selected mind rubrics from Kent's Repertory. The pre-test was conducted for all participants to assess their initial level of understanding and recall. [5]
Following the pre-test, the teaching intervention was carried out according to group allocation. Group A received songs-based recall teaching, while Group B was taught using the conventional lecture-based method. After completion of the teaching sessions, a common post-test using the same questionnaire was administered to assess improvement in understanding and short-term memory retention.
After completion of the crossover phase, a structured feedback questionnaire was administered to all students to collect data regarding their perception of engagement, interest, understanding, recall ability, and effectiveness of the songs-based recall strategy.
All collected data were recorded systematically and maintained confidentially for statistical and qualitative analysis.

DATA ANALYSIS

The data obtained from the pre-test and post-test were compiled and analyzed for students who were present for both tests.

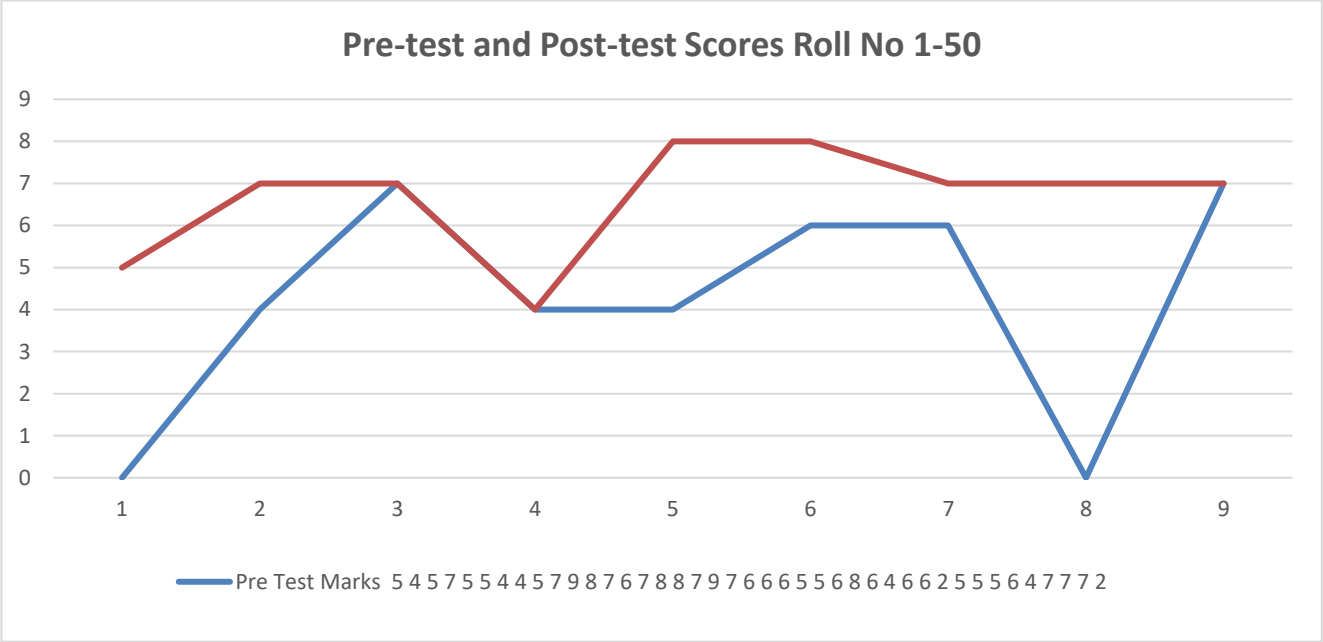
Study Sample

- **Total students enrolled:** 100

- **Students included in analysis:**
  - **Group A (Roll No. 1–50):** 44 students
  - **Group B (Roll No. 51–100):** 39 students

Students absent for either the pre-test or post-test were excluded from analysis.

Group-wise Pre-test and Post-test Scores



Group A – Songs-Based Recall Method

Parameter	Score
Mean Pre-test score	**5.84**
Mean Post-test score	**7.50**
Mean improvement	**+1.66**

Group B – Conventional Teaching Method

Parameter	Score
Mean Pre-test score	**5.95**
Mean Post-test score	**6.56**
Mean improvement	**+0.61**

Within-Group Statistical Comparison

- **Group A:**

Post-test scores were significantly higher than pre-test scores
(**$p < 0.001$**)

- **Group B:**

Post-test scores showed significant improvement compared to pre-test(p = 0.021)

Between-Group Statistical Comparison

Comparison of mean improvement between both groups revealed:

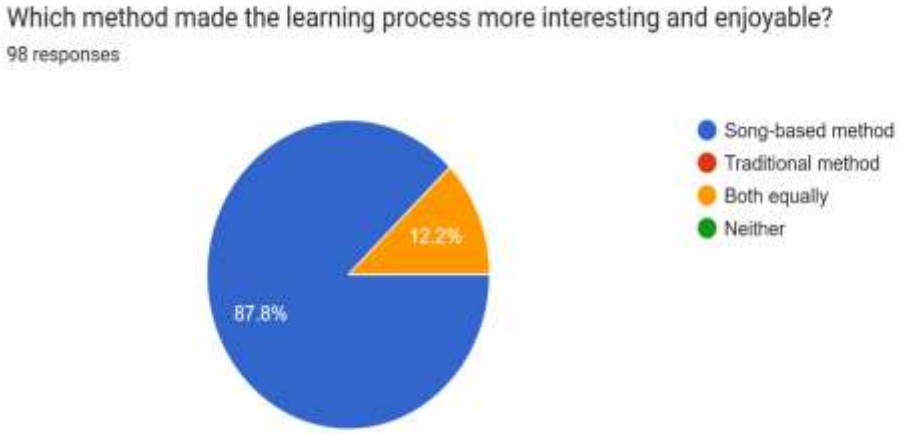
Group	Mean Gain
Group A (Songs-based)	**1.66**
Group B (Conventional)	**0.61**

The difference in mean improvement between the two groups was statistically significant
(p = 0.0049)

Overall Result

Songs-based recall teaching demonstrated greater improvement in post-test scores compared to conventional teaching methods.

Feedback from student



Student feedback was collected after completion of the teaching sessions and crossover phase to understand students' perception regarding the effectiveness of the songs-based recall strategy. A structured feedback questionnaire was administered to all participating students. [2,3,6,8]

Number of Responses

- **Total feedback responses received:** 98 students

Summary of Student Feedback

- A majority of students reported that songs-based recall strategies made learning more interesting and enjoyable. [2,3,6,7]
- Students felt that songs helped them remember Mind rubrics more easily due to rhythm, repetition, and emotional association. [6–8]
- Many students reported improved attention and concentration during songs-based teaching sessions compared to conventional lectures. [4,9]
- Songs-based recall strategies were perceived to enhance understanding and short-term memory retention of Mind rubrics. [6,8,10]
- Several students expressed that a combination of songs-based learning and traditional teaching would be most effective for

future classes.

Overall Feedback Interpretation

The student feedback indicates a positive acceptance of songs-based recall strategies as an innovative teaching–learning method. Students perceived this approach as engaging, supportive for recall, and helpful in understanding abstract Mind rubrics of Repertory.

Feedback-Based Conclusion

Student feedback suggests that songs-based recall strategies are well-accepted and beneficial for learning Mind rubrics and can serve as an effective adjunct to conventional teaching methods in homoeopathic education. [2,3 ,6,9]

Conclusion

The present study evaluated the effectiveness of songs-based recall strategies in improving the understanding and short-term memory retention of Mind rubrics of Repertory among 1st Year BHMS students. The results showed a greater improvement in post-test scores among students taught through songs-based learning compared to conventional lecture methods. The use of rhythm, repetition, and emotional association helped students grasp and recall abstract repertorial concepts more effectively. [6,8,10]

Student feedback also indicated better engagement, interest, and participation during songs-based sessions. The crossover design ensured fair exposure to both teaching methods and enhanced the validity of the findings. Thus, songs-based recall strategies can be considered an effective and innovative learner-centered approach that may improve academic performance and learning outcomes in homoeopathic education. [1,4,9]

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