



CHUNKING CUM ACROSTICS STRATEGY AS A TOOL FOR MEMORIZING THE NAMES OF COUNTRIES AND CONTINENTS

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Abstract

Chunking cum acrostics technique based on letters and colours have been developed to assist the geography students of secondary schools to recall the names of all countries of the world spontaneously and accurately with minimum outlay of time and effort. Geography students thus need to be able to memorize the names of countries and continents correctly whenever necessary. This memorising strategy is especially helpful for the students of third world countries where the concept of digital class rooms are not well exercised. The effectiveness of the strategy was measured by administering it upon the students of class nine with respect to the conventional teaching method. It was also observed that the extent of retention of information is greater in case of study group rather than the control group those are not exposed to the treatment.

Keywords: General Geography of secondary school; Chunk based Strategy with acrostics or rhythm; color based method; Names of all countries of the world; special ranks.



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Introduction

Chunking, in psychology, is a mnemonic trick. Imagine you need to remember a random line of letters, for instance M D P H D R S V P C E O I H O P. Easy? Not that much. But what if we group the letters as MD PHD RSVP CEO IHOP? Chunking the line of sixteen letters into five chunks helps remembering these letters, illustrating what the chunking is about. It is believed that the assimilation of different items according to their properties occurs due to individuals creating higher order cognitive representations of the items on the list that are more easily remembered as a group than as individual items themselves (Miller, 1956). Chunking involves taking long strings of information like numbers or letters and grouping (or chunking) them into smaller, more manageable bits of information. Scaffolding and chunking instructional strategies as they relate to information processing, describes how to determine and when to use scaffolding and chunking (Barker, 2010).

Chunking (a memorizing tool) is often used for taking individual units of information and grouping them into larger units (Miller, 1956). By separating disparate individual elements into larger blocks, information becomes easier to retain, recall and recognition. The chunking strategy minimizes cognitive overload and thereby increasing the learner's mental storage capacity. Chunking by category adds meaning and depth to learning. It also reduces the amount to remember and enhances the mental activities (Afflerbach, Pearson, Paris, In terms of chunking; memory has been classified into two categories, namely short term memory (STM or Working memory) with limited capacity and long term memory (LTM) having unlimited capacity (Fig. 1) (Reid, 2008). The STM plays a temporary zone for activities such as reasoning, mental mathematics and problem solving, processing the information from the long term memory (Baddeley, 199). In the LTM, the information is stored in connected pieces that can be retrieved by a single act of recognition. These pieces are designated as chunks. A chunk can then be defined as "a collection of elements having strong associations with one another, but weak associations with elements within other chunks" (Gobet, Lane, Croker, Cheng, Jones, Oliver, Pine, 2001). Chase and Simon and later Gobet, Retschitzki and de Voogt, showed that chunking could explain several phenomena linked to expertise in chess (Chase, 1973). Several successful computational models of learning and expertise have been developed using this idea, such as EPAM (Elementary Perceiver and Memorizer) and CHREST (Chunk Hierarchy and Retrieval Structures). Chunking has also been used with models of language acquisition and symbol sequences (Zhilin, 2013). Instructors can easily teach learning how to learn" strategies (e.g., chunking, primacy, latency) to their students. Teaching these strategies to students has been shown to enhance student learning along two dimensions: (1) decreasing the amount of time students require in order to learn a set amount of subject matter-specific material, and, (2) increasing the amount of material they are able to retain post-learning (Calder, 2006).

Remembering countries name is a difficult task. Memory tricks such as using pictures to relate information can be used at all grade levels. For example, because Italy is in the shape of a boot, every time students see boots, they will think about Italy. Students may also make up raps and melodies to remember the countries and their capitals.

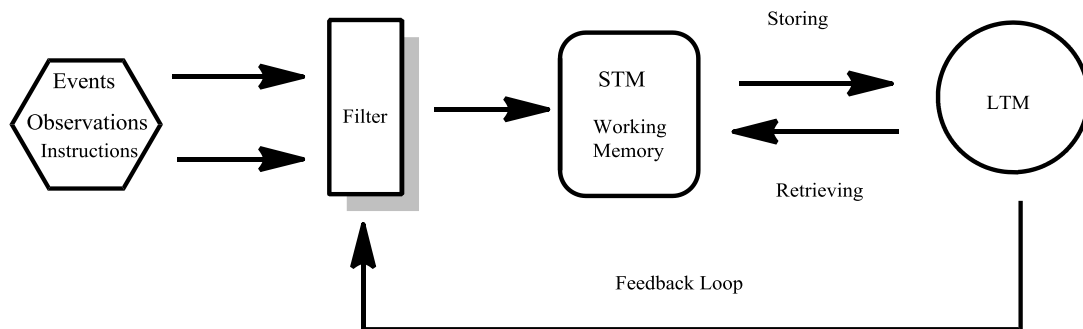


Figure 1. Block diagram of learning model.

Previous methodologies

There are no written format available in the literature for memorizing country names for all continents and continents with certain ranks. Very few previous efforts of acrostics have been made as audio-visual aids only for rather than the systematic chunk based mnemonics for memorizing the countries names of South American Countries, Central American & Caribbean, European Countries, and Middle East Countries separately. There is no sufficient and easy accessible chunk based methods to consider as a comprehensive method for memorizing all the continents and countries names accurately for all kind of students. In this study we have designed a chunk based mnemonics cum acrostics methodology for recalling and writing all the countries names as well as the respective ranks based on volume of all the continents of the world accurately. We have used a chunk cum acrostics strategy to stabilize the long term memory of the learners. Chunking method will help to split up the long words as small units while acrostics (rhythmic) method will give the rhythm in memorizing process and joyful learning. Variation of colours and area of various circles has also been considered to acknowledge the ranks of continents according to the area respectively. Fig. 2 describes a Circle with different shaded colours showing continents. The colours represent the respective continent used in Olympic Games usually.

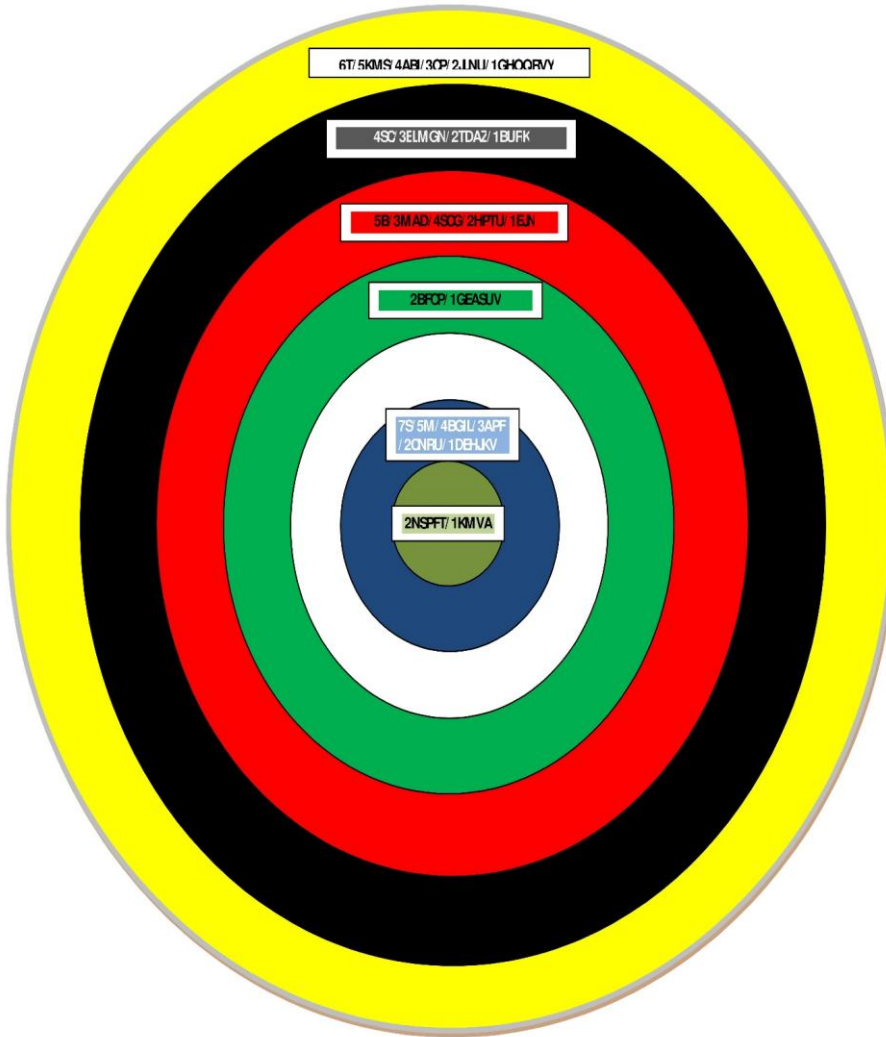


Figure 2. Colour diagram of the continents.

Proposed methodology

This paper proposes a chunk cum acrostics (rhythm) based memorizing technique of overcoming the lankness of recalling and rewriting names of continents and countries all at a satisfactory level quickly and accurately. This method consists of subsequent steps for memorizing all the continents and countries names and the respective ranks of continents according to area by various sized circles with colors shade. The rank of the continents according to their area follows the order Asia > Africa > North America > South America > Antarctica > Europe > Osiania. Antarctica continent is not taken into consideration as there is only one country.

Chunk cum acrostics strategy for memorizing country name under a given continent:

1. ASIA (54 countries):

Asia is the biggest continent in the world having 54 countries as depicted in Fig.3. In order to memorize the names of these countries following chunk based acrostics may be used.

Step-1: At first the students have to recall the numerical series 6-5-4-3-2-1.

Step-2: Alphabets have been inserted after the numerical digits as follows:
6T/5KMS/4ABI/3CP/2JLNU/1GHOQRVY

6T stands for six countries whose names begin with the letter T (total $1 \times 6 = 6$), 5KMS stands for names of five countries in each begins with the letter K, M and S respectively (total $5 \times 3 = 15$ in number). Similarly, 4ABI stands for four countries which start with A, B and I (total $4 \times 3 = 12$ countries). 3CP stands for three countries whose name start with letter C and P (total $3 \times 2 = 6$ countries) while 2 JLNU stands for two countries whose name start with J, L, N and U respectively (total $2 \times 4 = 8$ countries). 1 GHOQRVY stands for each country's name start with the G, H, O, Q, R, V, Y (total $1 \times 7 = 7$ countries). Thus total 54 ($6 + 15 + 12 + 6 + 8 + 7 = 54$) countries emerge out.

Step-3: Step 2 now may be rephrased into a mnemonic based acrostics as follows.

6 Teacher invited 5 Kolkata Medical Students, 4 Apprentice Bachelors from Ireland, 3 Cardiac Physician to Jawaharlal Nehru University with 1 Reputed Very Young Honorable and Quiet Orthopedic having diploma in Gynecology. Thus a unique acrostics/rhythm would give the names of 54 countries just by recalling their first alphabet of each county with the help of the first bold letter of each word under consideration of this acrostics.

6T/5KMS/4ABI/
3CP/2JLNU/1GHOQRVY

Asia: 54
countries

Taiwan, Tajikistan, Thailand, Timor-Leste, Turkey, Turkmenistan, Kazakhstan, Korea(N), Korea(S), Kuwait, Kyrgyzstan, Macau, Malaysia, Maldives, Mongolia, Myanmar, Soudi Arabia, Singapore, South Ossetia, Srilanka, Syria, Afghanistan, Armenia, Azerbaijan, Abkhazia, Bahrain, Bangladesh, Bhutan, Brunei, Indonesia, Iran, Iraq, Israel, Cambodia, China, Cyprus, Pakistan, Palestine, Philippines, Japan, Jordan, Laos, Lebanon, Nepal, Northern Cyprus, United Arab Emirates, Uzbekistan, Georgia, Hong Kong, Oman, Qatar, Russia, Vietnam, Yemen.

Figure 3. Chunk based strategy for memorising Asian countries.

2. AFRICA (35 countries):

Africa is the second biggest continent in the world by volume having 35 countries as depicted in Fig. 4. For African countries following chunk based acrostics may be followed.

Step-1: Recall the numerical sequence: 4-3-2-1

Step-2: Alphabets have been inserted after the numerical digits as follows:

4SC/3 ELMGN /2 TDAZ /1BURK

4SC stands for names of four courtiers in each begins with the letter S and C respectively (total $4 \times 2 = 8$ in number). Similarly, 3 E L M G N stands for four countries which start with E L M G and N respectively (total $3 \times 5 = 15$ countries). 2 T D A Z stands for two countries in each case whose names start with the letter T,D,A and Z (total $2 \times 4 = 8$ countries) while 1 BURK stands for one country in each whose name start with the letter B, U, R and K respectively (total $1 \times 4 = 4$ countries). Thus total 35 ($8 + 15 + 8 + 4 = 35$) countries emerge out.

Step-3: Step 2 now may be rephrased into a mnemonic based acrostics as follows.

Selection, Co-Option/ Election, Liberation Manifest Greater Nation/ Treachery is Dead Against of healthy Zacks /and Battles for Up-To-Date Revolution in Kingdom.

Thus a unique acrostics/rhythm would give name of 35 African countries just by recalling their first alphabet of each county with the help of the first bold letter of each word under consideration of this acrostics.

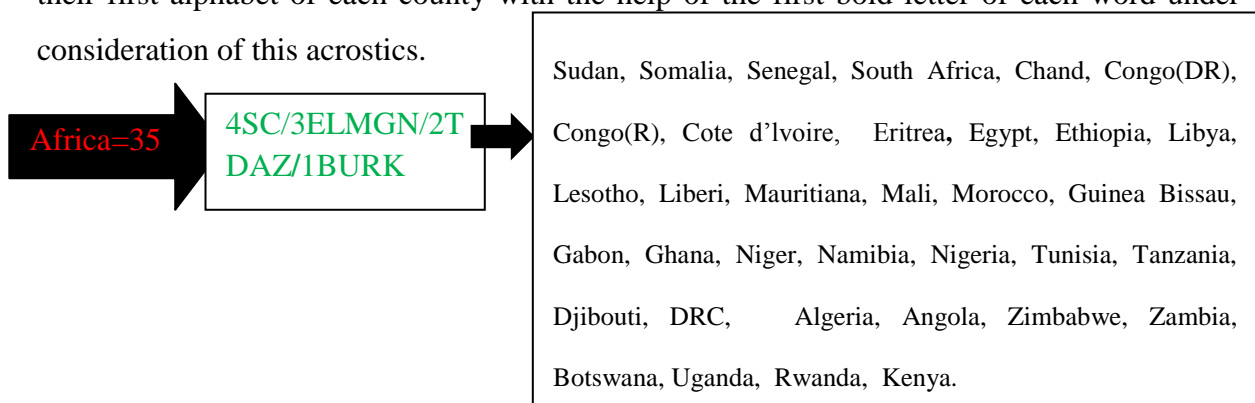


Figure 4. Chunk based strategy for memorising African countries.

3. NORTH AMERICA (37 countries):

Next comes North America. It is the third biggest continent by volume having 37 countries. For remembering the names of North American countries following chunk based acrostics may be followed (Fig. 5).

Step-1: Recall the numerical sequence: 5-4-3-2-1

Step-2: Alphabets have been inserted after the numerical digits as follows:

5B/4SCG /3MAD /2HPTU/1EJN

5B indicates the names of five courtiers begins with the letter B (total $1 \times 5 = 5$ in number). Similarly, 4SCG implies four countries in each start with S, C and G respectively (total $4 \times 3 = 12$ countries). 3MAD stands for three countries in each case whose names start with the letter M, A, and D (total $3 \times 3 = 9$ countries). 2HPTU stands for two countries in each begins with the letter H, P, T and U respectively (total $2 \times 4 = 8$ countries). 1 EJN stands for one country in each whose name start with the letter E, J, and N respectively (total $1 \times 3 = 3$ countries). Thus total 37 ($5 + 12 + 9 + 8 + 3 = 37$) countries emerge out.

Step-3: Step 2 now may be rephrased into a mnemonic based acrostics as follows.

5 Boys from **4** Significant Commercial Groups, **3**Masters and **D**octors, **2**Helpful Persons from **T**echnical University **E**nter the **J**ungle **N**ear.

Thus a unique acrostics/rhythm would give name of 37 North American countries just by recalling their first alphabet of each county with the help of the first bold letter of each word under consideration of this acrostics.

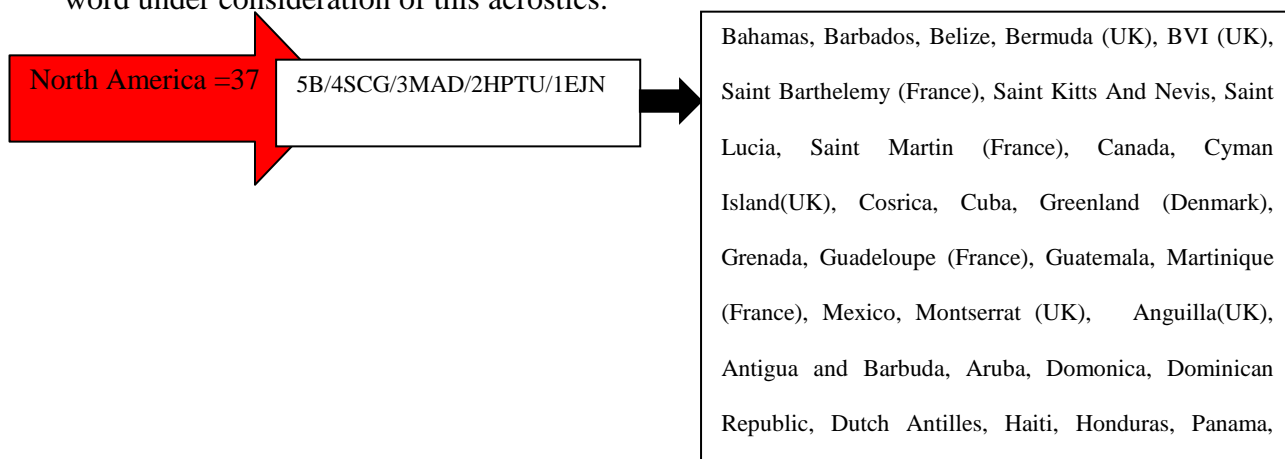


Figure 5. Chunk based strategy for memorising North American countries.

4. SOUTH AMERICA (14 countries):

South America is fourth biggest continent by volume having 14 countries. For remembering the names of South American countries following chunk based acrostics may be followed (Fig. 6).

Step-1: Recall the numerical sequence: 2-1

Step-2: Alphabets have been inserted after the numerical digits as follows:

2BFCEP/1GEASUV

2BFCP denotes two countries in each begin with B, F, C and P respectively (total $2 \times 4 = 8$ countries). 1GEASUV stands for one country in each whose name start with the letter G, E, A, S, U and V respectively (total $1 \times 6 = 6$ countries). Thus total 14 ($8+6 = 14$) countries emerge out.

Step-3: Step 2 now may be reframed into a mnemonic based acrostics as follows.

Black Or Fair Cute Person Gains Extra Advantage, Success And Unspeakable Valuation.

Thus a unique acrostics/rhythm would give name of 14 South American countries just by recalling their first alphabet of each county with the help of the first bold letter of each word under consideration of this acrostics.

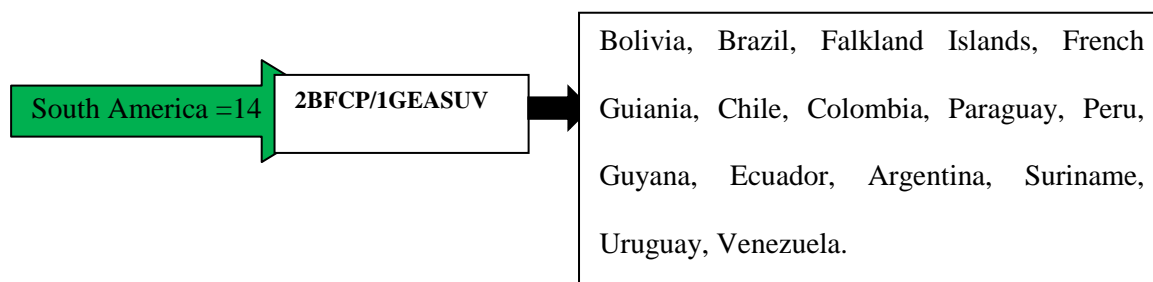


Figure 6. Chunk based strategy for memorising South American countries.

5. ANTARCTICA:

No country is available under Antarctica and hence such type of chunking strategy is not meaningful for this content.

6. EUROPE (51 countries):

Europe is sixth continent by volume having 51 countries. For remembering the names of European countries following chunk based acrostics may be followed (Fig. 7).

Step-1: Recall the numerical sequence: 7-5-4-3-2-1

Step-2: Alphabets have been inserted after the numerical digits as follows:

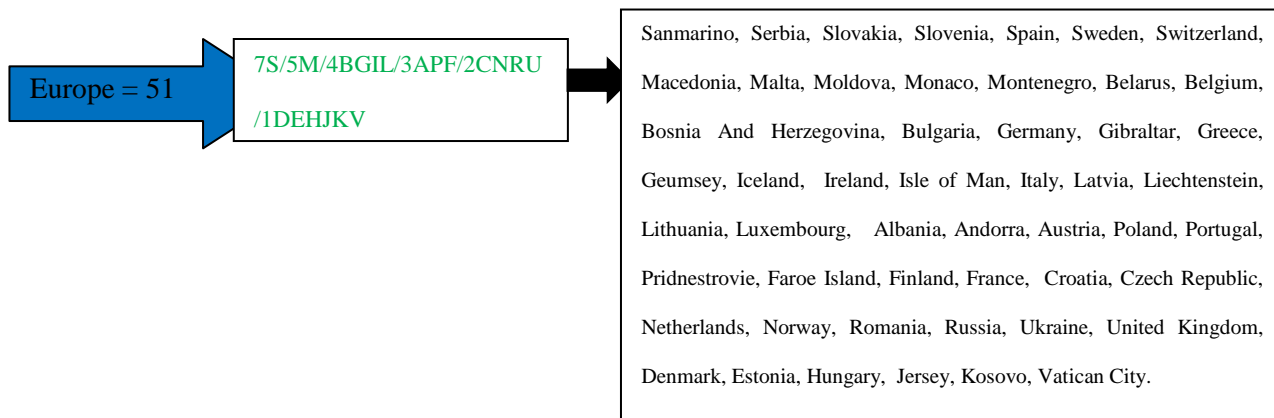


Figure 7. Chunk based strategy for memorising European countries.

7S stands for seven countries whose names begin with the letter S (total $1 \times 7 = 7$ countries), 5M stands for five countries whose names begin with the letter M (total $1 \times 5 = 5$ countries). 4BGIL stands for names of four countries in each begins with the letter B, G, I and L respectively (total $4 \times 4 = 16$ in number). Similarly, 3APF stands for three countries which start with A, P and F (total $3 \times 3 = 9$ countries). 2CNRU indicates two countries whose name start with letter C, N, R and U respectively (total $2 \times 4 = 8$ countries) while 1DEHJKV stands for one country in each whose name starts with D, E, H, J, K and V respectively (total $1 \times 6 = 6$ countries). Thus total $51(7 + 5 + 16 + 9 + 8 + 6 = 51)$ countries emerge out.

Step-3: Step 2 now may be reframed into a mnemonic based acrostics as follows.

7 Sixes, 5 Maidens, 4 Byes Gave India Lead of 3 runs Against Pakistan's Fury.

2 Catches Nine Runs Undo Danis, Elahi, Hafiz, Javed, Kamran's Venture.

Thus a unique acrostics/rhythm would give the names of 51 European countries just by recalling their first alphabet of each country with the help of the first bold letter of each word under consideration of this acrostics.

7. OSANIA or AUSTRALIA (14 countries):

Osiatia or Australia occupies seventh position by volume having 14 countries. For remembering the names of its countries following chunk based acrostics may be followed (Fig.8).

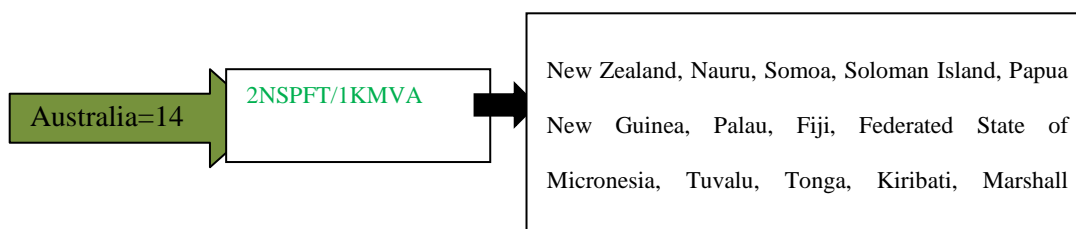


Figure 8. Chunk based strategy for memorising Australian countries.

Step-1: Recall the numerical sequence: 2-1

Step-2: Alphabets have been inserted after the numerical digits as follows:

2NSPFT/1KMVA

2NSPFT denotes two countries in each begin with the letter N, S, P, F and T respectively (total $2 \times 5 = 10$ countries). 1KMVA stands for one country in each whose name start with the letter K, M, V, and A respectively (total $1 \times 4 = 4$ countries). Thus total 14 ($10 + 4 = 14$) countries emerge out.

Step-3: Step 2 now may be rephrased into a mnemonic based acrostics as follows.

Never Should Politics Finish Talent, Keep Moral Values Ever Abstinent.

Thus a unique acrostics/rhythm would give the names of 14 Australian countries just by recalling their first alphabet of each county with the help of the first bold letter of each word under consideration of this acrostics.

Chunk cum acrostics strategy for memorizing the names of continents:

There are seven continents in the world and their rank with respect to their volume follows the order: Asia, Africa, North America, South America, Antarctica, Europe, and Osiania. For remembering the names of seven continents following chunk based acrostics may be followed.

Step-1: Recall the numerical sequence: 1-1-1-1-1-1-1

Step-2: Alphabets have been inserted after the numerical digits as follows:

AS-AF-NA-SA-AN-EU-OS or A-A-N-S-A-E-O

Step-3: Step 2 now may be rephrased into a mnemonic based acrostics as follows.

ASk for **AF**resh **NASA'S AN**nals on **EU**ropean climate **OS**cillation/ or **EU**ropa's **OS**cillation.

Thus a unique acrostics/rhythm would give the names of 7 continents just by recalling their first alphabet of each county with the help of the first bold letter of each word under consideration of this acrostics.

Implementation of the proposed method

The efficacy of the proposed method was judged by administering it upon the class IX grade students (secondary) of Satui R. N. High School, Berhampore, West Bengal, India. At first two groups were selected by equivalent group design method on the basis of the achievement test in geography in the previous year annual examination. By lottery one group was assigned to control group, the students (30) of which were taught by traditional lecture method about the names of continents and countries, while other group was assigned study group, the students (30) of which were administered by our proposed chunk based acrostics method with the help of power point presentation. Finally a formative assessment based on multiple choice based questions were administered on both the control group and study group separately for about 40 minute duration. The same test has been administered on both the control group and study group after four months of first formative assessment for measuring the degree of retention of country names. The results of two groups are collated in Fig.9 and Fig.10 respectively.

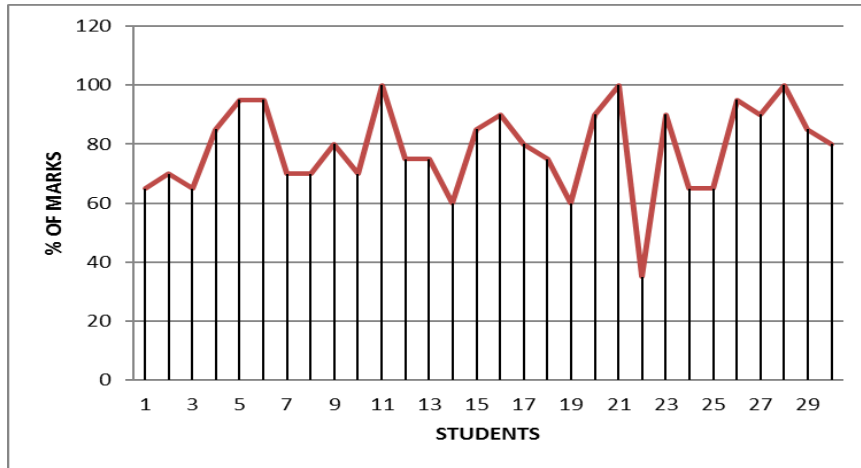


Figure 9. Marks obtained in percent of study group (chunk based learners).

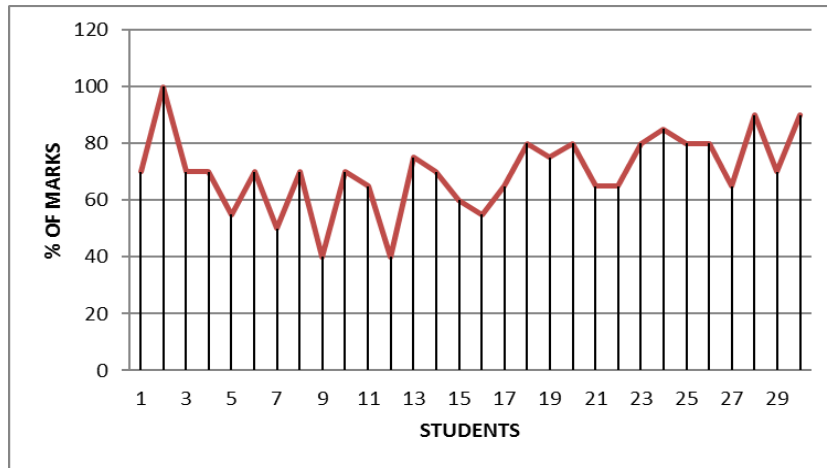


Figure 10. Marks obtained in percent of control group (conventional teaching method).

Results and conclusion

Results of study group which has been administered by chunk cum acrostics based method: 5 out of 30 students of study group scored 90% and above marks. 22 students' marks were in the range of 60%- 90% and rest 3 students scores were in the range of 30% to 60% marks. Results of control group which has been administered by traditional method: 1 out of 30 students of control group scored 90% and above marks. 23 students' marks were in the range of 60%- 90% and rest 6 students scored were in the range of 30% to 60%. Where the results in chunk based teaching were as followed-17% student scored 90% and above marks which is the 14 % greater than the traditional lecture method and even after four months the diminishing rate of retention of information was over all 10% in chunking method where 20% occurred in case of traditional lecture method. Thus it was proved that the chunking method in memorization of names of all 205 countries of the world (except

Antarctica) is more effective than the traditional lecture method of teaching. This is a unique memorizing method to rewrite and recall the names of countries with minimum input and in minimum outlay of time. This findings of this paper is remarkable for further research studies in geography education.

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