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Is your brain smarter than you? Comprehensive study guidelines for students and staffs

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Today's world is a survival of the best policy, competitive spirit is exhibiting new faces not only students but also among teaching staffs. This article is in pursuit of understanding students academic problems which hinder their success and also what can be done to achieve better. This is a wide spectrum of information for both teachers and students who seek better academic performance.

This article gives a detailed review of problems and their solutions. Survey shows students faces problems in effort input, recollection and presentation. Discussion of preparation and examination guidelines also is included. This article is will not provide magical remedies for any study problems, assures fruitful successful steps to be taken and executed in a simple manner. Ironically it is found that students face more problem is recollection and presentation rather than not able to study.

Key words: peripheral vision, image visualization, procrastination, sleep apnea, mind mapping.

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Introduction

Most of the student communities have problems in their academic performance and achievements. Reason is not with their inability, but methods of using their ability. That means academically backward are not useless, but used less. Let us see now the hurdles which hold students from achieving their goals. A census was conducted among pharmacy students in different pharmacy colleges and revealed the following:

- Not able to study / put efforts – 18 %
- Not able to recollect – 47 %
- Not able to express – 35 %

NOT ABLE TO STUDY / PUT EFFORTS

Cause: lack of concentration

Guidelines:

*1. Cultivate fast reading habits*¹: The faster you drive your bike, the more you concentrate on the roads. The faster you read the more you concentrate on the sentence. You can use your index figure to guide you on each line and move faster from end to end of each line initially and reduce this distance. When you look at someone you are not just seeing their eyes; infact you may see from top to bottom. This is peripheral vision. When we read we see more words other than the word we are seeing. The fact is the eye movement is a series of jumps and stops. Eye fixation takes 0.25 – 1.5 seconds. An eye fixation can read up to six words by practice.

2. Spaced studying: Once you open your book the period of studying should be the same of your examination time. If the examination time is three hours you must study for three hours. But don't forget to give five minutes break every 30 minutes. This is spaced learning. During the break you can casually watch fixed objects at a distance, watch the moon, stars, sky witch will relax the ciliary muscles of your eye. Another method is close your eyes and cup with your palm over each eye.

3. Image visualization: Vision is a continuous frame. See a fixed object or a spot and imagine the same after closing your eyes. Try to see the virtual image. This is based on the information stored in the brain. Catching a rebounded ball after throwing against floor or wall will improve concentration and coordination. This is even used as a technique used to improve clinical problems like dyslexia.

4. Concentration: Ability of a human mind to concentrate depends on the time of the day and night and is subjected to slight variations because it is the biological clock in our body which sets this². But still generally most of the homosapiens show concentration ability in terms of percentage as shown below:

Above 90 %: 4- 9 am, 80 – 90 % : 9-1 pm, 60 % : 1-4 pm, 50 -60 % : 4-7 pm,

80 %: 7- 11 pm, 70 % : 11- 4 am. Avoid over eating just before studies. Consume easily digestible food, avoid snacks during studies. Multivitamins, antioxidants along with plenty of water is beneficial. Seating arrangement of your study room shall be almost matched with that of the examination hall.

Cause: Lack of interest

Guidelines:

1. *Power of belief*³: A belief is a concept that once accepts to be true and have faith in that .A belief can be conscious or subconscious. Beliefs are powerful. So we do things the way we think .If you think yes you can, then you will subconsciously augment your activities and thrive to achieve the goal. Placebo treatments (dosage forms without active ingredient) are a simple example.

2. *Power of imagination*⁴: It is true that imagination of tamarind waters our mouth. In a state of relaxed mind imagination of achieving your goal program yourself and subconsciously you automatize for that success. You can make use of all the five senses – sight, touch, smell, taste and hearing. In fact what ever boosts your confidence you can adopt it.

3. *Start with easy topics*: When you finish topic by topic you get more confidence. Number of topics studied is proportional to your confidence. Therefore it is better to complete tough and lengthy topics in the last .This rule may not be applicable to all students, the logic is what ever choice you select you must feel comfortable.

4. *Art of positive thinking*

Learn the art of positive thinking. Positive expectancy has three steps⁵:a) Expecting a positive outcome b) Executing whatever steps for that to happen c) Accepting nothing less.

Cause: Lack of time

Guidelines: Although lot of books and publications preaches about time management, practically many students find difficult to adjust the time schedule. It is so short to do something and so long to do nothing! A successful time management doesn't mean doing every thing you like .It means which task you do and which task you postpone.

a) *Prepare "to do list"*⁵: Daily "to do list" – For routine work based on hourly basis. Short term "to do list"- projects currently under contract Long term "to do list"- this is for the future plans

b) *Determine priorities*: arrange the "to do list" according to the importance and preferences.

c) *Overcome procrastination*⁵: According to entrepreneur Victor Kiam, procrastination is opportunity's assassin .Procrastinators frequently miss deadliness, complete assignments at the last minute without revising, they put their colleagues and classmates under stress. Imagine the relief and happiness once you finish your job in time .If the project is complex break into several units, offer self incentive after finishing a job in time. Eliminate bad habits that waste time.

Yesterday is history, tomorrow is mystery, so do today's work today itself.

d) *Avoid distractions*- It may be difficult to check external distractions but we can take steps to reduce by not allowing anyone to chat when we are at work , not to take others responsibilities when we have our Project, letting voice mail take your calls or just ask people to be quite.

e) Use the 80/20 rule –The 80/20 rule states that 80 % of your accomplishments come from 20 % of your efforts. Provide more time for productive activities.

f) Design a productive work space

“Commonsense is not so common” many of us believe the same .There is no need of having a high IQ to make a simple protocol, have your cabin near your work space etc. There are some students who attempt a question only if they are very much confident in that. Do not try to be a perfectionist.

Cause: Lack of proper guidance

Guidelines: A class is filled with group of students who could be easily classified into the best, average, below average, worst. Every teacher has to take care of the last two categories. If a student is having any difficulty, approach their teachers in time and not after exams .Before exams there could be a solution but after you can expect some consolation or sympathy. Stitch in time saves nine!

Cause: Physically and mentally exhausted

Guidelines:

To function normally any cell in our body requires adequate concentration of nutrients and oxygen. Also the need of relaxation is also inevitable. Take adequate vitamins and minerals: Consult your doctor or pharmacist before taking vitamins and mineral tablets.

Anti oxidants like vitamin C can be taken in natural diet, like any citrus fruits. As normal food cannot practically support all the materials our body requires, we can opt for any tablets commercially available.

Omega 3 fatty acids (certain fishes) not only decrease your cholesterol but also aids in improving depression. Eating 45 g of coca rich dark chocolates everyday reduces chronic fatigue syndrome.

Turmeric reduces the risk of many degenenerative brain disorders including Alzheimer’s disease.⁶ Water the elixir of life has to be taken plenty. Avoid oil and sugar in excess .But honey can do wonders.

Fruits cereals and vegetables has to be taken plenty and reduce the intake of meat and diary products. Some report claims chocolates can stimulate dopamine in the brain.

Good night sleep: Although we wish a good night sleep, seldom we are satisfied. On an average basis the population sleeps 6 – 8 hours a day. Some people sleep up to 10 hours or even more. Some others sleep as less as four hours. The cycle of sleep is divided in to rapid eye movement (REM) and Non rapid eye movement (NREM). REM sleep represents deep sleep and dreaming. During a typical 7-8 hour sleep REM and NREM sleep alternates throughout the night .REM sleep which occur every 90 minutes gradually lengthen, until the final one last about 50 minutes. Sleep deprivation impairs attention; learning and performance⁷ .

Night lamp disturbs your circadian rhythm. Keep your room dark while sleeping. For the dinner take easily digestible food, avoid over eating, and avoid tea / coffee after dinner. There are reports suggesting that sleeping by head towards east is good for your brain. A half an hour cat nap during mid noon is also recommended for relaxation. 50 % of the world population sleeps in the day for a short period of time!.

Aerobic exercises and yoga: Human brain consumes only 20 – 25 % of the total oxygen intake. Exercise, deep breath techniques of yoga increases the blood flow to brain and so the oxygen supply and nutrients. Walking is better than running as far as your heart is concerned especially after 30 years of age. ⁸. Keep mentally fit by involving in many puzzle games, socialize with the society.

Cause: Reading aloud or silent reading?

Group study or single study?

Guidelines:

If you read aloud you tend to read slowly. This will be a hurdle for your fast reading techniques. But if you are not comfortable or your exams are nearing don't change your regular practice suddenly. A pool of ideas is better than a single idea .Group study will be beneficial to collect more informations and datas. But before a group study you must work out and have a brief idea about the topic. In dual study practice students will pair up, animator (usually a teacher) will ask questions from an acquainted topic .One student will tell the answer while his pair will listen. Then the next student will try the same. Advantage is there is a provision for self test and collection of new datas.

Not able to recollect

Memory can be divided into short term and long term memory. Converting long term to short term memory is called remembering. The reinforcement that results from frequent retrieval of information is called memory consolidation. Don't try to recollect if you didn't understand properly.

Cause: Impaired memory?

Guidelines:

Normal homosapiens utilize only 10 % of his mind power.^{1,8}.Rate of impulse conduction depends on the neurotransmitters, number of dendrites and axonites, nodes of ranvier. According to genotype and phenotype these factors show individual variations. Memory techniques used to sustain and enhance memory is called "mnemonics". Master the following mnemonics gradually. Note that these are not a substitute for studying.

Revision – Repetition is the best solution for recollection. Each time a new information is received a new connection is formed. But if we are not repeating this connection weakens.

Successful people have successful habits. We forget most of the things (82 %) we learn within the first 1-24 hours. Self assessing during repetition is more valuable than plain revision (Table 1). In the beginning you may find difficult to practice, but once you make it routine and start getting the benefit you will be able to appreciate this revision time table. At each stage don't forget to self assess. Repetition is a functional aspect of your left brain. Dairy writing is a good habit. Memorizing daily activities in the reverse order before sleep is recommended. Try to recollect minute incidences.

Acronym- VIBGYOR represents the first letter of each color in the rainbow arranged as violet Indigo, Blue, Green, Yellow, Orange, and Red

Word imaging- many copy editors of news papers and magazines can point out the wrong words or sentences just by looking into the paper. This is because they have the imagination of the correct words. In a relaxed mood look into the word you wish to remember, close your eyes and try to imagine the word, spell it out and write on a paper. Look back at the word even if you have correctly spelled.

Neurolinguistic Programming (NLP) is yet another technique developed by coordinating the thinking with your perception of five senses - sight , touch , smell , taste and hearing .So next time if you are studying about flower try to link with the beautiful color , the humming of the bee on the flower ,the soft texture of petal, the aroma, taste of its honey !

Link method: Theory of association states that new data are linked or attached with previous data which are stored already in the cerebral cortex of the brain. When we think about the flower vase we also think about the flower!

In link method we try to correlate words with numbers or images .The following are the classification of link method.

Rhythm – number link method: Remember ten words which imitate the numbers from one to ten .e.g. fun for one. Next step is to link the standard words with the list you want to remember. Table 2 shows examples of first three digits .Students are recommended to practice by their own imaginations.

Shape number link method: If you find difficult for rhyme words to link with numbers, you can use shapes of any objects to link with the number.eg: “a stick and ?” for 1 and 2 respectively.

Story link: Create a story to connect the words. To remember heart, scientist, bus, sea, play- heart of the scientist was taken in bus to sea and played by the mermaid.

LOCI method (roman placement system):

Imagine the items to remember in different locations of your routine route, may be to your institution or house.

Cause: lack of coordination

Guidelines:

Here we focus on the use of left and right lobes of the brain and collectively improve the coordination and thus recollection.⁸

Coordination can be improved by reading right to left, reading book by holding upside down, using both hands for writing one at a time .All these are fun not funny!

Classical karnatic music, Mozart piano sonata etc. in low volume during studying increases your coordination capacity.Certain games like shuttle badminton needs coordination of body and mind. Mind mapping is a good practice were all the contents of a chapter is put together in the form of a map in one page connecting all the headings and points .Colors, figures, arrows, 3D Memory card is another practice. Here small cards are cut out. Only the core points are written in each card.A group of such cards makes one chapter. Cards belonging to each chapter are distinguished by separate color.We are likely to recollect more what we learn before sleep. Utilize that time for a quick revision. Mixing bed coffee with bed studying? Avoid studying direct from sleep.

If you are physically or mentally exhausted it impairs your coordination and rest is the best remedy. A balanced diet rich in multivitamins and minerals, adequate exercise aids coordination. Checkout your medication anything which affects your central nervous system e.g. Sedatives, antihistamines many cough syrups etc.^{9, 10, 11, 12}

Not able to present^{4, 6, 14}

No examiner is bothered about your preparation but very much bothered about your presentation! If you are able to impress your examiner then you are differentiated from others .Generally examiners go for a comparison of papers for evaluation or students during a viva voce .If you are bothered about exam presentation you must be bothered about pre exam day.

1. Stay healthy and think healthy – studies show that immunity decreases during exam days because of stress and strain. Many students are not bothered about diet even they go to the extend of going for exams empty stomach. There are all chances of getting hypoglycemic and the brain may be deprived of enough oxygen and nutrients. Take multivitamin – mineral tablets, antioxidants, Omega 3 fatty acids etc. and take adequate sleep. But just before going for exam do not eat; blood supply to your intestine increases and brain decreases.
2. Consume honey before exam, and during exam days, this will give you additional energy and functions your brain better.
3. Before exam day never try new topics and new study techniques. You feel like swimming across a never ending sea!
4. Wear comfortable cloths; avoid tight dresses.
5. Check out your watch. It must match with that of the exam hall. Make sure you have the hall ticket, ID card, pens not pen and other essential items.
6. Many students have their own magic superstitious items like a particular pen, ring locket etc. It is advised to take if you have faith in this; after all the idea is to bring down your anxiety and it works out.
7. one hour exam exclusively utilize the mind map and memory cards which you were using before.

8. five minutes before exam completely relax; close your eyes and cup with your palm. See distant visions, e.g. Sky.

9. While entering exam hall

Neurolinguistic programming can do wonders!

Day dreaming of achieving success gives you more power and confidence .The dreaming should end up with imagination of your success. Imagine all success has transformed into energy which will concentrate on your right palm and at the end you keep your hand on your chest. Consider the energy is transmitted and diffused throughout your body. Practice everyday .Now before entering the exam hall you have to keep you right hand on your chest and the imagination of transferring and diffusing the energy will be felt depending on the belief and faith you have .This correlation of your day dreaming of success and your anxiety not only decreases also you are entering the examination hall with minimum concentration of adrenaline!

Conclusion

Most students are facing academic problems in the area of studying, recollection and presentation. There are several practical techniques which could be utilized for effective learning and nourishing their outcome .These techniques are not a replacement for studies, but eases them in their preparation. Examination presentation is equally important as its preparation.

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Table 1: recommended frequency of revision

Revision	1st	2nd	3rd	4th	5th	6 th
Frequency	1 hr	24hr	1 week	1 month	6 months	as per need

Table 2: correlation of number –word for link method

Digit	Standard word	List to remember	How to remember
1	fun	boy	Boy is fun
2	tool	apple	Use tool to cut apple
3	free	car	Have a free drive

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