

Strengthening Learning Styles May Improve the Academic Performance of Slow Learners

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Abstract

Every learner has different learning styles. But many a times they are not aware about it. There is a need to make them aware and strengthen it instead of changing teaching tactics. Hence purpose of this study is find out if strengthening learning styles help slow learners to improve their academic performance.

It was an Experimental study for students who were not able to clear their first year university examination. 47 participants from three consecutive batches were selected and followed up till their next university practical examination. VARK was administered on these students & their learning style was identified. Students were made aware about their leaning style and counseling sessions were arranged for them. Counselling for strengthening learning styles was given & fortnight visits were scheduled. The outcome measure was score in the subsequent university examination. There was a significant improvement in the scores of slow learners in the subsequent university examination. Strengthening learning styles may improve the academic performance of slow learners. However more detailed study is needed to generalize the results.

Keywords: Learning style, Slow learners, Academic performance.

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Introduction

The aim of medical education is to generate the health professionals who are competent enough to handle the practical situations in real life. During the course of medical education some learners are left behind because of wide variety of reasons. These learners may be termed as slow learners. Slow learners are students who learn more slowly than their peers, yet do not have a disability requiring special education¹. One of the common reasons being not being able to cope up with the studies. However the earlier studies have reported that the accommodation of students learning styles in the learning environment have resulted in improved test scores while a mismatch in learning characteristics and learning environment resulted in poor students' achievement^{2,3,4}. However, these studies were conducted on the school going children.

There are various studies in medical education emphasizing on learning styles & academic performance of the students. A study conducted by Robert J. Murphy, et al on 31,243 participants on the VARK concluded that higher percentage of dental students use visual learning as compared to other methods & suggested that dental educators should be aware of these differences in order to explore

opportunities for making the educational experience more productive and enjoyable⁵.

Also there are studies which has studied in details about the learning styles of students & their academic performance. Several studies have shown that academic performance of university students is related to their learning styles. These studies have concluded that the learning style has its own effect on academic performance of students^{6,7,8,9}. But all of these studies suggest that teachers or educators should modify their teaching strategies according to the needs of learner.

There are many instruments available to study students' learning styles. Some are designed for general purpose and others are for specific area of studies. Among them are index of learning styles (Felder and Spurlin, 2005), Kolb's learning styles inventory (Lis, 1984), pharmacist's inventory of learning styles (Pils, 2003) and the Grasha-Riechmann Student Learning Style Scales (GRSLLS)⁸. Irrespective of the instrument used, many studies have shown that learning style plays an important role in the academic performance of college students.

What is lacking in the literature is effect of accommodation of these learning styles by learners on their academic improvement. There are no studies conducted on physiotherapy students that have considered learning styles as one of the intervention to achieve desired academic performance.

Taking into consideration these two factors, aim of this study was to study if through counselling, learners can be made more aware about their own learning style & thus accommodating their own learning style in the self learning period between the previous summative

examination & subsequent summative examination & thereby if the academic performance is improved.

Objectives of the study were to identify the learning styles of the students, to counsel the students, to review their university examination results and to check if there is any improvement in performance.

Method

Design: It was an experimental study.

Participants, therapists, centres: Physiotherapy curriculum in Maharashtra is of four years with six months compulsory internship. Of this the first two years are preclinical & next two years are related to clinical area. For this study the first year students were chosen. Ethics committee approval was obtained prior beginning the study. For this study students who could not clear summative examination (S1) in the first year were taken up. Total of 47 students from three consecutive batches were identified. On a specified day for each batch these students were called & VARK questionnaire was administered to them after clearly explaining about the purpose of the study. Out of 47, five students were not comfortable with the idea of the study & hence dropped out from the study. After analysis of the VARK questionnaire, the remaining 42 students were divided into various categories (unimodal or multimodal). Unimodal category reflects the use of predominantly any one of the modality i.e. either visual, aural, read/write and kinesthetic. Multimodal category reflects the use of more than one modality. It can be a combination of any of the four modalities mentioned above.

Intervention: At first, students were made aware about their learning styles. They were informed about the category in which they fall into, i.e. either unimodal or multi modal. If unimodal, the dominant category which each student utilized was told to each one. Similarly if multimodal, each student was made known about which two or three category a particular student was more comfortable with. Intervention was primarily given in the form of counseling to understand and keep using these learning styles. These students were counselled with the help of a psychologist to continue to use their learning styles during self learning time of four months before appearing for the next university examination. Having already attended the lectures in previous year, it was a time for them to revise the stuff, this time with a difference. They were suggested to use those learning strategies which they are more comfortable with rather

than copying the roommate or simply mugging up the things. Thus it was an attempt to strengthen their learning styles. Students were given the liberty to get in touch with either the author or psychologist in case of any need. Also fortnightly informal visits were made to these students. Students found it to be interesting & were ready for the next university examination with more confidence. Also previous studies has reported that there may be a change in learning strategy over a period of time. Keeping this in mind, the VARK questionnaire was again distributed after a period of one year. Their performance in the previous (S1) and latest next summative examination (S2) was taken as a guide to prove the effectiveness of intervention. Student's feedback (F & each feedback was given a number as F1....) was obtained after they appeared for the next summative examination regarding their experience in the form of narrations. Detail record of these meetings, feedback given by the students & marks obtained during the examination was kept.

Outcome measures

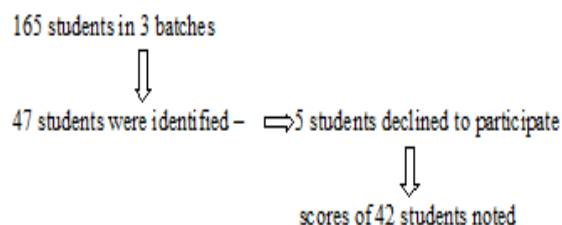
Primary outcome:

- Types of Learning styles of participants
- Scores in the university examination.

Data analysis: Wilcoxon signed rank test was used to find out if there was a statistically significant improvement in academic performance of the participants in subsequent university examination.

Results

Flow of participants, therapists, centres through the study



Out of 42 students who participated in the study, 33 were females & 09 were males in the age range of 17-19 at the time of enrolment in the study. Following is the distribution of students according to their preferred learning style. Majority were categorized into multimodal category, showing their urge to learn by using various tools available.

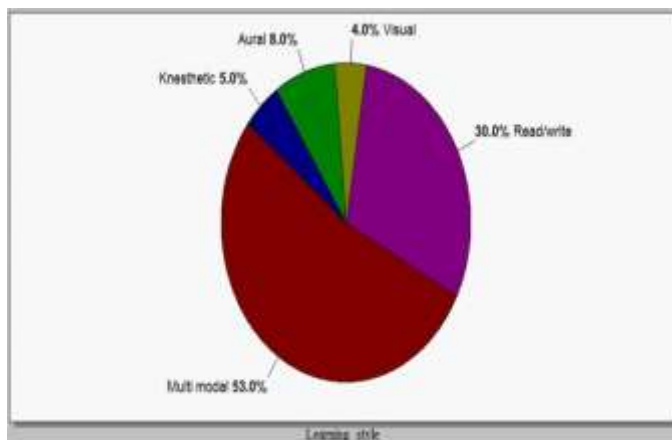


Fig. 1: Pie diagram showing the distribution of students according to the learning style

Table 1: Shows improved performance of the students after the intervention which is also statistically significant

VARK Category	Marks obtained in previous university examination S1	Marks obtained in latest university examination S2	Wilcoxon signed rank test
Visual	48%	55%	Z=-0.0187(p=0.05)
Auditory	47%	56%	Z=-0.0177(p=0.05)
Read / write	49%	59%	Z=-0.087(p=0.05)
Kinesthetic	46%	59%	Z=-0.0127(p=0.05)
Multimodal	47%	57%	Z=-0.0157(p=0.05)

Some of the feedback notes shared by our students:

F1- I feel I have renewed myself with my old arms but feel more confident to face the challenge.

F7- I had lost confidence with the result of my university examination.

F23- earlier I was just imitating my roommate to achieve the desired results from myself. Now I have learnt that I am different from my roommate. I should use those strategies that I am comfortable with & should not blindly follow the so called intelligent boys.

Discussion

Results of the study indicates that if the student depends on his own learning style or in other words strengthens his own learning style while regular study, it will help to improve academic performance. Each student has his /her learning style in which he/she is most comfortable for understanding a particular topic or to master a technique of treatment. With failure in the study, this confidence in our own learning style is shattered & students try to imitate the best student in the class or a senior during their study. For example if a student has a learning style of visual type & for some reason resort to auditory means of learning, he may not be able to do so well during the examinations. The results of the next summative examination S2 were compared with previous summative examination S1. It was found that there is a drastic difference in scores of 87% of students. This suggest that the intervention of

counselling regarding strengthening own learning style had a positive effect on the performance of the students.

Previous studies have suggested that the teacher should employ various strategies to boost learning styles of students 5. But in the opinion of author, it is not possible for a single teacher to modify his teaching strategy according to the number of students in an individual class. On the other hand it would be better make the students understand their own learning style & keep adapting to them while studying.

It is learnt from the present study that students have significantly different learning styles. This finding is in accordance with other studies also⁶. In the present study we did try to correlate the learning style with academic performance. For this their performance in s2 was taken as a guide. There were two students who on first analysis found to visual learner, but in the due course of study changed their learning strategy to kinaesthetic. This must have occurred as a result of changing scenario from one higher class to the next higher class, being into the clinical area where the things are really different. But the percentage of these students i.e. 0.03 is very small to comment on this aspect of learning style. In future a separate study can be undertaken to understand this aspect more clearly. Similar study can also be done for formative assessment since there is a better scope of improvement which can be more helpful for summative examination.

Conclusion

From the study it is concluded that instead of changing the teaching tactics by the teachers for individual students it is better to make the students reflect on their own learning style & try to strengthen it. This may also help to develop more constructive dialogue between the faculty & students. A strong commitment on the part of the educator is needed for improving the performance of students. At the most what a teacher may do is that he may incorporate more active learning strategies such as small group activities, or better power point presentations with more pictures or in class discussions, during his regular teaching sessions. But the crux of the study is strengthening learning styles may help the slow learners to improve academic performance.

Ethics approval

The PDVVPF's College of Physiotherapy Ethics Committee approved this study. All participants gave written informed consent before data collection began.

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