

SHORT COMMUNICATION

Peer Tutoring as a Remedial Measure for Slow Learners in a Medical School

Ray (Arora) Suranjana^{1*}, Ray Ujjani², Ray Manas Kanti¹

¹Department of Physiology, Medical Education Technology Cell, Indian Ocean Medical Institute Trust Sir Seewosagur Ramgoolam Medical College, Belle Rive, Mauritius, ²Department of Student Second Professional, Anna Medical College and Research Center, Mauritius

Abstract:

Background: A Slow Learner (SL) is one who has the ability to learn necessary academic skills but at a rate and depth below average of the same age peers. *Aims:* To identify SL we have to judge them not just by their grade level, but by the fact that they master skills slowly, have difficulty following multistep directives, live in the present and do not have long term goals. The remedial measures for these SL were repetition, peer tutoring, enhancing their self-esteem and improve confidence. With correct monitoring, support and feedback from a teacher facilitator peer tutoring can provide deeper learning, reduce dropout, and improve social behavior. *Objective:* The aim was to identify SL and to peer tutor them. *Material and Methods:* In a group of 106 students in the first year of MBBS in a college in Mauritius 20 students were identified as SL, out of the other 86 students 2 to 3 students were selected as peer tutors. The sample size on which the questionnaire was used to determine slow learners were 106 out of which 20 were found to be slow learners. The peer tutors were selected among the 106 students. The facilitator trained the tutors. *Conclusion:* In our Institute we found an alarming 15-18% of SL. The SL responded positively to the peer tutoring and a significant number improved their academic performance. Peer tutoring has significant cognitive gains for both tutor and tutees. Peer tutoring improves self-confidence, academic achievement, improves their attitude towards the subject matter and encourages greater persistence in completing tasks. Identifying SL has many pitfalls as we should confirm that they are not 'reluctant' or 'struggling' learners but SL.

Keywords: Medical School, Peer Tutoring, Remedial Measure, Slow Learner

Introduction:

The slow learner doesn't have the same cognitive ability as the other students in their class, the characteristics of a slow learner has to be understood to deal with them in the mainstream class. The slow learner cannot do complex learning i.e., learning which involves complex thoughts. They are usually anxious, have low self-esteem and poor concentration skills. They have problem transferring what they have learnt from one task to another. They have trouble mastering multi-step instructions. They live in the present and have no long-term goals [1]. In a medical school the curriculum content is vast and the time span limited. Most medical schools don't give the students much leeway in using their own learning strategies. Most of the teaching hours at the medical school are assigned to learning theoretical knowledge from didactic lectures and practical and clinical skills from doing and experiencing. The curriculum design is unscientific not taking into consideration different learning styles of the student and definitely not giving any thought to the slow learner. With the medical schools taking in a certain percentage of students whose academic performance was not taken into account at the time of admission, the teacher has no choice but to include the slow learner in the mainstream classes. The cost of education, the academic burden and the competitiveness in a medical school environment gives little or no leeway to slow learners. The entry into most medical schools is

linked to their academic performance and scores at the “A” level or class XII examination. The vast curriculum, the huge expectations of the teachers and parents put an emotional burden on the students. Such students are the ones who go on to becoming Slow Learners (SL) [1].

These learners pose a problem not only for themselves but also for their teachers. Repeated poor performance causes these students to become a burden not only to their parents but also to the medical school. A student learns better from his/her peers than from adults. The slow learners can be taught by peer tutoring. The peer tutors who have the time and commitment to teach the slow learners can be trained to teach those [2]. It has been reported that 18% of students in USA schools are slow learners [3].

The aim of the present study was to identify the slow learner and their problems and to innovate a method sticking to the time constraint and devise a method to streamline their learning and include them in the main stream students. The objective was to use peer tutors; tutors who have been selected, trained to reinforce the topic already taught by the teacher. Hence to find the outcome of peer tutoring on the learning outcome of slow learners.

Material and Methods:

In a medical school in Mauritius of 106 students studied. 20 students in the first year were identified as slow learners. The slow learners had the characteristic that they had low self-esteem, poor concentration skills, inattention in class, poor grades, procrastination in submitting assignments and their preference to work with their hands rather than theoretical learning. To identify students as slow learners a questionnaire was used which included following questions:

1. Is the student’s grade below the class average? (mention class average)
2. Is the student attentive in class?
3. Does the student submit assignments on time?
4. Is the student aware that his scores are below average(i.e has metacognitive skills)?
5. Does the student have good (verbal and non-verbal) communication skills?
6. Does the student suffer from poor self esteem?
7. Is the learning style of the student Kinesthetic (works well with hands –on work?)

For answering following options were given: always, often, sometimes rarely and hardly ever.

This questionnaire was filled by the teachers of first year MBBS. To act as peer tutors 2-3 students from the same class were chosen. The characteristics necessary to act as peer tutors was better at academic performance, good communication skills, able to explain concepts with clarity and empathy towards slow learners [1]. The peer tutoring was performed after the tutors were trained by the faculty during tutorial or group study hours and the scores and academic performance of the slow learners were subsequently noted [2].

Results:

A significant increase in learning capacity and academic performance was observed. Grades improved by 20-30% and thinking and analytical skills by 15-24%. The result of peer tutoring showed a 20-30% increase in scores in subsequent tests after peer learning ($p < 0.001$) (Table 1). The slow learners also developed good metacognitive skills and learnt to communicate with the peer tutors, their teachers and other students. They showed a marked improvement in self-esteem.

Table 1: Analysis of Criteria Before and After Peer Tutoring to Determine the Significance Level N=20

| Q. No. | Criteria | Pre-test (percentage of marks) | Post test (percentage of marks) | Level of Significance (p value) |
|--------|---|--------------------------------------|---------------------------------------|---------------------------------------|
| 1 | Grades Formative Assessment | 21.3± 0.87 | 22.8 ± 1.71 | p < 0.001 |
| 2 | Grades Summative Assessment | 28.3±1.35 | 30.4±2.22 | p< 0.001 |
| 3 | Analytical ability (judged by problem solving ability using problem based learning) | 34.3±2.34 | 36.9±2.36 | p<0.001 |
| 4 | Thinking Ability (using case solving and problem solving) | 35.3±2.59 | 39.3±4.65 | p<0.001 |
| 5 | Communication Skills (ability to present seminar, answering in Viva voce) | 38.6±0.90 | 40.3±4.78 | p<0.12 |
| 6 | Ability to follow multi-step directions (practical performance) | 40.0±1.35 | 43.0±4.17 | p<0.001 |

Values are mean ± S.D

Discussion:

Each student has his/her learning style. A learning style is a student's consistent way of responding to and using stimuli in the context of learning. Keefe (1979) defined learning as the composite of characteristic cognitive, affective and physiological factors that serve as an indicator of how a learner perceives, interacts with and responds to the learning environment. If the learner knows his strength or weakness he can decide on a proper learning strategy [4].

Peer tutoring makes the slow learner feel they are not alone, it boosts their self-esteem. The slow learner is more open to suggestion from peers than the teachers. The slow learner gets a boost in ego when their peers praise their progress. The slow learner discusses their cognitive difficulties easily with their peers. The peer tutors has the time to teach the learner at a pace they are comfortable with. The peer tutor helps boost resilience and reframes the lesson so that the slow learners learn

at own pace. The peer tutor made them feel that they had the ability to overcome their difficulty [5, 6].

Each slow learner was judged by the teacher and a like-minded peer tutor who is assigned to them. This peer tutor is one who encourages learning by helping the slow learner to identify their metacognition strategies (i.e. to identify what helps them progress their learning ability). The slow learner is more relaxed working with their peers while learning and were better able to concentrate [7]. Tutoring by peers seems to facilitate improvement in the tutors and tutees by improving self-concept in both. As the slow learner progresses the concept of role reversal can be done. The best way of learning is to teach others. Peer tutors are given explicit directions and training [8].

Peer tutoring was an effective way to provide appropriate level of instruction to students. This is important to slow learners who are in dire need for

additional instruction time. Krishnakumar P *et al* (2011) suggested that every school should have a resource room with facilities provided for remedial teaching to children with learning problems. They used Seguin form board test to identify slow learners [9]. Three methods to transfer learning-read it, explain it, draw a picture of it and then reinforce it [10]. Peer learning benefits can be assessed by assessing the learning outcomes of peer teaching. Peer tutors can make the slow learners feel comfortable and can relate to them. Once a slow learner improves his learning outcome he/she can be considered a future peer tutor as they are better able to empathize with the slow learner.

Learning takes place from simple to complex. If for some reason the student has not learnt the basics, it is futile to teach him the advanced topics. Remedial teaching is revising the topics taught before repeatedly to help enhance cognition. Careful analysis of the students' performance in the examination and diagnosing the areas of difficulty are key aspects in remedial teaching. Once the difficult areas are identified, the next task is to plan the learning experiences to teach the basics to understand the given topic [11]. Teachers often feel that what has not been learnt at the primary level, cannot be taught simultaneously with the prescribed topics at the secondary level as they are busy completing the syllabus. Experience shows that once the basics are taught, the learning process is accelerated and the slow learners comprehend and grasp the given topics of the class, since they have already attained the mental age to understand the topics taught [12].

During remedial teaching first the slow learners are identified, then cause of slow learning is found which could be a varied as lack of motivation, poverty, poor health, ineffective learning habits. A

part of remedial teaching is providing emotional security to the learner [1].

Students learn a lot from the peer group. Unconscious learning does not take place if students are segregated. Keeping the slow learners in the peer group of bright students and paying individual attention to them by the teacher will enable them to overcome their difficulties. Skills of metacognition should be taught along with curriculum. Corrective procedure if possible should be used individually; a type of remedial teaching where past errors of learning are corrected and repetition of earlier flaw prevented. Then the outcome of remedial peer tutoring should be found [13].

The diagnosis of the flaws in the slow learner can be found by pretest and after peer teaching improvement can be determined by post test. A significant difference in scores would mean that the peer teaching has been effective. If the learner is still lagging in performance suitable modification of method has to be used. Slow learning is apparent when students struggle with tasks but have no other obvious attitudinal or motivational difficulties. Underachievement is apparent when students fail to match up to expectation [14, 15]. Teaching underachieving students can be more difficult than teaching students who are doing well enough or very well. When students underachieve, their talent and ability find no expression. They are likely to become disaffected, and may well disrupt others. As we fail, our job satisfaction drops and the ethos and morale of the group and community suffer. Underachieving pupils present a challenge we have to respond to [16, 17].

Resolving underachievement teaches us a great deal about learning, and makes teaching as rewarding as it gets [18]. A schools context value

added (CVA) is calculated by achievement of students i.e. the previous results compared with present. But what is important is not attainment which is defined by cohorts' end-of-key stage test and exam results but achievement which is

broader and includes the progress and also incorporates the maturity and social behavior of a learner. So if a student is to be judged he is compared with the progress he has made and not the general result of the entire class [19, 20].

References:

1. Malik S. Effect of intervention training on mental abilities of slow learners. *Int J Educ Sci* 2009; 1: 61-64.
2. Dale M. Peer tutoring: children helping children. *The Exceptional Parent*; 1979 9:26-27.
3. Carrol S. Slow learners in the regular classroom: A handout for teachers, In. A S Canter and S A Carroll (Eds), *Helping Children at home and school*, Handouts from your school psychologist 1998: 205-206. Bethesda MD: The National Association of School Psychologists USA.
4. Keefe J.W. Learning style: An overview. In. J.W. Keefe (Ed.). *Student Learning Styles: Diagnosing and Prescribing Programs*. Reston, VA: National Association of Secondary School Principals. 1979: 1-17.
5. Lipton HL, Laic J, Cutler I W *et al*. Peer to Peer Inter-professional Healthy Policy Education for Medicare Post D. *Am J Pharm Edu* 2010;74(6):102.
6. Ellison DG. 'Tutoring'. In NC Cage (Ed), *The Psychology of teaching methods*.1976: 130-165.
7. Goodlad S. The effectiveness of peer tutoring in higher education: a typology and review of the literature. In: Goodlad Sinclair., editor. *Mentoring and Tutoring by Students*. London: Kogan Page; 1998: 49–69.
8. Holschuh JP. Do as I say, not as I do: high, average, and low-performing students' strategy use in biology. *J Coll Read Learn* 2000; 31: 94–108.
9. Krishnakumar P, Geeta MG, Palat R. Effectiveness of individualized education program for slow learners. *Indian J Pediatr* 2006; 73: 11-13.
10. Piaget J. The theory of stages in cognitive development. In: Green D. R., Ford M. P., Flamer G. B., editors. *Measurement and Piaget*. New York: McGraw-Hill; 1971.
11. Anderson RA and Wilson PT. What they don't know will hurt them: the role of prior knowledge in comprehension. In J Osborn (Eds) *Reading education: Foundations of Literate America*, Lexington Books 1986: 319-328.
12. Blanchard J. Up close and personalised—boosting creativity and individual learning', Curriculum Briefing: Restructuring learning—changing curriculums. *Optimus Education* 2007; 5(3).
13. Ray Suranjana and Ray Manas Kanti. Incorporation of peer learning in first MBBS curriculum to enhance metacognition skills. *Al Ameen J Med Sci* 2012; 5(4):339-341.
14. Maheady, L. Peer-mediated instruction and interventions and students with mild disabilities. *Remedial & Special Education* 2001; 22(1): 4-15.
15. Kathrin F. Stanger-Hall, Sarah Lang, and Martha Maas. Facilitating Learning in Large Lecture Classes: Testing the “Teaching Team” Approach to Peer Learning. *CBE Life Sci Educ* 2010; 9(4): 489–503.
16. Krishnakumar P, Jisha AM, Sukumaran SK *et al*. Developing a model for resource room training for slow learners in normal school. *Indian J Psychiatry* 2011; 53(4):336-339.
17. Libarkin and Mencke, 2001. Libarkin J., Mencke R. Developing training for undergraduate peer-teachers in an innovative program in undergraduate education. *J Coll Sci Teach* 2001; 31:235-239.
18. Topping KJ. The effectiveness of peer tutoring in further and higher education. A typology and review of literature. *Higher Education* 1996b; 32:321-345.
19. Bloom BS. *Taxonomy of Educational Objectives: The Classification of Educational Goals*. Chicago: Susan Fauer Co; 1956.
20. Crowe A, Dirks C, Wenderoth MP. Biology in Bloom: implementing Bloom's taxonomy to enhance student learning in biology. *CBE Life Sci Educ* 2008; 7(4): 368–381.

*Author for Correspondence: Dr. Suranjana (Arora) Ray, Associate Professor, Department of Physiology, IOMIT's S.S.R Medical College, Belle Rive, Mauritius. Cell: 9932983370 Email: suranjana.ray64@gmail.com