

**Original research article**

## **Skill lab for BLS Training**

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### **Abstract**

Despite the fact that it is general known that skills lab training has a number of favourable benefits, there is a shortage of evidence on the efficacy of skills lab training over a longer period of time. This is despite the fact that it is common knowledge that skills lab training has beneficial effects. In spite of the fact that the benefits of skills lab training have been the subject of much study and documentation, this continues to be the situation. As a consequence of this, we made the decision to carry out a prospective, randomised controlled trial with a follow-up period of either three or six months to investigate whether or not students who were instructed in accordance with a "best practise" model (BPSL) performed one skill of different suturing in a simulated environment better than students who were instructed in accordance with a traditional "see one, do one" teaching approach (TRAD). The research analysed and contrasted the levels of performance achieved by the two distinct groups.

**Keywords:** Skill lab, training, clinical practice, seeing and doing

### **Introduction**

The clinical skills laboratory at a medical school is an integral part of the comprehensive educational programme that is given by the educational establishment where the clinical skills laboratory is housed. This is the case since the clinical skills laboratory is where students learn how to perform clinical procedures. It provides a safe and "mistake forgiving" setting, in addition to a teaching environment that enables students to carry out procedures on one other in order to enhance their procedural abilities before applying them to actual patients. In other words, it allows students to practise their skills before applying them to real patients. Students are provided with the opportunity to obtain expertise in an environment that is not only risk-free but also instructs them on how to carry out operations [2-4]. It has been shown that training in skills laboratories may increase procedural abilities not only in novices but also in seasoned experts who have years of experience [5-8]. This is true for both beginners and those professionals who have already accumulated a lot of knowledge. This is true for people who are just starting out as well as those who have already amassed a significant amount of information. This is essential in order to have an in-depth grasp of complex surgical methods [8], in addition to the essential clinical skills that students practise while they are enrolled in medical school [9]. In addition to this, it would appear that there is evidence that simulation-based medical education is beneficial (also known as SBME), which is a factor that, when present in a clinical environment, favourably influences the outcome [10, 11]. This would appear to be evidence that SBME is a factor that, when present in a clinical situation, positively impacts the outcome. The presence of simulation-based medical education in a clinical setting is a factor that has the potential to favourably affect the outcome of the scenario. Issenberg and colleagues present a systematic review in which they identify characteristics that play a part in choosing how successful SBME is [5]. In this study, the authors highlight the factors that are taken into consideration. The authors of this review concentrate their attention on aspects of SBME that play a role in determining the effectiveness of the treatment. The authors of this investigation shed light on the various components by providing this. This review was carried out so that the writers could have a discussion that was more in-depth regarding the components, and it was for this reason that the review was carried out. Because it permits insight into the efficiency of the operational procedures, educational feedback is necessary to be present as one of the essential components that must be present. Because of this, educational feedback is required to be present as one of the fundamental components that must be present. This is the situation due to the necessity of including instructional feedback as one of the core components that must be included.

In addition, there are words of simulators such as "validity," "integration into curriculum," and "deliberate practise" that are some of the phrases that contribute considerably to the exceptional success of the SBME. These phrases are examples of some of the terms that contribute to the remarkable success of the SBME. These are some instances of terms that contribute to the remarkable performance of the SBME, and they are examples of terms that are included in this list. On the other hand, there is an alarming lack of information that addresses the impacts over a more extended period of time. This is a

serious obstacle to the progress being made. Maintenance of the procedural skills taught during SBME, despite the fact that it is common knowledge that practical proficiencies drop over time if they are not maintained, which is not something that is often trained <sup>[12]</sup>. This is despite the fact that it is common information that practical proficiencies diminish over time if they are not maintained. Despite the fact that it is general known that practical proficiencies are lost over time if they are not maintained, this is what has been seen. This is because training for practical proficiencies is not something that takes place very frequently. This is the root cause of the problem. Continuous training is not necessary for it because it is not something that has to be maintained. Since this is the case, there is no need to maintain it.

**Aims and Objectives**

In order to acquire BLS skills, it is vital to initially investigate and comprehend the difference between skill lab teaching and clinical practice, which comprises of viewing and carrying out the procedure. In order to proceed with the process of learning, this is the first step.

**Materials and Methods**

This research was carried out at the Srinivas Institute of medical Sciences in Mangalore's Department of Critical care and Emergency. The research was conducted between Jan 2021 and January 2022.

The study was carried out on students who were in their second year. The task of BLS training was taken. One hundred different students were chosen for the research project, and once they were all assembled, they were split into two groups.

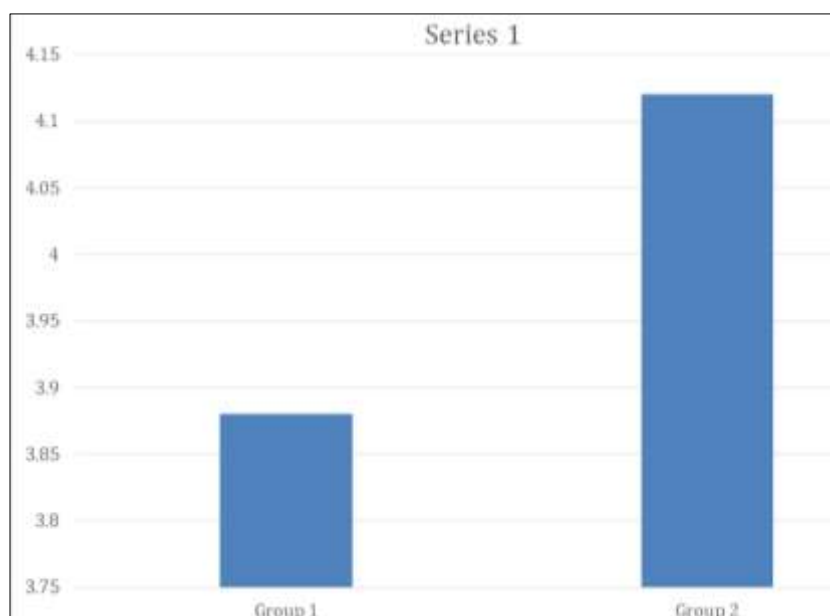
The first group of students went through their training in the skill lab, while the second group of students went through their training in the casualty (only watch). Three code blues were observed.

After receiving instruction for three months, participants took part in an OSCE test that was administered in the skill lab, and their results were compared.

**Results**

**Table 1:** Pre training OSCE marks

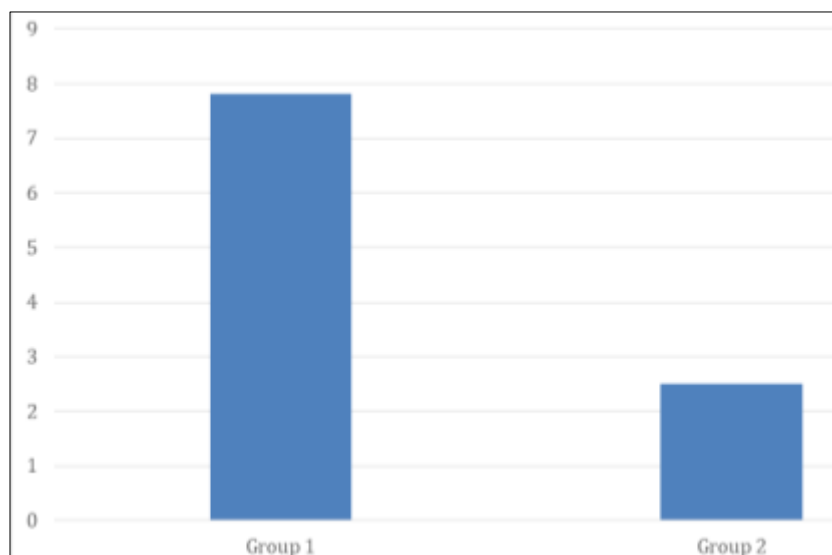
Group 1	Group 2	P-Value (<0.001)
3.88± 0.39	4.12 ± 0.56	No Sig



**Image 1:** OSCE Marks

**Table 2:** OSCE marks after 3 months

Group 1	Group 2	P-Value (<0.001)
7.82± 2.43	2.5± 2.35	Sig



**Image 2:** OSCE marks after 3 months

### Discussion

It would appear that theoretical knowledge is retained better than practical abilities, and it would appear that one's capacity to do simpler activities tends to be lost at a slower pace than one's ability to complete more complicated activities<sup>[13, 14]</sup>. Moreover, it would appear that theoretical knowledge is preserved better than practical abilities. On the other hand, it would appear that theoretical knowledge is preserved more effectively than practical talents. It would indicate that theoretical knowledge is more likely to be retained over time than practical expertise, on average. This is due to the fact that theoretical knowledge is more abstract than practical knowledge. Studies on the long-term retention of procedural skills have, for the most part, concentrated on the numerous abilities that are taught in basic and advanced cardiac life support training. This is because these are the skills that are most likely to be employed in an emergency. This is due to the fact that these being the talents that are most likely to be utilised in the event of an unexpected emergency. This is because these are the skills that are most likely to be required in the event of an unforeseen emergency. As a result, this is the reason why this is the case. This is due to the fact that they are the kinds of talents that are most likely to come in handy in the case of anything unexpected happening. Therefore, this is something that needs to be taken into account, so keep it in mind. In the current scenario, it is conceivable to prove that a detectable drop in performance began as early as a few weeks after the commencement of first training, or it is possible to demonstrate that it began as late as an entire year later. Either way, it is possible to establish that it began as early as a few weeks after the starting of initial training. In either scenario, it is feasible to demonstrate that the decline in performance started at some point in time following the beginning of the initial training. It is not difficult to establish that the performance drop occurred at some time after the beginning of the initial training in any of these scenarios. The most significant drop occurred between 6 and 12 months following the beginning of the experiment<sup>[15-18]</sup>. This was also the period during which the decline was the biggest. During this particular window of time, the pace of decrease was at its highest point, and the importance of this fact was also at its highest point. Studies on the effectiveness and retention of other skills that are taught in an SBME environment have been carried out on a considerably less frequent basis in comparison to the frequency of other types of studies. Additionally, there is a considerable level of variety about the skills done, the subjects of the research, and the training procedures; all of these aspects add to the challenges that are associated with evaluating the results. In addition to this, there is a significant amount of variation in the talents that are demonstrated during the competition. There are several examples of this phenomenon, some of which include surgical residents maintaining their competence in laparoscopic surgery or colonoscopy after three months<sup>[13, 19]</sup>, nephrology fellows experiencing a significant decline in their ability to insert temporary haemodialysis catheters after six months<sup>[20]</sup>, and trained anaesthetists maintaining satisfactory retention of a rare but crucial procedural skill like coniotomy up to a year<sup>[21]</sup>. Due to the fact that the data that have been collected have been so varied, it is exceedingly difficult, if not impossible, to arrive at any conclusions on the effectiveness of skills lab training for medical undergraduate students. Because of this, it is quite challenging to get any kind of judgement on the effectiveness of the training. In conclusion, the components that contribute to the long-term retention of SBME training abilities have a constrained range of application in terms of the domains in which they may be applied. Our current understanding of these components has a limited range of application. This is due to the fact that there is a general lack of data, there are shortcomings in the study design (such as variability in training techniques, number of redundant practising, etc.), and there is diversity in assessed skills with regards to the degree of difficulty of the abilities that are being

evaluated. Data are very lacking across the board in every aspect. This is due to the fact that there is a substantial gap in the quantity of data that is easily accessible. The "best practise" skills lab training that is carried out within an SBME environment incorporates a variety of different instructional components. Instructional methods such as Peyton's "Four-Step Approach," which aims to provide a dependable and yet very popular teaching method<sup>[22]</sup>, as well as feedback and repetitive practise as essential components of effective SBME<sup>[5]</sup> are some examples of the types of instructional strategies that are included in this category. Another type of instructional strategy that is included in this category is feedback<sup>[5]</sup>. Feedback is an essential component of effective SBME. In this regard, the European Resuscitation Council<sup>[23]</sup> mandated that it be included as a mandatory component in the training that is provided as part of the resuscitation training courses that it delivers and that it be included into the training that is provided as part of the resuscitation training courses that it delivers. In addition, it mandated that it be included into the training that is provided as part of the resuscitation training courses that it delivers. Of addition to this, it specified that it be included as a mandatory component of the training that is delivered as a component of the resuscitation training courses that it conducts. There is, however, evidence that is contradictory regarding whether or not skills lab teaching that follows a "best practise" approach (BPSL) leads to a better performance than other established teaching methods, such as a more traditional teacher-centered "see one, do one" approach (TRAD), which is a primary component of clinical bedside teaching<sup>[24]</sup>. This is because the "best practise" approach to teaching skills in a skills lab is known as the "best practise" approach to teaching skills in a skills lab. This is due to the fact that BPSL stands for the "best practise" approach to skills lab education, whereas TRAD stands for the "see one, do one" method. This is due to the fact that the "best practise" technique of teaching skills in a skills laboratory is also known as the "best practise" approach to teaching skills in a skills laboratory. This is the rationale behind why things are the way they are. This is due to the fact that BPSL refers to the "best practise" approach to skills lab teaching, whereas TRAD stands for the phrase "see one, do one." As a direct consequence of it, this predicament has materialised. Students are able to acquire information through this kind of instruction by seeing a knowledgeable medical practitioner as they demonstrate and discuss the application of a certain skill<sup>[25]</sup>.

### Conclusion

It implies that teaching skills in a lab setting is significantly useful for the reproduction of basic abilities when it comes to performance tested over a longer period of time. This is the case since teaching takes place in a more controlled atmosphere. This is especially true for those skills that need a higher level of complexity.

### References

1. Ziv A, Ben-David S, Ziv M. Simulation based medical education: an opportunity to learn from errors. *Med Teach.* 2005;27:193-199. DOI: 10.1080/01421590500126718. PubMed: 16011941.
2. Barrows HS. An overview of the uses of standardized patients for teaching and evaluating clinical skills. *AAMC. Acad. Med J Assoc. Am Med Colleges.* 1993;68:443-451, 451-443. DOI: 10.1097/00001888-199306000-00002.
3. Bradley P, Postlethwaite K. Setting up a clinical skills learning facility. *Med Educ.* 2003;37(1):6-13. DOI: 10.1046/j.1365-2923.37.s1.11.x.
4. Nikendei C, Zeuch A, Dieckmann P, Roth C, Schäfer S, *et al.* Role-playing for more realistic technical skills training. *Med Teach.* 2005;27:122-126. DOI:10.1080/01421590400019484. PubMed: 16019330.
5. Issenberg SB, McGaghie WC, Petrusa ER, Lee Gordon D, Scalese RJ. Features and uses of high-fidelity medical simulations that lead to effective learning: a BEME systematic review. *Med Teach.* 2005;27:10-28. DOI:10.1080/01421590500046924. PubMed: 16147767.
6. Jiang G, Chen H, Wang S, Zhou Q, Li X, *et al.* Learning curves and long-term outcome of simulation-based thoracentesis training for medical students. *BMC Med Educ.* 2011;11:39. DOI: 10.1186/1472-6920-11-39. PubMed: 21696584.
7. Khan K, Pattison T, Sherwood M. Simulation in medical education. *Med Teach.* 2011;33:1-3. DOI: 10.3109/0142159X.2011.530320. PubMed: 21182376.
8. Lynagh M, Burton R, Sanson-Fisher R. A systematic review of medical skills laboratory training: where to from here? *Med Educ.* 2007;41:879-887. DOI:10.1111/j.1365-2923.2007.02821.x. PubMed: 17696985.
9. Lund F, Schultz JH, Maatouk I, Krautter M, Möltner A, *et al.* Effectiveness of IV cannulation skills laboratory training and its transfer into clinical practice: a randomized, controlled trial. *PLOS One.* 2012;7:e32-831. DOI:10.1371/journal.pone.0032831. PubMed: 22427895.
10. McGaghie WC, Draycott TJ, Dunn WF, Lopez CM, Stefanidis D. Evaluating the impact of simulation on translational patient outcomes. *Simul Healthc.* 2011;6:S42-S47. DOI: 10.1097/SIH.0b013e318222fde9. PubMed: 21705966.
11. Barsuk JH, McGaghie WC, Cohen ER, Balachandran JS, Wayne DB. Use of simulation-based

- mastery learning to improve the quality of central venous catheter placement in a medical intensive care unit. *J Hosp Med.* 2009;4:397-403. DOI:10.1002/jhm.468. PubMed: 19753568.
12. Arthur W, Bennet W, Stanush PL, McNelly T. Factors That Influence Skill Decay and Retention: A Quantitative Review and Analysis. *Hum Perform.* 1998;11:57-101. DOI: 10.1207/s15327043hup1101\_3.
  13. Bonrath EM, Weber BK, Fritz M, Mees ST, Wolters HH, *et al.* Laparoscopic simulation training: Testing for skill acquisition and retention. *Surgery.* 2012;152:12-20. DOI:10.1016/j.surg.2011.12.036. PubMed: 22341719.
  14. Smith KK, Gilcreast D, Pierce K. Evaluation of staff's retention of ACLS and BLS skills. *Resuscitation.* 2008;78:59-65. DOI: 10.1016/j.resuscitation.2008.02.007. PubMed: 18406037.
  15. Anderson GS, Gaetz M, Masse J. First aid skill retention of first responders within the workplace. *Scand J Trauma Resusc Emerg Med.* 2011;19:11. DOI:10.1186/1757-7241-19-11. PubMed: 21303536.
  16. Duran R, Aladağ N, Vatansever U, Küçükuğurluoğlu Y, Süt N, *et al.* Proficiency and knowledge gained and retained by pediatric residents after neonatal resuscitation course. *Pediatr Int.* 2008;50:644-647. DOI:10.1111/j.1442-200X.2008.02637.x. PubMed: 19261112.
  17. Ruetzler K, Roessler B, Potura L, Priemayr A, Robak O, *et al.* Performance and skill retention of intubation by paramedics using seven different airway devices-a manikin study. *Resuscitation.* 2011;82:593-597. DOI:10.1016/j.resuscitation.2011.01.008. PubMed: 21353364.
  18. Yang CW, Yen ZS, McGowan JE, Chen HC, Chiang WC, *et al.* A systematic review of retention of adult advanced life support knowledge and skills in healthcare providers. *Resuscitation.* 2012;83:1055-1060. DOI:10.1016/j.resuscitation.2012.02.027. PubMed: 22391016.
  19. Snyder CW, Vandromme MJ, Tyra SL, Hawn MT. Retention of colonoscopy skills after virtual reality simulator training by independent and proctored methods. *Am Surg.* 2010;76:743-746. PubMed: 20698383.
  20. Ahya SN, Barsuk JH, Cohen ER, Tuazon J, McGaghie WC, *et al.* Clinical performance and skill retention after simulation-based education for nephrology fellows. *Semin Dial.* 2012;25:470-473. DOI:10.1111/j.1525-139X.2011.01018.x. PubMed: 22309946.
  21. Boet S, Borges BC, Naik VN, Siu LW, Riem N, *et al.* Complex procedural skills are retained for a minimum of 1 yr after a single high fidelity simulation training session. *Br J Anaesth.* 2011;107:533-539. DOI:10.1093/bja/aer160. PubMed: 21659406.
  22. Peyton J. Teaching in the theatre. In: J Peyton. *Teaching and learning in medical practice.* Rickmansworth, UK: Manticore Publishing House Europe, Ltd.; c1998. p. 171-180.
  23. Sopka S, Biermann H, Rossaint R, Knott S, Skorning M, *et al.* Evaluation of a newly developed media-supported 4-step approach for basic life support training. *Scand J Trauma Resusc Emerg Med.* 2012;20:37. DOI:10.1186/1757-7241-20-S2-P37. PubMed: 22647148.
  24. Manthey D, Fitch M. Stages of competency for medical procedures. *Clin Teach.* 2012;9:317-319. DOI: 10.1111/j.1743-498X.2012.00561.x. PubMed: 22994471.
  25. Williams GC, Lynch M, Glasgow RE. Computer-assisted intervention improves patient-centered diabetes care by increasing autonomy support. *Health Psychol.* 2007;26:728-734. DOI: 10.1037/0278-6133.26.6.728. PubMed: 18020845.