

One minute preceptor as a tool for teaching histopathology slides to postgraduate students in Pathology

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Abstract

Introduction: One minute preceptor (OMP) is a tool for teaching micro skills, it is a five step method, commonly used in clinical subjects, to teach student in busy schedule of clinics in outpatient department. Interpretation and diagnosis of histopathology is an important part of postgraduate teaching programme and for that proper step wise analysis and interpretation of observation is a skill to arrive at a diagnosis. Ability to interpret varies from individual to individual. Proper understanding of student's abilities and deficiencies and to point them out is very important for individual's improvement. A teaching tool 'One minute preceptor' was tried for training students for interpretation of histopathology slides.

Objectives: To introduce the One Minute preceptor as a teaching tool for teaching histopathology slides to postgraduate students in Pathology. To study the effectiveness of OMP and to know opinion of faculty and students about OMP as a teaching tool.

Methods: This study was conducted in the department of Pathology NKP SIMS Nagpur. All 11 postgraduate students were included in the study. Base line pre - test assessment was done on various points of arriving at a

diagnosis. Post-test evaluation of learner after 10 sessions of OMP was also done on the same line as pre-test assessment. Pre -test and post- test assessment of the student were checked for any significant improvement after introduction of OMP. Questionnaire (5 point likert scale) filled by the students and feedback from faculties, were studied to know their opinion about the newer tool, OMP.

Conclusion: Most of the students found it better method & thought that it should replace conventional teaching. 94.55% agreement was there that as slides were given during daily reporting so they have to report it in practical situation as if they are working independently in the Lab. More than 90% agreement was there that this method point out negative point as well as learning gap so stimulates further reading & improvement. 89% agreement was there on the point that it helps in building confidence as positive points are also told. Only 87% agreement was seen on the point that OMP helps in developing communication. Pre- test & post- test report showed that there is significant improvement in reporting skill. Overall all the students found it as a good teaching tool & thought better than conventional method. As one to

one communication is there it is better tool for training & improvement of the individual. Most of the students wanted it more frequently i.e. every month.

Faculty found OMP as better way for individual student's improvement and should be introduced early during post-graduation, though thought to be time consuming as each & every student has to be covered.

Keyword: One-Minute Preceptor (OMP), Teaching Tool for Histopathology Slides, Medical Education.

Introduction

One minute preceptor (OMP) is a tool known as five step method or "micro-teaching" which was first described in early 1990 by Neher JO et.al¹ It was used to teach student effectively in busy schedule of clinics in outpatient departments.. It was popular as it could be learnt in 1 to 2 hours, can be practiced immediately and easy to remember for many years. The five step method included: Get commitment, Probe for supporting evidence, Teach general rules, Reinforce what was done right, and correct the mistakes. Histopathology Slide interpretation and diagnosis is an important part of postgraduate teaching programme and for that proper report writing is a skill to arrive at a diagnosis. This can be accomplished mainly by frequently seeing slides during clinical work-up of cases. It can be complemented by structured slide seminar which is held once a week in many institutions. For that proper training and understanding lacunae on individual basis and subsequent improvement is very important. So OMP can be tried as a teaching tool for diagnosis of histopathology slides during the daily reporting schedule.

Aim- To introduce the One Minute preceptor as a teaching tool for teaching histopathology slides to postgraduate students in Pathology.

Objectives

1) To sensitise students and Faculty towards OMP

- 2) To introduce One minute preceptor in postgraduate histopathology teaching
- 3) To compare the results after exposure to conventional and new modality
- 4) To collect perception of students and Faculty about OMP
- 5) To study effectiveness of OMP

Materials and methods

Study design- interventional

Study setting- Dept of pathology, NKPSIMS; NAGPUR

Study duration-6 months

Study participant- eleven post-graduate students

Inclusion- All postgraduate students who are exposed to traditional teaching at least for two months

Sample size selection - sample of convenience

1. Eleven postgraduate students who are already exposed to routine teaching programmewere included in the study. Student's base line pretest assessment was done on various points for arriving at a diagnosis.

Table-1 showed Pre-test assessment of Postgraduate students.

Pre-test assessment of Postgraduate student		
	Domains	Marks allotted
1	identification of staining	1
2	Tissue identification	2
3	Scanner view	3
4	Low power view	3
5	Cytoplasmic and nuclear details	3
6	Other additional features	3
7	Diagnosis	5
8	Explanation	5
	Total	25

Pre-test assessment was done as shown in **Table-1**.

2. Postgraduate students and two teaching faculties were sensitised to OMP teaching tool.
3. OMP was introduced; each student was exposed to ten sessions of OMP
4. Evaluation of perception of learner after 10sessions of OMP was done by post test assessment on the same line as pre-test assessment.
5. Separate questionnaires were given to get feedback about OMP from faculty and students.
6. Pre-test and post-test students assessment evaluation data was analysed.
7. Feedback in the form of questionnaire from the postgraduate students and from the faculty was also analysed. Feedback questionnaire from students was analysed according to 5 point likert scale analysis
8. Data analysis- Pre-test and post-test assessment of residents was checked for any significant improvement after introduction of OMP.

Observation and Results

Table 2-Evaluation of perception of learner about OMP

Sr.No		(1) P	(2) P	(3) P	(4) P	(5) P	(6) P	(7) P	(8) P	(9) P	(10) P	(11) P	Mean	S.D	%
A.	Slides given during reporting so very practical situation, good to have such practice for future.	5	5	5	5	5	5	4	4	4	5	5	4.73	0.45	94.55
B.	It helps individual in findings gaps in learning	4	5	5	4	5	4	5	5	4	5	4	4.55	0.50	90.91
C.	It stimulates further reading	4	5	5	5	5	5	4	4	5	5	5	4.73	0.45	94.55
D.	As one to one communication, feel comfortable even if mistakes are there	4	5	5	5	4	4	5	5	4	5	4	4.55	0.50	90.91
E.	Better way to improve the skill of approach to the diagnosis	5	5	5	4	4	5	5	5	5	5	5	4.82	0.39	96.36
F.	Knowing Positive points build confidence	5	4	4	5	5	5	4	4	4	5	4	4.45	0.50	89.09
G.	Knowing Negative points, help to avoid further mistakes	4	4	4	5	5	5	5	5	4	5	4	4.55	0.50	90.91
H.	It improves communication as presenting slide individually to faculty	5	5	4	4	4	3	4	5	5	5	4	4.36	0.64	87.27
I.	OMP is a good teaching tool	5	5	5	5	5	5	5	4	5	4	5	4.82	0.39	96.36
J	It Should replace traditional teaching completely	5	5	5	5	5	5	5	5	5	5	5	5.00	0.00	100.00
K	from which term it should be implicated (1st to 6th)	2 nd	2 nd	2 nd	1 st	2 nd	2 nd	4 th	2 nd	2 nd	2 nd	1 st			
L	How frequently it should be done(every month/6monthly)	B	A	B	B	A	B	A	A	A	A	A			

P- Participant1-Strongly disagree, 2- Disagree, 3- Not known, 4- Agree, 5- Strongly agree A- Every month B- Every 6 months

Table 3: Graph showing evaluation of perception of learner about OMP.

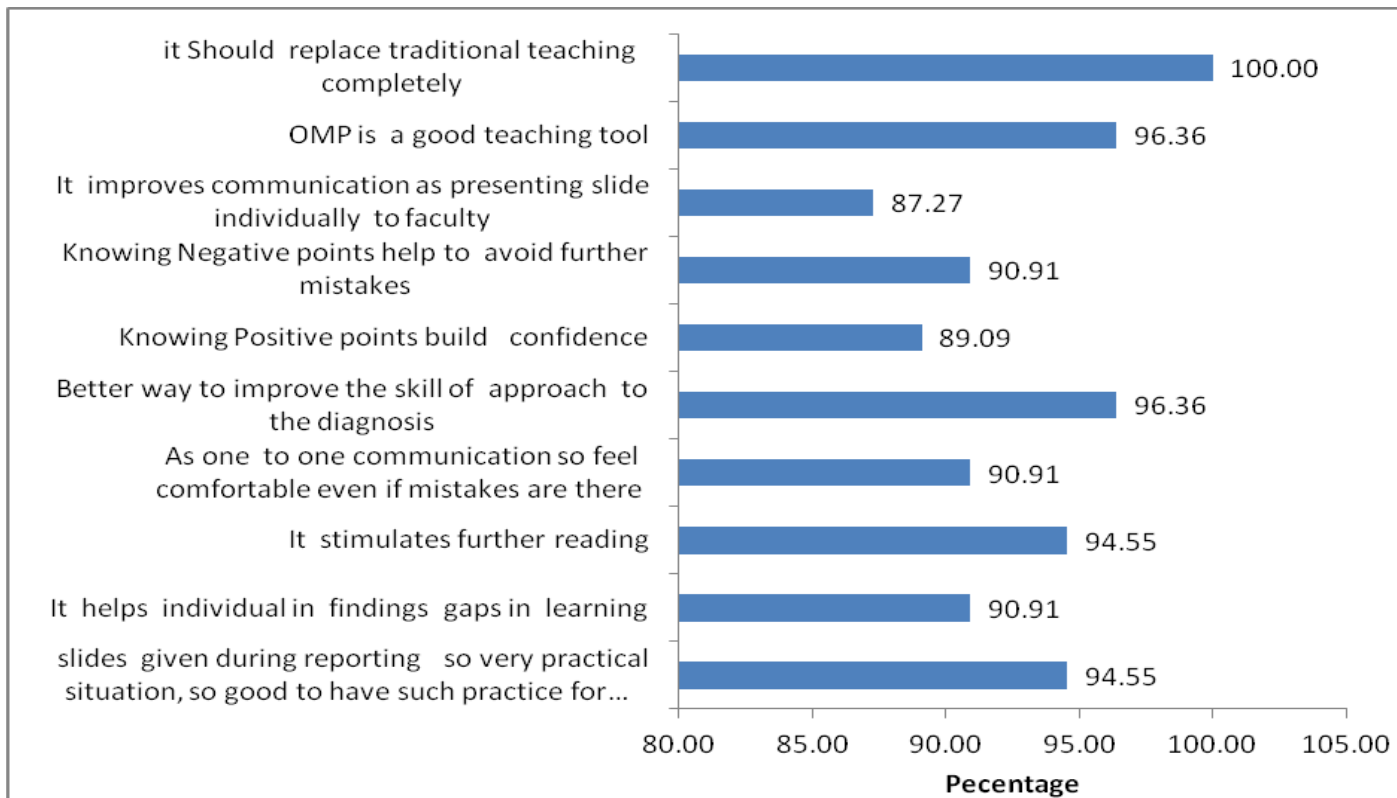


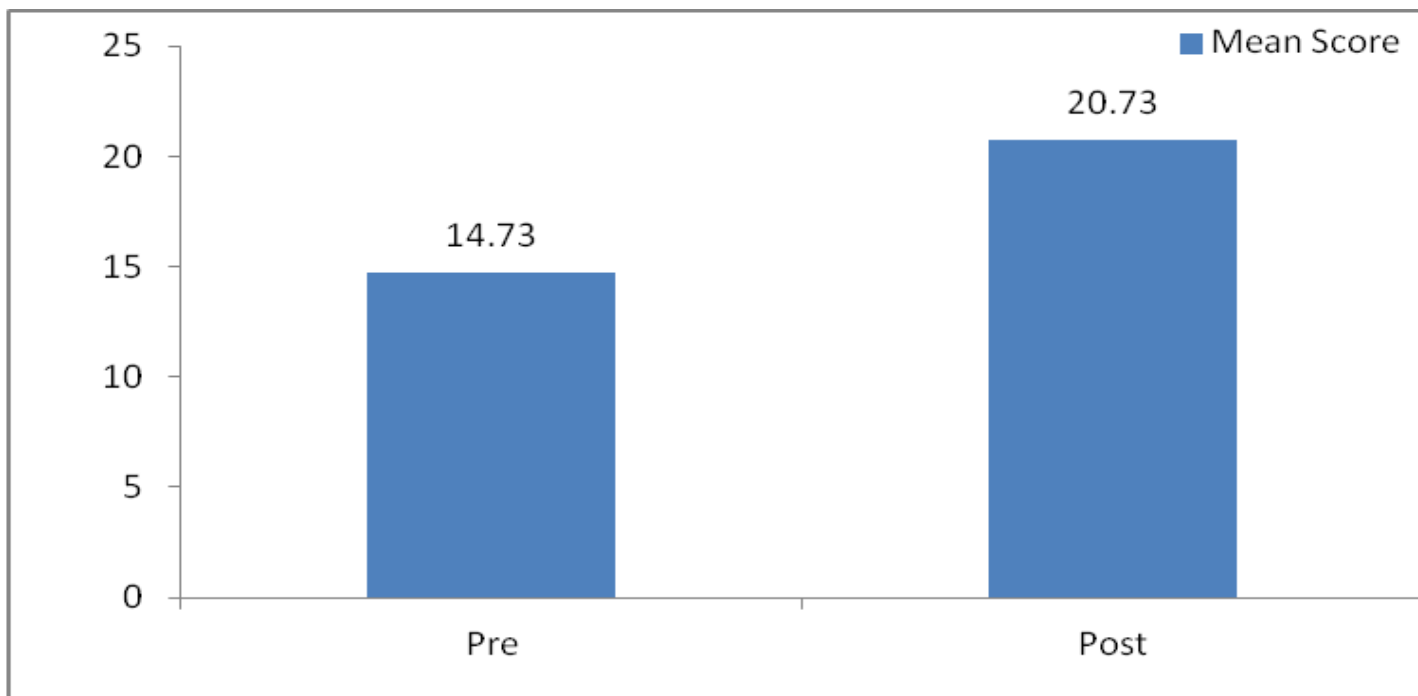
Table-4 Pre-test and post-test evaluation

No	Pre-test marks (max25)	Post-test marks (max25)	Difference
1	15	20	5
2	18	22	4
3	16	22	6
4	16	22	6
5	16	22	6
6	16	20	4
7	16	20	4
8	12	20	8
9	13	20	7
10	12	20	8
11	12	20	8
Average	14.73	20.73	6

Table-5 Statistics of pre and post test evaluation

Paired Samples Statistics from pre and post-test evaluation								
		N	Mean	Std. Deviation	%	% increase	T value	P value
	Pre	11	14.73	2.102	58.92	28.94	-12.34	<0.001
	Post	11	20.73	1.009	82.92			

Table 6- Bar diagram showing pre and post test evaluation.



Paired T test applied to pre-test and post-test evaluation

Table-7 showing Questionnaire for perception of faculty about OMP

A	Can OMP be introduced in teaching histopathology slides	Yes strongly recommended
B	Is it time consuming?	Definitely as you have to deal individually.
C	Is it effective tool to assess the student and understand individual learning gap?	Very effective as one to one interaction.
D	Is it helpful tool to give necessary tips according to individual student's requirement?	Very helpful tool as one to one interaction.
E	When it should be introduced in students academic calendar First year/ second yr /third yr	From 2nd term only.
F	Do you feel it should be applied to teach all the topics?	No, it is more to teach in general approach rather than individual topic. As it is time consuming so difficult to cover all the topics

Discussion

The One Minute Preceptor (OMP) tool of faculty development is a widely used method for skills. It is

originally designed for use by faculty in busy schedule of clinics and out-patient departments. It improves efficient clinical teaching with the use of 5 microskills. 5

microskills are: Get a commitment, Probe for supporting evidence, Teach general rules, Reinforce what was done well and Correct errors. This model can be taught in a single 1 to 2 hour seminar. It focuses on a few teaching behaviors that are easily performed. This model appears very useful for resident teaching during night calls or work rounds as they face similar time pressures as ambulatory preceptors. They also do the majority of teaching in case-based format rather than lecture, which makes this model an ideal choice to adapt for their use.^{1&2} The One-Minute Preceptor model of faculty development is a brief method. It is easy-to-administer intervention that contribute improvements in resident teaching skills. To determine the durability of the results, as well as to validate its usefulness further study is needed at other institutions. Another studies should examine the effect of a series of brief interventions to see the effectiveness in improving overall teaching ratings.² There is a major role of residents in the education of medical students and interns and there are reports spending significant amounts of time teaching medical students and colleagues.³ If the teachers role is regarded as an integral element in graduate medical education, earlier and more gradual preparation of the medical student for that role is essential.⁴ Specific training in educational methods is necessary for residents to become more efficient and more effective in their teaching. Many programs have been developed to improve the teaching of residents. But training sessions have been time-intensive for both the participating residents and the faculty teaching the courses.^{5,6}

OMP improves learner's clinical skills, clinical reasoning, and motivation for independent learning. OMP also has been shown to improve precepting skills and has

been proposed as a model that can be learned by new clinical teachers 1 micro-skill at a time.⁷

Conventionally slide seminars are included in postgraduate activity where the students are already given slides and relevant clinical details. Students read and even discuss with other fellow students and teacher in-charge of that particular activity and prepare their slides for presentation. So most of the time it is combined effort and individual's positive or negative points cannot be judged. For judgement on individual basis and improvement accordingly one minute preceptor was tried for teaching interpretation of histopathology slides.

According to learner's perception (**Table- 2 &3**) most of the students found it better method & thought that it should replace conventional teaching. 94.55% agreement was there that as slides are given during daily reporting so they have to report it in practical situation as if they are working independently in the Lab. More than 90% agreement was there that this method point out negative point as well as learning gap so stimulates further reading & improvement. 89% agreement was there on the point that it helps in building confidence as positive points are also told. Only 87% agreement was seen on the point that OMP helps in developing communication.

Pre- test & post- test report (**Table-4**) showed that there is significant improvement in reporting skill. Overall all the students found it as a good teaching tool & thought better than the conventional method. As one to one communication is there, it is a better tool for training & improvement of the individual. Most of the students wanted it more frequently i.e. every month. Statistics of pre and post test evaluation is given in **Table 5 and 6**.

Faculty found OMP as a better way for individual student's improvement and can be implemented early in

the course of postgraduate period but time consuming as each & every student has to be covered.

Study conducted by Gulati HK et al⁸, has similar findings. This study was the first which has highlighted the advantages as well as disadvantages of One Minute Preceptor in the field of pathology especially for teaching routine histopathology slides. Although the sample size of this study is small, the positive response to OMP by both the learners and faculty cannot be overlooked. However, future studies on application to a wider group of teachers and learners in pathology is needed to elucidate more on the methodology and the modifications required for its use in the department of pathology.

Students thought OMP was better compared to the traditional teaching methods as it allowed for their involvement in the decision making process and reasoning behind the decision making process. Students also felt that OMP was an extremely effective method for evaluation of knowledge, skills and teaching general rules. It was found helpful for giving feedback. No significant difference was found in asking for the diagnosis, providing positive feedback and offering suggestions for improvement by the OMP method, in contrast to our study where our student felt that positive feedback helped them to build confidence and improvement. Questionnaire for perception of faculty about OMP is discussed in **Table 7**. Considering the positive response of both students and faculty regarding feedback and individual improvement OMP can be recommended as a tool for formative assessment of individual student if done at regular interval.

Limitation of study

1. Very small sample size

2. While students were exposed to OMP, conventional teaching was also going on, so it may affect the pretest or post-test evaluation.

But to decrease the bias whether effect is due to conventional teaching or OMP, more stress was given to see the improvement in deficiencies or weaknesses pointed on individual part. According to faculty it was time consuming as each and every student has to be covered individually

Conclusion and recommendations

- One Minute Preceptor is a well-accepted teaching learning tool by both teaching faculty and students.
- Very helpful for individualized improvement. So it can be incorporated as a teaching tool in routine postgraduate activity partly replacing the traditional ways.
- OMP can also be recommended for formative assessment as feedback is given for improvement.

References

1. Neher JO, Gordon KA, Meyer B, Stevens N. A five-step "microskills" model of clinical teaching. *JABFP*, 1992;5:419-24.
2. Furney S, Orsini A, Orsetti K, et al, Teaching the One-minute Preceptor A Randomized Controlled Trial, *J Gen Intern Med*. 2001 Sep; 16(9): 620-624.
3. Wilkerson L, Lesky L, Medio F. The resident as teacher during work rounds. *J Med Educ*. 1986;61:823-92.
4. Tonesk X. The house officer as a teacher: what schools expect and measure. *J Med Educ*. 1979;54:613-6]
5. Jewett LS, Greenberg LW, Goldberg RM. Teaching residents how to teach: a one-year study. *J Med Educ*. 1982;57:361-64.

6. Wilkerson L, Irby DM. Strategies for improving teaching practices: a comprehensive approach to faculty development. *Acad Med.* 1998;73:387–96.
7. Cayley WE. Effective Clinical Education: Strategies for teaching medical students and residents in the office. *Winconsin Med J* 2011;110:178-81.
8. Gulati H, One minute preceptor – introduction and perception evaluation of a novel teaching tool for teaching routine histopathology slides to postgraduate students in pathology, *Indian Journal of Pathology and Oncology*, July-September 2016;3(3);503-507