

Portfolio as a Learning Tool: Students' Perspective

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Abstract

Portfolio writing is a method of encouraging reflective learning among professionals. Although portfolio-based learning is popular among educators, not many studies have been done to determine students' perceptions of portfolio as a learning tool. A questionnaire survey was conducted among 143 medical students to find out their perceptions of the portfolio as a learning tool. A majority of the students felt that the portfolio is a good learning tool. However, they also perceived that it is stressful and time-consuming to develop a proper portfolio. The study indicates that students need appropriate guidance from the academic staff for the system to succeed.

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Introduction

In the last decade, there have been numerous innovations in educational theory and practice. Education has moved from being a traditional teacher-centred process to one that is student-centred. Similarly, in the area of assessment, there has been a shift away from assessing knowledge towards a more competency/performance-based assessment. There is now a wide variety of methods of education and training to choose from and portfolio-based learning is an increasingly popular option among educationists.¹ A portfolio is a collection of written accounts of events and activities experienced by an individual, kept in the form of a journal. The portfolio is used not only as a document of evidence but also as an effective learning tool. Portfolio-based learning is an approach firmly rooted in the principles of experiential learning,² which is a cyclical process of recording, reviewing/reflecting and learning from events.³ It is therefore important that the portfolio does not become a mere collection of event narratives, but contains reflections on these events and the lessons learnt. Essentially, any evidence of learning is collected in the portfolio as evidence that reflective learning has taken place.⁴ The portfolio may also include details of learning objectives, learning resources and strategies, and how that

learning might be accomplished and assessed.⁴ Portfolio-based learning has several advantages. It enables learners to act and learn autonomously, and allows them to assess their strengths and weaknesses. It also helps them to identify and meet their learning needs and build an education plan for the future.^{5,6}

The role of today's teachers is not so much to impart knowledge, but to ensure that learning has taken place. Since portfolio offers the opportunity to assess what students have learnt, it has become an accepted learning and assessment tool in medical education.¹

The use of portfolio writing in health professions is growing as a means of keeping records of learning activities for continuing professional development. Portfolio usage in undergraduate medical training is not widespread, especially amongst Asian medical schools. Developing a reflective portfolio is not without its disadvantages and building a portfolio is a demanding and time-consuming exercise.² Despite the popularity of portfolio-based learning among educators, there remain questions, such as students' opinions of portfolio learning and the effect of portfolio learning on their education. This study was formulated to find out students' perspectives on portfolio learning.

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Portfolio Learning in our Programme

Portfolio writing is used as a learning tool in the clinical years (two and a half years) at International Medical University, Malaysia. The students are given a set of core learning outcomes and they are required to accumulate evidence of their learning in the form of a portfolio from Semester 6 to Semester 10, when they complete their undergraduate studies. The portfolio contains a series of case summaries, case reports, report on a research project, community and family case study reports and a record of other activities as evidence of learning. Upon entry into the clinical school, the students are briefed on the principles of reflective learning, the expected contents and the guidelines for developing the portfolio. The lecturers provide guidance on writing the portfolio as students pass through their rotations in various disciplines. The final semester (6 months) in our programme is earmarked for clerkship, during which the students function as junior housemen. During this period, portfolio-based learning and assessment forms the main mode of curriculum delivery and an important component of the final assessment. Students are expected to write 20 complete reports of cases that they follow. These reports must be developed over time as part of the ongoing patient management in which they are involved. Each case report will include a set of learning issues, which students need to identify and which in their opinion will lead to better understanding of patients' problems. The learning issues are organised under the major outcome domains of the curriculum and will include the students' reflections on the softer issues of patient management such as moral, social and ethical issues. The students are also expected to critically appraise the management and write 5 evidence-based reports as they apply to the patients that they are taking care of. During this period, the portfolio development is continuously monitored and the final assessment involves a portfolio review and an exit viva during which the students have to explain what has been discussed in the portfolio.

Materials and Methods

Feedback was obtained from an entire batch of Semester 8 students by asking them to write down what they felt about writing a portfolio. Based on their feedback, a questionnaire consisting of 23 questions was designed.

The entire student population (259) in the clinical school (from Semester 6 to Semester 10) was given an information sheet with details about this survey and was given the option of participating in the study. The students who volunteered for the study were asked to sign a written consent form. The students who gave their consent for the survey were requested to complete the questionnaire anonymously. For each of the 23 questions, students had to

respond on a 4-point Likert scale, ranging from strongly agree to strongly disagree. The responses to the questionnaire were analysed to determine the overall views of the students on the different aspects of portfolio writing.

Results

One hundred and forty-three students completed and returned the questionnaire (Table 1). There were 76 (53.1%) females and 64 (44.8%) males. In order to facilitate the analysis, the 4 levels of perception in the questionnaire – strongly agree, agree, disagree and strongly disagree – were regrouped; strongly agree and agree were grouped as one, and strongly disagree and disagree were grouped as the other.

The students perceived that the portfolio had helped them to improve their communication skills (72%), revise their work (67.8%) and practise self-directed learning (64.5%). The portfolio had helped them to reflect on the case (88.1%), encouraged self-reflection (51.4%) and enabled them to reflect on the problems discussed (74.6%). Among the respondents, 64.5% agreed that the portfolio was useful as an additional learning tool. Most of them also perceived that the portfolio had helped them in their personal and professional development (63.1%). Although the students realised the usefulness of writing portfolios, they felt that portfolio writing was stressful (93%) and only 48.3% agreed that portfolio writing should be part of every medical programme. Among the respondents, 66.9% indicated that they did not update their portfolios on a regular basis and left the work to be completed towards the end of a rotation. They also felt that they did not have adequate guidance from the faculty in writing the portfolio (81%).

Discussion

Portfolio learning is a method of encouraging adult and reflective learning for professionals.⁷ The portfolio has been an integral part of the graphic arts in tracking the professional development of artists for a long time. The use of portfolios in continuing professional development in medicine is still in its infancy.⁸ However, the portfolio has been shown to be a worthwhile addition to the existing learning and assessment tools for undergraduate medical training.^{9,10} A study has shown that students using portfolios obtain higher marks in factual knowledge compared to the control group of students not using portfolios.¹¹

In the present study, 64.5% of the students agreed that the portfolio was useful as an additional learning tool in comparison to the 50% reported by Lonka et al.¹² In spite of understanding the importance of portfolio, only 48.3% of the respondents in this study agreed that portfolio writing should be part of every medical programme. Their negative

Table 1. Portfolio as a Learning Tool: Students' Perspectives

	Agree		Disagree	
	No	(%)	No	(%)
1 I enjoy writing the portfolio	42	(29.6)	100	(70.4)
2 I can appreciate that my written communication has improved	103	(72)	40	(28)
3 It has helped me in self-directed learning as I can analyse problems on my own	91	(64.5)	50	(35.5)
4 Reviewing others' portfolios is very useful	99	(69.2)	44	(30.8)
5 Writing the portfolio is a stressful process	132	(93.0)	10	(7)
6 Writing the portfolio has helped my personal and professional development	89	(63.1)	52	(36.8)
7 While I write the portfolio, I usually think about the case	126	(88.1)	17	(11.9)
8 The portfolio encourages self-reflection	72	(51.4)	68	(48.6)
9 I normally write the portfolio on a regular basis in every posting	47	(33.1)	95	(66.9)
10 There is adequate guidance to write the portfolio	27	(19)	115	(81)
11 I use resources other than textbooks to write the learning issue	124	(86.7)	19	(13.3)
12 I have started to use the same principle (of writing the portfolio) in problems that I encounter in day-to-day clinical exposure	62	(43.4)	81	(56.7)
13 Writing the portfolio has given me an insight into outcome-based education	72	(50.4)	71	(49.7)
14 The portfolio should be part of every medical programme	69	(48.3)	74	(51.8)
15 I usually reflect on the problems that I am discussing	103	(74.6)	35	(25.3)
16 Whenever I write the portfolio I think of the 8 outcomes	17	(12)	125	(88)
17 The portfolio is a useful additional learning tool	91	(64.5)	50	(35.5)
18 I usually read the relevant chapter in books before I write the portfolio	105	(73.4)	38	(26.6)
19 The portfolio has changed the way I think when I encounter problems	58	(40.8)	84	(59.1)
20 The portfolio writing has changed my approach to learning	61	(42.7)	82	(57.3)
21 Writing the portfolio has helped me to monitor the learning goals	57	(39.9)	86	(60.1)
22 Writing the portfolio has helped me to recognise my strength and weakness	87	(60.8)	56	(39.2)
23 Writing the portfolio has helped me to revise my work	97	(67.8)	46	(32.2)

Note: In the returned questionnaires, a few of the columns were left blank, so the total number may not add up to 143.

feelings towards portfolio writing could be attributed to 2 reasons. Writing a portfolio adds to their workload and hence the students will initially consider it a burden until they realise the usefulness of the portfolio. Our students also tended to accumulate their work and were stressed towards the end of a rotation.

Medical schools using portfolios should undertake periodic reviews to ensure that there is a right balance in the distribution of the work for the students between the wards/clinics and writing the portfolios. As part of this process, we have reduced the number of case report write-ups to 14 cases from the existing requirement of 20 cases.

The ability to reflect on one's own action is an important skill for a doctor. This skill is difficult to teach; mentoring can be one way of imparting this skill,⁹ while peer review of the portfolios is another possibility. The attitude of the teacher is fundamental in encouraging and valuing the use and development of a portfolio.⁷ Our students felt that they did not receive adequate guidance in writing the portfolio. Over the years, we have introduced a system of regular timetabled portfolio reviews undertaken by dedicated faculty members in each discipline, who function as the students' tutors and supervise their portfolios.

Conclusion

A majority of the students perceive that writing portfolios is a useful learning tool. Generally, portfolio writing is perceived to be stressful because the students leave their work to the very end of the rotation.

The study demonstrates that any medical school intending to introduce the portfolio as a new learning method must take into consideration an effective orientation programme for both the learners and the teachers. Motivated students, and trained and motivated staff are essential for portfolio-based learning to succeed.

REFERENCES

1. Parboosingh J. Learning portfolios: potential to assist health professionals with self directed learning. *J Cont Educ Health Prof* 1996;16:75-81.
2. Stanton F, Grant J. Approaches to experiential learning, course delivery and validation in medicine. A background document. *Med Educ* 1999;33:282-97.
3. Dennison B, Kirk R. Do, Review, Learn, Apply: A Simple Guide to Experience-based Learning. Oxford: Blackwell, 1990.

4. Portfolio-based Learning in General Practice. London: Royal College of General Practitioners, 1993.
 5. Supiano MA, Fantone JC, Grum C. A web-based geriatrics portfolio to document medical students' learning outcomes. *Acad Med* 2002;77:937-8.
 6. Wilkinson TJ, Challis M, Hobma SO, Newble DI, Parboosingh JT, Sibbald RG, et al. The use of portfolios for assessment of the competence and performance of doctors in practice. *Med Educ* 2002;36:918-24.
 7. Snadden D, Thomas M. The use of portfolio learning in medical education. *Med Teach* 1998;20:192-9.
 8. Challis M. Portfolio-based learning and assessment in medical education. *Med Teach* 1999;21:370-86.
 9. Driessen E, van Tartwijk J, Vermunt JD, van der Vlugten CP. Use of portfolios in early undergraduate medical training. *Med Teach* 2003;25:18-23.
 10. Davis MH, Friedman M, Harden RM, Howie P, Ker J, Mc Ghee C, et al. Portfolio assessment in medical students' final examinations. *Med Teach* 2001;23:357-66.
 11. Finlay IG, Maughan TS, Webster DJ. A randomized controlled study of portfolio learning in undergraduate cancer education. *Med Educ* 1998;32:172-6.
 12. Lonka K, Slotte V, Halttunen M, Kurki T, Tiitinen A, Vaara L, et al. Portfolios as a learning tool in obstetrics and gynaecology undergraduate training. *Med Educ* 2001;35:1125-30.
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