




Students' Perception of Portfolio in Casablanca Dentistry Faculty

Aicha Oubbaih¹, Zineb Al Jalil², Mouna Hamza², Souad Chaour², Samira Bellemkhannate¹

¹Department of Removable Prosthodontics, Faculty of Dentistry, Hassan II University, Casablanca, Morocco

²Laboratory of Community Health Epidemiology and Biostatistics, Faculty of Dentistry of Casablanca, Casablanca, Morocco

Email: droubbaih@gmail.com

How to cite this paper: Oubbaih, A., Al Jalil, Z., Hamza, M., Chaour, S. and Bellemkhannate, S. (2024) Students' Perception of Portfolio in Casablanca Dentistry Faculty. *Open Access Library Journal*, 11: e12547. <https://doi.org/10.4236/oalib.1112547>

Received: October 30, 2024

Accepted: December 17, 2024

Published: December 20, 2024

Copyright © 2024 by author(s) and Open Access Library Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

Introduction: With the reform of dental medicine studies in Morocco, a sixth year has been added to the curriculum. The portfolio is one of the tools administered to students at the end of their sixth-year training. Our work aimed to identify the students' perceptions regarding this pedagogic tool. **Methodology:** We conducted a cross-sectional descriptive survey of students enrolled in the 6th year of the Faculty of Dentistry in Casablanca, Morocco during the academic year 2020-2021. **Results:** Among 131 students involved in this study; 67.4% considered the portfolio moderately useful, while 20.7% considered it very useful. Seventy-one percent of students viewed it as a means of assessment, and 25% saw it as a means of evaluation and training. Sixty-two percent agreed that the portfolio was a tool for self-assessment, and 65% appreciated this practice. **Discussion:** All the data collected in our study show that the portfolio system, its components, and its support were generally appreciated by students, who reported the benefits despite some difficulties. Several studies have highlighted the importance of students' perceptions of the tool and noted that this perception may differ from the pedagogical intentions of its designers if the formative and evaluative approaches have not been clarified and justified to the learners. This underscores the need to integrate the portfolio into the curriculum properly.

Subject Areas

Pedagogy

Keywords

Portfolio, Pedagogy, Dental Students, Perception, Self-Assessment, Reflective Writing

1. Introduction

The portfolio is a pedagogical tool that empowers learners to acquire actively new skills and knowledge. It is essentially focused on two key components: self-assessment and reflective practice. Portfolios foster personal reflection and often facilitate the exchange of feedback and ideas, providing a platform for students to critically examine their learning experiences. Moreover, portfolios serve as a means to assess students' progress, structure the learning process, and enhance communication and collaboration through the sharing of resources [1] [2]. The portfolio fulfills seven key functions: recognizing and recording prior learning, reflecting on and validating past experiences, presenting and planning future learning, and evaluating overall progress [2] [3].

In dental education, the portfolio has become an invaluable tool for developing students' competencies. While its origins date back to the 1940s in education, its widespread adoption in health sciences, especially in dental education, is a more recent development [4] [5]. One of the key aspects of the portfolio in dentistry is its ability to foster a reflective dialogue between students and instructors, enabling students to critically assess their clinical work. Through documenting significant learning experiences, students are prompted to reflect not only on their successes but also on challenges and areas for improvement, cultivating a mindset of continuous professional development and critical thinking [6]-[8]. This process aligns with broader accreditation requirements in dental education, which emphasize the importance of critical thinking and problem-solving skills in preparing graduates for professional practice. While pedagogical approaches like problem-based learning (PBL) and objectively structured clinical examinations (OSCE) have been widely explored, reflective writing, as a complementary method, is gaining recognition for its significant contribution to students' learning and professional growth [5].

The portfolio tool is already widely used in universities across Canada, Europe, and the United States. Following the reform of the dental curriculum, the Faculty of Dentistry of Casablanca introduced the portfolio in 2020 for its sixth-year students. These students alternate between two types of internships: professional immersion in private practices and multidisciplinary clinical training at the Dental Consultation and Treatment Centre. During this period, they must complete three modules, one of which is the Functional Rehabilitation of the Arches (FRA), involving collaboration between three departments: Removable Prosthesis, Fixed Prosthesis, and Conservative Odontology. As part of this module, students compile a portfolio to showcase the skills and knowledge they have gained through their training.

This study aims to assess how students at the Faculty of Dentistry of Casablanca adopt and use the portfolio, exploring its impact on their self-assessment and reflective writing skills. While portfolios are increasingly used in dental education globally, their adoption and effectiveness in Morocco, particularly in Casablanca, remain underexplored. The research will gather students' perceptions of the portfolio's utility, difficulties, and effectiveness in developing their competencies. By understanding students' views, the study seeks to offer recommendations for en-

hancing the portfolio's integration into the curriculum, ensuring it better meets their professional growth needs.

2. Materials and Methods

Study design

We conducted a cross-sectional study on students enrolled in the sixth year of the Faculty of Dentistry in Casablanca during the academic year 2020-2021, over six months from May 2022 to October 2022.

Participants

Inclusion criteria:

- Sixth-year students who have validated the multidisciplinary training.
- Sixth-year students who have submitted their completed portfolios to the administration.
- Sixth-year students who voluntarily agreed to participate in the study.

Exclusion criteria

- Interns who were exempted from the multidisciplinary training.

Data collection

The anonymous online questionnaire used in the study consisted of 28 questions with 19 items assessed on a five-point Likert scale (strongly agree, agree, neutral, disagree, strongly disagree).

The open-ended questions were designed to allow students to express their experiences using the portfolio and suggest improvements.

The dimensions assessed included:

- Students' overall perception of the portfolio.
- Perceived difficulties in completing the tool.
- Evaluation of the method used for completing the portfolio (input from tutors and peers).
- Students' perception of the development of reflection practice, autonomy, and self-assessment skills.
- Students' Perception of Achievement of the Portfolio's Objectives.

Statistical analysis

A univariate analysis was conducted, with qualitative variables expressed as frequencies and percentages, and quantitative variables expressed as means and standard deviations.

3. Results

3.1. Socio-Demographic Characteristics

From 131 students included in this investigation, 95 students responded to the questionnaire, resulting in a response rate of 78.5%. Of these, 64.2% were female, with an average age of 24.92 (+/-0.9).

3.2. Students' Overall Perception

- 67.4% of students considered the portfolio as a moderately useful teaching

tool, and twenty-point seven percent to be very useful (**Table 1**).

- Seventy-one percent of students saw the portfolio as a teaching and assessment tool, while twenty-four percent viewed it only as an assessment tool (**Table 1**).

- Forty-two percent of students said they had difficulty understanding the instructions associated with the portfolio (**Table 2**).

- Sixty-seven percent of the students reported that the portfolio created a work overload (**Table 2**).

- Forty-two percent of students had not asked their supervisors to complete their portfolios (**Table 3**).

- Thirty-two percent of students confirmed reception feedback from their supervisors on the portfolio's content (**Table 3**).

- Seventy-four percent of the students reported that their peers helped them better understand how to complete the portfolio (**Table 3**).

- Forty-nine percent of the students stated that the portfolio had helped them develop their self-assessment skills and thirty-six percent of them agreed to acquire reflective writing through the portfolio. (**Table 4**).

- Sixty-two percent of students believed that the portfolio's training and evaluation objectives were achieved by the end of their sixth-year internship (**Table 5**).

Table 1. Student's overall perception of the portfolio.

		Number	Percentage %
Perception of portfolio usefulness	Very useful	20	20.7
	Moderately useful	64	67.4
	No useful	11	12
Perception of the formative nature of the portfolio	Formative tool	5	5
	Evaluative tool	23	24
	Formative and evaluative tool	67	71

Table 2. Perceived difficulties in completing the portfolio.

		Number	Percentage %
Students' perception of difficulties in understanding instructions. Question: The instructions associated with the portfolio were difficult to understand.	Strongly agree	12	12.7
	Agree	28	29.4
	Neutral	22	23
	Disagree	28	29.4
	Strongly disagree	5	5.2
Students' perception of work overload. Question: The Portfolio has created a work overload for you.	Strongly agree	30	31.5
	Agree	34	35.7
	Neutral	10	10.5
	Disagree	18	19
	Strongly disagree	3	3.15

Table 3. Evaluation of the method used for completing the portfolio.

		Number	Percentage %
Student perception of tutor support.	Strongly agree	12	12.6
	Agree	28	29.4
Question: You have asked your tutor to help you create your portfolio.	Neutral	15	15.7
	Disagree	24	25.2
	Strongly disagree	16	16.8
	Strongly agree	8	8.4
Student perception of tutor co-assessment.	Agree	23	24
	Neutral	32	33.6
Question: Tutors provide feedback on the content of the portfolio.	Disagree	18	19
	Strongly disagree	14	14.7
	Strongly agree	29	30.5
Students' perception of peer support.	Agree	42	44.2
	Neutral	12	12.6
Question: The other students helped you understand what you need to create your portfolio.	Disagree	6	6.3
	Strongly disagree	6	6.3

Table 4. Students' perception of the development of reflective writing, autonomy, and self-assessment skills.

		Number	Percentage %
Students' perception of the acquisition of self-assessment skills: Question: You feel that you have developed self-assessment skills through the portfolio	Strongly agree	9	9.5
	Agree	38	40
	Neutral	20	21
	Disagree	19	20
	Strongly disagree	9	9,5
Students' perception of acquiring reflective writing. Question: The completion of the portfolio helped you identify your strengths and weaknesses	Strongly agree	9	9.5
	Agree	26	27
	Neutral	31	32.6
	Disagree	20	21
Students' perception of their autonomy. Question: You felt free and autonomous in completing your portfolio	Strongly disagree	9	9,5
	Strongly agree	15	15.7
	Agree	38	40
	Neutral	23	24.2
	Disagree	15	15.7
	Strongly disagree	4	4.2

Table 5. Students' perception of achievement of the portfolio's objectives.

		Number	Percentage %
Perception of achievement of learning objectives.	Strongly agree	12	12.6
	Agree	46	48.4
Question: You believe that the portfolio facilitated the integration of your theoretical and practical knowledge.	Neutral	16	16.8
	Disagree	13	13.7
	Strongly disagree	8	8.4
Perception of achievement of evaluation objectives.	Strongly agree	12	12.6
	Agree	48	50.5
Question: You believe that the portfolio allowed for assessing your learning progress.	Neutral	13	13.6
	Disagree	12	12.6
	Strongly disagree	10	10.5

4. Discussion

It is essential to closely study how students appropriate the portfolio to identify the factors influencing this process and achieve the pedagogical objectives set for it. Through our questionnaire, we aimed to determine whether students were initially aware of the portfolio's usefulness and pedagogical applications since this was their first time using this tool during their training.

We also aimed to identify factors that might hinder the proper implementation of the portfolio, particularly any communication failures regarding objectives, the quality of teacher support, and challenges students might face in developing it. Additionally, we examined the extent to which the portfolio's objectives had been met whether students had been able to practice certain skills, such as reflective writing and self-evaluation, and how they perceived these practices.

We conducted a cross-sectional survey of 120 students, 95 of whom responded seriously, with commitment and openness, allowing us to identify several points about their experience of this first portfolio experiment.

Most students (71%) view the portfolio as both evaluative and formative, demonstrating that they have understood its dual functionality. However, 24% perceive it primarily as evaluative, which can be explained by the fact that portfolios are submitted for validation at the end of the training. Furthermore, students are more likely to engage with the portfolio when it is required for summative assessment. As Driessen [9] noted in his study, when portfolios were not formally assessed, their use declined. Mc Mullan *et al.* [10] also found that participants made less use of the portfolio if it was not assessed.

42% of the students did not ask their supervisors to complete their portfolios. This result can be interpreted more positively if we consider that the students were able to develop a degree of autonomy, freeing them from reliance on the supervisor. This is supported by the fact that 74% of the students agreed that their peers helped them better understand how to complete their portfolios.

Alternatively, it may be a lack of communication and co-assessment on the part of tutors, a hypothesis supported by another finding: only 32% of students confirmed that they had received feedback on the portfolio's content from tutors.

Lack of support was identified as limiting the portfolio's potential in a survey conducted by Coffey [11] involving 22 nurses using a portfolio for assessment purposes in the Diploma in Geriatric Nursing in Ireland, where respondents expressed a need for more support to develop their portfolios.

Mc Mullan *et al.* [10], in their review of the use of portfolios to assess nursing learning and competencies, concluded that it is important for the trainer to provide regular support and feedback "as this helps students to build their portfolios".

In terms of peer support, studies have explored its influence on portfolio users and reported that this process provides a positive stimulus for learning. In a study by Tiwari and Tang [12] involving nursing students, portfolio users spontaneously developed collaborative learning strategies and supported one other, which is consistent with our findings (74% of students agreed that their peers helped them to understand how to create their portfolio). This, in itself, is considered a tangible outcome of participating in the portfolio process.

Regarding the difficulties associated with using the portfolio, 42% of the students had difficulties understanding the portfolio's instructions and for 67% of them, the portfolio created an excessive workload to manage.

Many authors [13], [14] consider time as a factor that negatively influences the use of portfolios by health professionals, who find it challenging to incorporate portfolio development into their already busy schedules. A study by Mathers *et al.* [15] found that portfolio development was time-consuming, especially for first-time users.

The literature review consensus that self-assessment is one of the ancillary functions of the portfolio approach. By selecting their best work and justifying their choices, learners critically examine their work and thereby engage in self-evaluation [16].

Gadbury-Amyot *et al.* state that "...the use of reflection and writing as an educational strategy to promote critical thinking and problem-solving is one of the best methods for students to use to represent their thinking process" [17].

In our study, only 49 % of students felt that they had developed self-evaluation skills, and 36% of them agreed to acquire reflective writing through the portfolio.

This fits with similar negative findings of an evaluation of an e-portfolio in undergraduate students in the School of Dental Sciences at Newcastle University, where students and staff noticed that the aim of the portfolio to encourage reflection was not being met [18].

Several reflective writing portfolios were described in the literature. Many studies found that reflection was difficult or uncomfortable for the students [8] [17] [19].

Gadbury-Amyot noted that the language of reflection was unfamiliar to students and the concept more difficult for students to understand than the authors had originally thought resulting in a lower-than-expected level of reflection [17].

We can consider our results regarding this reflective skill to be quite favorable, especially when we recall that the practice of this skill is not common for students, and for most of them, the portfolio represents their first opportunity to engage with it. It is up to the faculty to implement and assess this skill early in the curriculum.

5. Conclusions

All the data collected in our study show that students appreciate the portfolio, and clearly emphasize its benefits, despite certain difficulties and shortcomings.

In light of our work, we recommend the following.

Raise awareness among tutors involved in student supervision about the principles of the portfolio.

Emphasize the aims, benefits, and use of the portfolio at the beginning of the training.

Enhance student support.

Provide feedback on the content of the portfolio at the time of document signing.

Introduce self-assessment and reflection skills earlier in students' studies.

Implement the portfolio from the first year of clinical training (4th year).

Transition from a paper portfolio to a digital portfolio.

Conflicts of Interest

The authors declare no conflicts of interest.

References

- [1] Driessen, E.W., van Tartwijk, J., Overeem, K., Vermunt, J.D. and van der Vleuten, C.P.M. (2005) Conditions for Successful Reflective Use of Portfolios in Undergraduate Medical Education. *Medical Education*, **39**, 1230-1235. <https://doi.org/10.1111/j.1365-2929.2005.02337.x>
- [2] Van der Gulden, R., Timmerman, A., Muris, J.W.M., Thoonen, B.P.A., Heeneman, S. and Scherpbier-de Haan, N.D. (2022) How Does Portfolio Use Affect Self-Regulated Learning in Clinical Workplace Learning: What Works, for Whom, and in What Contexts? *Perspectives on Medical Education*, **11**, 1-11. <https://doi.org/10.1007/s40037-022-00727-7>
- [3] Tochel, C., Haig, A., Hesketh, A., Cadzow, A., Beggs, K., Colthart, I., et al. (2014) L'efficacité des portfolios pour l'évaluation et la formation pendant le cursus post gradué. Guide BEME No. 12. *Pédagogie Médicale*, **15**, 113-148. <https://doi.org/10.1051/pmed/2014016>
- [4] Naccache, N., Samson, L. and Jouquan, J. (2006) Le portfolio en éducation des sciences de la santé: Un outil d'apprentissage, de développement professionnel et d'évaluation. *Pédagogie Médicale*, **7**, 110-127. <https://doi.org/10.1051/pmed:2006016>
- [5] Gadbury-Amyot, C.C., McCracken, M.S., Woldt, J.L. and Brennan, R.L. (2014) Validity and Reliability of Portfolio Assessment of Student Competence in Two Dental School Populations: A Four-Year Study. *Journal of Dental Education*, **78**, 657-667. <https://doi.org/10.1002/j.0022-0337.2014.78.5.tb05718.x>
- [6] Ellis, J.S., Teasdale, D., Cotterill, S.J. and Thomason, J.M. (2010) Is a Generic UKE-Portfolio for Dentistry Desirable and Achievable? *European Journal of Dental*

- Education*, **14**, 254-256. <https://doi.org/10.1111/j.1600-0579.2010.00630.x>
- [7] Cynthia, C., Gadbury-Amyot, J.L., et al. (2015) Self-Assessment: A Review of the Literature and Pedagogical Strategies for Its Promotion in Dental Education. *The Journal of Dental Hygiene*, **89**, 357-364.
- [8] Woldt, J.L. and Nenad, M.W. (2021) Reflective Writing in Dental Education to Improve Critical Thinking and Learning: A Systematic Review. *Journal of Dental Education*, **2021**, 1-8.
- [9] Pool, A.O., Jaarsma, A.D.C., Driessen, E.W. and Govaerts, M.J.B. (2020) Student Perspectives on Competency-Based Portfolios: Does A Portfolio Reflect Their Competence Development? *Perspectives on Medical Education*, **9**, 166-172. <https://doi.org/10.1007/s40037-020-00571-7>
- [10] McMullan, M., Endacott, R., Gray, M.A., Jasper, M., Miller, C.M.L., Scholes, J., et al. (2003) Portfolios and Assessment of Competence: A Review of the Literature. *Journal of Advanced Nursing*, **41**, 283-294. <https://doi.org/10.1046/j.1365-2648.2003.02528.x>
- [11] Coffey, A. (2005) The Clinical Learning Portfolio: A Practice Development Experience in Gerontological Nursing. *Journal of Clinical Nursing*, **14**, 75-83. <https://doi.org/10.1111/j.1365-2702.2005.01279.x>
- [12] Tiwari, A. and Tang, C. (2003) From Process to Outcome: The Effect of Portfolio Assessment on Student Learning. *Nurse Education Today*, **23**, 269-277. [https://doi.org/10.1016/s0260-6917\(03\)00012-1](https://doi.org/10.1016/s0260-6917(03)00012-1)
- [13] Maidment, Y.G., Rennie, J.S. and Thomas, M. (2006) Revalidation of General Dental Practitioners in Scotland: The Results of a Pilot Study Part 2—Acceptability to Practitioners. *British Dental Journal*, **200**, 455-458. <https://doi.org/10.1038/sj.bdj.4813468>
- [14] Duque, G., Finkelstein, A., Roberts, A., Tabatabai, D., Gold, S.L. and Winer, L.R. (2006) Learning While Evaluating: The Use of an Electronic Evaluation Portfolio in a Geriatric Medicine Clerkship. *BMC Medical Education*, **6**, Article No. 4. <https://doi.org/10.1186/1472-6920-6-4>
- [15] Mathers, N.J., Challis, M.C., Howe, A.C. and Field, N.J. (1999) Portfolios in Continuing Medical Education—Effective and Efficient? *Medical Education*, **33**, 521-530. <https://doi.org/10.1046/j.1365-2923.1999.00407.x>
- [16] Koole, S., Vanobbergen, J., De Visschere, L., Aper, L., Dornan, T. and Derese, A. (2012) The Influence of Reflection on Portfolio Learning in Undergraduate Dental Education. *European Journal of Dental Education*, **17**, e93-e99. <https://doi.org/10.1111/j.1600-0579.2012.00766.x>
- [17] Gadbury - Amyot, C.C., Godley, L.W. and Nelson, J.W. (2019) Measuring the Level of Reflective Ability of Predoctoral Dental Students: Early Outcomes in an E-Portfolio Reflection. *Journal of Dental Education*, **83**, 275-280. <https://doi.org/10.21815/jde.019.025>
- [18] Vernazza, C., Durham, J., Ellis, J., Teasdale, D., Cotterill, S., Scott, L., et al. (2011) Introduction of an E-Portfolio in Clinical Dentistry: Staff and Student Views. *European Journal of Dental Education*, **15**, 36-41. <https://doi.org/10.1111/j.1600-0579.2010.00631.x>
- [19] Bush, H. and Bissell, V. (2008) The Evaluation of an Approach to Reflective Learning in the Undergraduate Dental Curriculum. *European Journal of Dental Education*, **12**, 103-110. <https://doi.org/10.1111/j.1600-0579.2008.00508.x>