

Online Research @ Cardiff

This is an Open Access document downloaded from ORCA, Cardiff University's institutional repository: <http://orca.cf.ac.uk/121363/>

This is the author's version of a work that was submitted to / accepted for publication.

Citation for final published version:

Mantzourani, E., Desselle, S., Le, J., Lonie, J.M. and Lucas, C. 2019. The role of reflective practice in healthcare professions: Next steps for pharmacy education and practice. *Research in Social and Administrative Pharmacy* 15 (12) , pp. 1476-1479. 10.1016/j.sapharm.2019.03.011 file

Publishers page: <http://dx.doi.org/10.1016/j.sapharm.2019.03.011>
<<http://dx.doi.org/10.1016/j.sapharm.2019.03.011>>

Please note:

Changes made as a result of publishing processes such as copy-editing, formatting and page numbers may not be reflected in this version. For the definitive version of this publication, please refer to the published source. You are advised to consult the publisher's version if you wish to cite this paper.

This version is being made available in accordance with publisher policies. See <http://orca.cf.ac.uk/policies.html> for usage policies. Copyright and moral rights for publications made available in ORCA are retained by the copyright holders.



Manuscript Concise Title:

The Role of Reflective Practice in Healthcare Professions: Next Steps for Pharmacy Education and Practice

Author list:

Mantzourani E^a, Desselle S^b, Le J^c, Lonie JM^d, Lucas C^c

^a School of Pharmacy and Pharmaceutical Sciences, Cardiff University, Wales, United Kingdom

^b College of Pharmacy, Touro University, California USA

^c Graduate School of Health, University of Technology Sydney, Australia

^d Arnold and Marie Schwartz College of Pharmacy and Health Sciences, Long Island University, New York USA

Author Names and Affiliations

Dr Efi Mantzourani (Corresponding Author)
Position: Senior Lecturer in Pharmacy Practice
Affiliation: Cardiff University, UK
Ph: +44 (0)29 2087 0452
Email: MantzouraniE1@cardiff.ac.uk

Professor Shane Desselle
Affiliation: Touro University, California, USA
Ph: (707) 638- 5980
Email: sdesselle68@gmail.com

Jeannette Le
Master of Pharmacy Student
Affiliation: University of Technology Sydney, Graduate School of Health (Pharmacy)
Address: 67 Thomas Street, Ultimo, NSW 2007 Sydney Australia
Ph: 0432 413 077
Email: Jeannette.Le@student.uts.edu.au

Associate Professor John M Lonie
Position: Associate Professor (Pharmacy)
Affiliation: Long Island University, New York, USA
Ph: (718) 488- 1259
Email: john.lonie@liu.edu

Dr Cherie Lucas
Position: Lecturer, Manager of Experiential Placements
Affiliation: University of Technology Sydney, Graduate School of Health (Pharmacy)
Address: 67 Thomas Street, Ultimo, NSW 2007 Sydney Australia
Ph: +61 2 95144275
Email: cherie.lucas@uts.edu.au

CONCISE TITLE: The Role of Reflective Practice in Healthcare Professions: Next Steps for Pharmacy Education and Practice

ABSTRACT

Reflective practice strategies can enable healthcare practitioners to draw on previous experiences to render more effective judgment in clinical situations. The central argument presented in this commentary is that education programs and structures for continuing professional development (CPD) and revalidation of professionals sharpen their focus regarding self-assessment to identify gaps in skills and attitudes rather than merely as a means of on-going monitoring. Pharmacy undergraduate and professional education need to promote reflective practice strategies that foster self-evaluation to promote pharmacists' readiness for practice change and advance patient care within rapidly expanding roles and scope of practice.

Keywords: clinical settings, reflection, reflective tools, clinical practice, pharmacist, pharmacy education

INTRODUCTION

Increasing pressures on healthcare systems internationally have led to a radical change in pharmacy practice over the last decade, witness to an expansion not only of roles but also of scopes of practice, such as prescribing and assisting with the management of chronic conditions.¹⁻³ The notion of competence for this shift of roles is currently upheld mainly via continuing professional development (CPD) and revalidation models, whereby reflection is implicitly or explicitly utilized.⁴

The terms reflection and reflective practice have been equated to a spectrum of activities, and no consistent definition has been followed. A systematic review of literature on reflection, attempting to develop a unified definition, thematically analyzed and clustered results to construct a five-component model of reflection that integrated one's thoughts and actions. The model comprised of a combination of attentive, critical, exploratory, and iterative thinking, the underlying conceptual frame, a view on the change, and the self.⁵

Over the years, the construct of reflective practice has been widely explored in various contexts wherein the act of reflection allows room for continuous improvement and development.⁶ The published literature suggests that there are a number of models from which healthcare practitioners can draw upon and/or utilize to assist them to facilitate reflection on their professional practice. The nursing profession has widely used Gibbs'(1998),⁷ Schon's (1983),⁸ Atkins and Murphy's (1994),⁹ Kolb's (1984)¹⁰ and Johns' (1996)¹¹ models to provide a structure for reflection during and after action, for effective patient safety and care. In the medical profession, published literature recognizes the use of Schon's (1983)⁸, Kolb's (1984)¹⁰ and Mezirow's (1990)¹² frameworks utilized to facilitate debriefing discussions post incidents and for effective decision-making.

The suggested models delve into theories of adult learning, assigning a central role to experiences that in turn play an important part in the processes of reflection. Broadly they can be classified in two categories. The

more basic models of Kolb and Gibbs can be utilized by novices in reflection, and are conducive to initial, superficial analysis, without many or deep prompt questions to guide the learner to develop critical thinking or analytical skills. Schon's model first distinguishes reflection on- and in- action for professionals, but his model does not provide much guidance on how to engage in either. Models that are salient to more experienced learners are Atkins and Murphy's, Johns', and Mezirow's; structure and probing questions support the person to examine the situation in the context of the environment and from different perspectives, to critically evaluate assumptions and to gain new perspectives via deeper reflection.

However, the value of established approaches to reflective practice to this day remains controversial. Eva and Regehr (2005) argued that the focus of reflective practice on self-assessment to identify desirable outcomes and goals is fundamentally flawed.¹³ They discussed that safe practice is context and patient-dependent rather than a uniform decision-making process on strengths and weaknesses taking place a priori; thus, improving one's self is intertwined with repeated, situation-specific relevant and reliable external assessment such as feedback from experts.

This commentary examines the literature to uncover strategies employed to support reflection in healthcare environments and education, with particular focus in pharmacy, and interrogates these strategies under the prism of the role of self-assessment.

REFLECTIVE PRACTICE IN HEALTHCARE ENVIRONMENTS

It has been argued that engaging in reflective practice benefits practitioners,⁸ allowing individuals to actively reflect and identify their key strengths and weaknesses, which may be the first step to improving future practice.^{8,14} Reflective practice has been linked to a number of distinct characteristics that encourage stimulating thought processes and hence empower practitioners to achieve best practice.¹⁵

The act of consistent reflection on a healthcare professional's actions has been shown to have an impact on providing optimal care.¹⁶ A range of reflective practice tools has been investigated in relation to how they can assist healthcare professionals in decision-making. De-briefing sessions have been used as a platform to facilitate discussion amongst healthcare professionals, mainly nurses and physicians, to encourage deep thinking and decision-making.¹⁵⁻¹⁹ One study followed the progress of 44 novice hospital nurses following implementation of a reflective program, whereby a positive correlation was observed between reflective practice and improved critical thinking ability.¹⁷

Another study analysed 42 medical residents utilizing reflective prompts and evaluated potential influence on the medical residents' clinical judgments for accurate diagnosis, against a control group of medical residents who were not exposed to the reflective prompts.¹⁶ The investigators found that the practice of reflection with

the help of these prompts was a useful tool for practitioners, particularly when diagnosing rare and /or specific cases with a greater complexity. Errors and accurate diagnoses were determined through a scale that encouraged the practitioners to critically analyze their own cases based on reasoning. A final diagnosis was deemed accurate when it aligned with the possible hypothesis made during reflection. As a result of utilizing reflective prompts, not only were accurate diagnoses more likely but there was a reduction in inaccurate diagnoses.¹⁶ This notion has been further reiterated in a number of studies which recognized the value of physicians maintaining a reflective portfolio as a lifelong learning tool in practice.²⁰

A randomized controlled trial²¹ exposed a group of interns to routine (weekly) direct observation with formal feedback sessions for their first 6 weeks, which addresses directly one of the suggestions of Eva and Regehr (2005).¹³ It was found that interns who had received the interventions performed better with patient care skills compared to the control group. The use of self-administered questionnaires has also been explored as part of the reflective process, and linked to increased understanding of preferred learning styles in relation to processing of information.²²

Not many studies have focused on reflective practice for pharmacy professionals. One study discussed the introduction of a multidimensional, reflective model, to explore the value of implementing reflective practice and tools.²³ The model, covering four key attributes including experience, reflection, transformation and development to illustrate the learning process of pharmacists, was found to support the positive impact that emphasis on reflection had towards development in a professional setting. The notion of dialogue-with-self in facilitating reflection on learning and professional practice has been explored with postgraduate pharmacists in a prescribing course, who engaged in using a structured written portfolio.²⁴ Reflective learning was perceived to equate deep learning, and it was argued that systematic reflection was achievable with the approach adopted, without input of others. A similar approach was assumed in a different study, by analysing written reflective statements of pharmacists after a training course.²⁵ Better reflective writing and reflective approach to practice was associated with deeper reflection.

In the published literature, key factors such as improved patient care, critical thinking and transferability of skills towards future practice were often linked to reflective practice strategies.¹⁵ However, each healthcare discipline had a slightly different view on the benefits and role of reflective practice. For example, with the nursing profession the incorporation of reflective practice into the nurses' daily routine was perceived as highly positive and associated with good decision-making, critical thinking ability, and the development of informed rationale for actions which ultimately reflected better patient care.^{6,8,11,17,22}

In contrast, the use of reflective practice was not found to be particularly favourable amongst physicians when linked with assessment.²⁶ Contributing factors for this included time constraints to document

reflections and complete portfolios, and the decline in the exercise of reflective practice in older physicians. Perceived positive effects of reflective practice on medical practitioners were shown in studies where physicians who were exposed to reflective prompts such as reflective writing has made more accurate diagnoses particularly in cases with higher complexity.¹⁶

REFLECTIVE PRACTICE IN HEALTHCARE EDUCATION

It is perhaps unsurprising that reflection-in-action is challenging for practitioners, as it is a complex concept requiring continuing input from reliable external sources. Familiarising healthcare students to this concept is essential to build future professionals who prioritise and feel comfortable with ongoing monitoring as opposed to simply identifying and addressing gaps in knowledge, skills and attitudes.

A diversity of pedagogical approaches has been employed by medical educators, such as portfolios, creative writing workshops, self-report questionnaires, reflective vignettes, learning logs.²⁷⁻³⁰ It has been argued that strategies for incorporating reflective practice in medical education are often rigid, and do not support students to unlock new insights nor do they empower students to be genuinely curious.³¹ A literature review of educational strategies to support medical students to develop their reflective practice identified four broad areas that need to be addressed.³² Firstly, the authors concluded that since the purpose of reflection is to improve judgement, to personally develop and also to contextualise practice, each reflective task needs to be clearly articulated to students in regard to its goal. Secondly, staff being involved in reflective activities need to be role models to be able to facilitate meaningful reflection. Thirdly, the use of self-assessment in tools such as written or web-based portfolios was explored. Clear structure balancing the needs of both novice and experienced reflectors, coaching by staff, variety in reflective subjects, and flexibility of assessment criteria were identified as helpful. Lastly, the momentous need for summative assessment was called for, thus concluding that designated time and increasing motivation were essential to support students to engage in the task.

In dental education study, reflective logs were analysed, and a link was found between reflective practice and performance: 69% of students who practised reflection felt more confident in managing orthodontic emergency cases.³³ A different study amongst nurses explored the role and influence of utilizing reflective practice strategies, allowing student nurses to deal with emotional challenges in a workplace environment.³⁴ Through reflective writing, the participants were able to recognize and acknowledge their own individual beliefs and how that impacted the way they approached emotional challenges when caring for their patients. Paper-based and electronic portfolios were frequently used in physiotherapy and dental studies directed towards student placement and clinical practice settings to document learning experiences and incidents that occurred.^{26, 33, 35} With technological advancements, two studies utilized different forms of

electronic devices to assist in the reflective process.^{36,37} These devices reinforced visual aid for nursing students on experiential placement.

The use of reflection to prepare students for the complexities of clinical practice is gaining traction in pharmacy education literature. Research has explored the implementation of frameworks from Kolb's¹⁰ and Mezirow's¹² models to allow students to transfer their reflective skills in a clinical placement environment.³⁸

A study utilizing Kolb's learning style framework with a 12-item questionnaire was administered to 249 first-year pharmacy students. Students were grouped into four different learning style categories including: Assimilator, Diverger, Converger and Accomodator. The results revealed that students who were classified as 'Assimilators' and 'Divergers' were more likely to utilize reflective processes and observation.³⁸ A later study adapted Mezirow's reflection model to explore the relationship of reflective writing skills and academic success among undergraduate pharmacy students. This synergistic relationship demonstrated improvement in academic assessments, particularly with the final written assessment.³⁹

A different approach that increased critical thinking of students after completing experiential placements was described elsewhere.⁴⁰ Students were supported by using a stakeholder informed, structured but flexible reflective template fit-for-purpose tool which they could utilize across their placements, regardless of type or duration. Strategies that have also been found to be effective in supporting pharmacy students to reflect are utilizing twitter and social media.^{41,42}

Whilst all the approaches presented so far support novice reflectors, as is required in initial education of pharmacists, they still mainly address reflection-on-action and revolve around reflection that needs to be measured and assessed. It remains a challenge for educators to foster reflective practices where most curricula require a form of assessment for an element that is neither truly measurable nor assessable. In that respect, even though it is critical to promote critical thinking and deep learning in initial education, so students familiarise themselves with the concept, evidence is lacking that the teaching of reflective strategies is indeed associated to enhanced reflective practice after graduation.

In further reviewing the literature on reflective practice strategies and/or tools utilized in healthcare professional clinical environments and education, a distinctive pattern has been present: it is observed that the ability of healthcare professionals to reflect on their practice is a competency standard and can be illustrated through the practitioner's application in a clinical setting, in particular when practitioners are faced with challenging cases.^{14,16} The findings have highlighted a number of perspectives from each healthcare discipline and the impact that reflective practice has made and their success within that respected profession. Reflective practice strategies and tools have been utilized to improve accuracy of clinical diagnoses, and build

endurance and capacity to deal with emotional distress that potentiate the likelihood of decisions and actions leading to adverse medical events.¹⁶ This could be transferred to a pharmacy clinical setting whereby, the role of reflective practice builds a platform for pharmacists to utilize their experience, knowledge and resources to critically analyze a certain situation, event or learning task to produce an appropriate action. In particular, the positive outcome when engaging nurses in debriefing sessions and prompting them to make crucial clinical decisions could be applicable to pharmacists in community, hospital and the emerging general practitioner/primary care setting. Pharmacists can draw on and adopt the elements of critical thinking and reasoning to make appropriate clinical decisions in practice and facilitate a multidisciplinary approach with other healthcare professionals.⁴³

Further studies including pharmacy students explored the different types of reflective tools such as Reflective Ability Clinical Assessment (RACA) and Reflective Interprofessional Education Model (RIPE), and also employed focus groups to understand reflection and its potential impact for future practice.^{36,38,39,44,45} Perceptions of students and educators were assessed and it was found that the use of reflective practicers contributed to the overall enhancement of skills such as communication, interprofessional collaboration, clinical knowledge, and competency for future practice in a clinical setting.^{17,44,45} The studies highlight the importance of incorporating effective reflective practice strategies in higher pharmacy education settings and of the emphasis of applying reflective skills in practice.

NEXT STEPS FOR PHARMACY EDUCATION AND PRACTICE

Reinforcing the notion of self-assessment as argued by Eva and Regehr (2005),¹³ reflection-in-action and on-going monitoring are essential for pharmacists to respond to the challenges of ever-changing roles and scope of practice internationally. So how do healthcare systems support and monitor this?

There are limited studies whereby this reflection-in-action has been integral to reflective practice strategies in pharmacy. A report of CPD of health professionals within Europe (EU) placed pharmacists fifth in the ranking of regulated professions, after doctors, nurses, physiotherapists, and dentists.⁴⁶ It was found that there were 4 different systems of CPD for pharmacists in the EU, ranging from mandatory to no formal structure at all. Most systems are based on number of credits, hours or activities, or learning outcomes in terms of skills, knowledge and competencies required. A new revalidation system in the UK has introduced formal peer feedback as part of the framework, and has integrated the need to show impact on CPD activities undertaken as an attempt to bring in external feedback and sources⁴⁷; the emphasis on identifying learning outcomes and goals though is still placed on self-assessment of needs. Scholars have advocated for a change of continuing education approach in the United States of America (USA), linking needs assessment performance gaps with quality improvement to demonstrate commitment to delivering optimal care⁴⁸; more focus on reflection-in-action would be welcome to align with the findings of Eva and Regehr (2005).¹³

Initial education for pharmacy professionals is where it can all begin. Fostering reflection into the current education structure could transform education into a strategy for advancing the profession's practice, and ultimately safeguarding patient care. Reflection needs to be integrated in higher level curriculum design, rather than interspersed sporadically by enthusiastic educators. We must find ways to accept and embrace diversity and flexibility in student reflection; that is, when assessing students by mark communicating the clear outcome that reflection forms a means of continuing feedback rather than merely a grade in and of, itself. Frequent direct observation and formal feedback can be a start to build skills for reflection-in-action; no such structured activities have been evaluated for pharmacy education. If all pharmacy educators involved in curriculum design and delivery understand and model reflective practice, reflection focus will shift from a mandatory task towards a meaningful step in students' professional development as they mature to become future professionals.

CONCLUSION

This commentary examined the literature to explore the role and the measured outcome of reflective practice strategies adopted by healthcare professionals and in education programs, with a view to identify next steps for pharmacy education and practice.

The healthcare system is constantly evolving with continued emphasis on interdisciplinary care, maximising the need for practitioners to reflect on the constant changes that pervade their practice. It is increasingly recognized that reflective practice in the context of interdisciplinary practice should be further incorporated into healthcare professional higher education programs. A review of current literature comprising this commentary identified the need for a coordinated integration of meaningful reflection in everyday behaviors also within the pharmacy world, with feedback from mentoring academic or practice staff also acting as role models, and with the emphasis on self-evaluation as a means of on-going monitors. Such an approach will empower the profession to take a leading role in the new era of enhanced clinical scope of pharmacy practice.

REFERENCES

- 1 Blouin RA, Adams ML. The Role of the Pharmacist in Health Care: Expanding and Evolving. *N C Med J*. 2017;78(3):165-167. doi:10.18043/ncm.78.3.165
- 2 American Pharmacists Association. A tale of two countries: The path to pharmacist prescribing in the United Kingdom and Canada. 2014. Available at: <http://www.pharmacist.com/tale-two-countries-path-pharmacist-prescribing-united-kingdom-and-canada> Accessed February 12, 2019.
- 3 Anderson C, Zhan K, Boyd M, Mann C. The role of pharmacists in general practice: A realist review. *Res Soc Adm Pharm*. June 2018. doi:10.1016/J.SAPHARM.2018.06.001

- 4 Austin Z. CPD and revalidation: Our future is happening now. *Res Soc Adm Pharm*. 2013;9(2):138-141. doi:10.1016/J.SAPHARM.2012.09.002
- 5 Nguyen QD, Fernandez N, Karsenti T, Charlin B. What is reflection? A conceptual analysis of major definitions and a proposal of a five-component model. *Med Educ*. 2014;48(12):1176-1189. doi:10.1111/medu.12583
- 6 Mann K, Gordon J, Macleod A. Reflection and reflective practice in health professions education: a systematic review. *Adv in Health Sci Educ*. 2009; 14:595-62. doi:10.1007/s10459-007-9090-2
- 7 Gibbs G. *Learning by doing: a guide to teaching and learning methods*. Oxford Polytechnic, London; 1998.
- 8 Schon D. *The reflective practitioner: how professionals think in action*. Basic Books, New York, 1983.
- 9 Atkins S, Murphy K. Reflective practice. *Nurs stand*. 1994; 8(39): 49-56
- 10 Kolb DA. *Experiential learning: Experience as the source of learning and development*. New Jersey;1984.
- 11 Johns C. Framing learning through reflection within Carper's fundamental ways of knowing in nursing. *J Adv Nurs*. 1995;22(2):226-234. doi:10.1046/j.1365-2648.1995.22020226.x
- 12 Mezirow J. *Fostering critical reflection in adulthood: how critical reflection triggers learning*. Jossey-Bass Inc Publishers. San Francisco, CA; 1990.
- 13 Eva KW, Regehr G. Self-Assessment in the Health Professions: A Reformulation and Research Agenda. *Acad Med*. 2005;80(Supplement):S46-S54. doi:10.1097/00001888-200510001-00015
- 14 Thompson N, Pascal J. Developing critically reflective practice. *Reflective Pract*. 2012;13(2):311-325. doi:10.1080/14623943.2012.657795
- 15 Gustafsson C, Fagerberg I. Reflection, the way to professional development? *J Clin Nurs*. 2004;13(3):271-280. <http://www.ncbi.nlm.nih.gov/pubmed/15009329>. Accessed February 11, 2019.
- 16 Mamede S, Schmidt HG, Penaforte JC. Effects of reflective practice on the accuracy of medical diagnoses. *Med Educ*. 2008;42(5):468-475. doi:10.1111/j.1365-2923.2008.03030.x
- 17 Kim YH, Min J, Kim SH, Shin S. Effects of a work-based critical reflection program for novice nurses. *BMC Med Educ*. 2018;18(1):30. doi:10.1186/s12909-018-1135-0
- 18 Lutz G, Roling G, Berger B, Edelhäuser F, Scheffer C. Reflective practice and its role in facilitating creative responses to dilemmas within clinical communication - a qualitative analysis. *BMC Med Educ*. 2016;16(1):301. doi:10.1186/s12909-016-0823-x
- 19 Sedgwick MG, Grigg L, Dersch S. Deepening the quality of clinical reasoning and decision-making in rural hospital nursing practice. *Rural Remote Health*. 2014;14(3):2858. <http://www.ncbi.nlm.nih.gov/pubmed/25209421>. Accessed February 11, 2019.

- 20 Koshy K, Limb C, Gundogan B, Whitehurst K, Jafree DJ. Reflective practice in health care and how to reflect effectively. *Int J Surg Oncol*. 2017;2(6):e20. doi:10.1097/IJ9.000000000000020
- 21 Shelesky G, D'Amico F, Marfatia R, Munshi A, Wilson SA. Does weekly direct observation and formal feedback improve intern patient care skills development? A randomized controlled trial. *Fam Med*. 2012;44(7):486-492. <http://www.ncbi.nlm.nih.gov/pubmed/22791533>. Accessed February 6, 2019.
- 22 Achi MM, Neji OI, Lydia OO, Felicia LE, Victoria KU, Mary OA, Catherine CN. Knowledge and application of reflective practice: A tool for meaningful nursing practice among nurses in University of Calabar teaching hospital cross river state Nigeria. *Int J of nursing, Midwife and Health Related Cases*. 2016; 2(2): 26-38. www.eajournals.org. Accessed February 11, 2019.
- 23 Black PE, Plowright D. A multi-dimensional model of reflective learning for professional development, *Reflective Practice*. 2010; 11(2): 245- 25. doi:10.1080/14623941003665810
- 24 Black PE. Dialogue-with-self: reflective learning for the professional development of postgraduate pharmacists. 2006. <http://oro.open.ac.uk/49161/>. Accessed February 6, 2019.
- 25 Edwards RM, Cleland J, Bailey K, McLachlan S, McVey L. Pharmacist prescribers' written reflection on developing their consultation skills. *Reflective Pract*. 2009;10(4):437-450. doi:10.1080/14623940903138290
- 26 Goodyear HM, Bindal T, Wall D. How useful are structured electronic Portfolio templates to encourage reflective practice? *Med Teach*. 2013;35(1):71-73. doi:10.3109/0142159X.2012.732246
- 27 Mamede S, van Gog T, Moura AS, et al. Reflection as a strategy to foster medical students' acquisition of diagnostic competence. *Med Educ*. 2012;46(5):464-472. doi:10.1111/j.1365-2923.2012.04217.x
- 28 Gull SE, O'Flynn R, Hunter JYL. Creative writing workshops for medical education: learning from a pilot study with hospital staff. *Med Humanit*. 2002;28(2):102-104. doi:10.1136/MH.28.2.102
- 29 Baernstein A, Fryer-Edwards K. Promoting reflection on professionalism: a comparison trial of educational interventions for medical students. *Acad Med*. 2003;78(7):742-747. <http://www.ncbi.nlm.nih.gov/pubmed/12857697>. Accessed February 6, 2019.
- 30 Boenink AD, Oderwald AK, de Jonge P, van Tilburg W, Smal JA. Assessing student reflection in medical practice. The development of an observer-rated instrument: reliability, validity and initial experiences. *Med Educ*. 2004;38(4):368-377. doi:10.1046/j.1365-2923.2004.01787.x
- 31 de la Croix A, Veen M. The reflective zombie: Problematizing the conceptual framework of reflection in medical education. *Perspect Med Educ*. 2018;7(6):394-400. doi:10.1007/s40037-018-0479-9
- 32 Chaffey L, de Leeuw EJ, Finnigan G. Facilitating Students' Reflective Practice in a Medical Course: Literature Review. *Educ Heal*. 2012;25(3):198. doi:10.4103/1357-6283.109787

- 33 Jones K, Popat H, Johnson IG. Dental students' experiences of treating orthodontic emergencies - a qualitative assessment of student reflections. *Eur J Dent Educ*. 2016;20(3):156-160. doi:10.1111/eje.12155
- 34 Rees KL. The role of reflective practices in enabling final year nursing students to respond to the distressing emotional challenges of nursing work. *Nurse Educ Pract*. 2013;13(1):48-52. doi:10.1016/j.nepr.2012.07.003
- 35 Constantinou M, Kuys SS. Physiotherapy students find guided journals useful to develop reflective thinking and practice during their first clinical placement: a qualitative study. *Physiotherapy*. 2013;99(1):49-55. doi:10.1016/j.physio.2011.12.002
- 36 Ladyshevsky R.K, Gardner P. Peer assisted learning and blogging: A strategy to promote reflective practice during clinical fieldwork. *Australas J Educ Technol*. 2008; 24(3):241-257. http://etec.ctlt.ubc.ca/510wiki/images/2/2b/Ladyshewy_and_Gardner.pdf. Accessed February 11, 2019
- 37 Nishimura A. Effects of different methods of reflection on nurses' gaze and judgement in a task using a touch panel. *J Clin Nurs*. 2018;27(3-4):e569-e577. doi:10.1111/jocn.14096
- 38 Tsingos C, Bosnic-Anticevich S, Smith L. Does a learning style preference for processing information through reflection impact on the academic performance of a cohort of undergraduate pharmacy students? *Pharm Educ*. 2015;15(1):233-240. <http://pharmacyeducation.fip.org/pharmacyeducation/article/view/392>. Accessed February 11, 2019.
- 39 Tsingos-Lucas C, Bosnic-Anticevich S, Schneider CR, Smith L. Using Reflective Writing as a Predictor of Academic Success in Different Assessment Formats. *Am J Pharm Educ*. 2017;81(1):8. doi:10.5688/ajpe8118
- 40 Deslandes R, Lucas C, Hughes ML, Mantzourani E. Development of a template to facilitate reflection among student pharmacists. *Res Soc Adm Pharm*. 2018;14(11):1058-1063. doi:10.1016/j.sapharm.2017.11.010
- 41 Desselle SP. The use of Twitter to facilitate engagement and reflection in a constructionist learning environment. *Curr Pharm Teach Learn*. 2017;9(2):185-194. doi:10.1016/j.cptl.2016.11.016
- 42 Benetoli A, Chen TF, Aslani P. The use of social media in pharmacy practice and education. *Res Soc Adm Pharm*. 2015;11(1):1-46. doi:10.1016/j.sapharm.2014.04.002
- 43 Salmon R, Holmes N, Dodd K. Reflections on change: supporting people with learning disabilities in residential services. *Br J Learn Disabil*. 2014;42(2):141-152. doi:10.1111/bld.12022
- 44 Lucas C, Power T, Hayes C, Ferguson C. Development of the RIPE model (Reflective Interprofessional Education Model) to enhance interprofessional collaboration. *Res Soc Adm Pharm*. June 2018. doi:10.1016/j.sapharm.2018.05.125

- 45 Lucas C, Power T, Hayes C, Ferguson C. "Two heads are better than one"- pharmacy and nursing students' perspectives on interprofessional collaboration utilizing the RIPE model of learning. *Res Soc Adm Pharm*. February 2019. doi:10.1016/j.sapharm.2019.01.019
- 46 Executive Agency for Health and Consumers, EU Health Programme Final Report. Study concerning the review and mapping of continuous professional development and lifelong learning for health professionals in the EU. 2013.
https://ec.europa.eu/health/sites/health/files/workforce/docs/cpd_mapping_report_en.pdf
Accessed February 6, 2019.
- 47 General Pharmaceutical Council Revalidation Framework. 2018.
https://www.pharmacyregulation.org/sites/default/files/document/gphc_revalidation_framework_january_2018.pdf Accessed February 6, 2019.
- 48 Wheeler JS, Chisholm-Burns M. The Benefit of Continuing Professional Development for Continuing Pharmacy Education. *Am J Pharm Educ*. 2018;82(3):6461. doi:10.5688/ajpe6461