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## Professional portfolios used by Canadian occupational therapists: How can they be improved?

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## Professional portfolios used by Canadian occupational therapists: How can they be improved?

### Abstract

Professional portfolios are widely used in continuing professional development (CPD), despite limited evidence of their effectiveness for improving practice and professional competence. Occupational therapy regulatory organizations in Canada have implemented professional portfolios as tools that support engagement in CPD. To advance research and practice on the use of portfolios, we conducted a critical analysis of their format, content, and embedded learning process. This paper aims to describe and compare the portfolios' characteristics when they are used as a tool to facilitate engagement in CPD. A document review approach was used to analyze documents describing continuing competence programs and portfolios and to compare their characteristics. Data was retrieved from documents using a coding scheme and content was compared to the literature. In Canada, seven out of 10 regulatory organizations have implemented a portfolio. They are similar in their content and proposed self-directed learning approach. Their strength is that they all promote self-assessment, reflection, and development of a CPD plan. However, the tools provided can be improved to help engage in more genuine reflection and integration of learning into practice. Our review of the content, tools, and proposed learning process of portfolios revealed avenues for improvement and future research.

### Keywords

self-directed learning, continuing education, professional development, reflection

### Credentials Display and Country

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Occupational therapists have an ethical obligation to maintain and continuously improve their professional competencies to deliver evidence-based rehabilitation services (Canadian Association of Occupational Therapists, 2011; McKinstry, Allen, Courtney, & Oke, 2009). Regulatory organizations in Canada, therefore, recommend that occupational therapists engage in continuing professional development (CPD) activities, and require them to provide evidence of their participation in these activities and of the impact on professional competency enhancement (Alberta College of Occupational Therapists, 2014; College of Occupational Therapists of Ontario, 2011; Ordre des ergothérapeutes du Québec, 2012). These organizations have thus developed continuing competence programs and make tools available to occupational therapists to support their engagement in CPD and help them to meet their professional requirements. Based on adult self-directed learning theory (Knowles, 1975), these programs promote a process in which professionals have to take the initiative, with or without the help of others, in (a) diagnosing their learning needs, (b) formulating their learning goals, (c) identifying resources for their learning, (d) choosing and implementing appropriate learning strategies, and (e) evaluating their learning outcomes (Crooks, Lunyk-Child, Patterson, & LeGris, 2001). A widely implemented tool used to support this postgraduate learning process is the professional portfolio (Tochel et al., 2009; Tompkins & Paquette-Frenette, 2010).

A professional portfolio is defined as a tool that stimulates reflection through self-assessment,

participation in learning activities, and professional development planning (Mills, 2009; Rouse, 2004). A portfolio can help clinicians reflect on their practice, allowing them to demonstrate and record details of their engagement in the continuous enhancement of their competence in an integrated, coherent, and longitudinal fashion (Driessen, van Tartwijk, van der Vleuten, & Wass, 2007; Gordon & Campbell, 2013; Tochel et al., 2009). However, portfolios have been described in the literature in various ways and have been used for multiple purposes. This can sometimes lead to confusion about their nature and purpose. Smith and Tillema (2003) state that portfolios can be differentiated based on their purpose: They can be used for a selection or assessment purpose but also for a learning or professional development purpose. Portfolios can also be mandatory (i.e., externally required) or for personal use. For example, an individual may keep a portfolio on his or her own initiative to apply for a position and demonstrate professional achievements and competence, whereas a student may be required to submit a portfolio at the end of a course for learning assessment. Portfolios implemented by professional regulatory bodies are typically used for both professional development and competence assessment purposes (Alsop, 2002; Tompkins & Paquette-Frenette, 2010). However, this dual purpose has been identified as creating a potential risk of portfolio misuse (Austin, Marini, & DesRoches, 2005; Van Tartwijk & Driessen, 2009). Clinicians may fear a negative evaluation from the regulatory body if they reveal a lack of competence in their portfolio and are genuinely transparent about their learning

needs (Van Tartwijk & Driessen, 2009).

According to McCready (2007), having clear guidelines for portfolio construction and assessment could reduce these difficulties.

The use of portfolios in continuing professional education has been frequently studied in different professional health care groups. A systematic review, published in 2009, looked at the results of 56 studies and reported that portfolios support the CPD learning process, promote reflection, and facilitate the users' engagement with their learning needs and plans (Tochel et al., 2009). Nevertheless, as mentioned in that review, evidence of portfolio outcomes derives mostly from uncontrolled observational and qualitative studies that provide limited evidence of a portfolio's effectiveness (Tochel et al., 2009). However, a quasi-experimental study involving nurses in Iran demonstrated that portfolio use is more effective than a traditional continuing education program for improving nurses' overall level of competence in seven categories, such as competence in quality assurance, managing situations, and organizational roles (Bahreini, Moattari, Shahamat, Dobaradaran, & Ravanipour, 2013). In that study, the participants using the portfolio had participated in a 16-hr training workshop to improve their reflective skills. A randomized controlled trial conducted among 1,082 dieticians in the United States showed that the portfolio participants completed their self-assessment, evaluated their learning needs, and developed a learning plan significantly more frequently than the control subjects (Keim, Gates, & Johnson, 2001; Sturrock & Lennie, 2009). A survey conducted of 1,415

Canadian pharmacists revealed that they initially misunderstood and experienced misapprehension about the role of portfolios when implemented by their regulatory body, but facilitation and peer-based discussions helped improve their attitudes. No published study was found in the field of occupational therapy. However, in a short survey conducted by the College of Occupational Therapists of Nova Scotia in 2011, 50% of the 115 respondents reported that the portfolio helped them identify their strengths and set professional development goals. Also, 62% agreed that the portfolio helped them create a learning plan. Conversely, 45% reported that the portfolio did not help them with their reflective skills, and 50% disagreed that their learning activities supported change in their practice (College of Occupational Therapists of Nova Scotia, 2011).

Previous studies have reported that the portfolio format and the support provided can influence its use (Driessen, Muijtjens, van Tartwijk, & van der Vleuten, 2007; Tochel et al., 2009; Van Tartwijk & Driessen, 2009). Studies comparing paper and electronic formats reported the electronic format as being easier to use than the paper format. The reasons for this finding included improvement in real-time access and easier retrieval of evidence and data transfer. Moreover, the electronic format users were generally more motivated and spent more time on completing the portfolio than the paper format users (Driessen, Muijtjens et al., 2007; Gordon & Campbell, 2013; Van Tartwijk & Driessen, 2009). Regarding the support provided, portfolio training offered at the time of implementation was identified as an important factor conducive to

appropriate portfolio use because professionals often lack knowledge and understanding of the portfolio's embedded learning process and its purposes. They also lack the necessary self-evaluation and reflective practice skills to feel competent in using this tool (Austin, Marini, Glover, & Croteau, 2005; Dagley & Berrington, 2005; Kostrzewski, Dhillon, Goodsman, & Taylor, 2009). The literature further indicates that the support of a well-informed mentor can be a crucial factor in the uptake and effective learning outcomes of portfolio use (Dekker et al., 2009; Driessen, van Tartwijk, Overeem, Vermunt, & van der Vleuten, 2005; Tochel et al., 2009). Mentors provide feedback, guidance, and motivation that induce professionals to adopt and maintain the use of portfolios. However, when portfolios are implemented in a compulsory CPD program, regulatory organizations are only able to provide members with limited support on how to complete their portfolio and engage in self-directed learning. Professionals are usually left on their own to complete their portfolios and must rely on intrinsic motivation and their own skills to complete this task (Tompkins & Paquette-Frenette, 2010).

Although physicians, nurses, dieticians, and pharmacists have conducted multiple studies during the last 15 years on portfolio use (Austin, Marini, Glover, et al., 2005; Bahreini et al., 2013; Bowers & Jinks, 2004; Dornan, Carroll, & Parboosingh, 2002; Goulet et al., 2013; Keim et al., 2001; Sturrock & Lennie, 2009; Tofade, Hedrick, Dedrick, & Caiola, 2013), the implementation and effectiveness of portfolio use among occupational therapists in the context of

CPD has not yet been studied. A critical review of occupational therapy portfolios developed by Canadian occupational therapy regulatory organizations was therefore conducted to understand the ways in which the tool has been implemented in this profession and to design future studies to improve its use and document its impact. This paper aims to achieve the following objectives:

1. Describe the similarities and differences between portfolios implemented in occupational therapy in Canada.
2. Appraise the format and content of the tools and resources provided to Canadian occupational therapists to help them engage in CPD and complete their portfolios.
3. Identify possible areas for improvement and future research avenues.

### **Methods**

The research team used a document review approach to describe and compare portfolios across Canadian regulatory bodies. The document review process uses a systematic procedure for identifying, analyzing, and deriving useful information from existing documents (Bowen, 2009). This qualitative research approach requires examining and interpreting data to gain an understanding of a phenomenon (Bowen, 2009; Merriam, 1988), in this case, the "portfolio process." Since portfolios are embedded in continuing competence programs, the research team retrieved all documents describing these programs from the organizations' websites (first retrieved in May, 2014, and again in March, 2015). When the documents could not be found

or were unavailable, the research team contacted the organization by email to obtain the documents or to confirm that no portfolio or continuing competence program had been implemented in that province. The documents alone were considered sufficient for the analysis of the portfolio process since they contain the instructions given to occupational therapists on how to engage in this activity. The documents were analyzed in six steps:

1. Individual review of each continuing competence program and portfolio description.
2. Drafting of a written summary of each program.
3. Development of a coding scheme to retrieve portfolio characteristics.
4. Extraction of data from the documents using the coding scheme.
5. Description of similarities and differences between the programs and portfolios.

Two coders (WD and ATH) first performed these steps, and the first author (BV) reviewed the results. After a first read of the documents, a coding scheme was developed and consisted of five categories: (a) portfolio format and requirements, (b) characteristics of self-assessment, (c) characteristics of the professional development plan, (d) characteristics of the reflective learning process, and (e) support provided for portfolio use. The retrieved information was compiled in a comparative table. Finally, to ensure the credibility and confirmability of the results, a member of the Association of Canadian Occupational Therapy

Regulatory Organizations (a group composed of all occupational therapy regulatory bodies across Canada to advance the quality of occupational therapy regulation) was asked to review this paper and provide feedback on its content based on her knowledge of the different continuing competence programs.

## Results

Document analysis revealed that eight of the 10 provincial occupational therapy regulatory organizations have a continuing competence program aimed at promoting members' development and maintenance of competencies. Eight of the regulatory organizations provide a guide describing the content and objectives of their continuing competence program. Seven of the organizations have implemented a portfolio as a part of their program.

### Portfolio Format and Requirements

The characteristics of the seven regulatory organizations' occupational therapy portfolios are presented in Table 1. The definition of the portfolio varies from one regulatory organization to the other. Some regard the portfolio as a tool for recording CPD activities, and others as a tool for recording evidence of self-assessment, learning plans, and descriptions of the reflective learning process. However, the continuing competence programs in the seven provinces that have implemented a portfolio recommend or require the use of a self-assessment process, learning needs assessment, and a professional development or learning plan. Four of the provinces use a paper format portfolio while two of the provinces provide occupational therapists with the option of using the paper or electronic

format, and one of the provinces requires the use of the electronic format.

Portfolio completion is mandatory for annual professional license renewal in three of the provinces. Occupational therapists are required either to submit their portfolio documents or to declare annually that they have maintained their continuing competency portfolio. However, for

the seven organizations using the tool, annual completion of the portfolio (or at least some part of it) is mandatory and it must be submitted at the time of competency review. Each regulatory organization provides at least one competency review assessment for each registered occupational therapist every 5 to 6 years.

**Table 1**

*Characteristics of Continuing Professional Development Requirements and Portfolios Developed by the Association of Canadian Occupational Therapy Regulatory Organizations*

	Alberta	Saskatchewan	Manitoba	Ontario	Quebec	Nova Scotia	Newfoundland
<b>CPD guide provided</b>	yes	yes	yes	yes	yes	yes	yes
<b>Portfolio in paper (P) or electronic (E) format</b>	P or E	P	P or E	P	E	P	P
<b>Portfolio mandatory for license renewal</b>	no	yes	no	no	no	yes	yes
<b>SA tool provided</b>	yes	yes	yes	yes	yes	yes	yes
<b>Completion of SA tool mandatory</b>	every year	every year	every two years	every two years	optional	every year	every year
<b>Practice examples required to complete SA</b>	yes	yes	yes	yes	no	yes	yes
<b>External feedback required for SA</b>	no	no	no	no	no	yes	yes
<b>Template for PDP provided</b>	yes	yes	yes	yes	yes	yes	yes
<b>Completion of PDP mandatory</b>	every year	every year	every year	every year	every year	every two years	every two years
<b>Mandatory learning activities</b>	no	no	PREP modules	PREP modules	9 hours of formal learning	no	no
<b>Reflection on goal achievement and learning outcomes required</b>	yes	yes	yes	yes	yes	yes	yes
<b>Support provided for portfolio use</b>	examples	examples narrated slides	examples narrated slides	examples	examples tutorial video workshop	under development	under development

*Note.* CPD = continuing professional development; SA = self-assessment; PDP = professional development plan; PREP modules = Prescribed Regulatory Education Program.

## **Self-Assessment**

All of the continuing competence programs using a portfolio provide members with tools to guide self-assessment. The tools take the form of a self-administered questionnaire based on practice standards and guidelines developed by each occupational therapy regulatory organization. The practice standards describe essential competencies for practice. Occupational therapists use this questionnaire to assess their level of competence in each competency, and to identify their strengths and weaknesses in order to define practice issues that require improvement.

The self-assessment tools provided in the continuing competence programs have similar requirements. Their completion is mandatory every 1 or 2 years, except in one province where occupational therapists are offered two self-assessment options: using the self-assessment tool or reflecting on and describing challenges or difficult and surprising situations encountered in practice. Only two of the provinces recommend that self-assessment be supported by external feedback from peers and clients. In these provinces, the occupational therapist uses the self-assessment results and peer and client feedback to identify areas of practice that require improvement. Colleagues and clients are provided with a questionnaire presenting a list of standard competencies that they must use to rate the occupational therapist's performance. In another province, occupational therapists are also required to obtain peer and client feedback, but not for the purpose of supporting the self-assessment process. This feedback is only

required at the time of the practice audit as part of the quality assurance program.

## **Professional Development Plan**

All occupational therapists using a portfolio are required to develop a professional development plan that describes their learning goals and the methods they intend to use in order to achieve these goals. Templates are provided by the regulatory organizations for occupational therapists to track and record their professional development plans. Learning goals are based on self-assessment and should target the improvement of essential competencies for practice. The learning activities most commonly advocated are formal (in a structured context and delivered by a recognized organization), not formal (readings, journal clubs, case discussions), or self-directed (chosen and planned by the learner). There is no restriction on the type of learning activity that can be used to achieve professional development goals. However, in Quebec, occupational therapists are required to accumulate a minimum of 9 hr of formal continuing education per year. In Ontario and Manitoba, members complete the "Prescribed Regulatory Education Program (PREP) Modules" annually. These mandatory modules are described as self-directed learning activities that help occupational therapists stay up-to-date on the profession's key issues and practices. In this context, self-directed learning consists of occupational therapists working on the modules on their own time and at their own pace. Occupational therapists are required to retain copies of their completed PREP modules and answer booklets.



## Characteristics of the Reflective Learning

### Process

The content of all seven regulatory organizations' portfolios is designed to promote reflection. Using a problem-solving process, occupational therapists are expected to identify aspects of their practice in need of improvement and elaborate strategies for achieving these improvements. To promote reflection on experience and demonstrate competence level, self-assessment tools (in the six provinces other than Quebec) require that clinicians provide examples from their own practice (see Table 1). Forms are provided for recording professional development plans; these include a section for indicating whether or not the learning goals were achieved and for describing outcomes and the impact on practice. However, most of the forms do not include questions to guide the reflective process. Instead, they only ask occupational therapists to describe how learning activities impact practice. This section of the portfolio is more elaborate in the provinces of Alberta and Quebec. For example, the "integration" section of the Quebec portfolio involves three steps:

1. Reflection on what was learned and a plan for how to transfer learning into practice.
2. Assessment of the level of goal attainment.
3. Assessment of the level of learning integration.

### Support Provided for Portfolio Use

While all seven of the regulatory organizations have developed a guide to support use

of their continuing competence program and portfolio, five of the organizations also provide members with examples of portfolios and the content for the different sections. Two of the organizations use narrated slides and one organization uses an online video tutorial. The Quebec organization also offers a workshop on its standard competency framework and continuing competence program. However, the content of these resources primarily provides basic information on the portfolio purpose and requirements. The examples provided are also basic and often incomplete.

### Discussion

Almost all of the occupational therapy regulatory organizations in Canada have implemented portfolios as part of their continuing competence program. The portfolios are used to support and guide engagement in CPD, as well as for assessment of competence. As described by Gordon and Campbell (2013), portfolios can be used for multiple purposes. The portfolios analyzed in this review were found to be both development and reflective portfolios. Development portfolios are structured around competencies and requirements and aim to demonstrate progression and performance for the purpose of assessment. By contrast, reflective portfolios provide practitioners with the opportunity to reflect on their experience and make sense of their learning process (Gordon & Campbell, 2013). Yet, combining CPD and competency assessment purposes can negatively influence portfolio implementation and user attitudes (Tochel et al., 2009). As described by Van

Tartwijk and Driessen (2009), this dual function of the portfolio can jeopardize reflection if clinicians fear they will be evaluated on the basis of their revealed weaknesses. Even if portfolios are often perceived as a burden, there appears to be greater compliance and more time spent completing this tool (McMullan et al., 2003; Tochel et al., 2009; Van Tartwijk & Driessen, 2009) when they are required for high-stake matters, such as competency assessment. When portfolios are not mandatory, they are significantly less used, even though professionals recognize their potential usefulness (McMullan et al., 2003; Tochel et al., 2009; Van Tartwijk & Driessen, 2009).

Based on this evidence, occupational therapy regulatory organizations should continue making portfolio completion mandatory. In doing so, however, they should also prepare for a major potential challenge: that of changing their members' perceptions of the value of portfolios for professional development and lifelong learning. For example, in a survey conducted by the College of Occupational Therapists of Nova Scotia (2011), 95% of the participants mentioned completing their portfolio because of regulatory requirements, while 25% completed it for their annual performance review. Only 16% of the participants mentioned career development as a motivating factor. While the primary purpose of these portfolios is to promote CPD, they are also used for assessing the ways in which occupational therapists meet continuing competence program requirements. Providing clear information on the purpose of the portfolios and greater transparency regarding their

evaluation criteria at the time of practice audit could help decrease members' feelings of coercion and fear of not meeting professional requirements (McCready, 2007).

The self-assessment tools developed by the seven regulatory organizations are composed of a set of questions based on a general list of standard professional competencies. Occupational therapists are asked to make a global assessment of their strengths and weaknesses, and in some cases, to complete this assessment with examples from their practice using reflection-on-practice. Only two of the provinces also require the collection of external feedback from peers and patients to support and complement this self-assessment. Yet, the literature suggests that self-assessment should include two key elements: seeking out feedback from reliable and valid external sources and using reflection-in-practice instead of reflection-on-practice (Epstein, Siegel, & Silberman, 2008; Eva & Regehr, 2005; Sargeant et al., 2010). Accurate external feedback, such as standardized practice assessments and patient surveys, offers insights into clinical performance that is essential for improvement (Epstein et al., 2008). Peer interaction provides a benchmark against which one can compare one's own performance (Sargeant et al., 2010). Furthermore, self-assessment should be repeatedly enacted in situations where professionals monitor their own ability to solve current practice problems effectively, otherwise known as "reflection-in-practice" (Schön, 1983). This is believed to be more effective than reflecting outside their practice context and at a time far removed from actual

performance (Eva & Regehr, 2005). Reflection-in-practice is an important mechanism, as it allows professionals to recognize difficult or surprising practice situations, which in fact offer privileged opportunities for learning and identification of personal learning needs (Eva & Regehr, 2005; Schön, 1983; Vachon & LeBlanc, 2011). Thus, self-assessment tools should promote the collection of external feedback and could be improved to support the development of mindful, self-monitoring abilities (Epstein et al., 2008; McConnell, Regehr, Wood, & Eva, 2012).

The approach proposed by the different regulatory organizations' portfolios follows the steps of the self-directed learning process, but the emphasis is mostly on self-assessment and the drafting of a professional development plan. If new learning and reflection are to change practice, professionals should carry out the reflective learning process and engage in the evaluation of learning (Tompkins & Paquette-Frenette, 2010). Evaluation of learning requires reflection on how well the learning objectives were achieved; the appropriateness of the learning plan; the impact on knowledge, skills, attitudes, and competence; how practice changed; and if and how patient outcomes improved as a result of engaging in CPD (Rouse, 2004). This last step is difficult to perform because it often involves transformation or change at the cognitive, emotional, and social levels (Illeris, 2008; McWilliam, 2007; Vachon, Durand, & LeBlanc, 2010). Portfolio content and the corresponding learning process need to support clinicians reflecting at multiple levels: on the new knowledge

acquired and how it differs from their previous knowledge, on their motivation to bring about change in their practice and how straightforward or challenging this will be, and on ways to overcome practice change barriers (Rochette, Korner-Bitensky, & Thomas, 2009; Vachon et al., 2010). Examples of completed portfolio sections provided in the organizations' continuing competence program guides are often incomplete, include minimal portfolio content, and show low levels of reflection and incomplete learning cycles. Providing complete portfolios that illustrate high-level reflection could help occupational therapists make better use of their portfolios.

Mentoring and peer support are described as an important condition for the success of portfolios (Dekker et al., 2009; Tochel et al., 2009). Yet the support and feedback that the regulatory organizations are able to provide is often scarce, and occupational therapists usually receive feedback on their portfolios only after a competence review assessment, which is usually performed every 5 to 6 years. In this context, occupational therapists should be encouraged to identify, in their work environment or elsewhere, a mentor or someone who can provide feedback on their portfolios' content. Furthermore, theories on reflective practice describe reflection not only as an inward-looking process but also as a process where meaning is created through interaction and facilitated by group discussion (Boud, Keogh, & Walker, 1985; Ng, Kinsella, Friesen, & Hodges, 2015; Rodgers, 2002; Schön, 1983). As such, it would be worthwhile to encourage and assess the

impact of conducting face-to-face or online portfolio-learning groups (Moore, 2006; Tompkins & Paquette-Frenette, 2010).

Finally, there is growing evidence that web portfolios are easier to use because they facilitate information retrieval and data transfer from multiple sources, are user-friendly, are flexible, and improve real-time access (Dagley & Berrington, 2005; Dornan et al., 2002; Gordon & Campbell, 2013; Tochel et al., 2009). Electronic portfolio users also spend more time developing their portfolios and demonstrate greater motivation regarding their learning process (Driessen, Muijtjens, et al., 2007; Tochel et al., 2009). Only three of the occupational therapy regulatory organizations have implemented electronic portfolios, and only one requires the use of a web-based version. Regardless of the variability of different clinicians' information technology skills, current portfolio evidence (Gordon & Campbell, 2013; Tochel et al., 2009) suggests that portfolios should be made available online for all practitioners.

Portfolios are increasingly being implemented in CPD and by the regulatory organizations of different health care professions. It is important to generate further evidence on the impact of portfolios and how they support professionals to improve their competence. The occupational therapy profession needs to conduct experimental studies on the effectiveness of portfolios to justify their widespread implementation. The tools provided to occupational therapists to guide this process can also be improved in light of current best evidence from

health professions education research on how to support self-assessment (Eva & Regehr, 2013; Sargeant et al., 2011) and reflective practice (Moon, 2004; Murdoch-Eaton & Sandars, 2014; Paterson & Chapman, 2013; Vachon et al., 2010). Future research efforts should focus on developing, in collaboration with occupational therapists, a self-assessment tool that requires the collection of valid external feedback and reflection-in-practice rather than solely general reflection-on-practice. Further, the reflective learning process embedded in continuing competence programs and portfolios should support the implementation of practice change and, ultimately, the improvement of service quality. This step can be facilitated by clinicians' reflections on their habitual ways of delivering occupational therapy services and identification of the contextual factors influencing practice. Using more appropriate strategies, such as mentorship, peer feedback, portfolio learning groups, or better reflective tools to guide this process should be evaluated in the future.

Future research avenues were identified on the basis of the document review and critical analysis of the portfolios implemented occupational therapists. There is a need to document the portfolio users' perceptions of the tool to allow the development of materials and interventions that can support better use of this tool and fuller engagement in CPD. Self-assessment tools, which promote reflection-in-action, and reflective guides, which support the achievement of a deeper level of reflection, should be rigorously developed in collaboration with users and regulatory

organizations. Assessment of these tools and guides in different formats could increase our understanding of the self-directed learning process occupational therapists use in practice. Since mentoring and peer support are key prerequisites for portfolio effectiveness (Dekker et al., 2009; Tochel et al., 2009), appropriate work-based support interventions could be developed and evaluated using rigorous research designs; the results of which would make an important contribution to this field of research.

This review presents some limitations. It provides an overview only of portfolios used in occupational therapy in Canada, and the results may not apply to other countries and other professional disciplines. The review was based on document analysis and on information provided to occupational therapists to encourage them to engage in self-directed learning. It is conceivable that the research team members misinterpreted this information, although strategies were used to ensure proper reporting of data. Finally, the main strengths of this work are the overview it provides of portfolio implementation in occupational therapy and the potential solutions and research avenues it suggests for improving portfolio use and its impact on practice.

## Conclusion

In conclusion, the study found that portfolios implemented by Canadian occupational therapy regulatory organizations are based on the principles and processes of self-directed learning. Our review of the content, tools, and proposed learning process revealed some avenues for improvement and future

research. Given the currently scarce evidence available on the portfolio's impact on professional competencies and quality of care, the outcomes of portfolio use require further assessment despite the major challenge this task represents. Assessment will become all the more necessary as professionals spend valuable time and energy complying with their regulatory organization's requirements.

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