

Designing Reflective Practice in the Context of OER-based e-Learning

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Abstract: Much is said about the importance of reflective practice especially in the professions. Yet much of what happens as part of reflective practice in the professions such as teaching is most of the time left to chance. Reflective practice allows practitioners to see the link between theory and practice by thoughtfully considering their own experiences, and applying knowledge into practice. In this paper we argue that for reflective practice to be meaningful and useful to professionals, it should be carefully designed with appropriate structure and guidance. We discuss how this was achieved by being pro-active about promoting and nurturing reflective practice within the context of a professional development program with Sri Lankan educators on OER (Open Educational Resources)-based e-Learning, and how it supported fostering Open Educational Practices (OEP). The OER-integrated online learning experience was designed with various strategies adopted to enhance reflection 'in' and 'on' action, within a situated learning pedagogical design – Scenario-based learning (SBL). Content analysis of the qualitative data mainly gathered through participants' self-reflections, supplemented with course team members' reflections, focus group interviews and the open-ended questions in questionnaire surveys revealed that a scenario-based approach to learning incorporating authentic learning activities and assessment tasks such as concept mapping, online discussions, reflective journal writing, and rubric-based feedback on assessment tasks, all helped scaffold participants' approach to reflective practice. Results show that these strategies that were adopted enhanced their critical thinking, creativity, collaborative learning as well as self-esteem, also indicating a shift towards OEP. We conclude that careful design of the learning experiences is critical in promoting and supporting reflective practice among educators, and the use of such strategies in the design of OER-based e-Learning.

Key words: Reflective Practice; OER-based e-Learning, Pedagogical Design, Open Educational Practices

Introduction

The significance of reflection and reflective practice in professional development is a much discussed subject. Reflection allows professionals to monitor and self-regulate their practices by thoughtfully thinking about their own actions and experiences, seeing the link between theory and practice and applying such knowledge into practice. Such reflective practice is a key to progressive development of professionals that enables them to become reflective practitioners. Yet, much of what happens as part of reflective practice in the professions such as teaching is most of the time left to chance. In this paper we argue that for reflective practice to be meaningful and useful to professionals, it should be carefully designed with appropriate structure and guidance. We discuss how this was achieved by being pro-active about promoting and nurturing reflective practice within the context of a professional development program with Sri Lankan educators on OER (Open Educational Resources)-based e-Learning, and how it supported fostering Open Educational Practices (OEP).

Conceptual Framework

Reflective Practice in Professional Development

Reflection is a form of mental process, thinking about what we have done, learned and experienced, which is used to fulfil a purpose or to achieve some anticipated outcome (Moon, 2005; Moon, 1999). Reflective practice becomes a key strategy for self-improvement in a professional setting, as it involves critical self-analysis in which individuals thoughtfully consider their own experiences in applying knowledge to

practice (Schön, 1983; 1987). Hence, it is a very productive process leading to great self-awareness of individuals by identifying practices that have worked well as well as areas for improvement as a step towards positive changes in their practices both in personal and professional contexts. A number of models on reflective practice that have been presented over the years attempts to explain how theory is linked to practice through reflection. For instance the Experiential Learning Theory (Kolb, 1984) illustrates an iterative cycle of four stages- concrete experience; reflection; abstract conceptualisation; and active experimentation, where learning occurs moving between active and reflective modes, emphasizing the significance of reflecting upon the experience for learning to happen. Similarly, the ‘Learning by Doing’ model (Gibbs, 1988) provides some key points in development, especially description, evaluation, analysis and action, encouraging the use of critical reflection in converting new learning and knowledge into action and change.

The significance of reflective practice in the teaching profession has been widely discussed and well-researched. While reflection is a form of mental processing that is used to fulfil a purpose, reflective learning emphasizes the intention to learn from current or prior experience (Moon, 2013). Through a reflective practice process the insights and learning gained through experiences can be used by the practitioners to continuously learn, grow and develop in and through practice. The notions of ‘reflection-in-action’, and ‘reflection-on-action’ (Schön, 1983) allows practitioners to engage in a process of continuous learning through critical reflection.

Reflection ‘in’ action and Reflection ‘on’ action

Donald Schön’s (1983) model focuses on reflective practice as a means for professional growth and on the role of the reflective practitioners in terms of two aspects - learning to reflect in action (RIA) and reflect on action (ROA) (Mung, 2012). RIA is ‘thinking on your feet’ or reflecting while engaging in an action, while ROA is ‘looking back’ or reflecting after an action or an experience (Schön, 1983). RIA allows practitioners to constantly be aware and monitor one’s own actions and make changes as required during the experience itself, while generating new understandings of the situation. However, this will be triggered with a ‘surprise’:

The practitioner allows himself to experience surprise, puzzlement, or confusion in a situation which he finds uncertain or unique. He reflects on the phenomenon before him, and on the prior understandings which have been implicit in his behaviour. (Schön, 1983, p.68)

ROA, on the other hand, is a post-action reflection which allows analyzing and evaluating the experience that will help practitioners to plan and improve their next course of action. These two notions, RIA and ROA are complementary in having a clear link or relationship between them, and together, playing a significant role in improving teaching-learning practices. This provides a useful framework to plan strategies to support reflective practice in professions (Mung, 2012).

The Reflection *in* Action and Reflection *on* Action framework (Schön, 1983) provided guidance in the development of a professional development course on OER-based e-Learning at OUSL, for practitioners in the higher education setting, where the learning experiences were carefully designed in a structured manner, including specific strategies to support reflective practice among them.

Design and development of the OEReL online course

The OER-based e-Learning (OEReL) developed at OUSL is an adaptation of a fully online professional development course of CEMCA. This course was developed based on the Scenario-based (SBL) pedagogical approach (Naidu, 2010). It used an innovative approach to learning experience design, a ‘learning engine’ for effective, efficient and engaging OER-integrated e-learning (Naidu & Karunanayaka, 2014). Integration of OER across the five modules of the course was at different levels shifting from a focus on OER to OEP (see Karunanayaka, Naidu, Rajendra & Ratnayake, 2015 for details). The learning design included an authentic learning scenario that challenged participants to engage in learning activities leading to assessment tasks with the support of learning resources. Each assignment consisted of three sections: an individual task; group discussion forum; and a self-reflection. The participants were provided clear guidelines to write a short reflection on their learning experience, as shown in Fig. 1. In addition, an assessment rubric used to assess and provide feedback to their reflections (see Fig. 2) was also shared with the participants.

Guidelines to write Self-Reflections

As an assessment requirement, you need to write short reflections at the end of each of the stages of your learning process.

Reflection allows us to learn from our experiences leading to greater self-awareness. The aim of reflection is to identify areas that need improvement, and identify approaches that worked well to reinforce good practice.

After completing each stage, recall the learning/assessment activities you were engaged in.

Make self-critical notes on your feelings, ideas, successes/failures and problems that may have arisen, related to each activity

Write a short reflection (a single page) focusing on the following:

- Analyzing the importance of the activity/activities
- How this experience has affected you/others?
- What were the issues arisen and how those were overcome?
- What were the successes/failures?
- What impact this experience had had on you?
- Could you have done certain things in a different manner, and If so, how?

Your reflective notes are your own ideas. The important thing is to write your reflections clearly and meaningfully.

Fig. 1: Guidelines provided for participants to write self-reflections

(b) Reflection	4. Reflecting on the learning experience: (i) Critical self-analysis (ii) Challenges (iii) Successes/Failures (iv) Impacts (v) Future improvements	Experience gained during the task are critically analysed appropriately and clearly addressing all 5 elements	Experience gained during the task are critically analysed appropriately and clearly addressing at least 4 elements	Experience gained during the task are critically analysed appropriately and clearly addressing at least 3 elements	Experience gained during the task are analysed, addressing at least 2 elements	Experience gained during the task are analysed, addressing only 1 element.
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Fig. 2: Assessment rubric used for self-reflections

Within the learning experiences designed in each of the modules, the participants were given various opportunities to reflect ‘in’ action and reflect ‘on’ action (Schön, 1983). Table 1 provides a summary of different aspects in the course design adopted to facilitate and promote reflective practice among participants during their learning process.

Table 1: Strategies adopted in the course design to facilitate reflective practice

Reflective Practice	Reflection in Action (RIA)				Reflection on Action (ROA)	
	→					
Strategy	Learning Scenarios	Learning Activities (Individual task)	Learning Activities (Group discussion forum)	Final Assignments (Individual)	Self-Reflections (Individual)	Feedback/ Assessment Rubric (Individual/ Group)
Details	Learners situated in authentic challenging scenarios	Engaging with new concepts, with the support of learning resources	Sharing draft work for critical, constructive peer feedback	Improving draft work and submit finalized assignment.	Writing self-reflective notes on the learning experience	Planning for the future

A description of a learning experience in one module is presented in Table 2 as an example to illustrate how different strategies were employed within the SBL pedagogical design to support reflective practice.

Table 2: An Example of Learning Scenario, Learning Activities & Assessment Tasks in Module 1

Learning Scenario	Learning Activities & Assessment Tasks (Part 1)	Reflective Practice
<p>The use of Open Educational Resources (OER) is being adopted by numerous institutions, governments and the private sector. As part of its service to the academic community, your university will be running a workshop entitled 'An Introduction to OER' for lecturers involved in tertiary education. The main objective of this workshop is to provide participants an understanding of the basics of OER so that they can in turn run a workshop for their respective institutions in the following areas: Openness in education Historical development of open educational practices; OER initiatives by institutions and governments</p> <p>Your Goal: You have been asked to lead a team of academics to prepare a plan/ blueprint for the workshop as well as identify and collate all the necessary resources to support the workshop.</p>	List one key concept related to 'openness in education' and at least three other concepts related to your key concept. Link the key and related concepts, with labeled arrows, and explain their relationship.	RIA
	Post the draft of your key and related concepts to the discussion forum; respond to the posts of at least two of your peers, with insights on their understandings of key and related concepts, and suggestions on how they might be improved	RIA ROA
	Based on peer feedback and tutor comments, develop your Concept Map covering all the concepts required, and write a description that explains your concept map.	RIA ROA
	Submit the finalized concept map covering all the concepts required, together with a description that explains your concept map and a short reflection on this process,	ROA

As shown in the above example, the SBL design initially situated the participants in a challenging situation in an authentic learning scenario where they were activated with a goal to achieve. This made it mandatory for them to reflect 'in' action in order to move forward— analyze the prevailing 'puzzling' or 'confusing' phenomenon based on their prior experiences, and also to think ahead about the actions required by them to face this challenge. Further, there was a sequence of learning activities that emerged from the scenario leading to the assessment tasks. These supported participants to reflect 'in' while 'experimenting' with their actions, reviewing, revising and 'changing' their work while developing 'new understandings' during the process. Also these allowed them to reflect 'on' their actions-to think at the end of each of the activities, reflecting once each task is completed, and plan for future actions.

Methodology

Research Design and Research Questions

The aim of this study was to explore how a systematic design of reflective practice within the context of a professional development online course on OER-based e-Learning, impacted promoting and supporting reflective practice among educators and fostering their adoption of OEP. A case study approach, which is an in-depth investigation of a single unit of study through examining first-hand experiences of individuals in a real life context (Yin, 2003; Bogdan & Biklen, 1998) was adopted as the research design.

The following research questions were addressed in the case study:

- What is the effect of the scenario-based pedagogical design in promoting reflective practice among educators?
- How and to what extent the strategies adopted within the course design enhanced reflection 'in' action and reflection 'on' action?
- What challenges were faced by the educators in their reflective practice process?
- What are the impacts of the learning experience design integrated with reflective practice, on educators?

Participants

A group of 35 educators at the Open University of Sri Lanka (OUSL) constituting 18 females (51%) and 17 males (49%) who enrolled in the OEReL course were the participants of the study. Table 3 presents a summary of the participant profile.

Table 3: Participant Profile

Category		Number	Percentage %
Gender	Female	18	51.4
	Male	17	48.6
Highest Educational Qualifications	PhD/MPhil	16	45.7
	Masters/PG Diploma	10	28.6
	First Degree	09	25.7
Experience as an educator in the Higher Education System	>20 yrs	07	20.0
	11-15 yrs	06	17.2
	Less than 10 yrs	22	62.8

While a majority of the participants (62.8%) were with less than 10 years of experience in the higher education system, they were well-qualified academics with either PhDs or MPhils (45.7%) and with other post graduate qualifications (28.6%). Yet, the number of active participants gradually decreased during the course of study and finally only 10 academics (29%) successfully completed all five modules in the course.

Collection and analysis of data

The key data collection strategy adopted for this study was participants' self-reflections written at the end of each learning experience. This was supplemented with course team members' reflections, focus group interviews and the open-ended questions in learning experience questionnaire surveys. A simple coding system developed based on the conceptual framework of reflection 'in' action and reflection 'on' action (Schon, 1983), was adopted for the content analysis of qualitative data, as show in Table 4.

Table 4: Coding system adopted for the content analysis of qualitative data

Reflection in Action (RIA)		Reflection on Action (ROA)	
Element	Code	Element	Code
Puzzling	[P]	Analyzing	[AN]
Experimenting	[E]	Challenges	[CH]
Reviewing; Revising	[R]	Impacts	[IM]
New understandings	[N]	Application	[AP]

Chunks of reflective statements obtained from the qualitative data were considered as 'units of analyses. After an initial analysis on RIA and ROA based on this coding system, a detailed analysis was conducted to identify specific strategies supported, challenges faced and impacts related to the reflective practice process.

Results and Discussion

What is the effect of the scenario-based pedagogical design in promoting reflective practice among educators?

The course team members' and the participants' reflections were analyzed to find out the effect of SBL design in promoting reflective practice. Some sample quotes are provided in Table 5.

Table 5: Sample quotes on the effect of the SBL design on reflective practice

Quote from a course team member's reflections:
<i>... This is the first time that I was involved in designing SBL for facilitating learning...It gave me an opportunity to realize when designing SBL how important that one should look into the learning outcomes and identify what the students should achieve on completion, and then how one should structure the scenario...trigger discussion and...drive into collaborative learning...I noticed...that students were very constructive and open in writing their reflection for each assignment...I strongly believe that when students reflects on their assignments they might have found their gaps and would have helped them to rectify when writing the next assignment...</i>
Quote from a participant's reflections:
<i>I really liked the SBL design...This was something new to me. [AN]...Each module was contextualized and situated in an authentic setting with tasks requiring us to engage in a number of activities which centered on designing an OER based- e-learning course in our related field. [P]...The real life activities such as writing the learning outcomes, developing the learning scenarios and the activities as well as designing the assessment tasks to fit the learning outcomes were challenging yet motivating. [E] [R]... The experience I gained from engaging in these tasks was invaluable. [N] [IM]...I have since given greater attention to ensuring that the assessment tasks I select are in keeping with the learning outcomes...[AP]</i>

As evident by the above quotes, the SBL pedagogical design had supported integration of strategies to promote reflective practice, supporting both RIA [P,E,R,N] and ROA [AN,CH,IM,AP] among the participants. Situating them in an authentic 'scenario' with a challenge compelled participants to reflect 'in' action – to analyze the prevailing situation while experiencing it, and think ahead about the actions required by them, based on their prior experiences. Further, the sequence of learning activities that emerged from the scenario too have motivated participants to reflect 'in' while experimenting with their actions, reviewing and revising their work and developing new understandings during the process, and leading to the completion of assessment tasks. These also supported them to reflect 'on' their actions – to think through each of the activities and reflecting once the assessment tasks are completed, and plan for future actions.

The SBL design which is a model based on situated learning principles (Brown, Collins & Duguid, 1989) and grounded in the constructivist theory of learning (Duffy & Jonnasen, 1991), allowed immersing participants in real life challenging situations that prompted RIA. Further, the learning scenario started with a precipitating event that 'triggered' them engaging in a sequence of activities to address the problem (Naidu, 2010) which also necessitated RIA in each step to move forward, as well as ROA at the culmination, to make use of that experience for the future. The 'learning engine' framework (Naidu & Karunanayaka, 2014) adopted to develop such learning experiences within the SBL approach was very accommodating to design and integrate specific strategies in a structured manner to promote RIA and ROA among the participants.

How and to what extent the strategies adopted within the course design enhanced reflection 'in' and reflection 'on' action?

Participants' feedback on specific strategies used in each module revealed how and to what extent the different strategies have affected their reflective practices. Some examples are given below.

Concept Mapping (Module 1):

When I start to draw my Concept map on Openness in Education, I was not aware of any concepts related to the topic.[P]...I got a paper and drew the concept map providing the relationships one by one. At the beginning it was a total mess. I drew again and again.[E]...Then I started to go through my group members maps and tried to comment on them.[R]...The exercise enlightened me on Focal concepts, the relationships, benefits, impacts.[N]...After completing the map, I realized that I missed to add several examples and also some pictures.[AN] More reading would help me to do a better job...in future...[AP]

Online quiz on licence types: (Module 3)

I tried the quiz before reading to check my prior knowledge of license types.[P] I found that while I had an idea of what the terms meant when it came to actually indicating the correct combinations I failed miserably. [E] Happily, after the readings I got just one type wrong [R] ...that was an achievement. [IM]

It was interesting to note the patterns of reflective practice of both RIA [P, E, R, N] and ROA [AN, CH, IM, AP] within the strategies, as depicted by the coded quotes of participants. Especially, the discussion forum activities included in all modules have played a key role in supporting reflective learning of participants, as evident by the coded quotes given below.

...Even though the learning may look somewhat simple and small the richness of information available within it could be much deeper and richer. [AN] The postings...in the discussion forum further emphasized this.[AN]...It is really an exhilarating experience.[AN]. Here I found different persons looking at things from different viewpoints and bringing out the richness in the lesson material.[AN]

I could not participate in discussions and post my assignments to get peer feedback. [CH]...However, I followed all the discussion posts, posted by others and got some valuable insights in drafting my assignment. [R] [N] This is the beauty of online learning, having all discussions posts stored and can be retrieved even at a later stage. [AN]...I also felt the value of communication and collaboration in an e-learning situation which is crucial for meaningful learning. [IM]

The peer-facilitated discussion forums were developed based on key design principles of eLearning (Salmon, 2000) that encouraged participants to collaboratively construct knowledge through social negotiation and self-regulation, and at the same time supporting reflective practice. These examples reveal that specific strategies included within the learning experience such as concept mapping, quizzes, and online discussions have all helped scaffold participants' approach to reflective practice.

What challenges were faced by the educators in the reflective practice process?

Despite the various strategies adopted attempting to encourage participants continuously engage in reflective practice, numerous challenges have affected their reflecting process, as summarized in Table 6.

Table 6: Key challenges faced by participants to engage in reflective practice

Challenges	Effects	Supportive Quotes
Novelty Self-learning	Doubts on understandings	<i>For me, reading took a considerable amount of time... most of the information was new...</i>
Time constraints	Inability to meet the deadlines	<i>Managing the time was the biggest challenge to adhere to deadlines...</i>
Peer-facilitation vs. Instructor facilitation in the discussion forum	Expectation of more instructor feedback, rather than peer feedback.	<i>Most of the knowledge construction was handled by peers... It would have been better if there were more interactions by the facilitators...</i>
Too many higher order thinking	Cognitive load	<i>All activities require higher order thinking skills and needs time to think...and articulate...</i>
Technical Problems	Problems with the LMS	<i>I was very unhappy... while waiting in front of my computer for more than 4 hours...</i>

Time constraint was a common issue faced by all participants who were full time academics. Reflection essentially needs time to *think*, either ‘on your feet’ (RIA) as well as ‘looking back’ (ROA) (Schon, 1983). The novelty of the content (eg. OER and related concepts), certain activities (eg. Concept mapping, SWOT Analysis) as well as the need to critically review of each other’s work, provide constructive criticisms at the forums required substantial time. Hence, the time allocated to engage in multiple tasks with the stipulated deadlines was claimed as insufficient by the participants. The complex nature of the activities which required mostly higher order cognitive skills such as critical thinking, analytical thinking, reflective thinking and creativity would have resulted in increasing the cognitive load (Sweller, 1988) of the participants.

What are the impacts of the learning experience design integrated with reflective practice, on educators?

Results show that the learning experiences designed within the modules have impacted on the participants in significant ways. A summary of impacts with examples given from the learning experiences in different modules are presented in Table 7 with supportive quotes of participants.

Table 7: Impacts of the learning experience on educators

Learning experience	Impacts	Supportive Quotes
Selection and categorization of OER (Module 2)	Collaborative learning; Critical thinking; Self-esteem	<i>...The categorization of OER aroused some doubts. [P]... After getting feedback from peers I was able to clarify the doubts.[R]...I've rearranged the types and found facts to justify the selection regarding the topic. [R]... At the end of the assignment task my knowledge in OER came to a higher level. [N]</i>
Writing Learning Outcomes (Module 4)	Critical thinking	<i>This assignment opened my eyes to look at the course in a holistic manner as well as to write learning outcomes more accurately [N]...As a teacher the experience gained is invaluable.[IM] In future I will use this knowledge gained in writing learning outcomes. [AP]</i>
Designing an OER-integrated eLearning experience (Module 5)	Creativity Self-esteem	<i>This was a great opportunity to think on how to design an OER course to deliver it an effective manner online [AN]...This exercise gave us the chance to demonstrate our creativity [IM] ...Not only it helps in selecting suitable OER but it also helped us in developing/creating our own homegrown OER...[AP]</i>

A closer analysis of the participants’ reflections revealed that their critical thinking, creativity, collaborative learning as well as self-esteem have been enhanced during the process. Further, it indicates a shift towards OEP, in the educational practices of the participants. For instance, integration of OER in different ways, at different levels in all activities in all modules of the OEReL course has been very supportive for participants to engage in self-study, independent learning, as well as reflective learning (Karunanayaka et al., 2015). These activities further enabled developing their competency in adopting OER in all 5R s – Retain, Reuse, Revise, Remix, Redistribution (Wiley, 2014), as well as creation of OER. On the other hand, group learning activities, especially the peer-facilitated discussions enhanced collaborative learning practices involving shared knowledge construction among the participants, with the support of OER-integrated learning (Karunanayaka, Rajendra, Ratnayake, & Naidu, 2015).

Such enhancements in innovative use and creation of OER and collaborative practices in the use of OER foster and promote Open Educational Practices (OEP) (Ehlers, 2011). Hence, the systematic design of reflective practice process in the OEReL course has affected fostering adoption of OEP among the participants while supporting RIA and ROA.

Conclusions and Implications

From the findings it was evident that reflective practice among educators was enhanced through a scenario-based approach to learning incorporating authentic learning activities and assessment tasks. Design of strategies such as concept mapping, online discussions, reflective journal writing, and rubric-based feedback on assessment tasks have helped scaffold participants' approach to reflective practice, and enhanced their critical thinking, creativity, collaborative learning as well as self-esteem, also indicating a shift towards OEP. Time constraint was a key challenge that affected reflective practice of participants. We conclude that careful design of the learning experiences is critical in promoting and supporting reflective practice among educators, and the use of such strategies in the design of OER-based e-Learning.

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