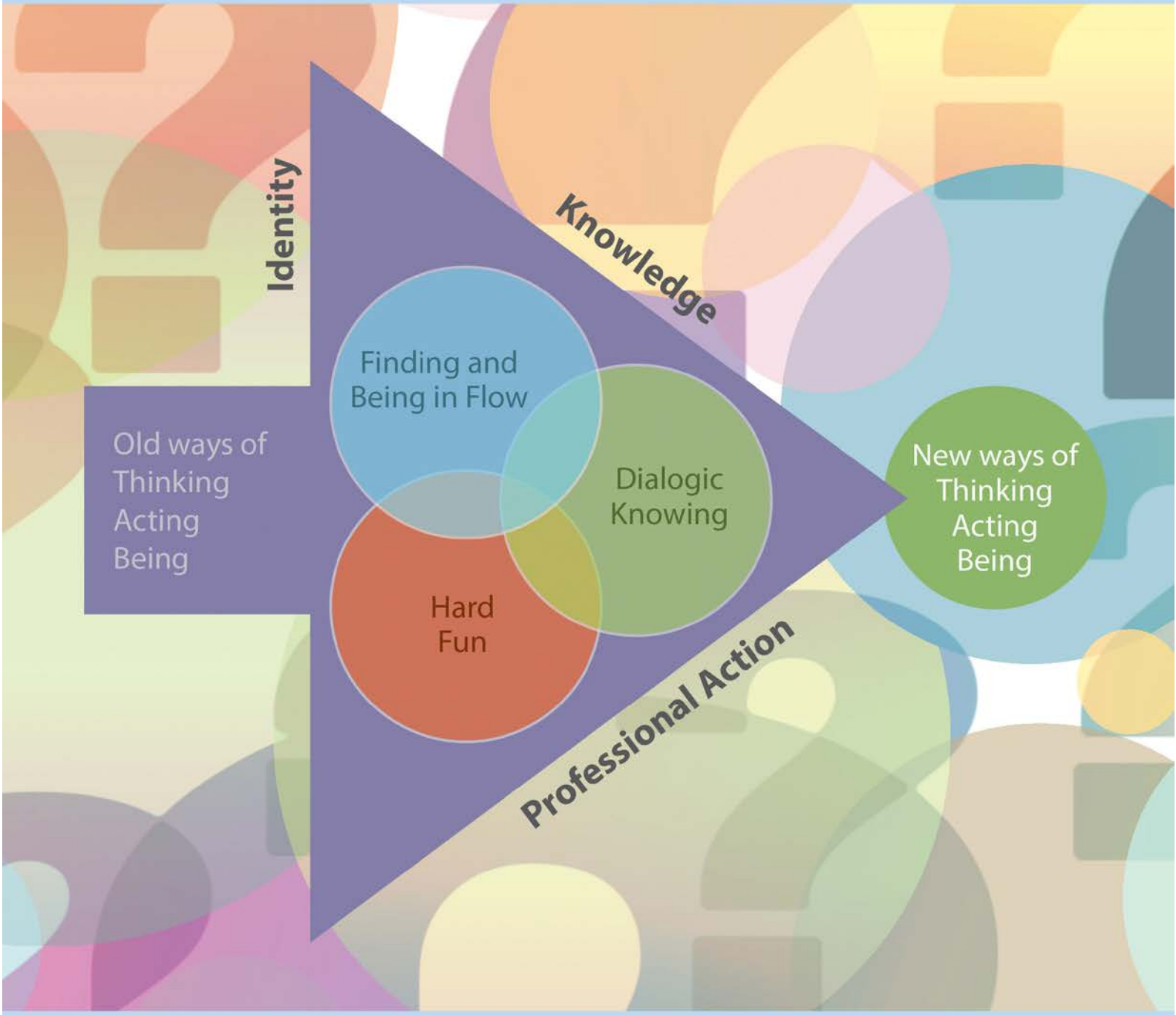
A NEW MODEL OF PROBLEM-BASED LEARNING

Inspiring Concepts, Practice Strategies and Case Studies from Higher Education

Terry Barrett



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Terry Barrett is an Assistant Professor in Educational Development at University College Dublin. She has over twenty years experience of working with problem-based learning (PBL) as an education developer, programme coordinator, tutor, researcher and research supervisor. She has worked in the design and implementation of PBL initiatives in a range of disciplines including nursing, medicine, physiotherapy, ultrasound, science, computer science, English literature, liberal arts, business, agriculture, community development, education, hospitality, tourism and policing. She has worked as a problem-based learning consultant in Ireland and abroad. She has presented keynote papers on PBL in Ireland, England, Finland and Australia. In addition to problem-based learning her research and teaching interests include curriculum design, creativity, academic writing and mindfulness and compassion in higher education.

She was joint co-ordinator of the Enquiry and Problem-based learning Project and is currently the Programme Director for the accredited programmes in University Teaching and Learning at University College Dublin. She facilitates a scholarship of teaching writing group and academic writers' retreats.

Terry was a founding member of the All Ireland Society for Higher Education (AISHE) and is the co-chair of Facilitate (The Irish Enquiry and Problem-based learning network) and a SEDA (Staff and Education Development) Fellow.

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The PBL students I have facilitated have inspired me as to the potential of PBL for dialogic knowing, creativity and hard fun and I am grateful for that.

Dedication

May this book contribute to providing challenging, collaborative and creative learning environments for students across the globe and across a range of disciplines.

Contents

Chapter Four

Strategies for Encouraging Flow, Creativity and Mindfulness in the PBL Process

Introduction

PBL Practitioner's Vignette

"Every time I'd been teetering on the edge of despair as we've neared the end of another difficult PBL process, I'd been pulled from the brink by the quality – and creativity – of the work produced by many of the groups, reassuring me of its value at the eleventh hour, and leading me to commit to PBL for another year. And even during the process I'd been in classes where the air has buzzed with learner excitement".

Naomi McAreavey. Lecturer in English Literature, School of English, Drama and Film, University College Dublin.

Naomi provides a case study of a problem she and her team designed in order to foster students' understanding of Renaissance poetry and develop their creativity. She also draws on her considerable experience of using problem-based learning with English literature students to write the response at the end of this chapter. She gives her perspective on developing flow, creativity and mindfulness in the PBL process.

Naomi coordinates PBL modules in English literature and has been struck by the creativity and quality of the work of her students. I have found watching my own PBL students experiencing the creative process of flow very inspiring. Many of us are interested in increasing our repertoire of strategies for facilitating creativity in PBL. We need new ways of thinking about creativity in PBL that will inspire our practice. This chapter is about an inspiring concept and related practice strategies for encouraging creativity, flow and mindfulness in the PBL process.

Chapter Overview

This chapter will help you to:

- Think in new ways about how you as a tutor can encourage creativity, flow and mindfulness in the PBL process
- Use a new illuminative concept to inspire your approaches to facilitating the PBL process
- Apply and adapt practice strategies for stimulating creative experiences of flow to your PBL initiatives
- Learn from case studies of the PBL process as experiences of flow
- Use questions, triggers and further resources for cultivating your students' creative experiences of flow and in your PBL initiatives

Creativity, Flow and Mindfulness

What is creativity? Creativity is a process of using the imagination to produce new or original ideas or products that are of value or useful (NACCCE 1999, Robinson 2001, Jackson 2006). The three Ps of creativity are considered to be: the *process* of production, the milieu called the *press* and the characteristics of the creative *person* (Knipper, Richards and Abraham 2012, Gallagher 2015). This chapter focuses on the *process* dimension of creativity. It looks at how we can purposively design and facilitate the PBL process in ways that stimulate students to experience creative experiences of flow. It explores creativity in terms of a *process* of producing something *new* to the *learners,* not necessarily something that is original in the world. I consider that the following definition of creativity resonates with the potential of the PBL process:

> Creativity involves first imagining something (to cause to come into existence) and then doing something with this imagination (creating something that is new and useful to you). It is a very personal act and it gives you a sense of satisfaction and achievement when you've done it (Jackson 2002: 1).

Creativity begins with imagination and is cultivated by openness to

possibilities and wonder:

> Where the imagination is alive, possibility is awake because imagination is the great friend of possibility. Possibilities are always more interesting than facts (O'Donohue 2015: 36-37).

Creativity is a frequent rather than a rare occurrence, is often a *collaborative* group process rather than an individualistic solo act and is *process* and a product (McWilliams and Dawson 2008). Problem-based learning has the potential to be a collaborative creative process where the team and individuals experience flow. What is flow? Flow is:

> being completely involved in an activity for its own sake. The ego falls away. Time flies. Every action, movement, and thought follows inevitably from the previous one, like playing jazz. Your whole being is involved, and you're using your skills to the utmost (Csikszentmahalyi 1996: 1).

The intentional self-regulation of attention is mindfulness, which helps us to experience flow. Mindfulness has been defined as "paying attention in a particular way, on purpose, in the present and non-judgementally (Kabat-Zinn, 1994:4). Csikszentmahalyi (1991) named focusing attention as one of the key enhancing elements for flow. Dhiman (2012: 34) discusses the relationship between mindfulness and flow and highlights:

> Both of these experiences, namely mindfulness as a cognitive state and being in a state of flow, are characterized by energized engagement with the activity at hand with all of one's mind and attention,

Mindfulness can be developed with regular practice: "And like a muscle, it grows best when working with a certain amount of resistance to challenge it and thereby help it to become stronger" (Kabat-Zinn 2013: xxxiii)

We have all had experiences of flow in our lives where we were engaged in optimal performance and one action or thought just flowed naturally to the next, like the flow of a beautiful river. You may have experienced flow in many different aspects of your life e.g. work, teaching, writing, sports, politics, social life, politics and the creative arts.

Figure 4.1 Flow, where one action or thought flows naturally to the next, like the flow of a beautiful river. Photograph Tedder (2010)

You bring your many experiences of flow and creativity to the reading of this chapter.

Stop and Reflect

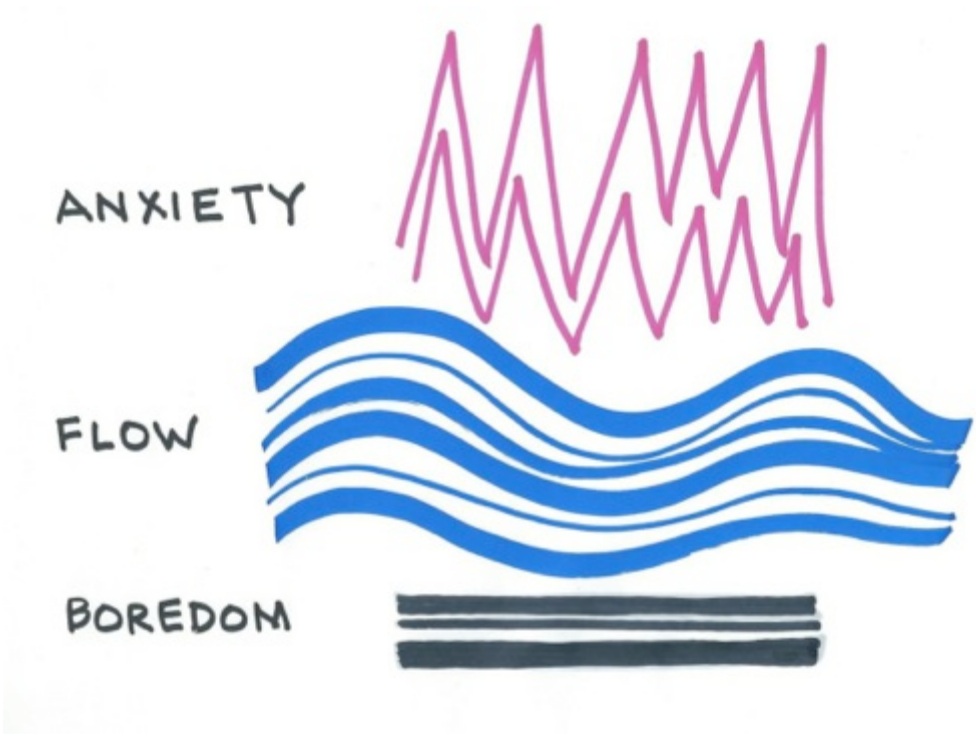
Think of a specific time when you experienced the state of flow

- What did it feel like?
- What challenge were you working on?
- What was the level of difficulty of the challenge?
- What skills, knowledge and creativities did you develop?
- When in your life do you think you were most creative?
- Would you like your students to experience flow more often in the problem-based learning process?
- How do you encourage your students to be creative?

The Illuminative Concept of the PBL process as Finding and Being in Flow

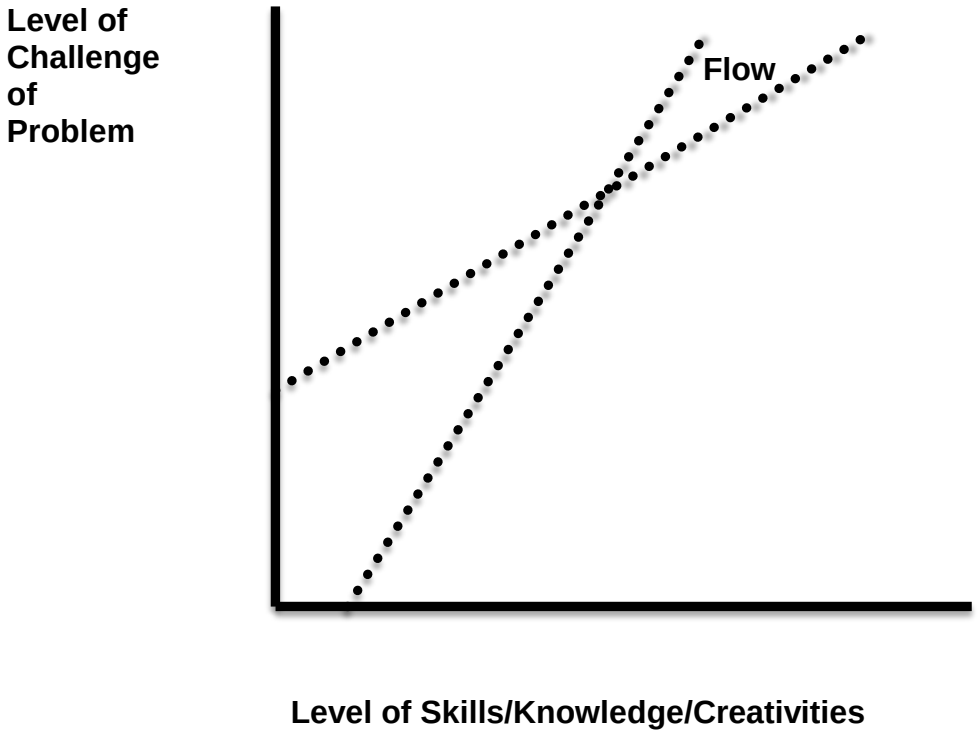
This concept has two parts: the non-flow states involved in finding flow and the flow state of being in flow (Csikszentmihalyi, 1997). Flow is a state of optimal performance where a high level of challenge is matched by high levels of skills **(**Csikszentmihalyi, 1997). Often on the way towards flow people experience non-flow states where there is a mismatch between the level of challenge experienced and the level of skills possessed. Flow occurs in the delicate zone between the anxiety of confusion and the un-interest of boredom (Csikszentmihalyi, 1997). I represent the anxiety of confusion by a jagged, up and down erratic line. A low flat line represents the boredom of un-interest. Flow is located in the zone between the two. I visualise my understanding of the concept of the PBL process as finding and being in flow in the following figure.

Figure 4.2 Finding and Being in Flow Terry Barrett and Shelly Barrett



The PBL process includes being presented with a problem, PBL tutorials, independent study to work on learning issues, preparing presentations of work on the problem and giving presentations of work on the problem. I argue that well designed problem-based learning presents students with a problem that is above their average level of challenge and difficulty. In the PBL process students are then stimulated to develop new skills, knowledge and creativities in order to rise to the challenge of working towards a resolution of this problem. This stretches them to work hard, to perform at their best, to develop their creativities and to enjoy their achievements, that is to experience flow. In other words, high challenge problems can be a stimulus for flow and creativity.

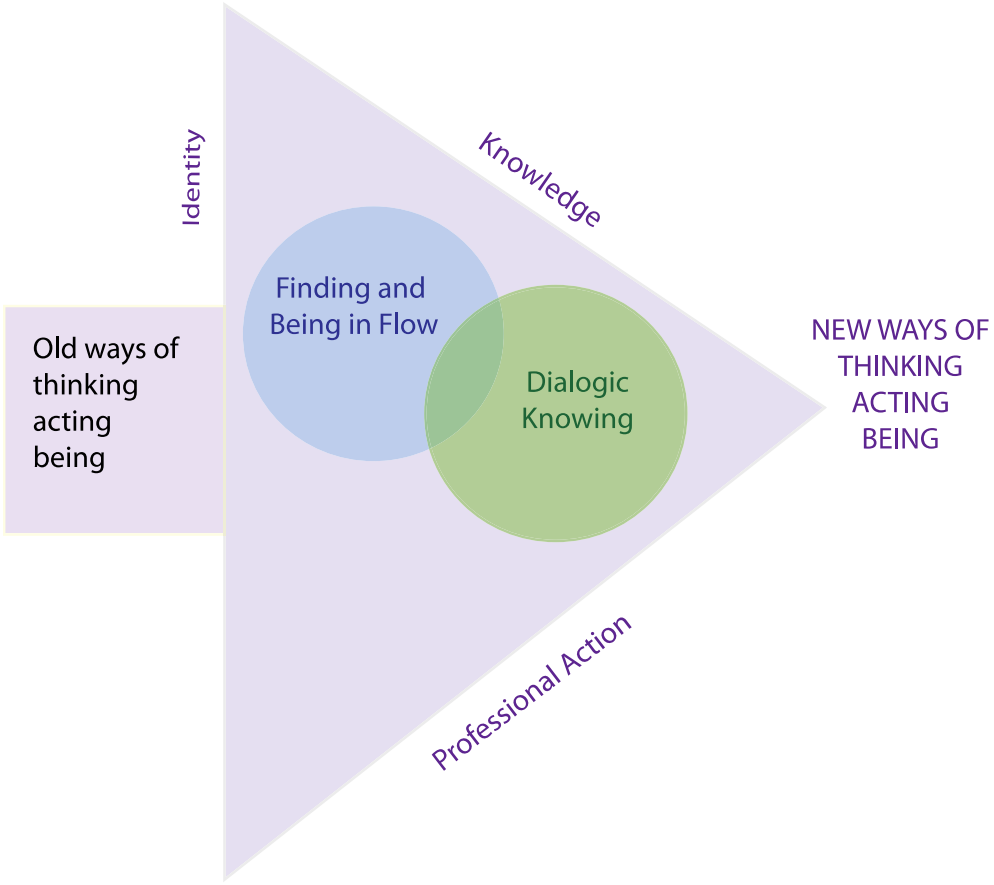
Figure 4.3 High Level of Challenge of Problems Stimulates Learning and Flow (Adapted from Csikszentmihalyi 1997: 31)



However in the full length of the PBL process for a module/course there are also times of boredom and anxiety.

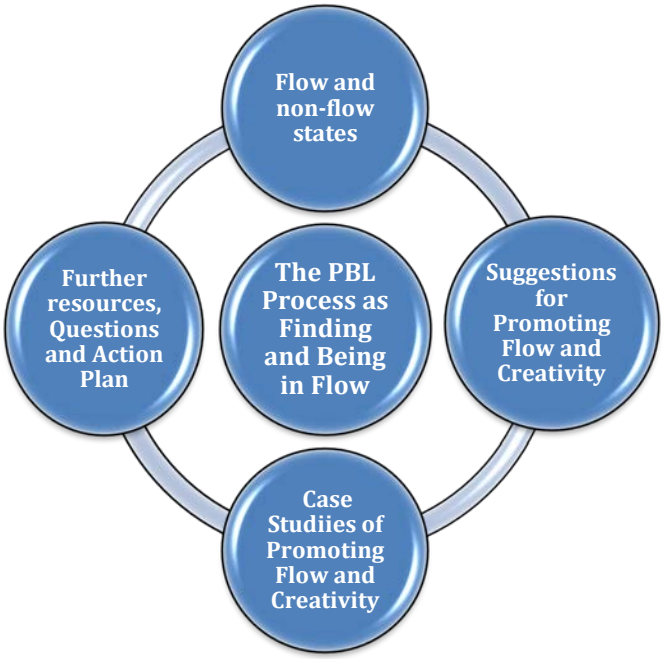
In chapter two the concept of the problem as a provoker of a liminal space was elaborated. The problem provokes betwixt and between spaces between old states and new states. PBL problems provoke liminal spaces between 1) current levels of knowing and new levels of knowing, 2) habitual forms of professional action and forms of professional action new to the learner and 3) satisfaction with current identities and a desire to explore other possible identities. PBL students move within and beyond the liminal spaces prompted by the problem in three different ways. This chapter focuses on one of those ways of learning and growing in a liminal space, that is, students developing their creativity through finding and being in flow in the PBL process.

Figure 4.4 Students learning in a liminal space through finding and being in flow



Chapter Structure

Figure 4.5 Chapter structure



One of the most direct ways of finding out about students' experience of the PBL process is to listen to their naturally occurring talk in tutorials. Firstly, this chapter begins by analysing how the students' talked about being in flow and being creative (Barrett 2008). The students were lecturers working on problems about problem-based learning. I gave the pseudonyms of Skelligs and Glendalough to the two PBL teams and pseudonyms to the students. This chapter then discusses the non-flow states that students also experienced on the way to flow. This included being confused and lost, and being not interested and bored. The analysis of extracts from student dialogue illustrates how the inspiring concept of the PBL process as finding and being in flow was derived from listening to PBL students. These extracts also bring to light understandings of the enhancers and inhibitors of creative flow experiences. Csikszentmahlyi (1999) encourages us to analyse groups rather than individuals in our efforts to understand the processes that foster creativity and to this end I analysed the naturally occurring talk during the PBL tutorials (Barrett 2008).

Secondly, specific practice strategies for encouraging flow, creativity and mindfulness that you can adapt for your own context are elaborated. Thirdly, as part of this discussion I present case study examples of promoting flow, creativity and mindfulness. Fourthly, further resources and questions will be provided to assist you in developing an action plan for enhancing the creativity and mindfulness of your PBL students. Since presenting my earlier ideas about the PBL process as finding and being in flow (Barrett 2010), I have further developed my conceptual understanding of this concept, the relationship between flow, creativity and mindfulness and most importantly have elaborated eleven practice strategies for encouraging flow, creativity and mindfulness with your PBL students.

Listening to students' talk about being in flow and being creative

In the following quotation Hanora, from the Skelligs team, was talking about the impression she would like to leave with Heads of School from their presentation on their experience of being PBL students. This presentation was the result of them working on a problem about designing and giving a presentation about their experience of the PBL process. The presentation would be to Heads of School attending a PBL staff development workshop. The team had decided to do a shadow-acting presentation with actors behind a sheet acting out scenes from a series of tutorials. There were two narrators, one telling the story week by week and introducing the scenes and the second narrator related the scenes to the literature on PBL. There were also thought bubbles beamed on to the sheet. Hanora talked about being in a state of

creative flow when given a challenging problem that was “different “ and “scary” and facing this challenge. As the challenge was considered high, it triggered the development of new skills through “doing something completely different”. It is noteworthy that Hanora’s statement is at the end of the module, the team did not experience flow at the start of the module but rather flow was found through working together on the challenges of the problems.

> Hanora: I think as well for the Heads of Schools to see that education can have such freedom. I said this before, I just think, I have not seen it before, we had great freedom here to move furniture *(laughter)* and you know set up props, and do something completely different that challenged us, which we wouldn’t have had, well particularly in my background, maybe people with a media background, we wouldn’t have had this lovely creativity… But I would love to think the thoughts we have left with them is that wow! you know, those students had an opportunity to be creative and part of that then is your own personal development and we are actually challenged by doing something scary and we faced it and did it.

It is important to review the elements of the PBL process that Hanora named as being part of this flow state. For example, she talked about having “freedom” and being able to define some of the parameters of learning by changing the norms of the classroom through “moving furniture” and “props”. Hanora mentioned being “challenged” twice and used two verbs to show that they rose to the challenge: “we faced it and we did it”. She talked about the creative dimension of flow twice: “lovely creativity” and “the opportunity to be creative”. In addition, she also talked about “the personal development” aspect of flow and eloquently described her team’s experience of being in flow, from having worked on a challenge that was perceived as difficult and “scary” and having developed new skills to meet this challenge. For Hanora, the elements of the process of “creativity” included freedom to choose the media to work in, learning to use new media and taking the risk of doing something “scary.”

Csikszentmahlyi (1997) explains that we experience flow when we are presented with a challenge that is at a little higher level of difficulty than our usual challenges. This level of difficulty can feel a bit “ scary” and challenging initially but as we increase our skills and knowledge to meet this level of

challenge we experience optimal performance and flow. The generation of ideas was central to this creative process of flow. An essential part of creativity is getting lots of ideas out there. In the Skelligs team, Joan talked about the PBL process as a process of being in flow, where one idea triggers other ideas:

> Joan:I suppose I kind of found, I find it a very imaginative way of working. And I find it quite intuitive. I think it's one of the methodologies I should actually stop reading and maybe feeling like we have to get it right, and there is a right way of doing it. And I like the way you can just keep going, you can just keep saying maybe, maybe this or maybe that. And work out some ideas. So I find it very imaginative and quite different to other ways of writing curricula or even thinking about what we have to produce.

Joan referred to flow as an enjoyable, likable process that she wanted to continue doing. She also talked about the creative dimensions of flow using the word "imaginative" twice. This flow had a productive element to it yet was a different way of thinking about what had to be produced. Noel, from the Glendalough team, talked about how the process was:

> Noel: messy initially but that makes the end product far superior.

The messiness of the process did not mean the production of an inferior product because of this messiness, rather this initial messiness was essential to the production of a superior product. The Glendalough team talked about how in their case flow was a team rather than an individual experience. They spoke about how the flow of optimal performance to produce a creative product, involved all group members contributing and not having one person in charge:

> *Noel:* It's amazing what people deliver. If one person was in charge all the creativity wouldn't emerge. Through the group process everyone finds their feet and it is all part of the whole.

Noel highlighted the idea that, in a team, setting the democratic nature of the team contributes to optimal and "amazing" performance.

In summary, the students talked about experiencing flow and creativity by facing a challenging problem and engaging in the hard work of playing with different ideas, working freely in different media and employing a form of teamwork that valued all members' contributions. They talked about **'**doing something completely different' and 'creative' when faced with a 'scary' and 'different' challenge in the PBL process. In the flow state a high level of challenge is matched with a high level of skills, knowledge and creativities and there is a feeling of using one's capabilities to the maximum, both individually and as a team.

> People seem to concentrate best when the demands on them are greater than usual. If there is too little demand on them, people are bored. If there is too much for them to handle, they get anxious. Flow occurs in that delicate zone between boredom and anxiety (In Csikszentmilhalyi 1986 as cited in Goleman 1996: 91-92).

This level of challenge is a trigger for the mindful engagement of focused attention. A high level of mindfulness is required to achieve flow and high-level outcomes. Having listened to these students experience of creative flow, it is time to pause and think of your reflections on your own students' experiences of creative flow.

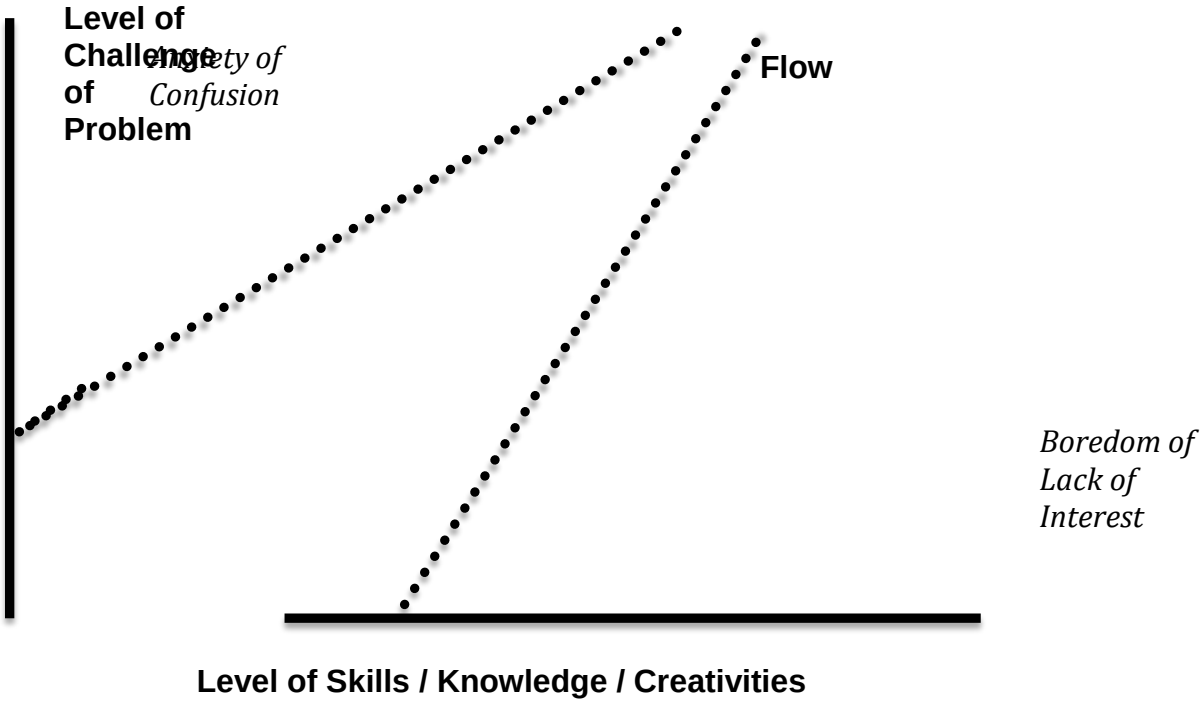
Stop and Reflect

- Does some of this resonate with the experience of your students engaging in problem/project -based learning or other forms of learning?
- What memories or stories stand out for you about your students' creativity?

Listening to students' talk about finding flow

The "finding" part of the concept of finding and being in flow involves students experiencing lack of flow states as part of the journey towards flow. The students talked about two non- flow states, namely, the anxiety of being confused and lost and the boredom of lack of interest. These are represented visually and then discussed in turn.

Figure 4.6 The non-flow states of the anxiety of confusion and the boredom of lack of interest and the flow state in the PBL process (Adapted from Csikszentmihalyi 1997: 31)



Students' talk about the PBL process being confusing and being lost

Both teams of students talked about the anxiety of confusion they experienced in the PBL process. The Glendalough team talked about this

state in terms of two discourses: the not O.K confusion discourse and the O.K. confusion discourse while the Skelligs team talked about the PBL process being “confusing” and “messy". Some students in the Glendalough team viewed confusion in the PBL process as positive, while others viewed this confusion negatively.

Mary: Will I reread the problem, just to kind of get ourselves focused on what we have to do or?
Frank: Is that necessary?
Julie: I think we have gone from here to there. And we need to see what the
Mary: It’s about discussion, and exchanging ideas and understanding and I don’t know how we could do that at the speed we are going at, but I know there is the timetable so I am waiting to be enlightened on that (*speaking quickly*)
Frank: I agree with that.

Mary: (*speaking quickly and in anxious tone*)

I just think it is a mad timetable. I don’t see how we can get to the end of it. But I am kind of hiding that, I am thinking you must be slow.
Noel: One of the big things is we organize prior knowledge, what do we know about it, I suppose to some extent what do we know about this interview with human resource management and then to, eh, to identify the areas that we know nothing about.
Julie: PBL (*laughing*) (*others laughing*)
Sue: I’m lost at this.
Julie: I’m lost as well.
Mary: But it’s creative to be lost. Hurray! I’m delighted we are lost.
Kate: We now believe that we don’t know that, we don’t know how. (*laughter*)
Mary: We are creatively lost.
Mary: But also this thing, it’s about jump into the thing. Sure we have jumped into it. So we are a bit stuck.

In this dialogue, the students were struggling to understand and implement the PBL process. The confusion was due to the challenge of working on a problem (using the PBL process) that was too high in comparison to their low level of PBL process skills. For many students, the mismatch between the level of the challenge and the skills led to an anxious state of confusion. Some of the students viewed that they were in a confused state that was part of a creative process. The discourses can be seen in the two contrasting sets of

vocabulary, which provide different ways of interpreting and representing the confusion experienced.

Figure 4.7 O.K. Confusion Discourse of the PBL Process versus Not O.K. Confusion Discourse of the PBL Process

O.K. Confusion Discourse of the PBL Process	Not O.K. Confusion Discourse of the PBL Process
One of the big things is we organize prior knowledge, what do we know about it, and then to identify what we know nothing about.	To have the PBL process. One thing that frightens me. I think the whole stuff, … where do you start if you have a whole course like this to take.
Hurray! I'm delighted we are lost. We are creatively lost. But also this thing, it's about jump into the thing. Sure we have jumped into it. So we are a bit stuck.	I don't see how we can get to the end of it. But they will know what to do.

However, there was not a divide into two clear-cut, fixed, polarized positions. In the last extract, Mary started to talk in terms of not O.K. confusion in relation to the PBL process, saying: "I don't see how we can get to the end of it." Later, in the same extract, she represented the confusion of the PBL process in positive terms saying: "But it's creative to be lost. Hurray! I'm delighted we are lost." I see these two discourses as points on a spectrum along which individual team members and the team as a whole moved along, going forwards and backwards, sometimes with small movements and sometimes with larger leaps and jumps, rather than remaining in polarized positions. These two competing ways of representing the confusion of the PBL process were discussed at length at different stages of the PBL process.

I link the confusion talked about by the PBL students to finding flow. Let us now look at what is involved in the transition from confusion to flow. The edge of chaos is a term used by O'Connor (1998: 198) for the place where there is

a balance between too much chaos and too much order. The edge of chaos was the site where new knowledge was generated by the teams, where learning took place and where a new sustainable way of working together as a team was redefined and creativity blossomed. From my analysis of how students talked about the PBL process, I have adapted O'Connor's (1999) model specifically for the PBL process.

Figure 4.8 The Edge of Chaos as the Site of Learning in the Problem-based learning process (adapted from O'Connor (1999: 201, 203) and Applied Specifically to the PBL Process)

Chaos	***Edge of Chaos/ Flow***	**Order**
Frustration and anxiety Confusion and messiness Inability to concentrate	*Knowledge* Creativity *Learning* Mindfulness	Habit /Rigidity Boredom Obsessional Behaviour
No rules for PBL process No use of whiteboards as shared learning environments No specific roles Free for all	*Sustainable way of working as a PBL team* *Communication bearing in mind agreed ground rules for the team that are reviewed and using a PBL process guide as a scaffold* *Team decides how to Use Whiteboard and Adapt and/or Add PBL roles*	Too many rules Fixed and limited headings for boards Fixed and rigid roles
Freedom from and freedom to do things	*Freedom to do things within own agreed ground rules*	Lack of freedom

It is at the edge of chaos where flow is possible. The edge of chaos is located between chaos and order, for the PBL process, this can mean that if the PBL teams communicate in ways that bear in mind the ground rules that they have made themselves and that they can review, change and add to, and if they use a PBL process guide as a scaffold (rather than as a straightjacket) they may find sustainable ways of working as a team that will foster the growth of new knowledge, learning, levels of mindfulness and creativity at the edge of chaos.

Kleimen locates the edge of chaos as a place far from high levels of certainty and agreement but before a complete chaotic state. His notion of the edge of chaos is as a place "where creativity is most potent" and as a "zone of optimal operation" (2011: 62.6). His representation of the edge of chaos as between stasis and chaos is inspiring for those of us trying to design complex PBL problems and encourage divergent thinking and healthy disagreement that can lead to developing students' creativity.

As well as talking about the anxiety of confusion, the students from both teams also talked about the non-flow state of the boredom of lack of interest

Listening to Students' talk about being not interested and bored

In the Glendalough team, a student talked about how, at times, nothing appears to get done in the PBL process:

> *Michael:* You often think when you get going on the problem initially, you wonder what you are doing, you spent the whole morning and nothing seemed to be done.

Similarly, a member of the Skellig team talked about times of boredom and lack of interest:

> *Philip:* … but very frustrating at times too, you turn off, I sort of listened and thought what are they on about again *(laughter*) I would lose it for a while then I would come back in, you know, I am not interested in that side of it or whatever it is.

Both of these remarks were made when the students were reviewing their experience of the PBL process after their work on the first problem. Strong *et al.* (2003: 24) assert that: "Boredom…occasionally haunts almost any sustained act of learning." In this PBL module students were given opportunities to become more aware of, to reflect on and to articulate their experiences of learning. Some of the students talked about the boredom they experienced. Therefore, non-flow states (and flow states) got noticed, and elaborated by students and analysed and interpreted by me as a researcher.

A state of boredom means that the challenge is too low in relation to skills level, according to Csikszentmihalyi (1991). Students in higher education do not like to be bored. Philips (1993), a psychoanalyst, views boredom as having two sides. On the one hand, boredom is a form of depression, psychoanalytically understood as anger turned inwards. On the other hand, boredom is viewed as a longing for that which will transform the self, making the learning process and life meaningful. According to Buzan (2001), one of the benefits of boredom can be the development of creativity, as the reactions to boredom, such as daydreaming and doodling, may enable people to make creative links in their minds that they may not have otherwise made.

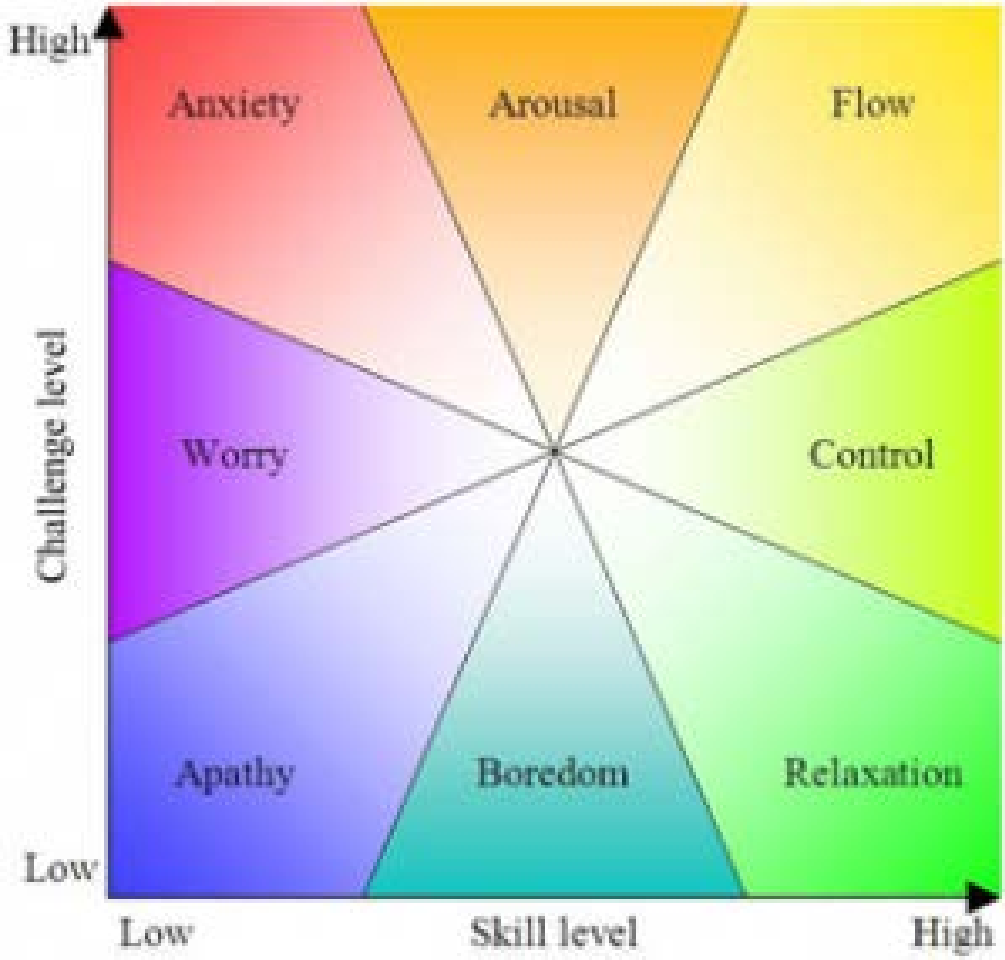
Stop and Reflect

- What has been your own students' experience of confusion?
- What kind of language do they use to describe this confusion?
- What do you think about boredom in learning?
- How do you feel about your students having the freedom to learn and create at the edge of chaos?

The PBL process as finding and being in flow: An inspiring concept for PBL practitioners

I have found understanding the PBL process as finding and being in flow inspiring in terms of both how I think about and facilitate the PBL process. The concept of finding and being in flow, is my way of making sense of these students' talk about the PBL process. The PBL process did not involve a neat transition from a to b but rather a messy transition of finding flow. For example, students talked about the anxiety of confusion in the PBL process before they talked about experiencing flow. This illuminative concept of finding and being in flow has two dimensions; finding flow and being in flow. On the way to flow, finding flow involves experiencing lack of flow states. These lack of flow states occur where there are low levels of challenge and/or skills/knowledge and creativities or where there is a mismatch between the challenge level of the problem and the current level of skills/ knowledge and creativities to meet the challenge. Csikszentmihalyi's (1986) idea of flow is that it occurs in the delicate zone between anxiety and boredom. I argue that finding flow involves experiencing lack of flow states in the PBL process and that these lack of flow states are a necessary prerequisite to achieving flow states. These lack of flow states were part of students' talk about the PBL process in this study. They are all part of the colourful journey towards creativity.

Figure 4.9 Mental state in terms of challenge level and skill level, according to Csikszentmihalyi's flow model (Wikipedia)



Practice strategies for stimulating flow creativity and mindfulness

Flow cannot be ordered to happen in the PBL process. The following strategies are specific ways of enticing in, or welcoming, flow and creativity into the PBL process and you can adapt these to your contexts. They are strategies about problem and curriculum design, facilitation of the PBL

process, developing mindfulness and student induction and staff development.

Strategy One: Design problems with a high level of challenge

Problem designers need to design problems that are sufficiently challenging that they provoke and stretch students to develop higher levels of knowledge, skills and creativities than their current levels, and then experience the optimal performance state of flow. Sometimes we don't raise the bar high enough when we are designing problems and students can become bored. And sometimes we design problems that are challenging in ways that catapult students into new areas of learning and growth. The problem needs also to be designed as challenging in the sense of it being ill-structured and large enough to stimulate student teams to define the problem, pursue paths and resolutions in different ways afforded by the nature of the problem space (Gallagher 2015).

Naomi McAreavey and her team gave her undergraduate English literature students the following problem with a high level of challenge

Case Study of an English Literature Problem with a High Level of Challenge

PBL problem: Introduction to Renaissance Poetry by Naomi McAreavey, Danielle Clarke and Jane Grogan

Renaissance Literature students have been asked to produce an anthology of Renaissance poems as a ‘taster’ for introducing first year undergraduates to the study of early modern verse. This anthology can be on any theme, but it must be in some way ‘representative’ of Renaissance poetry. It should also cultivate the students’ interest in the Renaissance.

In groups of around five, you should prepare an anthology of 10-15 Renaissance poems, all freshly edited, with at least five edited from poems in (an) early modern book(s). The anthology must represent at least three poets from the period, and each poem should be no longer than 30 lines (you may include excerpts from longer works). As a group you should agree an editorial policy (basically, how you present the poems to your readers), and apply it to each of the poems in your collection.

In preparing your anthology, you should choose a theme, then select suitable poems and arrange them appropriately. But you must provide a justification of your choices in the essay that will preface the anthology. In doing so, your aim is to educate first year students about Renaissance verse while also illuminating the specific poems you have chosen.

Designing problems with a high level of challenge can extend to designing assessments that deliberately foster choice and creativity (Servant et al 2015).

Strategy Two: Design problems about flow and creativity

A direct way of getting students to work on ideas and practices that encourage flow and creativity is to design a problem about creativity or innovation in particular professional work.

Case Study of a problem about creativity and flow given to lecturers undertaking a module on problem-based learning in higher education

When I was coordinating a module on problem-based learning for lecturers, I worked with colleagues and a cartoonist to design a problem about developing students' creativity using PBL. It is inspired by DeBono's (1999) six thinking hats approach to creative thinking. It is best read starting with the blue hat and then reading anti-clockwise.

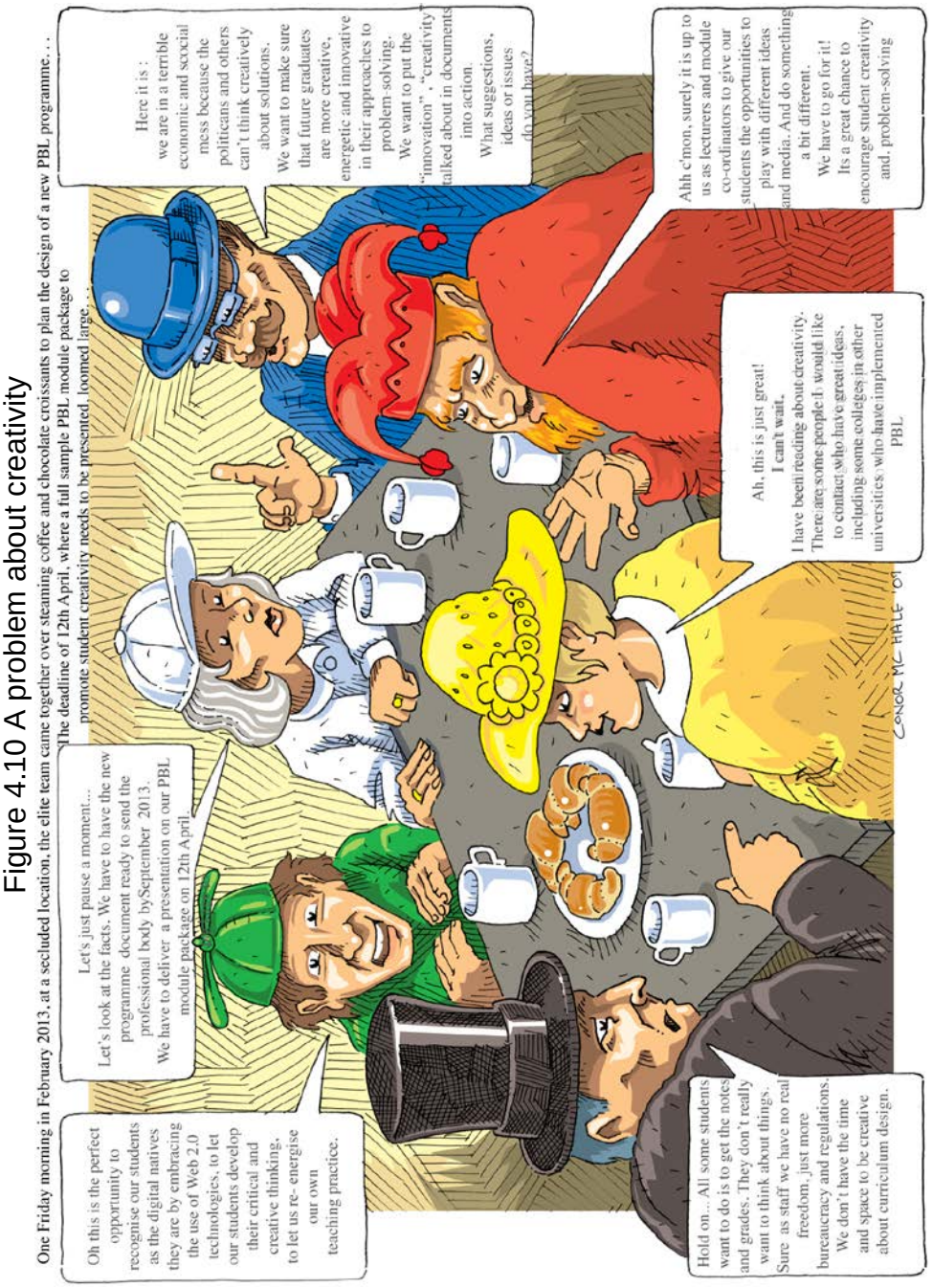


Figure 4.10 A problem about creativity

Stop and Reflect

- What ideas do you have about designing problems about creative flow processes in your profession/discipline/interprofessional/ contexts?
- Which creative colleagues or artists would you like to work with in designing these problems?

Strategy Three: Turn the curriculum upside down and use the PBL process in tutorials rather than lectures as the centre of gravity for the module/unit.

I worked with a group of lecturers who were re-designing two English literature modules into problem-based learning modules. When they asked me my advice on implementing PBL with 500 first year students with existing resources, I suggested that they turn the curriculum on its head and make the small group tutorials the centre of gravity for the learning rather than the large lecture. They designed problems for the students to work in small groups in the tutorials. They already had a tutorial for 24 students so they divided these students into small groups and worked as roving tutors. I drew their attention to the advice from Kolmos (2002) that in a PBL curriculum you need to re-constitute the purpose of the lecture to fit in with the PBL process and the

problems the students were working on and they did this and designed "landscape`' lectures in ways that suited their context (Clarke *et al:* 2009).

Strategy Four: Work in different media to encourage Creativity

Problems can be designed in a variety of media and students can be given the freedom to work on the problems using different media to stimulate creative thinking. For example, the line *"You are free to work in any media"* can be added as a last sentence to the problem that is presented to the students. Alternatively a problem can demand students to work in particular media only e.g. visual media, in order to stretch their learning and creativities.

Case Study of a Physiotherapy problem that involved students working in video media

I was facilitating a problem design workshop for a physiotherapy undergraduate programme. We had lecturers, recent graduates, doctoral students and physiotherapists from different clinical settings. One group designed a series of problems around physiotherapy students teaching patients to use various mobility aids: crutches, wheelchairs, hoists etc. The had planned to give each student group a different scenario of a particular patient needing to be taught how to use a specific mobility aid. When the group presented their idea I asked graduates who had recently been students, to comment on whether they thought this initial problem design was interesting and challenging or a boring teachers exercise. They said they thought other students would find this a boring problem. I asked them how could they use the kernel of the problem and transform it into an interesting and dynamic problem. They suggested that they would add to the problem scenario by stating that the student group had been asked to produce a training DVD demonstrating a physiotherapist teaching a specific type of mobility aid to a patient in a particular social context and that

this DVD would then be put up on the web as a resource for all students in the school. This both raised the level of challenge of the problem and developed students' creativities in addition to their knowledge and skills. The students subsequently learnt much from the problems that they enjoyed working on, and produced very high quality DVDs.

Robinson (2001: 111) reminds us of three vital elements of creativity that are very relevant to the PBL process, namely:

- the importance of the medium
- the need to be in control of the medium
- the need for critical judgement

The interplay of ideas with different media is at the core of creativity and so we need to encourage our students to work in different media as they explore ideas towards resolving the problem.

Strategy Five: Understanding the edge of chaos as a site for flow and creativity

Finding flow in the PBL process is one way for students to develop knowledge, innovation capacity and creativity. Staff and students can be introduced to the concepts of finding and being in flow and the concept of learning at the edge of chaos.

Students experienced in PBL can play an important role in discussing their experiences of the PBL process to both staff and students. For example, I was working with a school that were expanding their use of PBL beyond first year. As part of the staff development programme I asked a panel of students to come and be experts on the student experience of the PBL process. I put them at the top of the room as the experts on the students' experience of the PBL process. The staff of the school then asked them about their experiences of the PBL process and the students talked about: enjoying it at times, being confused at times, how they learnt new knowledge, being confident to ask other students to explain things, making new friends, their

experience of the student roles, etc.

Strategy Six: Be fully present and mindful and facilitate mindful learning.

It is important that tutors encourage students to give full attention to what is being said, written, drawn or shown in the tutorials. Students listening to one another without preconceived ways forward, is key to developing group flow in PBL. Tutors can play an active role in encouraging students to really listen to one another:

> Group flow is more likely to emerge when everyone is fully engaged, what improvisers call “deep listening” in which members of the group don’t plan ahead what they’re going to say, but their statements are genuinely unplanned responses to what they hear. Innovation is blocked when one or of the participants already has a preconceived idea of how to reach the goal (Sawyer 2007: 46).

Tutors can give their full attention to the students’ talk in the tutorials and encourage students to be confident that they can work on the problem, as they encourage students to move towards creatively discovering new solutions. For example, on one occasion when I was a PBL tutor, I was in the middle of the stressful process of selling one house and buying another. I took a few minutes to centre and focus myself before the tutorial. Then I gave my full attention to the students for the duration of the tutorial, actively listening to them, watching their body language and being aware of what was happening in the learning process. Tutors can encourage students to practise mindfulness during the tutorial by listening attentively to one another, being fully present, having “an emphasis on moment-to-moment awareness” (Wright, Sadlo and Stew 2011: 140). In short, we would do well to heed the advice of Gaffney (2011: 271) that one of the key components of flow is” You are concentrating fully on what you are doing at the moment ”. The tutor has a key role in setting the climate of the tutorial as one of attentiveness, listening and being aware of what is happening in the tutorial moment by moment.

The tutor can facilitate mindful learning at the start of the tutorial by getting the students to read the problem mindfully. Barbezat and Bush (2014) provide

guidance and case studies of this approach. There are different versions of the practice of mindfully reading a text. All involve reading the text more than once, times of silence after each reading, attention to individual words as well as the text as a whole and sharing individual responses to the text and learning from the different perspectives.

Tutors can facilitate mindful learning in the middle of the tutorial by giving students feedback on what they have observed and noticed in the tutorial as a way of encouraging students to give this attention. Tutors can foster an appreciation of different perspectives by encouraging debate with a mindful appreciation of switching attention to different viewpoints. The “conditional” approach recommended by Langer and Piper (1987) can help to further learning. This involves an open-minded approach and tutors asking “ could be” “may be” questions (Langer and Piper 1987). For example I have asked PBL students: “What could that look like?”; “What may be the outcome of that?”

Tutors can facilitate mindful learning at the end of the tutorial by getting students to do an exercise in mindful writing at the end of the tutorial. These spaces can provide students an opportunity to connect what they are learning to their inner experiences, thoughts emotions and insights. One form of mindful writing is freewriting (Elbow 1998). In freewriting students write in full sentences, in silence, for a fixed amount of time using a writing prompt. The idea of freewriting is to let the writing flow from one word to the next, and not to go back to edit or correct. For example I have given my PBL students the following writing prompts: “ The new things I have learnt from working on this problem are…….”; “From the other students in the tutorial I have learnt…….”; “After the tutorial I want to ……”

For more information on mindfulness, including short mindfulness practices tutors and students can do to help in being fully present, see the further resources section at the end of this chapter.

Stop and Reflect

- What strategies will you use to develop the mindfulness of your students?

Strategy Seven: Encourage students to engage in divergent thinking first and then convergent thinking

In terms of the discovery of solutions to problems tutors can encourage students to engage in *divergent thinking* through brainstorming lots of ideas towards a solution before engaging in the more *convergent thinking* of judging these ideas. Specific techniques to facilitate brainstorming can be used. For example sometimes as a PBL tutor I give people five minutes in real silence to think about their individual ideas in relation to the problem and to jot them down on post-its. As Webster –Wright (2013: 562 my emphasis) points out: "When we allow *the mind to settle*, unusual and creative thoughts can arise to surprise us. " Then the chair can co-ordinate the ideas being posted on the whiteboard, the discussion of the ideas and the process of clustering them.

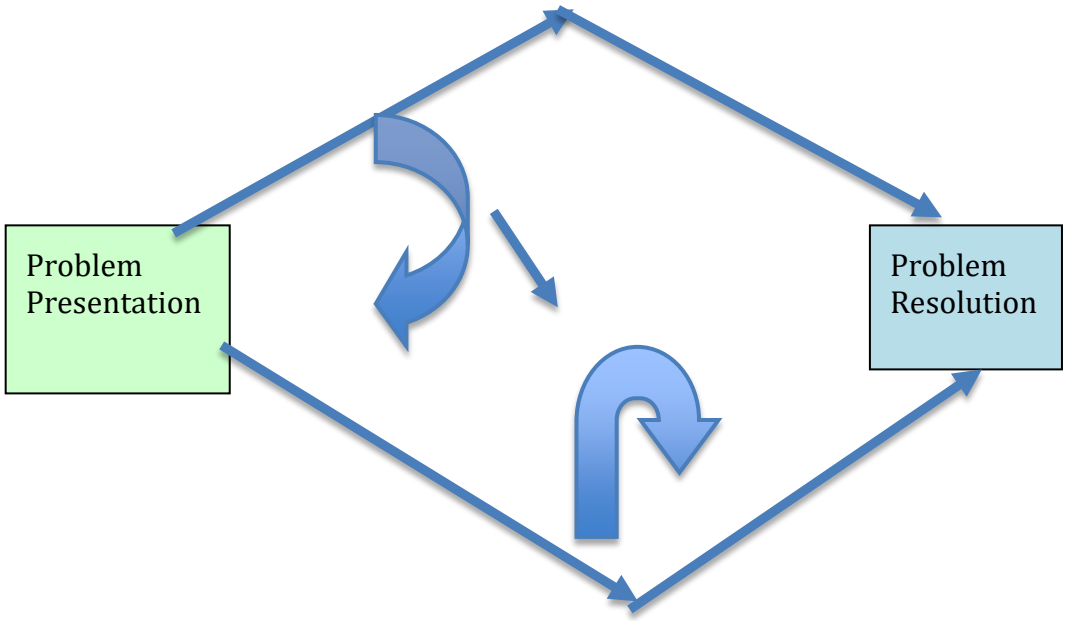
Another approach to encouraging a range of individual and divergent ideas is to use a talking stick that is passed around the group and only the person with the stick talks about their ideas and then passes it on. Getting people to work visually on the whiteboard and to work with metaphors are other ways of

helping people to play with divergent ideas. The students can then later engage in the convergent thinking of sorting through the ideas, evaluating and judging them, making decisions about what idea(s) to pursue and designing an action plan. The tutor can encourage students to engage in free divergent thinking first and not to foreclose this process too early. It is not effective for creative thinking to rush forward taking a short cut to the decision making of convergent thinking, or to let superficial groupthink kill creativity:

> With the right balance of divergent and convergent processes, one might be on the route to higher creativity-a goal sought and valued by a great many people (Knipper, Richards and Abraham 2012: 170).

The tutor can also encourage students to build on the ideas of one another, bounce ideas off one another, play with combining ideas etc. I have found both as a tutor and as an education developer training PBL tutors, that I have both stressed the importance of divergent thinking and introduced people to practical ways of doing divergent thinking.

Figure 4.11 Divergent Thinking First…Then Convergent Thinking



It is worth teaching or reminding people about the fundamental rules of brainstorming i.e.

1. Don't criticise or discount other participants' ideas verbally or non-verbally. The point of brainstorming is to get ideas out and recorded.
2. Blue-sky, wild and freethinking are to be actively encouraged. These ideas can be evaluated later.
3. The quantity of ideas is important so ensure that everyone contributes some ideas.
4. Bouncing-off other participants' ideas, piggybacking on what someone else said and combining ideas are to be encouraged (Osborn 1963, Isaksen and Gaulin 2005).

It will not be very creative if the students end up working on the lowest common denominator in terms of ideas. Rather, it is a question of giving sufficient time and energy to the divergent thinking phase so that the work on resolving the problem is based on a combination of a range of diverse ideas.

Strategy Eight: Use ground rules and the PBL process guide as scaffolds not straightjackets

Two inhibiting conditions of flow are "anomie" and "alienation" (Csikszentmihalyi 1991). He defines anomie in terms of no rules and elaborates that " when it is no longer clear what is permitted and what is not, …behaviour becomes erratic and meaningless" (Csikszentmihalyi 1991: 86). So in PBL participants can experience what they perceive as too much freedom as negative. Alienation is seen in terms of the polar opposite of too many rules where "people are constrained by the social system to work in ways that go against their goals. " (Csikszentmihalyi 1991:86). I consider that the learning space provided by PBL needs not to be constrained by too many rules and procedures, and yet provide some scaffolding for learning. Tutors can encourage students to make their own ground rules for working effectively as a team and adding or changing these ground rules flexibly as needed. The following are some sample ground rules.

Figure 4.12 Sample Ground rules

Ground rules

Start on time
Coffee available before tutorial for those who want
Respect one another
Let chairperson know if you have to be absent or late
Listen to one another, all ideas welcome initially, decisions later
Make sure everyone gets a chance to speak
No interrupting
Mobiles off or on silent
Be open to using different types of resources
Everyone does homework

Similarly, students can be encouraged to use the common PBL student roles used in the PBL process of: chairperson, scribe, reader and observer but also to add to these roles creatively as they see fit. For example one PBL group I was facilitating first added the role "photographer" and gave this to a person with photography skills and then "manager of photographer" to another person when they decided the first person was very good artistically but needed managing!

Parallel with the ground rules and roles, the PBL process visual guide can be used as a gentle scaffold not an inflexible set of steps and rules. If students get stuck or confused the tutor can make a suggestion like: "Perhaps if you look at the PBL process guide you can decide how to move forward".

Strategy Nine: Embed creative thinking tools into the PBL process

Students can be introduced to a variety of creative thinking tools by the tutor and also introduce one another to tools they have found useful. For example students can be introduced to DeBono's six thinking hats (1999). They can learn the advantage of doing one type of thinking at a time and using six different types of thinking. They can use the white hat of information to think about what are the facts of the problem, what information do they have already, what new information do they need and what would be the best sources of information. They can use the red hat of feelings to consider how

the people in the problem feel about the problem. The yellow hat of bright ideas can help them to think of different ideas for tackling the problem. The green hat of benefits can help them look at the benefits and strengths of different ways forward. However, it is also important to look at the limits of different ideas and the black hat of caution can help a team look at the pitfalls or dangers of some potential ways forward and take a devil's advocate perspective.

Other students may want to focus on integrating discipline related creative thinking tools into the PBL process. For example engineering students may learn much from integrating TRIZ creative thinking approaches into the PBL process (Savransky 2000). Tutors can introduce students to the SCAMPER technique developed by Eberle (1971). This will give them a framework for substituting, combining, adopting, adapting, modifying, re-purposing, eliminating and rearranging the multiple ideas that emerge from the brainstorm. Jackson and Buining (2010) detail specific approaches to enriching problem-based learning through design thinking. Baille (2006) provides a toolbox of further strategies for fostering creative skills. Awang and Ramly (2008: 22) when writing about the use of creative skills in PBL suggest that:

> Creative skills must be practiced until the thought patterns in our minds become comfortable with these creative lateral-thinking techniques. We can create these creative grooves in our mind so these techniques will be utilized.

Strategy Ten: Embed high-level information literacy development into the PBL process

Flow occurs when there is a match of high-level skills/knowledge and creativities and high-level challenge. In problem-based learning one of the crucial skills to develop is advanced information literacy skills. These key skills are needed in solving problems in education and professional settings. It is therefore vital that the development of information literacy skills is done in a planned, iterative and systematic way. When I was facilitating a PBL module as part of a Graduate Diploma in University Teaching and Learning I worked

with a librarian to plan this. After the teams had identified the learning issues for their first problem the librarian facilitated an information skills training session in a computer lab based on these learning issues that they had phrased as questions.

The PBL tutor needs to communicate the high level of information literacy expected. In the PBL tutorial, tutors have key roles in developing information literacy by the questions they ask and the feedback they give (Dodd et al 2010).

Strategy Eleven: Adapt the PBL process guide to the nature of the discipline or profession

The PBL process guide can also be adapted to the language and methods used in particular professions or disciplines as one way of matching the challenge of the problem with the challenges and processes in professional life. These process guides can be represented visually in compelling designs.

Conclusion

I hope that you find the concept of *the PBL process as finding and being in flow i*nspires you to do further work in cultivating your students' creativity. Here is a summary of some practical strategies to choose from and adapt to your context.

Figure 4.13 Strategies for Encouraging Flow and Creativity in the PBL Process

1. Design problems with a high level of challenge
2. Design problems about flow and creativity
3. Turn the curriculum upside down and use the PBL process in tutorials rather than lectures as the centre of gravity for the module/unit
4. Work in different media to encourage creativity
5. Understand the edge of chaos as a site for flow and creativity
6. Be fully present and mindful and facilitate mindful learning
7. Encourage students to engage in divergent thinking first and then convergent thinking
8. Use ground rules and the PBL process guide as scaffolds not straightjackets
9. Embed creative thinking tools into the PBL process
10. Embed high-level information literacy development into the PBL process
11. Adapt the PBL process guide to the nature of the discipline or profession

I think that the following poem, which contributed to my understanding of flow, captures the fluency aspect of flow very succinctly; there is a natural unfolding of personal potential as an individual performs at her/his particular optimal level.

Fluent

I would love to live
Like a river flows
Carried by the surprise
Of its own unfolding

(O'Donohue 2000:30**).**

Figure 4.14 Terry Barrett Scottish River

A key component of achieving flow is mindfulness, a purposeful attention. James (1890:424, my emphasis)) highlighted that one of the key purposes of education is to train the wandering mind to focus attention:

> And the faculty of voluntarily bringing back a wandering attention, over and over again, is the very root of judgment, character, and will. No one is *compos sui* if he have it not. **An education which should improve this faculty would be *the* education *par excellence***. But it is easier to define this ideal than to give practical directions for bringing it about. The only general pedagogic maxim bearing on attention is that the more interest the child has in advance in the subject, the better he will attend. Induct him therefore in such a way as to knit each new thing on to some acquisition already there; and if possible awaken curiosity, so that the new thing shall seem to come as an answer, or part of an answer, to a question pre-existing in his mind.

Problem-based learning can be deliberately used to cultivate mindfulness. Problem-based learning provides a problem for students to focus their attention on. It also stimulates students to define the questions they are curious about in relation to the problem. PBL can be consciously used to

develop students' mindfulness and mindful approaches to learning including mindful reading, writing and listening.

It is vital to develop student creativity for personal, economic and social reasons (Jackson *et al* 2006). On a personal level increased creative capacity leads to: effectiveness and enjoyment as learners/workers, satisfaction and happiness as people and new possibilities and imaginings as architects of our futures. Rather than thinking of creativity as something that a small group of geniuses do during special times, Richards (2010) writes of "everyday creativity" and thinks of creativity in terms of creative outcomes of originality and meaningfulness occurring in a wide range of everyday activities. Creativity thus conceived is a democratic rather than an elite process where "Everyday creativity is indeed our birthright as human beings" (Knipper, Richards and Abraham 2012: 73). The positive outcomes of creativity for physical health, wellbeing and resilience are well documented (Richards 2010).

At the economic level, in our global technological knowledge economy "we must produce students who can manipulate, transform and create new knowledge" (Caridad Garcia-Cepero 2008: 295). Creative skills are essential for students to develop to be able to work for companies that aim to compete successfully in global markets. At the social level creativity is needed for students to play their role in addressing social problems such as poverty and environmental issues. Creativity should have an ethical dimension and creative groups can contribute much to improving society. I agree with Mrnaveric that creativity should not be reduced only to "a particular model of engagement-western individualism, fed by the market economy-which colors ambient values to a strong degree" Mrnaveric 2011: 21).

In universities more work needs to be done in "connecting 'creative capital and university pedagogy" in order to make creativity the "centrepiece" of higher education (Williams and Dawson 2008: 633). There is much written in university strategic plans about championing creativity and innovation. However new managerialism practices in higher education " run counter to the

known conditions under which creativity flourishes" namely " risk-taking, collaborative exploration and autonomy (MacLaren 2012: 159). Beyond individual academics working to teach creatively and facilitate the development of the creativity of their students

> higher education institutions need to make a concerted effort to make creative practice legitimate and foster novel approaches to supporting creativity by establishing an organizational culture that enables dialogue and collaboration between creative individuals, within and beyond the traditional boundaries (Deverell and Moore (2014: 164)

Using the PBL process as a way of encouraging flow and creativity in students is one approach to doing this. Students can be encouraged to "choose creativity" as part of the problem-based learning process

> both in terms of the process of generating ideas, and in terms of making the decision to utilize creativity as a natural part of the problem-solving repertoire (Smith and Smith 2010).

Students experiencing flow in the PBL process and learning to transfer the conditions for flow to their work and social life is important because as Nistor (2011:42**)** asserts:

> experts in the field believe there is a significant link between experiencing flow and positive emotions, skills development, high performance and acquiring meaning and significance in life (Csikszentmahalyi and Csikszentmahalyi, 1988, Csikszentmahalyi, 1990, Asakawa, 2004, 2010).

Further resources

Here is a list of some resources that you might like to choose from to inspire yourself, your colleagues and/or your students to understand and cultivate creativity, flow and mindfulness.

Online resources on creativity

Problem-based Learning in Higher Education (2015) Vol 3, No 1
Special Issue PBL and Creative Processes
https://journals.aau.dk/index.php/pbl/issue/view/120

Creativity, Fulfilment and Flow: Mihaly Csikszentmihalyi on Ted.com
http://blog.ted.com/2008/10/23/creativity_fulf/

Edward de Bono Six Thinking Hats (1 of 6)
http://www.youtube.com/watch?v=3Mtc_CBTIeI

Ken Robinson says schools kill creativity (Ted Talk)
https://www.ted.com/talks/lang/en/ken_robinson_says_schools_kill_creativity.html

John Cleese on Creativity
http://www.youtube.com/watch?v=VShmtsLhkQg

Resources on Design Thinking

IDEO- Design Thinking firm
http://www.ideo.com/about/

Design Thinking Movie
http://designthinkingmovie.com/

Crash course in Design Thinking d.school Stanford University
http://dschool.stanford.edu/dgift/

Creative Thinking Tools

deBono Critical and Creative Thinking for Schools
http://www.debonoforschools.com/asp/six_hats.asp

Resources on Mindfulness

The Association for Contemplative Mind in Higher Education
http://www.contemplativemind.org/programs/acmhe
This association transforms higher education by supporting and encouraging the use of contemplative/introspection practices and perspectives to create active learning and research environments that look deeply into experiences and meaning for all in service of a more just and compassionate society. Produces the Journal of Contemplative Inquiry.

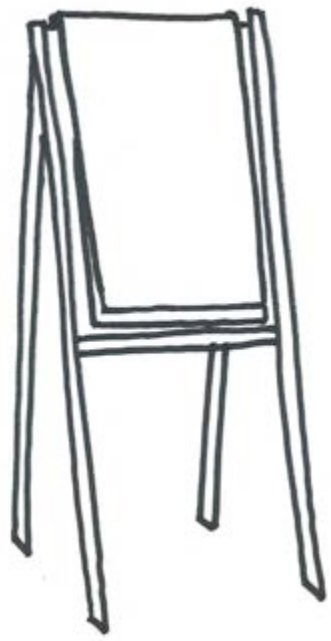
The Oxford Mindfulness Centre
This Centre teaches and researches mindfulness. It has useful resources and workshops
http://oxfordmindfulness.org/

The Mindfulness Association
Mindfulness resources, courses and conferences
http://www.mindfulnessassociation.net/

The Free Mindfulness Project
Free downloadable mindfulness resources and meditations
http://www.freemindfulness.org/download

Reflect and Plan

On your own or better still with your team, think of a specific problem-based learning initiative you are currently facilitating or one you plan to start in the future.



- What ideas or words in this chapter did you find the most inspiring? Why?
- What specific strategies do you think would be most appropriate in encouraging flow and creativity in your students?
- How might you adapt these strategies for your context?
- How can you raise the bar in terms of the level of challenge of the problems you design?
- How can you facilitate mindful learning?
- How would you represent your new ideas visually?
- What further reading or resource viewing have you been stimulated to pursue?

A PBL Practitioner's Response by Naomi McAreavey

Response to the chapter by Naomi McAreavey. Lecturer in English Literature, School of English, Drama and Film, University College Dublin.

I have a love/hate relationship with PBL. It's a lot of work. It's stressful. Some students hate it and complain through the whole process. Some colleagues hate it and worry that it's lowering standards. It involves a huge amount of planning and organization. And it often seems like we have to defend PBL more rigorously than other teaching methods because of its continued novelty in subjects like English. I have been involved in PBL teaching for six years, and every year, a few weeks into the process, I vow that I'm done with PBL. That's it: it's just not worth the effort. It's too stressful.

Then something clicks – for the students, and for me. The work comes in, and it's good. More than that, it's inspired. It's not like any other work that the students have produced. It's imaginative. They're proud of it. And they're reasonably assured of its quality because they've worked on it together. There's a buzz through the corridors, among students and tutors alike. We got there in the end!

Through several different PBL 'problems' in English, I have seen groups of students produce a staggering range of materials for assessment – beautiful anthologies of erotic poetry of the Renaissance; staged scenes from Shakespeare's plays recorded on DVD; detailed plans for an imaginary Midsummer Night's Dream festival; interactive websites on Elizabethan drama; even Shakespearean 'Top Trumps'! The freedom to work in a range of media has inspired students to create original materials, and they have had enormous fun in the process. But it's not frivolous. The license to be experimental in the production of work for assessment doesn't distract students from the academic subject. Rather, it brings them closer to it. What lies behind the assessment product created by groups of students at the end of the PBL process are weeks of independent reading in relevant academic fields, and the development and refinement of ideas through sharing and collaborating with peers. The work submitted for assessment is merely a way of demonstrating their learning, and this flexibility fosters the students' enthusiasm, excitement, and pleasure in learning. In short, it motivates and inspires them to achieve.

But this freedom is also disorientating for many students who expect to learn directly through their lecturers, and anticipate producing standard essays for assessment. These pedagogical methods continue to dominate the teaching and assessment of English and other Arts and Humanities subjects, and the relative unfamiliarity of PBL methods by comparison can make students very apprehensive, especially in the early stages of the PBL process. In order to help students overcome their concerns by themselves and find 'flow', we need to ensure that the PBL problem is well designed and the process

appropriately scaffolded, as Terry forcefully argues. And through the experience of 'flow', wonderfully described in this chapter, students can become genuinely creative.

Much of what Terry says about encouraging flow and creativity in PBL resonates with my teaching experience. Our second year students, for example, learn about Renaissance poetry by producing an anthology of Renaissance verse for first years. This is a highly challenging problem (Terry's strategy one) because they have to learn a lot about Renaissance poetry before they can select their poems, then they have to make the verse accessible to students experiencing the poems for the first time (as they are). The problem therefore involves broad and deep learning. It is also a creative project (strategy two) because they are required to produce a brand new anthology, and in so doing they are emulating one aspect of the professional work of many English Literature scholars (strategy eleven). Students are given freedom regarding the form of the anthology (strategy four), with some groups choosing to produce an online anthology; others supplementing their anthology with a CD on which the poems are read aloud; while those groups who present their anthology in the more traditional book format still experiment with the use of supporting images as well as the presentation and arrangement of the poems. One of our key objectives is to develop the students' information literacy (strategy ten), and in collaboration with the library we train the students to use two key databases, the Oxford English Dictionary and Early English Books Online, which they use to transcribe and edit the poems in their anthologies. This training takes place in the lecture, but in fact we use the PBL tutorials as the key site of learning (strategy three), timetabling the lectures after the tutorials, and ensuring that the lectures explicitly build upon the work taking place in the tutorials. Overall, the students produce very good work, and although they often still talk about the difficulty of the PBL process, they are usually proud of the work they produce in the end. They certainly demonstrate a deeper understanding of the language and contexts of Renaissance poetry: and that, of course, is our primary aim.

The PBL initiatives in English were developed with Terry's guidance, and their success is a testament to the efficacy of her approach. But in this chapter she has provided me with some fascinating new ideas for the further development and refinement of my (PBL) teaching. I'm particularly intrigued by the possibility of adopting some mindfulness techniques in the classroom. Being fully present and aware, moment by moment, listening attentively, and without prejudice, is something that we should encourage in our students and aspire to in ourselves. It will ultimately make us all better learners. And this is what I like so much about the PBL model: as well as encouraging creativity in our students, it also helps us to become more experimental, innovative and creative teachers.

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