March 2019

RADICAL TEFL **

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THIS ISSUE:

Starting from the learner's *language* learning problems Page 22

Learning to speak as two kinds of knowing: How does the learner bring them together? Page 4
How does the EFL learner see English? Page 22
Enquiry as re-conceptualisation Page 24
EFL teachers: win 7 nights in Wales! Page 48
Call for articles Page 50

RADICAL TEFL

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An annual forum for probing concepts and assumptions in TEFL; for EFL teachers to report on and reflect on their classroom problems and experience; and for exploring and developing understanding of EFL teaching and of the individual learner's EFL learning.

Number 6 / March 2019

Electronic version

Publishing Editor: Alistair L. Maclean

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CONTENTS

(**NB**: No material which met the aims of *Radical TEFL* was received for this issue, and in order to continue this project the Editor is publishing two articles. Please encourage your student-teachers to think that their experience is worth reporting on - please see the following page.)

	PAGE
Propositional knowledge, practical knowing, and	
learning to speak a second language	
by Alistair Maclean	4
What is the English language from the	
EFL learner's standpoint?	22
Enquiry as re-conceptualisation: the significance of the work of Stephen Toulmin for enquiry into EFL learning	
by Alistair Maclean	24
Competition for EFL teachers:	48
win 7 nights accommodation in Wales	
Call for articles	50
Contents of first five issues of Radical TEFL	53

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Dear Colleague,

Practical classroom realities and difficulties in implementing work from applied linguistics and language studies are often not known about or acknowledged by those who do not teach teenagers. Secondary-school teachers know about these problem only too well but they rarely write about them. We might learn from teachers – if they would write about their attempts to put theory into practice.

Other applied fields develop through probing experimental work on the ground, or in a laboratory, followed by critical reporting back on how a theory or idea works in practice. In this way, a theory can be developed or reconsidered. But this feedback loop is lacking in TEFL/TESOL, and so our field is held back.

In order to encourage submission of such work from teachers, *Radical TEFL* is sponsoring a competition, with an opportunity for a teacher to study at the Welsh National Library in Aberystwyth. Short, reflective articles, based on experience, are invited on the topic *"Problems and solutions in teaching EFL to teenagers"*. The winning teacher will receive a week's free accommodation near that world class copyright library (which receives all UK books and journals).

This could be a way for a young teacher to both pursue research in an exceptional library, and to see work published. I hope to organise this competition each year, with articles invited, annually, for June 30th. All reflective articles submitted which describe and reflectively address a classroom problem will be considered for publication. If you are sympathetic to this idea of encouraging teacher feedback from the classroom, could you encourage student-teachers who you work with to write an article (perhaps as part of their course work)?

Full details are given below, ON PAGE 48.

Yours truly, Alistair Maclean / *Radical TEFL* Publisher

PROPOSITIONAL KNOWLEDGE, PRACTICAL KNOWING, AND LEARNING TO SPEAK A SECOND LANGUAGE

Alistair L. Maclean

INTRODUCTION TO THE E-VERSION The e-version and print version of this article are the same. If the article does not always read smoothly it is because I needed to drastically shorten it. I took out passages from early drafts and developed that work into three further articles, one of which is published in this (2019) issue of Radical TEFL, *'Enquiry as reconceptualisation* ', with two further articles to be (hopefully) published in the next (2020) issue of Radical TEFL. This will give four short articles instead of one very long one, and each article treats the same question but from different standpoints.

The question I have probed is how the speaking of a second language is achieved. The question is difficult and the answer proposed required help from philosophy and from the history of the growth of knowledge. It required a fresh understanding of *"coming-to-know"*, or, 'learning'. Sources are taken from my own classroom experience, from histories of enquiry in science and in technology, and from studies of how the growth of knowledge (or learning) occurs. Even if the argument and conclusions are not found convincing I have at least tried to introduce in these two issues of Radical TEFL (issues 6 and 7) fresh perspectives to understanding the *student's problems and solutions* in growing his knowledge, in the special case treated here of learning to speak a second language. (AM)

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A problem which I often met when teaching English was that my teenage or adult students had spent perhaps several years learning English, and they had intellectually grasped the basic system or structures of English. However, they were unable to easily *transfer* that passive understanding into good, active spoken use when confronted by a situation in real time, as in a role play with a partner.

I came to EFL teaching after teaching secondary-school mathematics. I had learnt in teaching the 'language' of mathematics that one key to helping students move from an intellectual or passive grasp of an aspect of mathematics to actually using that understanding to solve real-life mathematical problems was that materials required to be designed in a way that the student could *refer back to* and be helped by his existing understanding.

I regularly used role play to teach EFL speaking, normally with a language focus (an example, with dialogue, is given at the end of this text. 1 In this article I will:

- explore the learner's problems in learning to speak;
- explore why it might be that students are helped by a grammatical focus in free practice activities;
- explore why learners might appreciate a controlled environment as they move from passive understanding to active, spoken use in real-life situations.
- This article will present an argument that there are (at least) two kinds of knowledge in language learning, and that
- the learner needs to be able to move freely between the two if he is to develop his spoken English.

I use "he" for the learner, and "she" for the teacher.

1

At the end of this article (e-version), I also list the conditions which I found needed to be present in both role-play

(1) TWO KINDS OF KNOWLEDGE IN SECOND LANGUAGE LEARNING

Activities which are called 'skills' or 'abilities' seem to require two kinds of knowledge: passive understanding (and which can be learned from a book), and application of that understanding, which I will label *practical knowing*. How does a second language learner move from the former to the latter, as he learns to speak?

(1.1) In second language learning, learners are 'coming-to-know' (a phrase from Dewey). It follows that prior to exploring root issues in learning we require some understanding of 'knowledge', and of what it means 'to know', and to 'come to know'. An old tradition in epistemology (study of the grounds of knowledge) claims that there are, broadly, two kinds of knowledge: 'knowledge that', and 'knowing how to', and this study will draw on that dichotomy. Very generally speaking:

- propositional knowledge (**knowledge that**) is a knowledge claim at a general level which may be an endpoint in a given enquiry, and;
- practical knowledge (**knowing how to**) is dynamic, is made (or created or constructed) in action, is local, and guides an enquiry, or an activity.

Propositional knowledge is sometimes referred to as 'declarative' knowledge, and practical knowing is sometimes referred to as 'procedural knowledge'. This distinction exists in 'common sense' where theory or 'talking the talk' is distinguished from actually doing a job, or putting an idea into practice.

If learning to speak EFL is, at least partly, an example of developing practical knowing, then we might profit from an understanding of how practical knowing grows and develops. Especially interesting is the relationship between these two kinds of knowledge in TEFL, and implications of this relationship for learning. How does the student move from his understanding to applying that understanding in his spoken English? If we can even only partly understand his problems here, then we may be in a better position to help him, in materials design and selection, and in pedagogy.

Each of the two kinds of of learning may be considered as a separate problem for the student. And to complicate both teaching and learning (as well as materials design), a student may need to move backwards and forwards from 'propositional' to 'practical knowledge' (even in the course of a single lesson). Given this, it follows that provision will need to be made for that in classroom management and in materials. To add further complexity, different students in a given lesson and faced with the same material may do this moving backwards and forwards in their own ways and in their own time. **2**

(1.2) Learning as synthesis of the two kinds of knowledge

A teacher is in a privileged position to observe and understand learning (or failure to learn). By teaching 20 contact hours a week, perhaps over 30 weeks a year, she may spend 600 hours each year observing learning. From evidence provided by my own students' learning, over many years, I concluded that what students need as one condition for learning to speak EFL is a combination of formal work on the system of English, followed by free practice. The first seems to establish for students the 'knowing that', and the second supplies the needed conditions for bringing into action the 'knowing how to'. Both are required, and they need to be related and brought to a synthesis, by each learner, *for himself*. This essay tries to understand and explore the significance, for the learner, of this work of synthesis.

The learning significance of role play for the individual learner, I observed, is not only that 'communicative practice' is given in a real-world situation, but that propositional knowledge becomes practical knowing. The role play gives the

² Chomsky suggested (1976: 119, <u>Reflections on Language</u>, Fontana) that [for the first-language], learning takes place in stages, with the implication that both understanding and investigating learning become proportionally more complex. He suggests that the learner proceeds through a sequence of cognitive states. Also see (ibid: 19-20 & 159-162). There is recent and relevant discussion in Seedhouse, Paul; Walsh, Steve & Jenks, Chris (eds)(2010), <u>Conceptualising learning in Applied Linguistics</u>, Palgrave Macmillan (pages 2 & 21). But writers do not start from the learner's standpoint, and there are few insights on how learning processes my be studied.

learner what he needs to make this transition. I consistently found that, in a single lesson, a combination of:

- 'teaching' (or reviewing) a form or structure of English (and opportunities for controlled practice), together with
- appropriate material for free practice;

leads to successful learning to speak. The central problem of learning to speak EFL, I concluded, is about individual learners bringing *into use*, autonomously and for themselves, the system and structures of English. EFL students need to and can, for themselves, make the language their own, and this 'appropriation', I found, cannot be taught. What learners require from teacher and material is input and conditions which will allow them to get on with that work. (My 2018b)

Why do teenage and adult learners seem to need a combination of formal work as well as opportunities where they can autonomously bring the language system into use? I believe that:

- it is because they are in the middle of a long-term process of understanding the language for themselves, of organising and re-organising, arranging and re-arranging their own understanding. They are *appropriating* English for themselves, in a way which we don't understand each making English his own, according to his needs, motivation, ability and prior understandings (or misunderstandings). This requires both time, and space free from distractions from the teacher. Teachers might assume that students are all working to a common finished product "English" but their test papers will show that there are large differences between the Englishes of different learners;
- students are at the same time looking for safety. When I first started secondary teaching with restless and lively teenagers, I was often surprised that I generally had their full attention when presenting language on the board. My students would often stop me and ask '*Can you explain that again*?'. I believe that they were looking for security, perhaps trying to confirm, or amend, their existing understanding.

In both cases, students want to establish for themselves secure reference points. Given this safety, they are then happy to do role play or free work, bringing that passive understanding into use. But, lacking secure reference points, they may *not be ready* to take risks and launch out into use.

Since about 1980 role plays and similar activities have been used because, it is argued, they reflect an understanding that language is used to communicate, and because such activities help prepare learners to enter the real word of spontaneous and unpredictable oral interaction, especially when teaching adults who know what they require English for. And when one uses communicative activities it is indeed easy to conclude that, because students are communicating with each other, that the communication is the key to their success. But I have come to believe that this is only partially the case. The success of role plays may mask a key educational and learning function of role plays. *They also help the learner solve the problem of moving from passive understanding to active knowing*.

In other words, role-plays address an individual student's learning problem, and perhaps only secondarily a 'communication' problem. This means that their value should not be exclusively understood in the context of a 'communicative theory' of language learning, but rather also belongs to an older tradition in understanding language learning. Role play is perhaps a development of the direct method of teaching, and where language structures may be practised under controlled conditions, using materials as prompts rather than the teacher, and giving practice in real situations which learners may meet.

Work in second language learning studies on this problem

Mitchell et al (2013: sec 5.2.3) report on empirical research into learners' 'declarative' and 'procedural' knowledge (and these terms are also used in educational psychology [Kahney 1993]. **3** The empirical work reported on by Mitchell et al may have fallen into the trap of selecting an inappropriate method of enquiry for the problem, and in particular, attempting to measure what cannot be measured. This work does not seem to offer a theory to account for the relationship, *from the student's standpoint*, between the two kinds of knowledge. I try to do this below.

³ In the work which I have seen on declarative and procedural knowledge those terms are not clarified or explored, and are arguably misleading. I have preferred to draw from the tradition in epistemology of practical and propositional knowledge. Work in this field belongs, because it explore the grounds of knowledge, to to epistemology, and it seems safer to draw from that tradition, and which has given considerable thought, since classical Greece to the very difficult questions of what is meant by knowledge.

(1.3) I concluded from my teaching and materials writing experience that a helpful starting point for understanding students' learning problems in moving to active use in second language learning is indeed found in the broad propositional-practical knowledge dichotomy, introduced above. The second kind of active 'practical knowledge' seems to be 'made' by the learner. This idea is given a theoretical underpinning by John Dewey, and in more detail, by Ernst von Glasersfeld and others, who explore the idea that such learning is often a 're-construction' of what is already known, and I return to and explore this idea below My thesis is the following:

Learning to speak a second language occurs most efficiently when propositional knowledge (in the form of concepts) is combined with developmental work through practical 'experimenting'; and the two kinds of knowledge require to work together. While practical knowing can make advances without propositional knowledge, in fact practical knowledge works better when it draws on and combines with propositional knowledge. Our work is to better understand the student's problem here.

In researching this essay, I studied how practical fields develop and grow. Generally (bot not always) practical fields seem to develop into a more successful and efficient discipline as conceptual frameworks became available. But, if lacking such a framework, then the field or the individual practical knower must rely on itself or himself. **4** If speaking EFL is, partly, an example of practical knowing, then it might follow that an individual learner's development of his spoken English requires a synthesis or integration of:

- establishing a conceptual framework (ie, the language system of EFL), combined with
- opportunities to develop practical knowing, through applying this framework.

For this reason, it is often not new input that will be helpful, but rather opportunities for the learner to *refer back to* what he already understands.

(2) EFL LEARNING: INTEGRATING THE TWO KINDS OF KNOWLEDGE

In order to understand the learner's work in making the transition from passive understanding to practical use, we require a general theory of learning which understands that a learner needs to solve the problem, for himself, of making that transition. At the same time, we secondly need an understanding of language, and thirdly an understanding of the work in moving from a first to second language – but from the student's point of view (in this issue of *Radical TEFL*, immediately after this article, I publish some questions as entry points to understanding how the EFL student sees English, as he move to it from his first language) 5

(2.1) An understanding of 'knowing' as created *in action* has been discussed in mainstream education by Michael Eraut, Lai, Guy Claxton as well as by von Glasersfeld. These writers offer entry points for better understanding learning as a 'constructing' (or re-constructing) process which the learner can only do for himself, implying that as educators our role, or function, is to arrange for the conditions to be in place for learners to do this. I have argued elsewhere that schema theory, as used in mathematics education, is an exemplification of this general theory of knowledge, and that schema theory has implications for TEFL pedagogy, where the learner is allowed to work out for himself the transition stage from passive understanding to active use – conditional on the teacher selecting appropriate materials (my 2016: Part 2; and 2018b). According to schema theory, the successful learner *reconstructs* or rearranges his provisionally established understanding in an active way, linking it to new input, this leading to new 'knowledge', for himself. (ibid: 2018b).

The question of how, psychologically, the learner does this work seems to belong to the field of educational psychology (eg, Kahney 1993), to psychology, and to second language acquisition studies. More study by TEFL is required here of writers in mainstream education who have followed up these ideas, and who have explored their implications for

⁴ Evidence for the preceding two sentences can be found in histories of technologies. I have no space to cite work which I have researched from those histories, but I would be happy to supply a copy to any interested reader.

⁵ What is the English language from the the EFL learner's standpoint?

education. For example, we find in Piaget the intriguing suggestion (1950: ch. 1) that some more adventurous learners look for 'routes' through their learning problems. But linguistics can give us some help, as follows:

The student's understanding of language, if we follow Sapir, Chomsky and others, is captured in concepts, and in relationships between concepts. Sapir writes "*The essential fact of language … lies … in the classification, in the formal patterning, and in the relating of concepts*". Chomsky writes "*If our present belief systems are near correct, the grammar of language is a highly intricate system of rules and principles*". Jacobovits writes: "*Knowledge of language at all levels consists of knowing patterns of relations rather than constituent elements*". **6**

In my own teaching I have found that the post-childhood learner requires propositional knowledge in the second language, in the forms of a grasp of concepts and of relationships between those concepts, as prior work, in order to have a secure reference point as he moves from the concept and relationship system of his first language to English. He also requires to activate and try out and activate that new concept-relationship system.

(2.2) The quotes from the three linguists just cited help us to understand the significance of propositional knowledge is in the context of second language learning. A necessary condition for much learning and for moving knowledge forward by an individual (or by an intellectual field) seems to be a successful grasping, development and bringing into use of concepts. In second language learning, the learner learns, and learns to apply, the concept system of a new language. It is through fresh or re-conceived concepts that knowledge develops both for an individual, and for a field. Evidence from the history of science confirms that fields develop conditional on developing, and applying, clarifying and abandoning concepts and conceptual systems. 7

A similar, 'experimental' process may occur in learning (study in preparation). Assuming following Dewey that learning is in part an enquiry, an individual enquirer (for example an EFL learner) seems to do much of this work for himself. For example, he sees, for himself, that what he thought he 'knew' does not work when he tries to use it, and is 'wrong', and in my experience, he will *almost always* do such re-conceiving work for himself. He will have to re-think parts of his system. (To better understand the learner's problem here, I found a reading of Sapir [ibid] helpful, especially chapters 2 & 5).

(2.3) Implications for understanding EFL learning

We can start to see why practical and propositional knowledge require to be brought together in a kind of synthesis in learning to speak EFL. The student needs to try out what he thinks he understands, in free practice. The teacher cannot do this work for the student, but. with her materials she can orientate and encourage the student to do it.

In the dialogue given immediately after this article (in the e-version only) students are presented with an aspect of the language system before starting a role play. The teacher, through her boardwork, will also present examples of the concept. In my work I give time for understanding, so allowing students to grasp the concept in their own way, each in the context of their own prior knowledge. If the concept is grasped (or remembered from earlier lessons) it then seems to have for the learner the status of a working propositional knowledge claim. He can then experiment with it in a role play. But the propositional knowledge remains sterile, book knowledge, passive, until it is put to use or developed in some way. For this reason, free practice is required – but organised in a way which allows the leaner to refer to his resource and store of already established understanding.

In my teaching (and learning) experience, the challenge of making the transition from passive to active understanding is very difficult for both the student and for the teacher. We do not understand how the student does this work One part of the solution is to make the gap between propositional knowledge of the concept, and active knowing of the concept, as small as possible. This can be done by allowing the student, if he wants, to keep his practice at a very controlled level, with a dialogue (or boardwork giving examples of the language) in front of him. He may simply read out the dialogue, as he gains confidence. Stronger students will not even glance at the dialogue – they do not need this prop. In this way, the materials support the weaker student. (A sample dialogue is given after the text of the e-version of this article, designed to be used with the role play.)

⁶ Sapir, <u>Language</u>, (1921: 8); Chomsky <u>Reflections on language</u>, (1976: 157); Jakobovits (1970: 19), <u>Foreign</u> Language Learning: A psycholinguistic analysis of the issues.

⁷ This topic is brilliantly explored by Stephen Toulmin in his <u>Human Understanding Part 1</u> (1972: 200-13). I explore his thinking in my (2019) <u>Enquiry as re-conceptualisation</u> (In this issue of *Radical TEFL*)

In my experience, if this is done, students will invariably and eventually start to use the concept. But the weaker students especially require the work to be presented in a controlled, step-by-step way, and they want to feel in control. This transition work cannot be 'taught', and the role of materials is the key to it working. The teacher is only *an instrument*, an intermediary or facilitator, in encouraging her learners in this work. The necessary support and prompts are given in the materials, which orientate the students. We observe that there seems to exist a dialectic in useful learning between the two kinds of knowledge.

The argument presented here may be understood, also, as an argument for, as a priority, teaching the forms of EFL rather than the functions. Learning the forms (the concepts and system) gives learners safety, and safety nets, which slower learners especially need, allowing them to work step-by-step, and to 'retreat to safety' in their 'experimental' work, as required. It should be emphasised that, in secondary classes, there will generally be learners who have not grasped the work. They need time and space, while the stronger students need opportunities to spread their wings.

Because the concepts of a language comprise a system for generating enormous amounts of new language, the possibilities for experimenting in the sense of 'trying out' the new language are almost unlimited. But the forms (that is, the concepts which they represent) need to be practised and *tried out*, and an attempt made to bring them into use, and the student given space to do this. In my experience, when learning is going well, I believe that something like this is happening.

(2.4) On learning 'dispositions' I propose here an hypothesis which may help us to understand why the work of moving backwards and forwards between propositional knowledge and practical knowing results in more efficient learning to speak, as follows. An individual's EFL learning might be understood as his physiologically establishing new neural pathways and links. Thanks to these neural changes, understanding becomes established in the sense that it becomes part of the store of that person's invisible '*dispositions'* to act and behave. In learning the person has, according to this conjecture, physiologically added something to himself, and which he can draw on. The overt, superficial results of an invisible disposition are a skill or ability. **8**

To rephrase this from the student's standpoint: the hard work of active practice is rewarded by changes in the brain, which amount to learning. It is for this reason that one feels tired after learning – work and energy have resulted in changes in the brain. (One could call these changes "additions to long-term memory", but it will be safer to avoid terms which belong to another field, and which seem to lack either clear understanding or agreed meanings.)

This hypothesis proposes, further, that *learning a disposition* is dependent on these conditions being in place:

- a) proactive work is required by the learner ("motivation");
- b) for the learner to achieve a new disposition he requires to move backwards and forwards between propositional knowledge and practical knowing, as explored above, and as allowed for in the role play material;
- c) *before doing a role play, the propositional knowledge requires to be securely established.* In EFL learning, this would mean that the student has a well-established framework, or map, or set of schemas to use as a resource: patterns, tense structures, etc., these allowing him to understand English as a coherent system.

Linking (b) and (c), the learner cannot move backwards and forwards between propositional knowledge and practical knowing unless his propositional knowledge, that is his understanding of the system of the language (albeit incomplete and provisional), is clear.

This hypothesis may offer a route to understanding:

- the need by the learner for opportunities provided in practice material (and sufficient practice time) to move between the two kinds of knowledge;
- why both controlled and free oral practice are condition for learning to speak, as in role-play material;
- why learners will be impeded if they lack a secure foundation or store to refer back to, this represented by an understanding of the forms or systems of English.

The hypothesis supports an understanding of EFL learning which gives a key role to establishing for and by the learner the forms of English, followed by opportunities for both controlled, and free and autonomous practice. I found, in over 30 years of teaching especially lower-level teenagers and adults to speak, that this hypothesis was confirmed. I found that learning to speak, for students who do not easily learn English, takes place if the conditions stated above are in place (these expanded in the role play material and classroom management conditions, in the e-version of this article).

⁸ On learning and "dispositions" to know, see Gilberte Ryle (1949: chs. 3 & 4), <u>The concept of mind</u>. In this difficult book, Ryle discusses "knowing that" and "knowing how to", although the distinction goes back to Aristotle.

As educators we are not primarily interested in what happens in the brain, which is a a study for cognitive science and experimental psychology. Rather, following this hypothesis, we will be interested in the conditions that require to be present for a 'disposition' to be learned. The value of the hypothesis is that it offers a model of learning which teachers and/or materials writers can try to fit in with (or at least, not disturb), so creating conditions for the learner to do this complex 'disposition-learning' work. Implications for further enquiry include the following: If learning to bring passive understanding to active use does require some moving backwards and forwards between the two kind of knowledge, then there will be discrete stages in the process, and we might try to understand what those stages are, where they can fail, and how they can be encouraged. It may be that these stages are similar to the stages observed in scientific enquiry, and this was John Dewey's view. **9** It is beyond the scope of this study to pursue that link.

(3) PRIOR KNOWLEDGE AND LANGUAGE LEARNING STRATEGIES

By propositional knowledge I mean, in the context of learning to speak EFL, understanding which has in some way been stored or embedded, and is available as a resource for further progress in learning. It is for the fields of cognitive science and experimental psychology to explore how this understanding is stored. For the practical purposes of EFL language learning, it is enough to know that it can be both stored, and retrieved. Given this, we can then go on to ask questions such as: *What are the optimal conditions for retrieving this knowledge? How can the teacher help (or distract from) the learner from drawing on this resource? What is the role of materials here?* and so on.

If the work of learning to speak EFL is partly work of moving backwards and forwards between propositional and practical knowledge, then we need to better understand the stores of propositional knowledge available to the learner. I propose that he has, altogether, four kinds of propositional knowledge as resources, and that each of these have the potential to be incorporated into use and active knowing. Specifically, he has learned already:

a) <u>Communication strategies, learnt when learning his first language</u>

The second language learner has learned what language can achieve for him, and he knows that language is an instrument for meeting his needs: and he has learned communication strategies. The student's approach to a second language, after childhood, will surely be to try to employ what he has learned when learning his first. Halliday writes: *"The child knows what language is because he knows what language does (deriving from) successful demands on language that he has already made (and so the child is) aware that language has many functions "*. **10**

b) <u>A conceptual apparatus of how language works, this expressed by symbols, again learnt</u> when learning his first language

His first language has equipped him with a set of concepts, a conceptual apparatus or framework, and which is expressed through symbols. The EFL student will hope that the concepts in English are similar, allowing straightforward comparisons. But some concepts will differ, and some will not, and the student's problem will be to establish for himself which concepts he can employ in the second language. Having determined which first-language concepts match the second language, he will surely refer to them, as a secure reference point.

c) Language-learning strategies, these learnt when learning his first language

At the same time we know from first-language learning studies that, as they learn their first language, students at the same time learn and establish for themselves strategies for their language learning. These studies seem not to be known about in EFL learning studies.

The educational psychologist Kahney explores the specific strategy (in first-language learning) of working from analogies with existing understanding, writing: "*People use old knowledge in trying to understand new events or problems … people interpret a new problem in terms of what they know already … people solve problems by identifying analogies between old problems and new problems"*. (1993: 59-60)

Interestingly, and concerning pedagogical implications, Kahney claims here that learners often need help from their instructor or from materials in identifying the analogy, as otherwise they may not notice it. Giving students examples, and giving them time and space to work out the general rule underlying the examples (Kahney reports

⁹ Dewey, J. (1916, EMEREO reprint), Studies in Experimental Logic, see The Introduction pp. 3-8; 16-23; & ch. VI.

^{(1966),} Educational Review, 'Relevant Models of Language', 22/7, This article is reprinted in the Edinburgh Course in Applied Linguistics (1973 volume). The questions which follow this article (my What is the English language from the EFL learner's standpoint?) probe implications of this claim by Halliday, as well as implications that the learner has learned language-learning strategies when learning his first language.

from the literature) may allow a student to do this.

It is important to note that these strategies seem to be deeply embedded, and are subliminal, with the implication that they cannot normally be taught. This combines well with a 'constructivist' thesis that students should be left alone to get on with their learning, and also provides an example of where the teacher can be helpful (ie, in drawing attention to analogies to help learning).

In mathematics learning, learning strategies are taught from day one (eg, double-check your working; write down all your thinking). The importance of strategies has been proposed and argued for in rather general terms in the applied linguistics literature 11, often without evidence, but in first language studies and in educational psychology there exist reports of specific work and findings on this for example, by Kahney, (quoted above). There also exists in the field of first-language learning studies work on the learning and exploitation by the student of strategies from first language learning, where these are then employed in their subsequent first-language learning (especially as learned in vocabulary learning and in reading). 12

d) **Provisional and partial understanding of the second language**

The student has also acquired a body of understanding about the second language. He may consider himself certain about some of this understanding, and so can use it as a secure reference point, as safely-established propositional knowledge. But if one observes a successful student, he tests out understanding, he experiments with his understanding, to see if it works for him (note how a student maintains eye-contact with a partner in role play, perhaps to receive confirmation, or otherwise, that he is understand).

We propose that the EFL learner has four reference points to aid him in his EFL learning, in each case, a kind of propositional knowledge. In each case, he draws on this understanding as he attempts EFL learning. He tries to use those understandings for learning EFL.

These resources of propositional knowledge (the first three of which he owes to his first-language leaning experience) seem to give an early-stage EFL student security and points of reference, a foundation for launching into practical and 'experimental' use. This work, I suggest, results in a disposition to being able to speak becoming progressively established and embedded. I have seen this understanding of learning confirmed in my own teaching, for example, with confused adult learners who, after completing an intensive remedial course, were then able to use English to solve problems in their work, whereas before the course because they could not do this.

(4) IMPLICATIONS OF THE RELATIONSHIP BETWEEN THE TWO KINDS OF KNOWLEDGE FOR PEDAGOGY

Given the above, a teacher's questions to herself might be:

- How can I fit in with my students' store of understanding, and not interfere?
- How far should I 'let go'? When do I intervene, and when do I trust my learners to find their way, to experiment with and to try out their language?
- What kinds of materials will help me to do this?

¹¹ See Mitchell et al (2013: sec. 5.2.3.3), who summarise work on this, and claiming "*learning strategies ... may be represented as procedural knowledge*". We would dispute this claim. Our comment would be that strategies, where they are learned in first-language learning, will, on the contrary, be drawn on by the EFL student as relatively fixed, subliminal and embedded *propositional knowledge*. As Mitchell et al observe, studies show that strategies are relatively inflexible *once established*, and can only be 'taught' later with difficult in classroom situations [(Plonsky 2011, cited by (ibid), and also see (ibid: 22). Because of this they are reference points for the learner, and so are propositional knowledge. Work on learning strategies in applied linguistics (as seen in the sample of work reported on by Mitchell et al) seems unclear about the concepts of 'strategy', 'declarative knowledge' and 'procedural knowledge'. Mitchell et al (ibid) write, in fact, of 'the lack of theory', and we would agree and add, the lack of clarity about what is being studied. This is an example of an area requiring conceptual clarification before further work can be done. [There is a chapter in Ehrman (1996: ch. 8), 'Understanding second-language learning difficulties') on learning strategies, citing work by Oxford, but which does not however refer to first-language learning strategies.]

¹² This work, not cited here, was done in the 1970s, at a time when cognitive studies were common.

(4.1) To recapitulate, I observed in my teaching that students need to move backwards and forwards, in the course of a lesson, between the two kind of knowledge. I saw that this strategy helped them, and I encouraged it, and provided the conditions for learners to do this. The learner will, normally, grasp propositional knowledge, if clearly offered to him, as one starting point. When moving backwards and forwards between the two kinds of knowledge, learners are perhaps checking their reference points, before they risk launching into use. It is for this reason that I begin and end my role-play lessons with a 'propositional knowledge' stage at the beginning and end, where students write and can confirm for themselves their passive understanding. (Teaching notes for the role play are also given after this text in the e-version)

It has been observed (by H.H. Stern) that successful language learning requires risk-taking. How can we give the student the confidence to take risks? I have found in my work that this happens when he is confident of the basic forms and tense system of English (propositional knowledge). For this reason I use a dialogue, with boardwork, to introduce role plays, with a clearly expected language structure to be practised and brought into use. The student can then start from that security and build on it and make use of it, and launch out, at his own speed, to free use, as in a role play. In this way, a combination of secure propositional knowledge and 'experimental' practical knowing seems to comprise the combination which learners require.

This, at least, is my own teaching experience. It was also my conclusion from teaching secondary-school mathematics. In the role play which I have earlier referred to, learners are 'experimenting' as they develop their practical knowledge, finding out what works, and thinking again about what doesn't work, just as a reflective, skilled, practical person does in working on a fresh task.

(4.2) Confusing childhood and teenager learning strategies and the social constructivist trap

However, traps lie in wait for those who are attracted to thinking and solutions such as the above, as influenced by Dewey's work, and which were exemplified in his child-centred ideas. At the university where he worked in the 1890s, the Department of Education had a primary school attached to it, where experiments in child-centred learning were carried out, and conclusions from this work influenced the progressive education movement over the following 40 years.. The learning theory behind that movement was sometimes called discovery learning, but it was criticised as it did not always produce results. Those progressive, 'child-centred', educators who followed Dewey did not always note that Dewey worked with children, who learn in a different way from teenagers. Teenagers need a background of propositional knowledge which they can trust and draw from when they transfer their learning to active use. A core understanding of basics, I found, gives teenage learners security, and the teaching in TEFL of work on form (provided it is combined with free practice in the same lesson) gives an interesting and disciplined classroom, supplying the security which especially the more vulnerable or slower learners require.

The risk with employing a theory of learning (or teaching material) which neglects this central role of propositional knowledge is that the mistakes of the child-centred movement may be repeated. For example, if 'constructivist' ideas are understood as 'social constructivism', then the risk is that the individual learner's learning problems, and his need for security, are neglected. 'Child-centred ' learning, in its more naive form, is in fact not learner-centred at all: it is centred on the assumption that learning is social. But if learning is ultimately, an individual enterprise, then to neglect those problems is to mis-conceive learning.

It is an unreflective mistake, arguing from a claim that 'language is communication' (and which it is not – communication is a *function* of language) that learning a language is primarily a group or social activity. However, the above mistake of neglecting the place of propositional knowledge has arguably been made in the last generation of academic thinking on language learning. For example, a book by Marion Williams explores the application of constructivist thinking for EFL learning, but only in a social sense. **13** A recent book in mainstream education, drawing on Vygotsky, offers the same partial treatment. **14**

(4.3) Summary and conclusions The post-childhood EFL learner, with his first language as reference point as well as his strategies learned for language learning, seems to incorporate into that framework the input he receives, and so makes EFL his own. He requires security and foundations to do this complex work, in the form of concepts and ideas (propositional knowledge). Working with these, the more adventurous learner, in a way which we do not

¹³ Williams, Marion, (1997), <u>Psychology for language teachers: a social constructivist approach</u>, CUP, pp. 49-55; 143-55 & 174-77. Discussion is mostly at a general level about 'humanist' social constructivism.

¹⁴ Karpov, Y.V., (2014), <u>Vygotsky for educators</u>, CUP. Ch. 10 for a critique of constructivist instruction. But Karpov and Vygotsky refer mainly to social constructivism, and not to constructivism in individual learning processes.

understand, seems to 'experiment', and finds his way forward. In that context, the dichotomy of practical-propositional knowledge helps us to see more clearly the learner's problem, and also his solution. The teacher's task is therefore to provide the materials and classroom conditions which allow the student to work towards his solutions, in his own way.

(4.4) Further work Further work to help develop these insights might be a study of the question "*Is EFL learning often a form of experimental enquiry*" (essay in preparation by the author, with the working title *Learning to Speak EFL as a Form of Enquiry*, and which will be published in *Radical TEFL*, 7 (2020). We might also revisit cognitive understandings of language learning, as well as investigate the first-language learning literature which studies language learning strategies.

Our field is perhaps disproportionately influenced by language studies, and by social studies. But language learning is primarily a learning problem, a problem belonging to education and to learning theory. Our problem is to understand our students' *learning*, and impediments to their learning. A helpful perspective might be to try to understand second language learning from the student's standpoint (my 2018b, "*Getting inside the EFL learner's standpoint and learning problems*"), as well as to try to understand the student's standpoint to the second language (my 2019, in this issue of Radical TEFL, "What is the English language from the the EFL learner's standpoint?")

The role play (with dialogue) referred to in the text is given on the pages which follow. After the role play I list the conditions which I have found require to be present in role-play materials and in classroom management strategies. A bibliography is given following that.

June 2018/46 LEARN / 85

Acknowledgement

To the world-class Welsh National Library in Aberystwyth.

About the author

He studied Physics, Chemistry and The History and Philosophy of Science, and graduated in Philosophy. He has taught Mathematics in secondary schools in England and secondary EFL in Poland, and has also worked with pre-service and in-service EFL teachers. He gave many workshops for the British Council in Belgium, and he specialised in short course ESP teaching. He lived and taught in Poland for 20 years, and edited *The Polish Teacher Trainer* (1993-95. He taught *Theory of Knowledge (TOK)* for the International Baccalaureate (IB) Diploma, in Poland (2009-2011). He is looking for further teaching opportunities, perhaps as a short-term stand-in (for secondary school, academic writing, working with teachers, or teaching IB TOK) – contact at: alistair.maclean@outlook.com

No copyright is claimed for this article, and the role play may be freely used in classes.

RADICAL TEFL, 6, March 2019

ARRIVING AT A YOUTH HOSTEL / Dialogue

A =	Alicja and her 2 f	friends, travellers	from Poland
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YH = Youth hostel worker

YH:	Hello, can I help you?
A:	Yes, we reserved by email. Can we check in, please?
YH:	What's your name please?
A:	Alicja Wisniewska. Here is a hard copy of my email.
YH;	Can you spell your name please?
A;	You spell it A-L-I-C-J-A- space W-I-S-N-I-E-W-S-K- A
YH:	Yes, we received your reservation Can I see your youth hostel card?
A:	Here you are.
YH:	Yes, that'll be OK. Do you want breakfast? It costs £7.00 per person.
A:	Can we do our own breakfast here?
YH:	Yes – there's a self-catering kitchen, over there.
A:	So, we'll do our own breakfast, thanks.
YH:	Do you want an evening meal?
A:	No thanks, we'll cook in the kitchen. Can I use my sleeping bag?
YH:	No, sorry you can't. But bedding is included in the price.
A:	How much will that be?
YH:	That'll be £96.60 please, for 3 people. For 3 nights, yes?
A:	Yes, that's right. Can I pay by credit card?
YH:	Yes, that'll be OK. Can I see your passport also please?
A:	Here you are.
YH:	Oh, you're Polish! OK. That'll be fine! Here's you key.
A:	How can we find our room?
YH:	Your room is 34. It's on the third floor. You can take the lift, there.
A:	Thank you. We'll see you later!

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(FOR THE TEACHER - New language focus is "will" shortened to "ll" in speech. Other language is already known, and is to be brought into active use. The questions on the role play page are intended only to help the learner get started. Learners may keep the dialogue on their desks)

ARRRIVING AT A YOUTH HOSTEL / 2

Traveller

For every question, ask about:

Price? Payment methods? Can you use your sleeping bag? Supper? Breakfast?

	Explaining your problem and what you want.
1.	Give your name, and say that you reserved by email. With your friends you are a group of 4. Ask if breakfast is included in the price. What about the evening meal?
2	Give your name. You didn't reserve. You are travelling alone. You need supper and breakfast. Ask if you can pay in Polish zlotys.
3	You are a group leader, with 28 students from a school. You reserved in advance, including breakfast, and you paid in advance, by fax. You want a single room for yourself, and separate rooms for boys and girls.
4	You are travelling on your own, without reservations. Ask if there is a room for you for one week. You only have a credit card for paying, you need breakfast and supper, but you want a quiet single room. Ask if you can hire a bike
5	You don't have a reservation, and you need a bed for two nights.

QUESTIONS FOR THE TRAVELLER TO ASK: (Only xamples)

Do you have a bed for me/us?

What's the price per night?

Can we do our own breakfast?

How can I pay?

Can I use my sleeping bag?

Can I order breakfast and an evening meal?

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ARRIVING AT A YOUTH HOSTEL / 3

Youth hostel worker

For every traveller, ask about:

- Reservation
- Youth hostel card
- Payment
- Breakfast
- Sleeping bag

	Explain how the youth hostel works, and answer questions.
1.	Ask for first and last names. Ask if the person reserved a bed . You find the reservation, for 2 girls, and give them a room with 2 beds. Breakfast is £7.70 extra per person There is a kitchen for cooking.
2.	There are enough beds for tonight The traveller can use the kitchen for cooking supper, or there is a Chinese restaurant opposite the hostel. It isn't allowed to use your own sleeping bag in English hostels. Payment in pounds.
3.	A school reserved for 30 people, a month ago. They didn't pay for breakfasts, they must pay now (=£217.70). There are no single rooms.
4.	Someone wants to stay for a week, 3 nights is the maximum. You prefer payment in cash. There are no single rooms, but tomorrow there will be. Single rooms are £14.40/night extra.
5.	You don't know if there will be a bed later, you will try to help. Look at the card. It is out of date! (not valid) The person must pay £14.40 for a new one!.

QUESTIONS FOR THE YOUTH HOSTEL WORKER TO ASK: (Only examples)

- **1.** Do you have a reservation? /
- **2.** How did you reserve?
- **3.** How many people are there altogether?
- **4.** For how long do you want to stay? (maximum is 3 nights)
- **5.** How do you want to pay?
- **6.** Do you want to order breakfast?

CONDITIONS FOR ROLE PLAY MATERIALS DESIGN AND FOR CLASSROOM MANAGEMENT

I found, over hundreds of lessons of 'experimenting' with oral pair work, that materials which allowed my learners to make the move from propositional knowledge to practical knowing needed to satisfy the following core conditions, :

1) be non-threatening: the role play should be fun to do;

2) the language structures which were required to do the role play needed to be securely understood, *before* attempting the role play. If necessary, this work is practised in preliminary oral controlled practice in pairs, requiring additional material;

3) the students need plenty of concrete information to work from, with a clear target outcome in the form of a clear, manageable and concrete task;

4) the activity allows the student to recover from his mistakes and confusions. There are about five role plays in each activity (gradually becoming more complex) allowing fresh starts;

5) the student requires space and opportunities to work things out for himself, allowing each learner, in his own way, to 'fit in' new work with what they already know (consistent with schema theory) **15**

6) plenty of on-task practice time is needed – if possible about twenty minutes of role play work;

7) the learner is able to group or link the practice within some context, which might be other language which is well grasped, or perhaps an affective context, or perhaps the context is working with a friend;

8) input in the form of a model of the language required, in the form of a dialogue, and which weaker students can use as a prompt, giving those learners safety (NB: See the dialogue introducing the role play *Arriving at a Youth Hostel*)

9) Differentiation of level: each pairwork activity has 5/6 tasks, each requiring several questions from one of the students. Note that the unpredictability increases as the work proceeds, meaning that students can rely progressively less on controlled ability: the language required becomes more real (this gives stronger students a chance to use freer language) 16

10) Summary: the materials give plenty of practice at different levels; A weak pair will focus on the basic patterns required, but a stronger pair will forget about the structures, and begin to use language quite spontaneously.

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¹⁵ See Mitchell et al (2013: 51), who cites Newmark L., (1966), <u>How not to interfere with language learning</u>, *International Journal of American Linguistics*, **32**, and the argument there is paraphrased by Mitchell et al: "… (this paper) argues that teachers should let the learning process in the classroom take its course rather than try to directly shape it … this marks a major departure in conceptualising the learning process".

¹⁶ This idea is expanded in Appendix A of my (2016), where the concept of 'differentiation of level in materials' is presented. This concept is a key idea in the design of materials for mathematics learning, allowing each student to work at his level and on his problems. It is a good example of a concept in education which TEFL can learn from.

Classroom management conditions for role play

Classroom management, a central concept in mainstream education, is a group of strategies and techniques which physically establishes in the classroom the practical conditions for learning to have a chance of taking place, although with small cooperative classes classroom management time may be minimal. As a secondary-school teacher with a challenging class I typically spent the first ten minutes of a lesson on classroom management, for example, anticipating discipline problems, dealing with late students and forgotten pens, and writing models of work on the board as the class settled and found their notebooks. Classroom management is about 'setting up the job', so that once started, the work goes without distracting interruptions.

I found that the following classroom management strategies allowed students to work through role-plays such as *"Arriving at a Youth Hostel"* smoothly:

1) The language which will be required is first very, very clearly presented *on the board*. And students copy it *into their notebooks*. This allows everyone to confirm their understanding of the language. A bright spark might complain "But we know this." However, the weaker students, less vocal, may still be uncertain and need to see the language again. If this stage is omitted, students who failed to understand the same work last year will not understand it this year, either.

2) The dialogue is read out, clearly and slowly, first by the whole class, and then in pairs. This allows the students to hear and to speak the needed language.

3) Clear and unambiguous explanations (perhaps demonstration by one pair in front of the class) of how they role play works: there must be no uncertainty in the students' minds as to what they need to do, or other confusion. Pair work can go wrong!

4) students choose with whom to work, the teacher keeping a low profile; students are left alone so far as possible, to allow them to find their own way.

5) When there is an odd number of students, make one group of three students.

6) Students may keep the dialogue in front of them. Strong students will not refer to the dialogue, but weak students have it available as a resource

7) Each pair works at their own speed, with no pressure for completion of the work. Very weak students, unable to manage the activities, can be asked to write the dialogue, this giving more controlled practice on the structures.

8) Students who won't cooperate or won't use English (normally weak students) can also be asked to write the dialogue.

9) Strong pairs, who finish first, can repeat the activity, changing roles.

10) For the last five minutes I ask all the students to individually write out a dialogue, choosing one of the five role plays (as given in the activity). In this way they write what they have just spoken. By checking this written work (as they write it) I can see who still has not grasped the material, and so help any stragglers. For the students, the value of this five-minute activity is that they reinforce and confirm their understanding. Students like this – they can see what they have understood, and they finish the lesson feeling that they have 'learned something'.

With well-motivated learners, role plays which are presented in this way can be done with classes of up to 40. With restless learners, about 12/16 students in a class is the maximum. In my classroom management work I especially think of the weaker learners as their problems are very often overlooked in a large class, and as a result, they do not master the work, and make little progress from year to year. It is for especially this reason that teaching a large class is quite different from teaching a small group, and the skill of a teacher perhaps lies in looking after her weaker students. The strong ones will generally look after themselves.

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WHAT IS THE ENGLISH LANGUAGE FROM THE EFL LEARNER'S STANDPOINT?

(Focusing on first-language learning strategies.) "He" is used for the student, and "she" for the teacher.

1) How do teenage/adult EFL learners see 'language', having already learned a language?

What do EFL students bring from their first language to the learning of English? Their first-language learning (L1) strategies? An understanding of how 'language' works for them? An appreciation of what language can achieve for them? Isn't our starting point when teaching EFL an appreciation of how the student sees "language" in the context of moving from his L1 to English?

2) Should EFL learning be understood as 'learning communication' (again) ?

How different, really, are the ways in which people communicate with each other in different languages? Aren't many of the communicative functions in English universal to language? If 'communication' is learned while learning an L1, *does it need to be learned again*? Hasn't 'learning to mean', generally, already been achieved when learning a first language, and might the strategies learned while doing this learning later be employed, autonomously by the student, in second language learning?

"(the learner can perhaps) carry over to the second language the mental operations he already possessed .. (and) the new language would provide merely a new vehicle for expressing (what he can already express in his) native language". (Carroll: 1973: 127)¹⁷

"The child knows what language is because he knows what language does (deriving from) successful demands on language that he has already made (and so the child is) aware that language has many functions " (Halliday 1973: 59)¹⁸

Don't students, as a priority, need from an EFL language programme secure foundations and reference points, and from which they can then build on, and so then bring into action their communicative strategies, which they *already know* in their first language?

In British applied linguistics, isn't the question "*What is language*?" often conflated with the quite different question "*What is the function of language*?" Also, isn't the question of how language is used a quite different question from the question of how a second language is learned? Might an emphasis on teaching communicative strategies distract the learner from his core **learning** problems? Is there a risk that those applied linguists who understand language as communication then go on to assume that EFL student need to learn this – *when students already know how to communicate, and how to 'mean'*? Perhaps the learner just needs practice, to transfer this to EFL?

3) What are the student's problems in moving from his L1 to a EFL?¹⁹

"Language is a ... method of communicating ideas, emotions and desires by means of a system of ... symbols... (Sapir 1921: ch. 1, pp. 22)

From the standpoint of the learner, and in order to understand his difficulties and impediments in moving from is L1 to EFL, don't we need to start from an understanding of *the learner's problems* as he moves from concepts in his first language (represented by symbols) to concepts in EFL? If language is, partly, a symbol and concept system, how does this affect the learner's problems in learning EFL? In learning his second language, isn't the learner's main problem to know where the concept-symbol systems in the two languages are similar, where they are different, and where they are

¹⁷ Carroll, John B, <u>Linguistic Relativity and Language Learning</u>, in Allen, J.P.B. & Pit Corder, S., eds., (1973). Reprinted from *International Review of Applied Linguistics*, **1/1**, (1963).

¹⁸ Halliday, M.A.K., (1973), <u>'A rich and adaptable instrument'</u>, in Allen, J.P.B. & Pit Corder, S., eds., (1973). Reprinted from *Educational Review*, 'Relevant Models of Language', **22**/7,

¹⁹ Maclean, A.L. (2018b), <u>Getting inside the EFL learner's standpoint and learning problems</u>, *Radical TEFL*, **5**, Free download at <u>http://radicaltefl.weebly.com</u>

different, and how these differences may be expressed?²⁰

5) What role do analogies and analogy-seeking strategies play in EFL learning?

Does the the EFL student subliminally employ learning strategies, *which he learnt as he learned his L1*, as resources and reference points? If a first language represents a 'store' of *language*, and if the learning of a first language gives a store of *language learning strategies*, is it reasonable to think that an EFL learner, perhaps subliminally, makes use of those resources?

"The learner's knowledge is seen as a unified whole, in which new knowledge is integrated and systematically reorganised with previous knowledge of the native language" (Spolsky 1989: 31)²¹

If it is the case that some kind of rearranging and restructuring of new input against prior understanding is going on in all language learning, and if such processing strategies have already been learned when learning the first language, how can EFL teachers and materials leave space for students to do such work? How might a teacher and her materials unintentionally impede the student drawing on these resources? Where can literature in L1 learning studies help us here?

6) Encouraging EFL students to use L1 learning strategies. If, in EFL learning, the student (helpfully) draws on his first-language learning strategies, shouldn't EFLT educators study how TEFL might fit in with this work by the student? For example, if the learner is (helpfully) making use of analogies when he sees new material, how might the use of analogies be encouraged - by giving students numerous examples and models of EFL, so giving them time and space to work out the general rule underlying the examples? But when might it *mislead* learners to look for analogies with their first-language learning? How might we investigate this question? Where can we find work on this in educational psychology, and in first language learning studies? Hasn't work on EFL learning strategies, until now, neglected the significance of L1 learning strategies?

Alistair Maclean

RADICAL TEFL, 6, March 2019

²⁰ Sapir (ibid: ch. 5). Not on learning, but the text here is revealing for understanding the EFL learner's problems.

²¹ Spolsky, B, (1989), <u>Condition for Second Language Learning</u>, Oxford University Press

ENQUIRY AS RE-CONCEPTUALISATION: THE SIGNIFICANCE OF THE WORK OF STEPHEN TOULMIN FOR ENQUIRY INTO EFL LEARNING

Alistair L. Maclean

"Concepts, like individuals, have their histories, and are just as incapable of withstanding the ravages of time as are individuals"

Kierkegaard, quoted by Toulmin 22

There is no lack of work which enquires into second language learning - the field has been called an industry. Numerous studies are carried out and published, and one book which reports on this work is over a thousand pages long. But within second language learning studies there seems to be little discussion of underlying features of how enquiry works. One answer given is "*But there is no one way of doing enquiry, or research*" and then the question might be left on one side. This essay will be more persistent. We will ask: What defines successful enquiry? What is the significance of enquiry – why is it important to enquire? What features are present in the *planning and carrying out* of an enquiry which develops a field? What features are present in the *results or legacies* of innovative enquiry? These questions reward attention, and are explored in the branch of philosophy which studies the growth of knowledge.

This essay will attempt to get under the surface of enquiry. The attempt is relevant to TEFL, because claims made as the result of enquiries into second language learning may feed down to the TEFL/TESOL classroom, in the form of syllabuses, teaching materials and examination requirements. It is then the teacher and the EFL student – and not the researcher – who must deal with and implement ideas and claims which may not take account of teenager classroom realities. But if we can better understand root issues in enquiry, then researchers might be better able to do more helpful enquiries, and to avoid the many pitfalls of enquiry, and so be able to move our understanding of EFL learning forward.

Most other fields (eg, history, social sciences, physics) probe their methods of enquiry, and we might learn from them. Help might be found in the field of the philosophy of education, for example in the probing work of Richard Pring (2004a), but I will draw instead from the history and philosophy of science, where we can find voluminous sources and extensive discussion on enquiry and the growth of knowledge. I will draw especially from the work of Stephen Toulmin (1953; 1961; especially his 1972; & 1990). He used his understanding of how enquiry works to explore underlying issues in enquiry, arguing that successful enquiry allows a field to re-conceptualise itself, and that without this work, a field does not develop. **23**

In his heroic *Human Understanding Part* 1 (1972) Toulmin used the history of science as his source material for understanding how knowledge grows, and since about 1950 there have been many studies and biographies of individual scientists who moved their fields forward. We also have detailed accounts by some enquirers – for example by the astronomer Kepler and the physicist Michael Faraday – of how they set about their work including, helpfully, their wrong turnings and their thinking as they worked. The twentieth century offered many such accounts (eg, Watson 1968; Crick 1988; Hoffman 1959; & Feynmann 1965). To understand how enquiry works is in the first instance an empirical question, and we can draw from accounts by enquirers, and by their biographers.

I have summarised some of these accounts in an evidence section, given at the end of this essay. I tried to read accounts of successful and innovative enquiry without preconceptions, either about how enquiry works or about the underlying processes in enquiry. I surveyed work from astronomy, chemistry, life sciences atomic physics, and other fields. I studied about a dozen researchers or fields. **24** Sources are given at the end of this article.

²² From The Concept of Irony, and quoted by Stephen Toulmin (1972: x)

²³ After doing research with Ludwig Wittgenstein, Stephen Toulmin taught history of science at the University of Leeds in the early 1950s, and then moved to the USA. He was both a philosopher and an historian of thought.

²⁴ Kepler, Newton and the Copernican revolution; Faraday and electromagnetism; chemistry and especially Lavoisier; life sciences; 18th century geology and meteorology (the latter an example of unsuccessful enquiry); atomic physics; and others. Full references are given at the end of the evidence section (e-version only).

I found that there are some common core features in much enquiry, and which can be repeatedly observed in the history of enquiry. The evidence section (in the e-version of this article only) led me to the conclusions given now in Section 1. My own background for doing this work was that I studied sciences, then the history of science, and then philosophy. These three fields are linked, and if we can see the links, we can better understand enquiry. This was Stephen Toulmin's life's work – to enquire into enquiry.

But can one draw lessons for second language learning studies from enquiry in 'science'? I understand science not as a body of knowledge, but as a self-correcting process for making provisional claims to knowledge, and the processes can be used in other intellectual fields. **25** There seems to be an underlying unity to how enquiry in different fields is structured, and I argued for that thesis, following John Dewey's work on enquiry, in my (2017). **26** If the assumption that there is a unity in the growth of knowledge is followed, then enquiry into second language learning might indeed learn from enquiry in other fields.

(1) CONDITIONS AND FEATURES IN SETTING UP ENQUIRY

From evidence available in histories of scientific enquiries we can identify some core features and conditions in those enquiries which, it was seen in retrospect, moved a field forward. We consistently find the following:

1) Awareness of historical context The successful enquirer is aware of the historical context of the problems he is addressing, while at the same time he ...

2) Stands outside the assumptions and methods of enquiry of both his predecessors and his contemporaries. The innovative enquirer introduces or makes use of a fresh standpoint or way of seeing. This standpoint might be technical (eg, the telescope); or by introducing fresh assumptions or hypotheses; or by seeing the problem differently; or it might be through introducing fresh methods of enquiry ...27

3) Attention is given to the method of enquiry. The enquirer adopts, adapts or designs a method of enquiry which is appropriate for the field and for the specific problem being addressed.

4) Learns from the attempts of others and earlier theories had run into difficulties; Enquirers understand where earlier investigators

5) Ask questions to themselves: they ask appropriate questions. (For John Dewey, questioning drives an enquiry);

6) Their goal is clarification and understanding, rather than a programme for action or reform, except for reform in the sense of clarification of their field. They do not set out to change their field, but to solve a problem which is preventing progress.

7) They respect data and observational evidence. Enquirers often start from contradictions between existing theory and observed data, taking such contradictions as their starting problem. Evidence has priority over a theory or hypothesis.

8) Hypotheses Enquirers employ hypotheses, these regarded as provisional, and are scrutinised. A 'wrong' hypothesis can be fruitful (Popper 1994 & 1999), provided that there is a scrutiny stage to reveal that the hypothesis requires revision, or abandonment. **28** The gestalt psychologist

²⁵ In German, the word 'science' does not exist, and instead the word *wissenschaft* is used, meaning "knowledge creation". History, for example, is considered an example of *wissenschaft*. In this way, the physical sciences are not regarded as distinct from the human sciences. This viewpoint has not held back German 'science'. The word 'science' is a trap.

²⁶ '*Re-conceiving teacher research with the help of John Dewey's theory of enquiry'*, especially in Appendix A there, in *Radical TEFL*, **4**, which is available as a free download from the *Radical TEFL* website.

- ²⁷ For a case study of a once influential but now neglected empirical educational researcher who proceeded without examining his underlying assumptions, see the biography of Thorndike by Joncich (1968: esp. chs. XIII & XXIV).
- ²⁸ See Popper, Karl, (1994), ed. M.A. Notturno, <u>The myth of the framework: In defence of science and rationality</u>, Routledge, esp. pp 58-59; 68-71; 74-75; 82-101 & 144-149, **and see** Popper, Karl, (1994, tr. 1999), <u>All life is</u> <u>problem solving</u>, paper 1, <u>The logic and evolution of scientific theory</u>, Routledge. The latter was a radio talk, where his ideas are presented very clearly. Or instead, for a presentation of Popper;s thought on enquiry, see Magee, B.,

Kohler wrote: "Since assumptions will be tested and continually corrected, they can surely do not harm and they can always be discarded and replaced by better ideas. If an hypothesis has any specific content, it must also have specific implications; and these can be tested" **29**. The American Richard Feynman moved atomic physics forward, arguing that a field proceeds by use of "guesses" or hypotheses, writing, "What we are looking for are hypotheses, very definite and easy to compare with experiment – it is not unscientific to make a guess".

9) Aware of bias risks Designs the enquiry in a way which avoids the traps and pitfalls which are present in his evidence or his method, for example, the trap of confirmation bias, this avoided by looking for disconfirmation at the scrutiny stage**30**. Other checks on confirmation bias are: re-examination of first principles; and of assumptions in the field; and by self-questioning and probing. Enquirers are self-critical.

10) Three-stage self-correcting loop The architecture of the enquiry is a loop of: problem identification; leading to an hypothesis or conjecture or theory; leading to scrutiny. Contained in this loop may be repeated failures and fresh attempts, often returning to the beginning. Successful enquirers revisit their data; their questions; their problem; their hypotheses-theories; and their first principles - as the evidence requires.

11) **Perspective by being familiar with another field** The enquirer often comes from or is familiar with another field and so is able to see the problem in a fresh way, as well as being able to bring from the other field concepts, standpoints and enquiry processes as required by the new problem. In bringing this perspective, an enquirer's thinking is not cluttered and restricted by assumptions which are present in the field, and can therefore perhaps see and propose a fresh starting point.

12) Enquiry is often solitary The enquirer often works alone, and is persistent, perhaps over many years. It is often claimed that the growth of knowledge is done in a social context, but the evidence available shows that this is not the case for innovative enquiry. Roy Porter writes (1988: 12): "... at the very centre of of the search of science has been the individual scientist, dedicated ... to uprooting the authorised version of truth in his field, and substituting his new vision of things" **31**

13) Fresh observations not essential Not all enquiry required measurement, or data collection. In the history of science it was often assumed that progress required more data, but such work often failed, (for example in 18th century meteorology.)

14) Long periods of reflection and fresh attempts An enquiry often takes several years, not only in gathering evidence, but also in allowing time for reflection, fresh hypotheses, and for reconsideration and redefining of the original problem. Successful enquirers are tenacious, and give themselves time to re-start.

15) Reason and reflection have a key role A striking feature in all the successful enquiry which I surveyed is that reason (reflection) and empirical work (observational data) work together. We conclude that innovative enquiry employs and requires reflection and reason, **32** and we conclude from the evidence that the role of observation and data collection is less important than sometimes assumed.

(1973), Karl Popper, OUP/Viking Press, chs. (ii); (iii) & (v). Or see Taleb (2005: ch. 7)

- ²⁹ Kohler, Wolfgang (1947: 55 & 271), <u>Gestalt Psychology</u>, Liveright New York, esp. ch. 2 on methodological problems in quantitative measurement
- ³⁰ On confirmation bias, see Taleb, Nassim Nicholas. (2007), <u>The Black Swan</u>, Penguin, chapter 5. Also esp. see: Prologue, chs, 1, 9 & 11. Also relevant: chs. 3, 4 6 & 10. On bias and other pitfalls in enquiry.
- ³¹ Porter's (1988), with the misleading title <u>Man Masters Nature</u>, is perhaps the most penetrating and helpful text for understanding how scientific enquiry works. BBC Books. This is a collection of short articles for non-scientists by specialists on different innovative scientists. Porter is an active historian of medical science.
- ³² A helpful source for following up the role of reason in research (understood as 'systematic enquiry') is the special issue of the *Cambridge Journal of Education*, **27/2** (1997), available in many university libraries. See there the articles by Wilfred Carr (1997), Morvenna Griffiths (1997), and especially, by David Bridges (1997). The question has been discussed in TEFL by Judith Suissa (2006).

Some enquirers relied on data collected by co-workers (for example, Kepler), but whose significance had not been understood, or seen, or unravelled by those co-workers.

As a corollary to these conditions, if they are lacking enquiry may fail, or results may be insecure, but a study of the many pitfalls and traps in enquiry would require another article.

(2) THE RESULTS OF INNOVATIVE ENQUIRY

The above features were present in most or all of the enquiries I surveyed. However, it is in the nature of enquiry that is open-minded, and does not pre-conceive its results, and so for example, an enquiry is open to a much-favoured hypotheses requiring to be abandoned. In this study, and again based on the evidence, we clearly distinguish between:

- a) the conditions and features present in successful enquiry (given above), and;
- b) the results or endpoints or legacies of successful enquiry.

Some features of the *endpoints* of successful enquiries often seem to include that:

- a clearer overview of the starting problem is thereby achieved, and
- links are seen and made with previously unconnected phenomena, and
- a concept or assumption which had been commonly employed was rejected, refined, or merged with another concept, resulting in a synthesis and clarity which had not been seen before. (Toulmin 1972: 200-13). This key idea is expanded on below.

It should be emphasised that Section 1 only identified the surface features and conditions present when carrying out successful enquiry. Those features do not explain why such enquiry is successful, and they do not show the root significance or function of innovative enquiry. I will argue now, following Stephen Toulmin (1972), that the most successful enquiry is enquiry which results in a field advancing through a *re-conceptualisation* of concepts within its field.

Innovative enquiry understood as resulting in a synthesis of existing fields

Enquiry looks for patterns, or relationships, or connectedness between different phenomena, these relationships expressed for example as laws of physics or as correlations. Enquiry is 'uniting work'. The ultimate connecting work is the bringing together of two apparently disconnected fields – a synthesis. Here is Roy Porter, an historian of medical science, arguing that intellectual fields profit from seeking connections with other fields, and from assuming that there is a unity in how nature works: (1988: 10, Porter's emphasis)

" ... the idea of **Nature as a unity** has paid dividends Science has progressed by specialisation. But diversification has often eventually led to new and unexpected reunification ... (for example) Kepler in the seventeenth century was able to reunite (two strands of astronomy) and develop a true physics of the heavens. ... After Newton, the various physical sciences made their separate advances ... (but from) the nineteenth century, the great scientific advances came through demonstrating a higher level of unity in these apparently distinct phenomena (and for example) demonstrated that magnetism, electricity, energy, light and gravity ... were all intimately connected"

How might a synthesis in a field help other workers or investigators in that field? What are the practical advantages or implications of a synthesis for developing a field?

For Toulmin (1953: 121-23) a field can be understood as a map, and enquiry is a mapping. A map's value is not that it shows where roads and rivers and towns are, but that it shows the relationships between roads, rivers, and towns. A "synthesis" is, by definition of that word, a way of relating and bringing together different aspects of a field, and so bringing coherence to what seemed separate. A synthesis, as with a map, establishes connections and makes links clear. The Newtonian synthesis is often cited (see evidence section), but many other major advance can be understood as a synthesis of existing understanding in different fields, for example, the medieval synthesis of Christian theology with the work of Aristotle. It should be noted, from the evidence, that syntheses are not planned or intended, and are seen only in retrospect.

However, enquiry in a given field may reveal that two concepts (or frameworks of concepts) which were thought to be linked are not connected as supposed. A good example is work in the Copernican-Newtonian scientific revolution, which showed that astrology and cosmology, previously regarded as linked, were not at all related to each other. From work done by Kepler and others, the link was broken, allowing progress in astronomy. Kepler related cosmology to physics, instead. How might this link to understanding learning?

Perhaps enquiry into language learning is held back by the assumption that language studies (and social studies) are the route to understanding learning. Language studies are, perhaps rather, the astrology of second language studies. Before understanding of language learning can be advanced, we require fresh concepts (Sec 3 below).

(3) FIELDS EVOLVE THROUGH THEIR CONCEPTS

It seems that in order to understand enquiry we first need to understand, as a prior question, what it means when we say that a field advances or moves forward. The answer given by Toulmin is the following: a field moves forward by introducing into itself fresh concepts, and through the evolution or abandonment of its existing concepts (Toulmin 1972: 200-12). Any work of enquiry which can throw up fresh concepts - or which results in re-vigorated concepts - might be useful for moving a field forward. In the context of education and of TEFL in secondary schools, such concepts might include concepts which capture the realities of the classroom such as teacher survival, preparation time, discipline, student resistance or indifference. At the moment, such concepts are often not taken account of in work on TEFL. The concepts which currently influence TEFL , from language studies and social studies, are disproportionately influential.

Development or evolution in intellectual fields, according to Toulmin, is conditional on new concepts being introduced, and/or, conditional on concepts which had been commonly assumed and employed in the field being moved forward, in one of these ways: by being:

- a) rejected;
- b) refined or redefined; and/or
- c) merged with another concept to form a hybrid concept.

As a result of this work, the field evolves or develops. (Toulmin 1972: 200-13). In every example of innovative enquiry which we have surveyed (evidence section), we observed that the concepts of a given field (which are its building blocks) were developed. Progress was made less by new data or information **but by conceptual evolution**. The kernel of Toulmin's thesis on how fields develop - which we follow - is that fields evolve through their concepts, and that without such movement a field does not develop.

(3.1) We may take one example. Kepler was unable to make progress on his problem of understanding planetary motion while he regarded the planetary orbits as circles. The assumption of a necessarily circular orbit was a concept which was part of his intellectual inheritance, a given. But when he regarded, hypothetically, the planetary orbits as ellipses, and then tried to see if elliptical orbits would fit with the available observational data, then he made progress. For him and his contemporaries, however, to regard planetary orbits as ellipses was taboo, and so to move from the concept of circular to elliptical orbits required courage and imagination. Generally, we stay close to the concepts which we are familiar with – we are too close to them to notice them. However, the evidence from the history of science which Toulmin (1972) surveys shows that fields develop when their concepts develop.

Toulmin concludes that progress in a field is made by work which leads to scrutiny and development of its concepts. As a result - although this may not be anticipated by the enquirers – a field re-conceives itself. That is, fields develop through the *evolution of their concepts*. For Toulmin, fields evolve or die. He gives as an example languages (ibid: 340-48), referring to the well-known feature of language, as studied in historical (diachronic) linguistics, of how languages do not remain static, and two languages may merge into a hybrid language. **33** For Toulmin, to appreciate what is happening as evolution in a field takes place, we need to watch and follow the development of the concepts, which are the building blocks of a field.

The influence of Wittgenstein Toulmin was strongly influenced by Ludwig Wittgenstein, his doctoral supervisor, who argued that the work of enquiry was often work of *clarification*. Although Wittgenstein did not publish work on enquiry, and on how knowledge grows, he argued in his notebooks that enquiry is often about seeing more clearly, about standing back, and about adopting an appropriate standpoint. He argued that enquiry is less about doing more experimental work and collecting more data, and more about unravelling what is already available to us. Data which is already available requires to be seen clearly, or seen differently, and this requires the work of thought, for example, in challenging existing assumptions about how to interpret data.

In arguing for this, Wittgenstein is consistent with a tradition in philosophy inaugurated by Socrates which argues that if

³³ On the this topic, see the very readable Deutscher, Guy, (2005), <u>The unfolding of language</u>. On evolution and conceptual development in languages. This book also shows (101-11) how linguistic science makes use of hypothesis to move forward..

we do not possess some awareness and clarity about the concepts we employ - if only to appreciate their complexity - then enquiry and other work which builds and relies on those concepts is insecure, or in technical terms, it lacks validity. Our work here is to argue that such work of clarification and concept development is done through probing enquiry. Purely empirical investigations or observational studies cannot do this work, as they start from and presume existing concepts. The work of enquiry, however, is to stand back from the data, as well as from 'the theory', and, as a result perhaps, to reform it. **34**

An implication of the above may be that EFL learning studies might resist the call for for 'more research', that is, to reduce the emphasis on purely empirical investigations or experiments, or observational studies and reports, and instead try to first better understand research methods which do the work of studying EFL learning. This is because empirical work, without reflection, is premature and unsafe until conceptual issues have been explored. The work required at this stage in the evolution of our TEFL field, perhaps, is perhaps not empirical, but work of clarification. Might TEFL and the enquiries and source disciplines which influence it be about where astronomy was in Kepler's time – requiring fresh concepts, bold hypotheses, and the checking out of assumptions?

(3.2) The need for discussion in TEFL/TESOL to acknowledge 'classroom reality' concepts

In her work, a secondary EFL teacher starts from concepts which are central to achieving her work, and getting through her day, but which may not yet have entered the TEFL vocabulary. These 'reality concepts' (and which she will give priority to) include:

- "teacher survival";
- anticipating and dealing with discipline problems;
- learner expectations; student refusal to work; student 'learned helplessness';
- her preparation time;
- parent pressure; exam pressure;

and so on - problem-concepts which may not occur to those who have not taught in secondary schools. As a result, they are not taken into account in designing theory which is intended to be used in classrooms.

Further, if TEFL educators who advise teachers want to help teachers to help their students, they also need to help teachers to combine their priorities with their students' learning needs – time, space, and so on - and which are also concepts which might reward more probing. These teacher and learner "classroom-reality-concepts" - all related to the conditions on the ground – are the teacher's starting point.

(3.3) Toulmin argues that, without development of concepts in a given field, that field remains static. We might propose that this is the case for TEFL, and for the study of EFL learning. If so, then it follows that those who enquire into EFL learning require to be open to new concepts, and to absorb them into the field. For it is in this way, we argue with Toulmin, that a field thereby moves forward and reforms itself. For Toulmin (1972: 359), one function of this evolution of concepts is that the field opens itself to further modifications, perhaps allowing it to deal with problems which had not been anticipated.

The roots of a field, and in understanding, are found in its concepts. An empirical investigation, based on observation, as in perhaps a Master's dissertation, does not require to thoroughly probe roots, and it works within existing concepts. Similarly, an experiment is restricted in its scope by the framework within which it does its work. An enquiry, however, tries to stand outside such work, and to probe deeper, for example, enquiry asks questions such as

- 1. Am I clear about the meanings of the concept which I am enquiring into?
- 2. Is the concept in fact a cluster of sub-concepts? Even a cursory scrutiny of a concept (eg, "learning") may have a value in revealing, for example, that what seemed to be one concept is in fact a cluster of concepts, each requiring its own study (Scriven 1998). One helpful suggestion given by both Scriven and Wittgenstein on probing a concept is to only probe it in the way in which it is used, and not in the abstract, that is, both advise working from concrete examples.
- 3. Does the concept have a 'weak' form and a 'strong' form, and which need to be considered separately?
- 4. In a classroom situation, is the concept changing its nature, as it interacts with other concepts in real time

³⁴ For other work on enquiry by Stephen Toulmin, see especially his (1961), Foresight and Understanding: An enquiry into the aims of science. Harper Torchbooks. See there especially pp.13-14 & 99-109. Toulmin argues that in order to understand how systematic enquiry works one needs to understand the standpoint, the existing framework, and the pre-suppositions of investigators. Also, see his (1990), Cosmopolis: the Hidden Agenda of Modernity, Chicago. On lost traditions in methods of enquiry, see there esp. pp 29-36; 70-83 & 168-193.

(3.4) Much of this article, arguing for the significance of concepts in understanding how a field develops, has been at an abstract level. However, the issue directly affects the practice of a teacher, as she can only reflectively work within a framework provided by the concepts available to her. An implication of the discussion offered, therefore, is that if the teacher can be presented with more relevant concepts, then she can better understand her work, and routes to solutions for her students' learning problems. The history of a field, to recapitulate, is partly the history of its concepts – their development, abandonment, and evolution into more adequate concepts, or into hybrid concepts. My own work in *Radical TEFL* has been a project of re-conceptualisation, looking at assumptions within concepts used in TEFL, as well as attempting to clarify, unravel and perhaps develop those concepts – the concepts of 'teaching', 'materials' 'learning' and 'teacher research'. **35**

Summary Empirical investigations and studies may 'add to our knowledge', but they will not, on their own, advance our understanding at a conceptual level. By contrast, enquiry (containing the features outlined in section 1) results in *re-conceptualisation* of a field. Re-conceptualisation moves a field forward because it allows us to see a field more clearly, and previously confused or contradictory data become clearer, and order replaces fragmentation. The result of such clarification is that the field moves forward and is renewed; the re-vitalised field is able to address and solve new problems; and links are made with other fields where previously no connection had been seen. This is the essence of Toulmin's argument – that a field develops in this way. (Toulmin 1972: 201, 203 & 205 for diagrams which neatly summarise his argument). For Toulmin, this evolutionary (or developmental) understanding of how a field progresses is counter to the often-cited and uncritically-adopted thesis put forward by T.S. Kuhn, of 'revolutionary' changes followed by 'periods of 'normal science' (see Toulmin 1972: circa 90-120, for a critique of Kuhn's thesis).

For Toulmin, rather, fields evolve. Consistent with Toulmin's thesis, a brief survey of many fields suggests that those intellectual disciplines which continue to be relevant and/or dynamic succeed in moving forward and evolving, conditional on their periodically revisiting and scrutinising their frameworks of understanding, their assumptions and their underlying concepts. Economics offers a present-day example of a field which is self-critically re-examining its current model. **36**

This study proposes that concepts play a more important role in the development of a field than sometimes supposed. We are often so close to them that they go unnoticed – but they are the foundations of thought. Concepts which are widely employed in a field, histories of intellectual fields show, require to be looked at sceptically. New concepts can be useful, as they bring new life to a field. (Those who prefer the word 'construct' to concept will not, I believe, find that the above argument does not apply if one substitutes the word construct: Toulmin's argument is that concepts *are* constructed – by enquiry. One may use either word.)

As I surveyed many examples of enquiry, and many discussions of how enquiry works, I concluded from that literature that enquiry which moves a field forward makes use of four approaches: British appeal to experience, this combined with questioning and scepticism; French appeal to reason and to argument; German respect for past authorities, learning from them; and American pragmatism, with a focus on what is helpful, and on what works.

But a field – whatever approach it uses - which does not succeed in developing its concepts, the evidence shows, becomes fossilised or stuck, as eventually the existing concepts, and the frames of reference which they support, become sterile. This is arguably a risk for TEFL now. My study concludes that research into EFL learning needs more balance: it requires fewer empirical studies,

³⁵ My (2015) proposed that pedagogy of EFL might be conceived as a form of practical knowledge, and as a problemsolving enterprise. My (2016: Part 1) proposed that materials and the 'teaching' of speaking are a hybrid concept. My (2016: Part 2, & 2018a) explored the idea that learning EFL is work of restructuring and re-organisation by the learner – and not simple acquisition. My (2017), drawing from Dewey's theory of enquiry, offered a re-conception of teacher research, and also suggested that teacher research and teacher development can be conceived as a continuum – again, a hybrid concept. My other work has tried to re-conceive learning and language from the point of view of the learner, as follows. My (2018b), as a series of questions, probed EFL learning, starting from the learner's problems and standpoint. My first article in this *Radical TEFL* explores conceptions of knowledge and knowing in EFL learning, from the learner's standpoint.

³⁶ For example, see the monthly magazine *Prospect*, May 2018, for the article by Howard Reed, *Creative Destruction*.

and less data, but more thought, more hypotheses, and more probing enquiries. And, as Wittgenstein advised, "Do not lose the link with practice" - with the classroom, and with individual learners.

The text of the argument is now complete. The evidence section on which I based the argument is given immediately after this text, followed by sources, and which is then followed by a bibliography.

June 2018 / 51 ENQUIRY 45

EVIDENCE SECTION FOR "ENQUIRY AS RE-CONCEPTUALISATION". AND WHICH LED TO THE 15 CONDITIONS FOR INNOVATIVE ENQUIRY, WHICH ARE LISTED IN SEC. 1 OF THE MAIN TEXT

Features and conditions of 'scientific' enquiry

In researching the essay "Enquiry as re-conceptualisation" I read many books and articles on successful scientists (secondary sources), selecting work which reported on how each enquirer worked. I also read some available primary sources by enquirers themselves, where they described how they worked, and these are all from the 20th century. Details of these sources are given immediately after this section, as well as in the bibliography after "Enquiry as re-conceptualisation". I had already studied the history of science as a student, which made this work easier. From that reading, this evidence section reports on and identifies some conditions and features which are present in examples of successful, scientific innovative enquiry. A summary of that work is given in the main text, in section 1. The words science and scientific are used here not to mean 'a body of knowledge', but rather, to mean 'a process or method used for establishing provisional knowledge claims about the world'.)

The survey begins with Kepler and Newton, as not only has the way in which they worked been extensively studied, but Kepler wrote down his wrong turnings and false trails, allowing us observe him correcting his own work. Normally in science we are only presented with the end product, which tells us little about the process of enquiry, which is what we wish to follow and understand here. If we can understand the self-correcting process of scientific enquiry, and if the self-correcting method of the physical sciences are also present in other enquiry, then we might attempt to extrapolate lessons for issues in designing enquiry into EFL learning.

(a) Kepler

Kepler used methods of enquiry supplied by pre-existing mathematics, this combined with a method of enquiry which employed hypotheses, and which then rejected those hypotheses when they did not fit with the data he had.. His eventual achievement was to mathematically describe the motion of the planets, a task which had defeated enquiry since ancient times, although many solutions had been proposed, and those solutions had often been accepted. However, each proposed solution had contained its own problems and contradictions.

Kepler was a thinker, a reasoner, and not an astronomical observer, and his quest and life's work was to find patterns and regularities in the data available. Similarly Copernicus, another solitary worker, and a hundred years before Kepler, made use of existing data, and employed mathematics to come to his conclusions, these combined with his own hypothetical assumptions about how the solar system worked. In this way, the approaches of these two innovators to their problems and their material had common features.

Kepler, and Copernicus, did not need to be empirical observers of planetary motion, or collectors of data, because they inherited data about the motions of the planets. The astronomer from whom Kepler had inherited his very accurate data, his near-contemporary and co-worker Tycho Brahe, had the same data to work from, but was unable to find satisfactory patterns in his data, and so bring his data under control, and to so clarify it into a general theory, as Kepler did. Given that Brahe and Kepler had the same data, why did Brahe fail and Kepler succeed? Part of the reason for Kepler's success was that, as part of his reasoning, he developed concepts which would help him solve his problem, for example, he considered that the orbits of the planets might not be circular but elliptical – which led to a breakthrough.

<u>HYPOTHESES</u> In his work, Kepler mainly started from problems in the form of anomalies or contradictions between theory and data, and he tackled these anomalies with fresh hypotheses, this requiring fresh starts. In this way, he took failures (as in a failed hypotheses) as a starting points for new work. He always seemed to be working from an hypothesis which, however, he was willing to abandon. He constantly scrutinised, criticised and revisited his own work, and conclusions. He would not tolerate anomalous or contradictory results, and more than once restarted his life's work when faced with a small discrepancy between what his hypothesis implied and the data.

<u>PERSISTENCE</u> Although his several early hypotheses turned out to be false, each helped Kepler to move his work forward. Some of these hypotheses were thought experiments (an enquiry strategy which was common at the time). He asked, 'What if ...?' questions, and followed up the possibilities. He also 'thought-experimented' with new assumptions. He stayed with his problem, driven by a compulsion to find a unifying solution. We will find the same compulsion to find a unifying theory in much other work at the time, and in the work of Faraday(below), and again in work in 20th century atomic physics (below). The eventual result in each case was an eventual and provisional synthesis, perhaps completed or overturned by later work.

Kepler's process of identification of the laws of planetary motion followed Dewey's three stages of the growth of knowledge:

- a problem (for example, discrepancies in readings against an existing theory);
- a knowledge claim in the form of a provisional hypothesis (based on empirical observations made by Tycho Brahe); and
- a validation (warranting) attempt which, when it failed, obliged him to return to his original problem and reformulate it.

His method was to propose a hypothesis, and then see if the data (experience) fitted the hypothesis. He not ask for an 'explanation' of what he observed, but simply for consistency between hypothesis and observation. Because he was self-critical of his results he crucially avoided 'confirmation bias' (where one is unable or unwilling to see or consider contradictory evidence or ideas which might oblige one to rethink, and one stops looking for what might dis-confirm them).

REASON COMBINED WITH EVIDENCE In these ways Kepler combined data with thought. Much of his time was spent in doing mathematical calculations, attempting to bring order to his data. That is, he combined reason with observation to move forwards, and also used reason to validate his results. He started from given data; he looked at it from different points of view. He sometimes retreated as a research strategy, seeing that work needed to be done in another area before progress could be made with his main problem. Kepler was continually learning and exploring different fields. He earned his living as a mathematician and as an astrologer, but also studied optics and protestant theology. In common with every other innovative enquirer whom I report on below, he brought experience from other fields to his main work in astronomy.

Kepler could easily have stopped his enquiries after several years, satisfied with a theory that *almost* accounted for the observational data, just as people before him had done, and he would have been forgotten. Kepler avoided this, and the trap of confirmation bias, because he achieved a distance from and a perspective towards his problem. He achieved this by

- being self-critical, willing to admit his false paths and inconsistencies between data and hypothesis, and by
- being ready to propose to himself fresh hypotheses, and to restart.

As a result, and in this way, he could stand outside, and restart, his own work. Newton was to develop the synthesis offered by Kepler (and Galileo) to a completion, resulting in the 'universal theory' of gravitation.

<u>THE LESSON</u> A lesson from Kepler's work is of the value of hypotheses, provided that they are scrutinised against contradictions between the theory proposed, and data available.

(b) Isaac Newton

AN ADVENTURE IN THOUGHT Newton's work brought together, in a synthesis, insights and methods of enquiry from Kepler, Descartes, Galileo and others. Science in Europe in that period was reacting against Aristotle's qualitative philosophy, towards more quantitative approaches. The story of how planetary motion came to be quantified, and related to terrestrial motion offers a case-study of an adventure *in thought*, but not of experiment and observation. As with Kepler, Newton did not collect data to create his theory (of universal gravitation), nor did he experiment: he used precise mathematics as his language of enquiry. We know that he worked largely alone, and was a practical person, often making his own instruments. We know very little, specifically, about the process of how Newton worked, nor of the cognitive ways in which he came to his insights, as he did not record these, as Kepler did. However, we are able to reconstruct his enquiry strategies, and understand the conditions which were present in his successful enquiries.

- Firstly, he gave lot of attention to his methods of enquiry, and he prepared his method for his 'universal theory' by first developing the needed mathematics (the calculus). He spent twenty years refining this method of enquiry before publishing his main theory. But he changed his method as required, for example, he saw that his work on optics (not considered here) required an experimental approach.
- Secondly and contrary to what is sometimes claimed Newton, like Kepler, *used hypotheses as a heuristic or discovery method*, not for the hypothesis themselves, and which could be abandoned, but for where they led. Throughout the history of science, bold hypotheses helped to move fields forward (below)
- A third aspect of his enquiry strategy was to see that that apparently opposed concepts were in fact complementary. He brought together and synthesised insights from different fields, leading to a unity. He also introduced fresh concepts to move understanding forward. In order to ensure that he was not building on insecure foundations, he would return to beginnings, to first principles as he understood them, or to other fields for help. He was constantly teaching himself new things from those different

fields (chemistry/alchemy, optics and religion), which would perhaps help him to see his own problems from a different standpoint.

Newton was more reasoner (mathematical-mechanical) than empiricist but, while 'reductionist' in his method, he understood that there was a limit to description, and some things were unspecifiable. However, it was only by simplifying the problems which he treated that Newton succeeded in reducing them to manageable proportions. A serious problem, however, for those who imitated Newton's necessarily 'reductive' mathematical method was that, along with the advantages of simplification, is the disadvantage that what cannot be measured or reduced to mathematics may be left out, and not considered.

<u>BUT - THE REIGN OF QUANTITY BEGINS</u> This problem was introduced into modern thought by Galileo, shortly before Newton. But in the social sciences and in education, what cannot be measured may be the key to understanding a problem in a field. Being inheritors of Newton, Galileo and the Copernican revolution, we are also inheritors of this problem. It was perhaps for this reason that the Catholic church was an opponent of Galileo and the tradition which he inaugurated – because he inaugurated the 'dis-enchantment' of our world.' The 'reign of quantity' began. I explore the influence of this tendency in educational research below. ³⁷

We can restate Newton's strategies in arriving at his universal theory of gravitation:

- he drew on the work of others, combining and synthesising into a more general theory earlier theories, concepts and methods of enquiry which were not apparently related;
- he didn't experiment but he seemed to do 'thought experiments', working with hypotheses as Kepler had done;
- his theory was not in terms not of *explaining*, but of simply accounting for what was observed; and
- he paid great attention to his method of enquiry, developing his own. However because his method was a mathematical one, it could only treat problems in a way which reduced them to quantities. There may be lesson for research into learning.

THE NEWTONIAN SYNTHESIS OF EARLIER AND UNRELATED WORK

As a result of his work, he brought together what was already known in apparently unrelated fields, and in doing this, he re-conceived his field, creating new concepts and so new understanding. Newton combined understanding of the motion of the planets with motion on earth into one theory, and this synthesis has not been overturned. The entertaining but rigorous book by Arthur Koestler on the revolution in science which resulted in a new understanding of the solar system, linking physical laws there with laws on earth, is called *The Sleepwalkers* (1959). Koestler wanted to make the point that these innovators – Copernicus, Galileo, Kepler and Newton – **did not set out to re-conceive their field**. They simply worked on the problems and contradictions which they found in existing work, especially, between existing theory and data from observations, and tried to solve those problems. The re-conceptualisation which arose was not planned or foreseen.

<u>THE LESSONS</u> A lesson for theory-building work in TEFL perhaps is to, first, begin from and address problems; second, probe concepts; and third, to follow the line of argument which arises. The results of such work cannot be seen while working on the problems – the results emerge. One follows the argument, and investigates implications of the argument. Wrong turnings can be rejected – or can be the starting point for fresh work and hypotheses. That is the lesson of the Copernican revolution.

(c) Michael Faraday: another synthesis, but a different method of enquiry

A SEARCH FOR UNITY As with Kepler, we have notes which Faraday made, allowing his thinking to be followed. Firstly, and starting from his deep religious convictions, he was searching for a unified theory to link his interest in chemistry, magnetism and electricity. He was convinced that these fields were related in some way, and he worked to identify and describe those relationships. To do this he was willing to disregard old concepts, and old methods of enquiry, in his search. He was looking constantly for alternatives to the Newtonian conceptual system, believing it to be an inappropriate one for solving the problems and questions he had set himself. He inaugurated a new and non-mechanical conception of energy, which could be described as 'fields of force. In order to make progress in his work, concepts which he needed to set aside included: the use of mathematics; the Newtonian corpuscular theory of matter; and traditional ideas about force. Having set aside Newtonian corpuscular and mathematical concepts ,

³⁷ A good introduction to the problem of finding the correct balance in enquiry in education between the empirical / quantitative, and reason /reflection, can be found in the special issue of the *Cambridge Journal of Education*, 27/2 (1997), available in many university libraries. See there the articles by Wilfred Carr, Morvenna Griffiths, and especially, by David Bridges.

regarding them as an inappropriate framework for his enquiries, he introduced fresh concept such as fields of force.

In this way, he re-conceptualised his field, both the concepts required to understand the problems he addressed, , and the conceptual framework required in order to achieve this understanding. His new conceptual framework united understanding of electricity and magnetism (resulting in electro-magnetism). Like Newton, it is unlikely that he planned to re-conceive his field: rather, the re-conceptualisation emerged, and was then built on by his successors Maxwell and then Einstein. The re-conception, and synthesis of concepts, which were previously seen as unrelated, was a by-product. In this way, Faraday's work has parallels with Newton's. A lesson from both Newton and Faraday is that the way to achieve fresh understanding in a field is, starting from a problem in the field, to probe, challenge and perhaps eventually replace or merge existing concepts. This is also the kernel of Stephen Toulmin's (1972) understanding of how fields develop (sec 4)

As part of his general strategy of enquiry Faraday identified problems, and worked from lists of key problems and questions which he set himself. He reasoned as well as experimented, and made use of 'thought-experiments', mentally following through implications of assumptions. As tactics in his research he worked without collaborators in his laboratory (only with an assistant); and he was clear about what he didn't know. He kept well-organised notes, allowing him to go back to old evidence. He understood what needed to be done in one area before progress could be made in another, and in this way, he was ready to investigate other fields if they seemed relevant to his main problems.

FARADAY STOOD OUTSIDE HIS FIELD Faraday was largely self-taught, and since he had not been trained in one single approach to enquiry he was open to different approaches to enquiry. Without a formal university education he was able to stand outside from the way his contemporaries worked, and so he saw differently. Mechanical and corpuscular theories for understanding chemistry were part of the Newtonian legacy which he inherited, but he was able to transcend those assumptions. During 30 years of research he critically stood outside his own work, and he constantly tested and scrutinised his ideas. Like Kepler, he regarded 'theory' as provisional, and identified objections to his own theories. This prevented him from getting too close to his theories, and allowed him to avoid 'confirmation bias'.

THE GROUND PREPARED FOR EINSTEIN AND TWENTIETH CENTURY PHYSICS

As a result of Faraday's work in bringing together into a general theory problems and questions in magnetism and electricity, the ground was partly prepared for Einstein, who although innovative, started from concepts which he inherited from Faraday (and from Maxwell). However, Einstein rejected old assumptions about time and space as fixed, and from this starting point he was able to design a new cosmology. His method of enquiry to do this was advanced mathematics, and so his research strategy was based less on experimentation and more on reasoning. He made use of hypotheses (regarding time and space as relative); his important early work was done alone; and he was able to bring a fresh standpoint to cosmology. We can start to see a pattern of features present in innovative scientific enquiry. Like his important contemporaries, Einstein was well-read in in philosophy, which presents and critiques different underlying approaches to understanding the cosmos and external world. Einstein, like Faraday, rejected mechanical approaches to understanding cosmology.

In early twentieth-century atomic physics research developed through a combination of:

- bold hypotheses;
- rejection of these hypotheses by rival scientists due to contradictions in them or through dis-confirming experimental data;
- and through mathematical reasoning.

In this dramatic period scientists challenged both existing work and new work, demolishing the arguments of their rivals, and as in a jungle, the fittest theory or synthesis survived – until replaced by another. In this case study of a science developing, work was done in the context of challenging the complacent nature of physics in about 1880, and which believed that it had solved the essential problems in physics. The theoretical underpinnings of that work were overturned.

Interestingly, developments were sometimes made by returning to much earlier work, and which had been either dismissed or forgotten: but the most innovative scientists were aware of this work and had not forgotten it, showing the value of having a long memory of one's field. For example, the American Richard Feynman moved atomic physics forward by:

- returning to old and discarded theory from the generation before him;
- proposing fresh (mathematical) ways of seeing and treating problems in his field.
- arguing that a field proceeds by use of "guesses" or hypotheses, writing, "What we are looking for are hypotheses, very definite and easy to compare with experiment it is not unscientific to make a guess".

There are perhaps here two lessons for enquiry into EFL learning: to return to discarded pre-1980 theory to search for insights; and to employ hypotheses.

However, Feynman warned, "You cannot prove a vague theory wrong", arguing that an hypothesis needs to be expressed clearly, and with implications clearly stated. A flaw in present-day thought in TEFL and applied linguistics may be that key terms and concepts are often – vague. For example, what is a "task"? What *is* "Communicative language learning"? Without a clear, working conception of what something is, one cannot scrutinise it, and so perhaps develop it.

(d) The beginnings of chemistry and modern medicine

A CASE STUDY IN CLARIFICATION AND RE-CONCEPTUALISATION

The modern era in chemistry was initiated by the work of Lavoisier. He re-conceptualised chemistry by ordering and classifying the chemical elements, this allowing others to systematise chemistry. The old phlogiston concept, although mistaken and which he overthrew, had provided a useful working hypothesis for work on understanding gases, but after a hundred years that theory was exhausted.

Like Kepler, Newton, and also like his rival Joseph Priestly, Lavoisier studied many other fields besides his own, and this perhaps allowed him to get a distance or perspective from his main problem. He was an economist, a specialist in agricultural reform, and also a public figure. We can summarise his work by saying that he *clarified* his field, and so allowed what was previously disconnected in it to be seen as a whole. He re-conceptualised chemistry, and so founded modern chemistry.

In medicine, progress was slow compared to astronomy, perhaps partly because a mystical and anti-rational tradition had dominated for longer. It was not until the 1860s that the required clarification of concepts through took place. Before this time, progress was often made by practitioner-surgeons, who found solutions to ailments without input from theory. They were closer to the their patients' problems than existing theory which was often accepted without attempts at scrutiny.

(e) The life sciences

In the life sciences we have an unusual example of two innovative scientists working together. The joint work of Watson and Crick (determination of the structure of the DNA molecule) has the following features: they:

- identified where the interesting problems lay.
- found it hard to stay with their immediate problem, always looking outside for insights, and being familiar with other fields, and with the methods of enquiry of those fields...
- they could bring fresh approaches to attack their problems.
- they noticed the significance in data which others had missed, cutting through the complexity of a problem (separating 'signal from noise'); and
- they worked from hypotheses in the form of novel assumptions, at the same time
- using critical thinking and reasoning.

(f) Case studies in unsuccessful enquiry

Examples of successful and innovative enquiry have been studied above, however, many other fields were abandoned and are are now forgotten, for example, in 18th century medicine. A common feature of these unsuccessful fields seems to be that those fields did not build into their method of enquiry provision for scrutiny, or validation, of theories offered. They did not acknowledge discrepancies between their theory and observed data, preferring to 'explain away' using the tactic which is known in philosophy as 'the death of a thousand qualifications'. Examples of such fields are numerous: for example, explanations of the motions of the planets before Kepler; astrology; phrenology; and so on. Such theories were gradually abandoned as they were found not to work, that is, they were found to be unfruitful in moving forward understanding, or unhelpful in solving problems on the ground.

From the above case studies, we see that each field requires a method of enquiry which is appropriate for its subject matter. We also observe that, frequently, a key to moving forward a field, and as Wittgenstein observed, was not primarily through data collection, nor through experiment, but through thinking work, that is, through clarification and re-seeing of what was already present, and that as a condition for doing this work, relevant conceptual development was required, and that the thinking required to do this often benefited from the use of working hypotheses. Again and again in the history of science we observe that it was a fresh hypothesis which moves a field forward. However, for someone not familiar with the history of ideas, 'hypothesis' may be synonymous with speculation, but provided an hypothesis is scrutinised this is not the case. The truly dangerous hypotheses (because unnoticed and so unchallenged) are unexamined assumptions which underlie an accepted theory.

We may take two further examples of scientific enquiry to illustrate these ideas. In the eighteenth century, the young science of geology did not allow experimental work, and progress was made through hypotheses, and then looking for evidence to confirm or dis-confirm a provisional hypothesis (or knowledge claim). This led to a successful research programme. Interestingly, and by comparison, during the same period, there was considerable work in meteorology, using the enquiry strategy of recording data and trying to establish patterns, and from there, general laws. However, this work was quite unfruitful, and is perhaps a case study of how observation without a guiding (and provisional) hypothesis does not lead to success.

(g) Enquiry in history

This study explores lessons from successful enquiry in science for enquiry into EFL learning. A parallel study might explore lessons for understanding EFL learning from enquiry in history. There is a large, reflective, literature in history (historiography) which critically reflects on how the past is studied, and from this, identifies helpful approaches, as well as pitfalls. ³⁸ The field of historiography studies for example:

- problems raised by evidence and sources, such as their reliability and trustworthiness;
- enquiry strategies of putting oneself in another person's place (perhaps relevant for understanding the problems of the EFL learner);
- examining pre-suppositions brought to an enquiry into the past.

From an understanding of how the past has been studied and may be studied, historiography is able to identify traps for the unwary historian, such as losing touch with the everyday realities of the past; of allowing ideas to be more important than people and their problems; as well as the trap of looking for simple answers or interpretations of this past. All these seem relevant in studying learning. Historiography identifies specific methodological problems in enquiry, again found in learning, such as the interaction between different factors and variables. Interestingly, some of these issues are studied at school level, especially the question of evidence and sources, as a way of introducing to to the school student a critical but probing, open, attitude to the past.

Since the study of learning is always the study of evidence of what has already happened (that is, it is a study of the past) it may be that enquiry into EFL learning has much to learn from ways in which the past is studied. One extremely interesting insight from historiography (from Vico) is the idea of entering into the mind of another person or period, that is, an imaginative reconstruction of the past. This may be an entry point into understanding the EFL learner, starting from his standpoint to his learning problems.³⁹ However, this takes a long way from the work of this evidence section.

The sources for this evidence section are given immediately below, and a bibliography which gives full references for work cited in the main text follows those sources.

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Acknowledgement

To the world-class Welsh National Library in Aberystwyth.

About the author

He studied Physics, Chemistry and The History and Philosophy of Science, and graduated in Philosophy. He has taught Mathematics in secondary schools in England and secondary EFL in Poland, and has also worked with pre-service and in-service EFL teachers. He gave many workshops for the British Council in Belgium, and he specialised in short course ESP teaching. He lived and taught in Poland for 20 years, and edited *The Polish Teacher Trainer* (1993-95. He taught *Theory of Knowledge (TOK)* for the International Baccalaureate (IB) Diploma, in Poland (2009-2011). He is looking for further teaching opportunities, perhaps as a short-term stand-in (for secondary school, academic writing, working with teachers, or teaching IB TOK) – contact at: alistair.maclean@outlook.com

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RADICAL TEFL 6, March 2019

No copyright is claimed for this article

Competition for English Teachers

WRITE A SHORT ARTICLE FOR *"RADICAL TEFL"* ... and ...

Win seven nights in Wales !! NEAR A WORLD CLASS RESEARCH LIBRARY

Are you doing research, or thinking of writing a thesis? This competition is a chance to spend a week in a world-class copyright library, to study, and to look for references and insights for your work. The Welsh National Library, in Aberystwyth, contains all books and journals published in the UK since 1907. It is free, and any book or journal can be ordered, often available in 45 minutes.

The library is fully digitalised, hooked up to the internet, and has photocopying facilities. It is next to Aberystwyth University, with a sea view. (!) It is five minutes walk from the town. You would stay in a Youth Hostel near Aberystwyth (in Borth). You can see what the Welsh National Library holds by consulting their on-line catalogue at: www.llgc.org.uk

The winning article would address the topic: "<u>Problems and solutions</u> in teaching EFL to teenagers", in perhaps the following way:

1. It would focus on a problem met in teaching English in secondary school classrooms, eg:on helping a student who seemed to be failing; on working with uncooperative classes; or, what you learned from a lesson which didn't give the result you hoped for.

2. It would describe a problem met in teaching or learning EFL, and say what you did; give concrete information and examples of what happened in your classroom; and reflect on what *you* learned.

3. It would give information about: class size; materials used; exams; and learners' age and attitudes.

44

MORE INFORMATION ABOUT YOUR ARTICLE:

• length of 1,000 / 2,000 words,

• bibliography and references are not needed

• based on personal <u>experience</u> and on classroom <u>problems</u> met and tackled;

• Send your article in WORD to:

alistair. maclean@outlook. com

• Deadline for receiving articles: 30 June 2019 and 30 June 2020

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FOR THE WINNER!

• Your article will be published in *Radical TEFL*

- The winner of the competition would stay in the friendly, quiet, seaside Youth Hostel in Borth, in a single-sex dormitory (YHA/IH registered). There is a self-catering kitchen, TV room, games room, and 3 pubs nearby (*"The Victoria"* pub is next to the sea.) The hostel is 10 minutes from Borth railway station, and next to a bus stop for Aberystwyth.
- You choose your dates for your nights at the youth hostel
- There are trains from Borth to Aberystwyth. (12 minutes through beautiful, Welsh, farming countryside)
- There is a direct train both to Borth and to Aberystwyth from Birmingham International airport (through the Welsh mountains).

You arrange your transport. Only your accommodation will be paid, but not food and travel

THE COMPETITION WILL BE JUDGED ESPECIALLY ON <u>REFLECTION</u> ON A STUDENT LEARNING PROBLEM; AND <u>REFLECTION</u> ON SOLUTIONS ATTEMPTED; BUT <u>NOT</u> SIMPLY ON A DESCRIPTION OF A SUCCESSFUL LESSON.

All reflective articles submitted will be considered for publication.

ARTICLES WANTED FROM TEFL TEACHERS

EXPLORING OR EVALUATING A RESEARCH CLAIM IN YOUR CLASSROOM

A possible structure for an article:

- State the claim or idea you wanted to evaluate: give the written source of your claim (perhaps in an article, or a conference presentation, or in a handbook on teaching; etc.);
- Give the context of your evaluation: class size, level and age; previous learning and of students; exam and/or needs or problems of students;
- Why did you decide to scrutinise, for your class, the research claim or idea?
- What did you do to evaluate / explore the claim?
- What was the result of your scrutiny? Be as specific as possible, perhaps in terms of students' output, or students' work
- What questions or conclusions emerged from the above?
- Could you suggest an amendment or qualification to the claim, or idea, in order to make it work in your kind of classroom?

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Articles are also wanted from teachers on: <u>Histories of TEFL in local situations.</u>

As an example of a format of an article:

- describe an outside influences that took place during your teaching career;
- describe the effects of those changes on your teaching
- describe also perhaps the situation you taught in, the problems you had to deal with, and describe the needs of your students; or exam requirements;
- give an evaluation of the results of those outside influences which led to change on meeting the needs of your students. Don't be afraid to be critical.
- or write a personal reflection on how your teaching developed over time as a result of outside influences (e. g., as influenced by a new theory about language or learning; or by new syllabus requirements)

CALL FOR ARTICLES ON ENQUIRY INTO EFL LEARNING

For issue Number 7

(Articles for 30 September 2019, for Publication March 2020)

Theme:

"Methods of enquiry in investigating and understanding EFL learning"

Some possible questions to explore:

- What can we learn from enquiry in other fields?
- What are some methodological pitfalls in researching learning and classrooms?
- What might different approaches to enquiry into learning leave out and neglect?
- What are the different factors and variables in learning? Can they be clearly described, prior to investigating them? How can research deal with multiple variables and factors which are interacting with each other?
- If learning is, essentially, a *process*, then what methods of enquiry are appropriate for investigating processes? What research methods are inappropriate?
- Can learning be understood by studying groups, or do we need to start from individuals? Should we start from the learner's standpoint?
- What sources of evidence can we use? How far can teacher experience be used?
- In which ways, and for which questions, are teachers best placed to understand EFL learning, compared to external observers?
- Before investigating EFL learning, does one require as a starting point a general learning theory or group of learning theories?
- If learning is a "coming-to-know" (John Dewey), do studies of learning need to start from understandings of how knowledge grows?
- How can learning, as a cognitive process, be investigated?

RADICAL TEFL, 6, March 2019

CALL FOR OTHER ARTICLES AND GUIDELINES FOR CONTRIBUTORS

http://radicaltefl. weebly. com

Radical TEFL would like to publish work which probes beneath the surface of EFLT: work which examines assumptions, myths or contemporary orthodoxy in our field, or which in some way put under the spotlight some aspect of EFLT, while relating ideas discussed to classroom realities. In addition to the calls for articles on pages 35/36 and 41, *Radical TEFL* would also like to publish longer and more analytical articles which perhaps draw on educational thinkers from outside EFLT, whose thought and experience could open up new and fresh approaches and perspectives to understanding our problems, while related to classroom realities.

Longer articles should, so far as possible:

- Start from a clear research question, or from a problem met in practice;
- Try to probe under the surface of the question addressed; and
- Be grounded to the EFL classroom, normally by use of examples and by being based on experience.

Shorter articles reporting on classroom experience do not require citations and references. Send your work in WORD to: <u>alistair.maclean@outlook.</u> com. Copyright of articles will belong to the author, and your article will be published in both a print version, and be available as a free download on the *Radical TEFL* website above. Although the final date for receiving articles is September of each year, it is very helpful if articles (or drafts) can be sent earlier.

Alistair Maclean/Publisher

CONTENTS OF BACK ISSUES OF Radical TEFL

(Free download from the website)

RADICAL TEFL Number 1 (March 2014)

- Why Radical TEFL?
- The significance for TEFL of the work of Michael Swan

RADICAL TEFL Number 2 (March 2015)

• How can a teacher grow her knowledge?

RADICAL TEFL Number 3 (March 2016)

- The importance of pedagogic design (Alan Waters)
- What is teaching speaking?
- How can one investigate student failure?
- John Dewey on 'knowledge' and learning (e-version only, page 60)
- Four major difficulties in researching pedagogy (e-version only, page 62)
- How can one investigate an educational concept? (e-version only, page 48)

RADICAL TEFL Number 4 (March 2017)

- Re-invention in TEFL pedagogy (Alan Waters)
- Reconceiving teacher research with the help of John Dewey's theory of enquiry
- Are there lessons for TEFL from the mathematics class next door ?
- The study of EFLT histories

RADICAL TEFL Number 5 (March 2018)

- Tom Hutchinson on Alan Waters (In memoriam)
- Tasks in textbooks (Alan Waters)
- Pedagogical implications for TEFL of schema theory
- Getting inside the EFL learner's standpoint
- How can applied linguistics understand TEFL?

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Copies of print versions (first six issues) have been sent to the following libraries: The British Council (London Spring Gardens); University of London Institute of Education; and in the following UK university libraries: Lancaster, Essex Edinburgh, Oxford (Department of Educational Studies), Leeds, Kings College London, Southampton, Reading, Canterbury Christ Church, and Cambridge Homerton College.

WHY RADICAL TEFL?

- To encourage debate and questioning about assumptions and group-think both in TEFL and in research into TEFL;
- to provide a forum for responses from the classroom to second language acquisition studies, sociolinguistics, etc.;
- to publish articles by teachers; and so ...
- to add to perspectives and rigour for better understanding the teaching and learning of EFL.

If you are sympathetic to this project, please write an article, or encourage a student-teacher to enter the competition (see PAGE 48)

DISTRIBUTION AND FINANCING of Radical TEFL 5 (March 2018 issue)

300 copies were printed and about 200 were distributed. Most f these were sent as complimentary to British Universities offering MA courses in TESOL or Applied Linguistics. The cost of printing and distributing Radical TEFL 3 was about £700 and was paid for by the publisher. Radical TEFL receives no financial assistance or sponsorship, and offers of help (including for a single issue) would be welcomed, perhaps from an academic institution which would like to share some editorial responsibility?

The Editor is looking for EFL teaching experience

I would like to earn some money to pay for printing and distribution of *Radical TEFL*, and at the same time have an opportunity to investigate and further understand EFL learning by spending more time in classrooms.

I am a retired teacher, and have experience teaching ESP (engineering and business); academic writing; intensive English courses; EFL summer courses; the International Baccalaureate Diploma Programme (TOK); as well as working with pre-service and in-service teachers. I can relocate for up to a year, for example, as a short-term stand in for a teacher.

Contact me at my email address for a CV

alistair. maclean@outlook.com

All issues of *Radical TEFL* are available as a free download at

http://radicaltefl. weebly. Com

LECTURERS AND MENTORS! ARTICLES WANTED FROM YOUR STUDENTS!

Radical TEFL would like to publish short articles from teachers and from student teachers, based on classroom experience.

Lecturers – please encourage your student-teachers to think that their experience is worth writing up and sharing. There is a prize of 7 nights in the UK for the best article on the topic:

"Problems and solutions in teaching EFL to teenagers"

See PAGE 48 for details.

eRT 6 / 22

Many thanks indeed to Dr Richard Smith of the University of Warwick for creating and updating the *Radical TEFL* website.

END OF RADICAL TEFL 6, MARCH 2019