"New Learning" and CALL: a DIY paradigm

Ania B. Lian
Charles Darwin University, Australia
Ania.Lian@cdu.edu.au

Abstract

This paper translates the implications of the "do-it-yourself" (DIY) culture of the "new learning" paradigm which is emerging due to digital technology and the Internet into the context of second language (L2)-pedagogy. It demonstrates the relevance of the DIY metaphor to the modern learning context while drawing on theoretical and CALL developments which problematise concepts such as text, engagement, meaning-making, dialogue and pedagogy. Hence, the principles on which the paper builds are distinct from the traditions which continue to dominate research in L2-pedagogy. The paper formulates a model of L2-pedagogy and pedagogic research which breaks with these traditions, and which proposes dialogue which leads to change as a methodology for both students' learning and teachers' research. In so doing, the paper identifies the opportunities and challenges that dialogue and its transformative power can offer.

What is "new learning"?

The exponential growth of technology has resulted in the creation of a world which, while not quite egalitarian as yet, has changed how people create, gather and assess what counts as knowledge. Present advances in technology and, especially in communication technology, are comparable to the changes that followed as a result of the development of writing itself thousands of years ago, and Guttenberg's invention of the printing press around 1450. Today, the widespread availability of digital technologies, and especially the Internet, has resulted in people challenging many of the dominant social, cultural, intellectual, political and ethical paradigms. Central to these world-changing events is the ability for ordinary people to communicate with one another freely and openly, thus enabling organisation of mass social movements and opportunities for individuals to reinvent themselves in virtual worlds. The extent to which various governments have sometimes sought to curtail the rhizomatic dialogue which these communication tools have unleashed, only attests to their power. The inexorable rise of the "proletarian autodidact" continues, pointing to (a) challenge as the force which ignites transformation and change; (b) rhizomatic dialogue as its tool; and (c) technology as its vehicle.

It is clear that the conventional ways of doing things are being challenged. Digital technology changed the expectations which shape how we go about our daily lives, including learning. The paradigm of "new learning" was not invented by anyone. It is not a theory of learning but a culture of learning which is emerging as a result of the dialogic opportunities which technology brought with it. The culture of "new learning" is changing the expectations which the users of digital technologies have of themselves, of others, and of the future. People are becoming increasingly self-reliant, able to look for and find the information they need in a timely manner, to solve their problems, and in the expectation of semi-instant outcomes. They are connected with others and can identify relevant collaboration networks when needed. They observe and explore how people do things, and even use virtual personalities to help them feel safe when experimenting on the Internet. They seek out expansion through social connections and the unpredictability which they may bring with them.

Increasingly, around the globe, a modern "autodidact" has access to information in ways which support their autonomous and yet connected way of living. More than ever before we are living in groups and, unlike ever before, our connections are not limited by geographical boundaries. Our interactions are shaped by our needs and possibilities, and our sense of self-value and personal resilience depends on the extent to which these needs and possibilities resonate with others and are perceived as relevant and worth engaging with. In other words, whether we count, or not, does matter, and neuroscience now provides evidence demonstrating that whether in a learning context or in other contexts, being seen as legitimate, and therefore worth engaging with, is pretty much a matter of life and death (Immordino-Yang, 2010; 2013, p. 45). However, as shown in this paper, second language (L2)-pedagogies and L2-study approaches still find it hard to integrate students' voices. In 2014, technology continues to be seen as, more or less, an entertainment (a fun-thing), real knowledge is legitimised by Second Language Acquisition (SLA) studies, and students are objects of these externalising discourses, with their own personal histories and therefore voices being hijacked by what the experts know about them.

Supporting "new learning"

In the context of L2-pedagogy, the promise of "new learning" that digital technology has brought with it will not translate into outcomes unless it is accompanied by new thinking about learning, i.e. a principled understanding of what is to change and why. How teachers construct the 'job' of technology in education depends on how they construct their own roles in learning environments, and the role of their students. This paper seeks to demonstrate that once the concept of new learning is engaged and problematised, the quality use of technology in L2 classrooms becomes more a matter of exercising imagination rather than a matter of money and fast connection speeds.

Frameworks supporting "new learning" pedagogies

Problematising the concept of "new learning" is not simple. Drawing on traditional frameworks of TESOL may not be sufficient if only because the frameworks were constructed in the absence of technology and without consideration for the difference that digital technologies make to the very way we think of language learning. For example, the Interaction Hypothesis (Long, 1996; Doughty & Long, 2003) places students and teachers in a context where decisions regarding the forms of "input" that students require to re-organise their personal models of L2 are made by the teacher or, a teacher-like interlocutor. In the Interaction Hypothesis what the teacher knows about language, s/he uses to interpret students' learning needs. In so doing, teachers address problems as **they** see them, **not** as students experience them (Lian, 2008).

The Interaction Hypothesis does not concern itself with this issue. It also does not problematise the concept of language beyond the conventional linguistic structures such as words and grammar. Typically the interactions it advocates are embedded in the pedagogy of task-based teaching (TBT or TBL for Task Based Learning). TBT approaches see tasks, **not the students**, **as carriers of meaning**. In principle, TBT approaches do not questions where the tasks come from, or whose knowledge of the world they legitimise and engage. For example, when Kramsch asked her students to summarise a story, she was surprised at their reactions: "You asked us to summarize, so I just summarized, I really didn't think about it" (Kramsch, 2000, p. 149). They did not engage because Kramsch did not engage them, their histories. Instead, the task she designed engaged her knowledge of the world and the expectations she had of her students. She designed a pedagogic task and then she objected to the students approaching her activity as
"an obligatory act of compliance to school routine" (p. 149).

In an authentic communicative setting, the act of writing itself, the form of the text, its length, the medium, the choice of the interlocutors, and their roles are not objects of arbitrary decisions. Kramsch herself recognises that "signs are the result of non-arbitrary selections" (p. 143). This means that the decisions regarding one's form of communicative engagement depend on how the students see themselves in a particular context, the stakes they pursue and the tools they have to evaluate the relevance of their perceptions. This includes all kinds of schemes of perception and production which impact upon how students act and what goals they pursue.

We are multisensory beings. This means that we use multisensory schemes of interpretation in order to process information in more than one way (Gothard, 2014; Maguire, 2014; Minsky, 1981, Wolf, 2012). It has been demonstrated that when this multisensory processing is prevented, our brain replaces the missing systems with what it already knows (Herrmann, Friederici, Oertel, Maess, Hahne, & Alter, 2003). In the context of L2-learning, this results in L1 interference. When unsupported, students are left to work with limited information and in a limited way. Consequently, the interference patterns become entrenched and are hard to break. Students' meaning systems do not reside in linguistic taxonomies, but in students' personal histories. To result in a transformation of any kind, learning must engage these histories. We could think of knowledge construction as a process of re-construction (re-organisation) which is potentially on-going if students are given access to tools and conditions enabling them to evaluate the terms which inform their target language interactions in a dialogic, and therefore self-directed manner, utilising information from a multitude of multisensory systems and processing networks they have created over the course of their lives (Immordino-Yang, 2009; Lian, 2014; Lian & Lian, 1997; Buranapatana & Zhang, 2008). A pedagogy of this kind supports an expansion of students' histories. The most recent findings in neuroscience studies of amnesia (Maguire, 2014) suggest the obvious: patients with amnesia cannot plan as planning relies on memory. Along similar lines, when teachers disregard students' pasts, their students have limited building blocks to rely on; ultimately they create "students with amnesia".

Developing ways which engage students' personal histories is imperative. Achieving this will take more than engaging students in discussions, correcting the students, hoping they correct themselves, explaining, modelling and playing online puzzles. Strategies suggesting brainstorming wordlists, using dictionaries and matching words with their definitions fall within the spectrum of the same problem: none of these proposals problematise (a) the concept of text as an interplay of social, cultural and symbolic forms of capital; (b) interaction as a discursive event; and (c) interlocutors as agents with experiences rooted in their personal discursive histories (Lantolf & Pavlenko 1995: 116-117). It follows L2 pedagogies need more sophisticated tools, and developing such tools requires inter-disciplinary research, itself critical of its assumptions, and able to engage students in a similar dialogic project. Figure 1 illustrates this methodology. In the dialogic model, research supports students' explorations without reducing it to its own tools of analysis. This is a very different methodology from those currently practised by SLA studies.
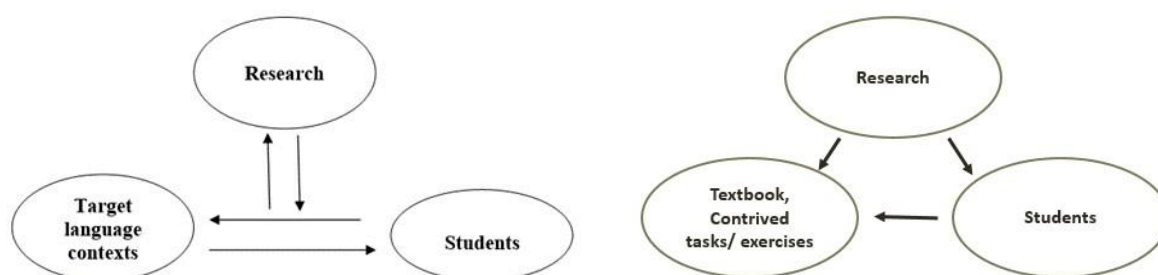
Figure 1: Comparing the new, dialogic model of SLA studies (left) with the traditional methods (right).

TBT model

In order to offer a new model which breaks away from the traditional TBT steps of pre-task, apply, assess and re-do task-structure (Ellis, 2006; Nunan, 2006), it is necessary to juxtapose the frameworks on which the two models build, and which provide a working plan for teachers and researchers.

Cormack's (2011, p. 9; 2011) research on genealogy of the "reading class" helps to differentiate between the two models. His work challenges teachers and researchers to theorise the relationship they construct between themselves, the text and the students. Figures 2 and 3 illustrate models which centre all their attention on the text as the carrier of the meaning-making relationships.
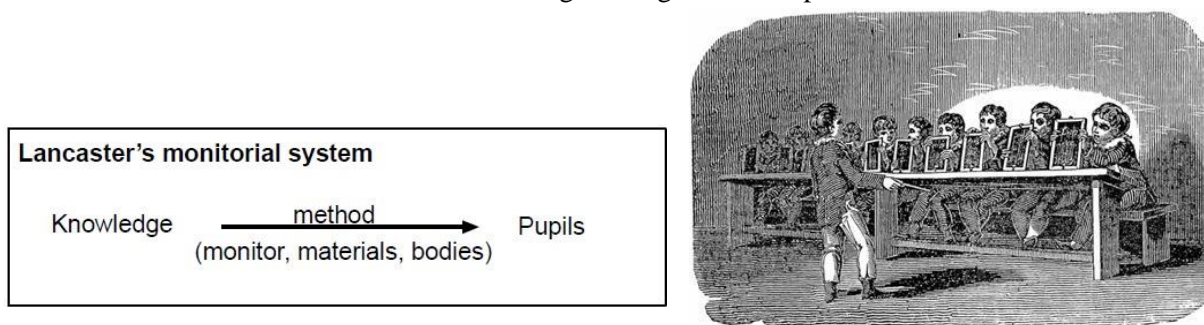

Figure 2: The mediation of knowledge in early 18th century models of teaching. Teacher functions as an arbiter in the 19th century reading class (Cormack, 2011).
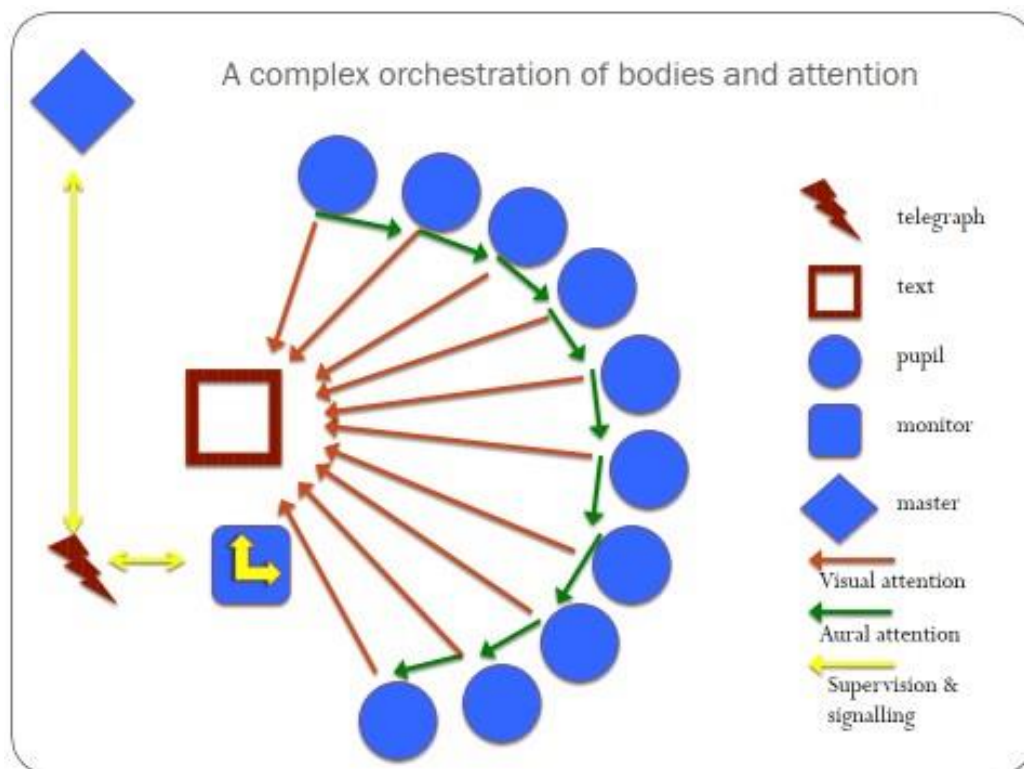

Figure 3: The 19th century reading class. (Cormack, 2011).

In Figures 2 and 3, the teacher acts as the arbiter of what constitutes legitimate knowledge and what, therefore, is worth engaging. Students are organised to re-produce this knowledge and any adulterations they may produce are corrected by the teacher (or peers) to coincide with their model of the right form. TBT

approaches are aware of the drawbacks of this 19th century model (Ellis, 2009, p. 87-88), but are unable to escape them due to the conceptual ties they share with them. This is because, as Kramsch did, they focus on (a) task, not engagement; (b) performance, not effect; and (c) content, not power.

(a)   *Task*
       The main objective of TBT is for students to produce texts. While human action is understood as goal-directed, TBT does not teach students to explore their goals. This instantly causes TBT to break the relationship between the goals which inform students' understanding of what people do, why, when and how, and their learning context. These goals form the four-dimensional structure of the connections which the students construct over the course of their lives and which give them a sense of objectivity and continuity. TBT approaches do not see it as central to engage these histories.

(b)   *Performance*
       Having thus cut off students from their personal interpretative schemes, the TBT methodology must replace them with other schemes in order to make its language practices viable. To this end, it looks for ways that would allow the texts, the discursive practices and the social practices of the classroom "that are constructed by and through a task resemble those found in non-pedagogic discourse" (Ellis, 2006, p. 29; Breen, 1998). In other words, TBT needs to find a way of bridging its pedagogic tasks with the non-pedagogic world of practices. To accommodate for this problem, TBT restores the teacher to his or her traditional role of monitoring their students' performance and needs (Ellis, 2006, p. 32-33). In effect, students become objects of the discursive framework of the teacher who is now the arbiter of the ends and means of their learning.

(c)   *Content*
       Dis-engaged, with no histories of their own, students have no other choice but to revert to strategies which Kramsch (2000) describes as "compliance to school routine" (p. 149). The pedagogic world of TBT presents interaction very much like someone describing the game of tennis as the giving and receiving of balls. The students converse, are encouraged to take linguistic risks, respond to the awareness-raising opportunities created by their teacher for them, share goals and meanings (Ellis, 2006, p. 36). This peaceful image stands in stark contrast to the real game of tennis where the players do not engage in an exchange of meanings; they play to win. Hence the value of each shot is never fixed (or found in a dictionary); it is always subject to play. Their significance or power is the upshot of the perpetual modification of each shot by its return, "Each shot, in this analogy, produces value in two ways: in what it enables or prevents; and to either player" (Freadman, 1987, p. 44). One cannot read the value of the shots prior to their engagement by the other player. It is not the game that the players must learn, but the playing of the game. To translate this image into the L2-context, the idea is not to learn in order to play one day, but to play. The act of playing calls for re-examination of the repertoire of the strategies and tactics in relation to which students interpret their game. No one can read the impact of the shots they experience for them, on their behalf. Hence it is their engagement that gives them the tools for reading the game and therefore their own capacity to play.

Dialogic model

The critique above offers a framework for describing the dialogic model of language learning.

Briefly, Figure 4 illustrates the proposed model for the dialogic learning It shows the students connected to the world ("other texts"), engaged in activities enabling them to explore those texts, and with the aim to create new texts in order to affect others. The model shows reality as discursive, students as participants in the discursive practices in which it is used, and their participation as expanding or contributing to the world

of these practices. The emphasis on the participatory aspect of students' engagements resists the tendencies of pedagogies which view students as deficient and in need of strategies which shield them from the non-pedagogic world of practices.
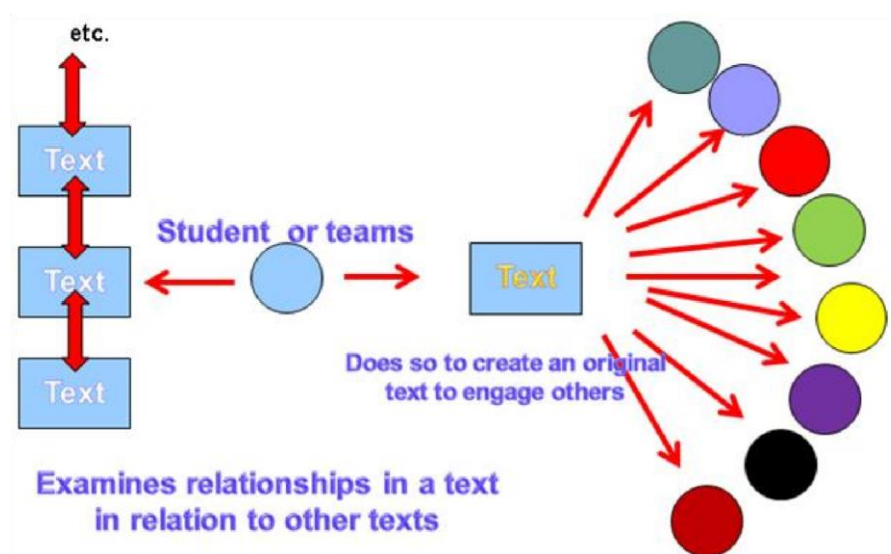

Figure 4: Configuration of the relationships in the dialogic model of learning.

The dialogic model escapes the trappings of the 19th century model by subverting its structure, and focusing on (a) engagement, not task/text; (b) effect, not performance; and (c) power, not content.

(a) *Engagement*

The goals which people pursue and therefore see worth engaging depend on the understandings they bring with them into their contexts of interactions. Hence understandings regarding what to do, why, when and how are embedded in a wide network of practices which, as signaled earlier, form a four-dimensional structure of the connections which the students construct over the course of their lives, and which give them a sense of objectivity and continuity. In this sense we could say that "There is nothing outside the text" ("*Il n'y a pas de hors-texte*" – 'There is no 'outside-text'', Derrida, 1969), as our goals are textual, interpretive, discursive. In fact, Wolf (2011) talks about this process of "self"-construction as locating oneself along the axes of space and time. Hence it is not language as such that L2-teachers should focus on, or "culture". It is how language tools can help students achieve objectives which are not linguistic; one may call it learning to mean, as opposed to learning the meaning.

Pitching L2-pedagogy at the level of learning to mean instantly places the students in the position of experts. This is because they already have expertise in meaning-making in their own L1. The job of the teacher is to assist students in building on this expertise in order to expand it beyond the familiar contexts and tools. However, in order to use students' expertise as the building blocks, the job of the teacher is not to tell students how language is used. Rather, it is to engage them in an exploration of what people do, why, when and how, so that they can tap into the target language interactions by relating what they know to what they investigate. A pedagogy of this kind also caters for the transforming aspects of education. This is because a four dimensional exploration enables students to grow a richer vision of themselves in relation to others, regardless whether they then apply this new knowledge when using their L1 or L2.

In practice, teachers can create databases enabling students to "peek" at the things people do when using a specific L2. For example, students can explore the concept of the map from different perspectives of time (when), culture, context and purpose (why), structure and representation (how). Figure 5 illustrates examples of such maps.

Figure 5: A display of different navigational tools developed by people at different times to serve different purposes in different contexts.

Information can be presented in a number of ways, there is no one way to do so. It is important though that the exploratory facilities allow for comparing and contrasting of a multitude of aspects of what makes up different maps, or what the concept of a map involves. The art of good design is to allow students to link information in ways that give students control over their searches. This means that the database permits students to make unpredictable connections which respond to their personal questions, and which are not limited by the design, or someone else's idea, of what a map is. In this way, the goals which direct their explorations are not limited by the design, and correspond to the interactivity requirements expected by the modern "autodidact".

The database resources and search facilities do not need to be limited to countries where an L2 is used as a national language. Students could easily explore maps explained by Sudanese speakers of the target language, or by the Lapland people. This is because language adapts to culture, not the other way around. The exact mechanics of such search capacities are explained in the next section of this paper. For now it is important to illustrate how teachers can engage and expand students' personal histories for students to build their L2 tools in an informed and critical way, i.e. in relation to symbols and systems of value which people call upon to construct their interactions.

(b) *Effect*
As illustrated in the engagement phase, the dialogic model goes beyond the traditional questions regarding the link between language and culture, or what one should say and in what kinds of contexts. In a dialogic environment, students are not requested to perform tasks, because linguistic expressions alone do not have a performative function. Instead, the aim is for students to tap into and explore "sources of authority" (Bourdieu, 1991, p. 113) which are available to them and which thus enable them to produce culturally appropriate language. The model requires students to have access to tools which, ultimately, help them reflect and transform the concepts they activate for defining themselves, others, and for doing so in ways which evoke respect from them and from others.

When engaged on their terms, and in relation to the schemes they use to make meaning, students are likely to show interest in following up their explorations, this culminating in a project which

they see to be of relevance to them and, potentially to other users of the L2. To follow up with the concept of the map, students may create a game: *Spot the odd one*, where players look for maps that do not belong to a specific (cultural or other) paradigm. Or they can create an interactive map of their school or university. These are just examples. Figure 6 illustrates an example of an interactive map. The map makes use of the different themes students may identify through their explorations, which are then arranged to spark interest and enhance the aesthetics.

A map then is not only useful to others. It can be a product of students' creative engagement, cultural learning and concept-development. They can also subvert how maps use language in order to make them more user-friendly, and reflecting the spirit of the campus.

Figure 6: An example of an interactive map (created by the author of this paper).

(c) *Power*

Students need support tools and activities which help them explore the cultural, social and symbolic relationships and values in relation to which they interpret and construct their L2 interactions for the best impact. As Wolf (2011) shows through her research on perception and literacy, the act of meaning-making is not an act of matching. It is a process involving the brain (and the body) in a dialogue between the various associations which the brain calls upon to make sense. These associations help students evaluate the impact of what others do, why, when and how, in order to respond accordingly. Figure 6 illustrates the pedagogic structure of the learning environments which support this form of learning.

As shown below, once students identify the activities they want to pursue (their projects), classroom meetings continue to provide students with exploratory tools enabling them to break down information, make use of several different ways to represent it; use strategies which help students look at things differently, create different associations, in other words, "'think' about it" (Minsky, 1981). Making these associations meaningful will involve having a few of them, because

"if we understood something just one way, we would not understand it at all" (Minsky, 1981). In other words, students explore how language is used in non-pedagogic activities. The tools of the environment and its activities, CALL (Lian, 2014) or not CALL-based (e.g. group discussions, teacher's explanations, any reflective activities, including rehearsals, Lian & Mestre, 1985) are integrated to allow students to navigate meaningfully and with ease through these texts and to evaluate their own texts. This process is ongoing until the students complete the projects. While it is students' questions that drive their learning, it is the teacher's role to assess whether the conditions put in place allow students to do so. In other words, students must leave the class feeling they achieved their goals, while also truly learning. This is the point at which theory meets practice (Figure 1). There is little gain in taking a narrow view on practice and making students work within the narrow space of that vision. The tools with which students can explore texts will not come from technology, or linguistics, or any other field. And even if they did, their meaning will not be apparent to us unless we engage ourselves in looking for ideas and clues. These clues are everywhere in our own work and in the insights we obtain from research into different disciplines which, as shown above in the case of the amnesia study, might say nothing about language learning but, for example, may say a lot about perception and what prevents learning.

This is again the case of a DIY pedagogy where, by searching YouTube for the newest research lectures, and then looking for the papers of their presenters, we may expand our own knowledge and, as a result, the benefits that our students gain from our own engagement in the problematic of language teaching. In short, to assist "new learning", we ourselves must become part of that paradigm of 'new learning'.
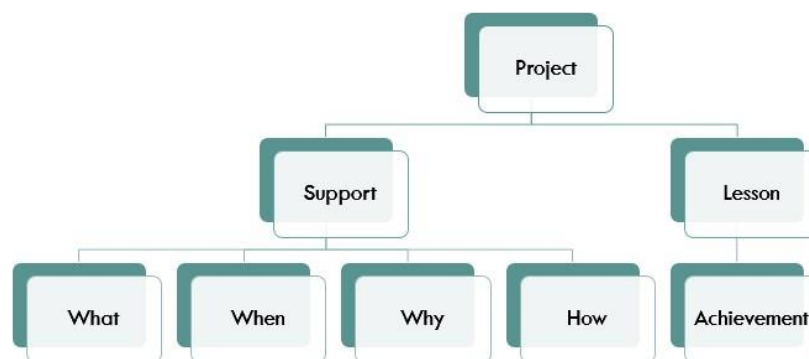

Figure 6: The pedagogic structure of dialogic learning environments.

What can CALL do?

Many of the tools designed to assist students in expanding and re-organising the meaning-making systems they bring with them into the L2-learning environment will be integrated as CALL applications and resources. This is so because digital technology offers unique flexibility in regard to information management, which is, ultimately, what all learning is. This flexibility, when well exploited and integrated, can support students in a unique and personalised way. The points below illustrate the capacities of digital technologies in relation to the features of the dialogic model of L2- learning which this paper described.

(a) *Access and storage*

The efficiency of digital storage devices continues to increase exponentially. There now appears to be no end as to how much data one can upload and store and retrieve online. New technologies continue to emerge. Hence in today's world, there is an abundance of (a) examples of practices of L2-use; (b)

tools enabling students to engage in these practices; and (c) tools enabling students to involve others in their own L2-engagements. While in some countries access to this information is slow, and sometimes refused, there are still avenues available for teachers to collect and use information when needed. For example, teachers can download gigabytes of information on a regular basis when on campus in their universities. They can download videos and text when overseas. They can collaborate with teams overseas that can bring data to them. While their students may not be accessing live data, they still will have more information to work with than the students in Australia in some regional schools, or students 10-15 years ago when the Internet was slow and had no YouTube. Creativity is still called for. The data to be downloaded may contain anything, long and short segments including songs, their karaoke versions, advertisements as creative, cultural expressions, cute video footage with animals, people, kids, news shows, morning shows, jokes, interesting podcasts and websites, anything. Applications like PowerPoint allow for multimedia storage, presentations and project management, with all data being stored on the local disk of a PC. Also, multimedia environments can be used as a support. Yet students can use media other than the Internet to present their projects. For example, they can video-tape students presenting a news show, can create newsletters, or PechaKucha events in the target language, thus bringing the community of the target language speakers onto their campus. In a project which engaged students in creating a news show (Thai News Network), students used the interactive facilities of websites to publish, advertise and engage the wider community in their activities (Buranapatana, 2000). Today, Facebook alone, or websites like Google Sites or any blog applications would have more interactive capacities than anything used back then.

(b) *Manipulation of information*

Digital information is stored in a way that allows each of its elements to be accessed more or less instantly and about as easily and as efficiently as any other, no matter how many elements may be in the set. Random access together with sophisticated retrieval algorithms enables the flexible access characteristics of search engines, applications and management systems which give computers their clear advantage over libraries, tapes or any other forms of record whose accessibility is limited by their form. While global search engines like Google help manage information at the global level, local solutions will need to be developed for problems which are experienced locally and for which local solutions are needed. The development of such systems requires creativity and possibly collaboration across sectors and maybe across different institutions or countries. These management systems can be as complicated as a database of language resources described by Lian, A-P. (2014, 2011), or as simple as shown in Figure 5 where all information is stored locally and students can explore the database together in class. This still gives student a huge advantage over classrooms with textbooks and no live resources, and therefore no exposure beyond what they already know. Google Sites have facilities for organising information which also can be used, if available.

Other information management tools may help students work with texts and sounds in a multitude of ways (Lian, 2004). Many of these tools are free and easily accessible. Their value is often underestimated in the culture of traditional pedagogies which see language learning as focusing on learning words and grammar, not as information management. Among these tools are text-to-speech applications. For example, MS Office SPEAK facilities allow students hear any text they type or select, in any direction. Direction of listening is important for students to hear things differently than their expectations dictate. The online text-to-speech Avatar (oddcast.com) provides even more facilities. Students can play with sounds as they want to and begin to explore their aspects in unpredictable, yet productive, ways (Lian, A.B., 2014). Free online speech-to-text facilities, including Google search are not perfect, but are a far cry from having nothing at all. They are fun and invite students to reflect on their productions.

(c) *Connectivity*

Computers can be linked together in single and multiple networks and this very function gives digital technology its greatest power: "The Network is the Computer" (SUN Microsystems). Connectivity does not imply discussions only. It implies forms of "collaboration" and facilities which allow for cross-linking, thus making students' explorations both, precise and rich in data. For example, dictionaries, whether as a book or online, while very useful, alone are isolated "applications", disconnected, a 19th century solution to 19th century problems. But when online dictionaries are connected to other systems from which students access their information, this is different. When they are integrated as in Figure 5 to allow students to manipulate information in a dynamic way, they become tools in a network which caters for differences and flexibility. The same can be said of online games. When used in isolation, their function is reduced to an isolated experience. But when integrated in a larger network of connections, they can be used to engage students in exploration of places through games which children play to cook, to garden, to read, to place objects and animals in the right place in the room, to build and re-furnish homes, hospitals, to meet people we know, people we don't know, and more (Lian, 2012). This integrated way turns free online games into an interactive virtual space where students act as if this space were real. Again, imagination is the key. But imagination needs inspiration and this comes from the understandings which problematise notions which the field accepts as a given and which as a result frequently become its own breaks of progress.

Conclusion: where to from here?

This paper began with the observation that education is finding itself confronted with the challenge which the rhizomatic dialogic tools of the Internet make possible. The new "autodidact" is not looking for an expert, but for an answer. A new culture is developing where people gather together, create and compile resources to accommodate for all kinds of questions, simple and complex, from all walks of life. The new "autodidact" is increasingly autonomous, while also connected. The paper then proposed how this "new learning" culture can translate into L2-classroom. It also made a case as to why it should do so. The theoretical foundations of this paper have not been built overnight. They encompass decades of research studies in the areas of text, perception, critical theory, pedagogy, and CALL of researchers from all over the world. Unfortunately, the concepts on which it builds have rarely been considered especially in the field of TESOL due to the historical developments of the field. But in every field of education, technology paves the way for new developments and breaks with the past. We need to open up the courses we teach in L2-pedagogy and research to make room for the conceptual expansion which is required.

The discipline therefore needs to explore its theoretical discourses beyond what it already knows, and it needs to define itself around the questions it asks, not the answers. Frequently, L2-teachers are unaware that SLA studies were never intended to support teachers and teaching. Hence the answers they produce cannot be taken as referring to the same questions which the teachers ask, let alone the learning students. The model proposed in this paper also identifies its own pedagogic question. This question is about the means by which teachers can allow students' voices and perspectives to come through, the means by which teachers do not replace these voices with their own and, finally, a methodology enabling the field to learn from others, and therefore not stagnate. As said earlier, to support "new learning", the teacher must become part of the "new learning" culture which values expansion, autonomy, flexibility and self-reliance. These are very different from traditional qualities of an L2-classroom which caters for students who depend on the teacher's assessment of his or her needs, capacities, forms of engagement and forms of learning.

References

Bourdieu, P. (1991). *Language and symbolic power.* Cambridge, MA: Harvard University Press.

Buranapatana, M (2004). Thai News Network: Cultural learning. Paper presented at *Australian Association of Research in Education* (AARE) conference. Australia: Melbourne.

Buranapatana, M., & Zhang, F. (2008). Pedagogy meets technology in the somatically-enhanced approach. In F. Zhang (ed.), *Handbook of Research on Computer-enhanced Language Acquisition and Learning* (pp. 240–258).

Cheyne, J. A. & D. Tarulli (1999). Dialogue, difference, and the "Third Voice" in the Zone of Proximal Development. *Theory and Psychology*, *(9)*, 5-28.

Cormack, P. (2011). Reading pedagogy, 'evidence' and education policy: Learning from history? *The Australian Educational Researcher,* 38, 133-148. Retrieved from: http://w3.unisa.edu.au/eds/documents/Pedagogy.pdf

Cormack, P. (2011). A genealogy of teaching practices: researching the reading practice, Presentation to the *Centre for Research in Education Seminar Series*, University of South Australia. Retrieved from: http://w3.unisa.edu.au/eds/documents/Researching.pps

Derrida, J. (1967*). Of grammatology*. (Trans. G. Spivak), Baltimore: John Hopkins University Press, Section 158. Retrieved from: http://www.mohamedrabeea.com/books/book1_3997.pdf .

Ellis, R. (2006). The methodology of task-based teaching, *Conference Proceedings: Task-based Learning in the Asian Context*, *Asian EFL Journal*, *8*(3), pp. 12-45.

Freadman, A. (1994). Models of genre for language teaching. *The 1994 Sonia Marks Memorial Lecture*. University of Sydney.

Freadman, A. (1994). Anyone for tennis? In A. Freadman & P. Medway (Eds.), *Genre and the new rhetoric*, pp. 43-66, London: Taylor & Francis.

Gothard, K. (2014). The Ancestors in our brains, *The evolving brain: University of Arizona lectures*, The University of Arizona. Retrieved from: http://youtu.be/5bQP0-02xRU?t=35m5s

Herrmann, C. S., Friederici, A., Oertel, U., Maess, B., Hahne, A. & K. Alter (2003). The brain generates its own sentence melody: A Gestalt phenomenon in speech perception. *Brain and Language 85*(3), 396-401.

Immordino-Yang, M.H. (2013). Studying the effects of culture by integrating neuroscientific with ethnographic approaches. *Psychological inquiry: An International Journal for the Advancement of Psychological Theory*, *24*(1), 42-46. Retrieved from: http://www-bcf.usc.edu/~immordin/

Immordino-Yang, H. (2010). Cultivating the creative mind. Keynote address, *Our bodies, our minds, our "selves": Neurobiological perspectives on creativity Conference*, Utah Valley University. USA, Retrieved from: https://www.youtube.com/watch?v=3ubtLgs_j1Y&feature=youtu.be&t=1h36m35s

Immordino-Yang (2009). Our bodies, our minds, our selves: Social neuroscience and its application to education. In S. Feifer & G.Rattan (Eds.), *The Neuropsychology of Emotional Disorders*. Middletown, MD: School Neuropsychology Press. Retrieved from: http://www-bcf.usc.edu/~immordin/

Kramsch, C. (2000). Social discursive constructions of self in L2 learning. In J. P. Lantolf (Ed.), *Sociocultural theory and second language learning* (pp. 133-153). Oxford University Press.

Lantolf, J. P. & Pavlenko, A. (1995). Sociocultural theory and second language acquisition. *Annual Review of Applied Linguistics, 15*(1), 108-124.

Lian, A.B. (2014). *Avatar*. Pedagogic tutorial, Retrieved from: https://www.youtube.com/watch?v=Ne53XFg1fWg .

Lian, A.B. (2012). *ICT, literacy and the lion King.* Pedagogic tutorial. Retrieved from: https://www.youtube.com/watch?v=PiU5bcURwlg

Lian, AB. (2008). Making our learning environments interactive: a critique of the concept of interaction in second language acquisition studies. In M. Mantero (Ed.), ISLS *Readings in Language Studies:*

Language Across Disciplinary Boundaries. (pp. 333-350). St. Louis, MO, USA: International Society for Language Studies Inc.

Lian, A-P. (2014). On-demand generation of individualised language learning lessons, *Journal of Science, Ho Chi Minh Open University. 1*(9), pp. 25-38, Retrieved from: *http://ljunction.com/linksdb/filemgmt/visit.php?lid=18* .

Lian, A-P. (2011). Reflections on language-learning in the 21st century: The rhizome at work, *Rangsit Journal of Arts and Sciences 1*(1), pp. 5-16, URL: http://www.rsu.ac.th/rjas/issues.php?j=1

Lian, A-P. (2004). Technology-enhanced language learning environments: A rhizomatic approach, in Son, J-B. (Ed.): *Computer-Assisted Language Learning: Concepts, Contexts and Practices,* New York, iUniverse, pp. 1-20. Retrieved from:

http://www.andrewlian.com/andrewlian/prowww/apacall_2004/apacall_lian_ap_tell_rhizomatic.pdf

Lian, A.-P. & Lian, A. (1997). The secret of the Shao-Lin monk: Contribution to an intellectual framework for language-learning. *On-CALL,* 11 (2), 2-19. Retrieved from: http://www.andrewlian.com/andrewlian/prowww/shaolin/psupres2.htm

Lian, A-P. & C. Mestre (1985). Goal-directed communicative interaction and macrosimulation. *Revue de Phonétique Appliquée (73-75*), pp. 185-210. Retrieved from http://andrewlian.com/andrewlian/prowww/macrosim.htm .

Maguire, E. (2014). The Neuroscience of Memory, *Friday Evening Discourses in 2014,* The Royal Institution. Retrieved from: http://youtu.be/gdzmNwTLakg?t=40m27s

Minsky, M. (1981). Music, mind, and meaning. *Computer Music Journal* 5 (3), pp. 8-44. Retrieved from http://web.media.mit.edu/~minsky/papers/MusicMindMeaning.html .

Nunan, D. (2006). Task-based Language Teaching in the Asia context: Defining 'Task', *Conference Proceedings: Task-based Learning in the Asian Context, Asian EFL Journal, 8*(3), pp. 12-18.

Wolf, M. (2012). The Science of the reading brain: implications for instruction. Retrieved from: https://www.youtube.com/watch?v=e_ephYMS16Q

Wolf, M. (2011). Pleasures and perils of the evolving reading brain, *The Reader Organisation's 'Reading for Wellbeing Conference'* in New Brighton, Wirral. Retrieved from https://www.youtube.com/watch?v=IWzHn1Psc0 .

Pictures:
Figure 5
Taylor, Karen, Pitjanjatjari Aborigine, *Snakes at waterhole dreaming* in traditional Aboriginal dot technique, URL:
http://www.tribalworks.com/K007_Karen_Taylor_Pitjanjatjari_Aboriginal_dot_painting.htm
Figure 6
Symbols and their meaning in Aboriginal Art website, URL: http://www.thanguwa.com/symbols.htm
All other images have been sourced from Microsoft Office Images library and are used with permission from Microsoft Corporation and their partners Istock Copyright © 2012
http://www.microsoft.com/about/legal/en/us/IntellectualProperty/Permissions/Default.aspx#ELC

Examples of Applications:
Text-to-Speech, URL: http://www.oddcast.com/home/demos/tts/tts_example.php
Speech-to-text, URL: http://talktyper.com/
Free online English language games, URL: https://sites.google.com/site/alumnieducationhub/esl-tricks