Reactions, Reflections, and Responsibility:

A "Responsive Evaluation" of an Emerging Blended E-learning Subject
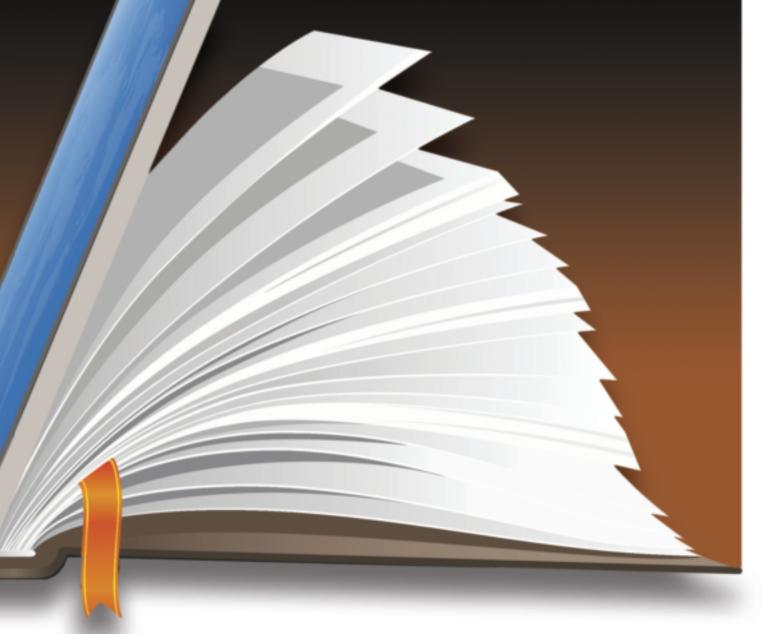
1. Introduction to the E-focus and E-context

In the decade since Schrum and Hong's comment that "online learning has rapidly become a popular method of education for traditional and non-traditional students,"[1] this approach to tertiary learning has morphed through several generational forms and platforms to the point where it has become firmly entrenched in the Australian tertiary landscape. As a broad generalization, e-learning, online, or flexible learning in many universities represents a spectrum of "information communications technology" (hereafter referred to as ICT) usage that ranges from little or no actual real-time interaction or "face-to-face" contact with associated viewing linkages such as YouTube through to teaching attempts at fully interactive programs. However, despite the numerous studies purporting the benefits of this form of study, a few voices have argued that this rapid shift has been "accepted uncritically."[2] Of late, there has also been a gathering chorus of research which suggests that the research base has been skewed, as it has not fully taken into account the understandings of the front-line users: the students themselves.[3] This leads to the rationale of this article that what actually constitutes authentic "flexible learning," its actual efficacy, and effects remain unclear.[4]

Emerging out of the context of standard online delivery is the notion of "blended learning" or "mixed mode learning."[5] In this learning mode, the ideal is that students retain some of the benefits of constant face-to-face interaction with peers and tutors, as well as the flexibility and less-restrictive nature of learning through technological access.[6] However, blended learning in the Australian context has itself become situated across an ICT spectrum that ranges from the "provision of two-way communication so that the student may benefit from or even initiate dialogue"[7] to the attempt at quasi-virtual situations of the "ClassSim" project.[8]

Despite the research during the past decade showing that "blended learning" in the general tertiary student populations has the potential to enhance student engagement,[9] raise learn-

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ing outcomes, and prepare students to become more responsive to new technological advancement,[10] it would appear that less research has been undertaken in regard to pre-service teachers. In a profession deeply grounded in constant social interaction and the socio-emotional facets of the classroom, do online courses have a place in teacher training?

While acknowledging that online learning has become a firmly entrenched component of the overall tertiary learning space, Marcoux believes that e-learning educators still have to deal with two critical questions: "what is to be learned and how it will be learned."[11] This article deals with an investigation that centered on these two questions, but also asked, "What was the perceived efficacy of a form of 'blended approach' as understood by one cohort of pre-service students?" The impetus for this project began with a group of final-year pre-service teachers approaching the first author, who is head of school in the Faculty of Education, Business, and Science at Avondale College of Higher Education, New South Wales, Australia. They requested a change in the timetable that would provide them with a learning environment that would challenge them, as well as the opportunity to gain teaching experience, which they

hoped would "fast track" their chance of full-time employment. Acknowledging that this was a valid request, the lecturer saw this as an opportunity to take the already-established use of online connectivity through the platform of Moodle to another stage of innovation and development with the introduction of "blended learning." Another layer of improvement was added in the design of the course, which provided the students with an opportunity to take more responsibility for all aspects of the teaching-learning-evaluation cycle.

To this end, the students were given seven online forum tasks to complete. There was one forum per week for seven weeks. Each group was comprised of seven students chosen randomly from the whole cohort of early childhood-, primary-, and secondary-education students, along with those learning about school systems from the chaplaincy course. Each week, a different student was appointed by the group to be the group's facilitator for that week. Their assignment was to keep the forum going and allocate marks to the other members of the group according to specific criteria. The facilitator would e-mail the lecturer at the end of the week a one-page synopsis of the forum discussion and a mark for each member of the

group. The lecturer would then allocate a mark for the facilitator for that week.

2. Framing the E-focus Within the E-forum: A Summary of the Related Literature

While the more skeptical researchers believe that online learning in all its forms "settled digitally" into the tertiary milieu in Australia without debate or criticism because of its supposed cost effectiveness, more recently, there are numerous studies reporting the positive impact of online learning on students.[12] There is also a smaller set dealing with staff perspectives, relatively few reporting the viewpoints of both stakeholders,[13] and even fewer dealing with pre-service teachers' perceptions. Hence the developing need for the study outlined in this article.

Notwithstanding the economic reasons for the introduction of online learning, within the framework of the relatively new paradigm of the "enterprise university,"[14] there is a general consensus that the use of the Web as a learning space fits within the generational online social media worldview[15] and digital lifestyles[16] of the current generation of students. Often termed "millennials"[17] or "digital natives,"[18] this "goodness of fit" between the "techno-visual generation"[19] and the use of technology as a learning modality would appear to be more than simply an affinity of use but also a resonance with a generational schema. As such, the use of the Web for these students would appear to be grounded in a lifelong or long-term immersion of "collective connectivity" through an array of computer or digitally based social network systems. It has been suggested that they have a worldview that sees learning as non-hierarchical and utilizes the development of online relationships, interaction, and discussion as taken-for-granted processes. With the rapid proliferation of handheld devices and phones, this generation seems to be more than comfortable in using technology as part of their "personal space" with a corresponding expansion of cognitive and socio-emotional horizons characterized by a high degree of public connectivity, collective memory, openness, and transparency.[20]

In their leisure hours, this generation will typically inhabit interactive Web-based sites that are constantly refined, updated, and remixed. Conole, de Laat, Dillon, and Darby acknowledge, in a somewhat surprised tenor, that while based in the notion of enjoyment, this interaction and conjoint learning is a highly sophisticated mode of "finding and synthesizing information and integrating across multiple sources of data."[21]

In regard to the latter points, while there is little evidence that the thought processes that occur in the leisure hours of ITC use are transferable into the tertiary online learning, there is developing anecdotal evidence that universities need to cater for these open, generationally based and very public learning facets. However, one of the critical issues is the possible learning divide that could be created when a generational mindset used to fluidity of connectivity intersects with the demands of tertiary outcomes and a hierarchical curriculum structure. More than a decade ago, Lévy predicted the possibility of this gener-

ational-learning chasm in regard to technology and believed that there needed to be a corresponding form of learning experience, which he termed "nomadic experiences."[22] In other words, students would at best only partially engage with the learning experience and never fully make deep connections.

While it would appear that engagement is not always realized in current tertiary e-learning modalities, developing this mode of "nomadic" learning encounter is now even more relevant than ever. Toledo has characterized this current generation of learners as "digital tourists,"[23] as they are supposedly completely at home in visiting new far-reaching aspects of the Web, "leaping from network to network, from one system of proximity to the next."[24] Legg takes the previous commentator's understandings one step further, believing that this generational schematic viewpoint is far different from previous generations' in that it is connected at multiple levels, typified by characteristics such as being "outward looking, multi-leveled and transnational."[25] With the possibility that this younger generation may possess this far-reaching predisposition, it has been suggested that tertiary teachers using online learning must therefore take into consideration not only the collaborative inclinations of this generation, but also the probability that they intuitively tend toward building on- line communities of understanding through synchronistic dialogue, self-evaluation, and reflection based on non-hierarchical expectations. Prior to the online revolution, Jonassen[26] made similar recommendations and connections to the use of computer-mediated communication and suggested that their use had the potential to generate "authentic real world connections." While several suggestions have been put forward regarding how to actually accomplish this, such as Toledo's recommended transference of older modes of literacy[27] and Topping's use of peer tutoring,[28] Wood, et al., have suggested that a lack of an ideological framework related to e-learning is perhaps a key inhibitor in computer-mediated spaces.[29] Without praxes related to connections or a full understanding of the links between tutor and tertiary learners, is it any wonder "little has been done on assessing the benefits of 'computer mediated communication' or CMC, in a university context"?[30]

While there is a growing consensus that the use of the Web provides a learning platform that appears to have "goodness of fit" with the current generation's affinity with technology and mindset, there appears to be a developing understanding that there are ongoing issues to be addressed in order to increase this connectivity and efficacy. On the surface, it would seem that e-learning provides tertiary students with the opportunity to easily access learning materials and to enter into communication with online teachers and discussion periods with peers. Despite this, the work of several researchers has found that the most simple and taken-for-granted assumptions could divert students' attention and focus away from the social and positive aspects of the e-learning space. Jones and Johnson-Yale believe that students could be more susceptible to social alienation when experiencing difficulties in the initial stages of an online class as they commence using the learning tools found in platforms such as Moodle and Blackboard.[31] This appears to be linked to Paik, Lee, and McMahon's findings that a lack of explicit requirements, insufficient technological directives, and an assumed understanding that students were technologically savvy inhibited collegial development or engagement with their lecturer.[32] Indeed, the literature base further suggests that exacerbating these issues and the generational need for connectedness includes attempting to integrate traditional forms of tertiary classroom teaching into the online space, lack of structured sharing processes between all participants, and lack of appropriate assessments.[33]

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Rourke, et al., believe that genuine participation in online groups requires the establishment of a "community of enquiry" that is underpinned by the development of engaging cognitive social challenges and a genuine teacher presence.[34] Barab, Squire, and Dueber insist that authenticity occurs "not in the learner, the task, or the environment, but in the dynamic interactions among these various components . . . authenticity is manifest in the flow itself, and is not an objective feature of any one component in isolation."[35]

As for educational faculties, Zibit and Gibson took this notion of authenticity and online learning and suggested that for pre-service teachers, these formats provided "an environment for aspiring teachers to practice making decisions about planning, task design, and responding to other students with complex personalities and cognitive profiles."[36] However, while online learning has the potential to facilitate greater understanding to perhaps facilitate pre-service teachers taking ownership of their learning, many student teachers report experiencing problems understanding the relationship between theory and practice in teacher education and often report finding theories irrelevant to the development of teacher compe-

tences in the traditional face-to-face mode.[37] In many instances of online learning, it appears there is a disconnect between the design, implementation, and connectivity to real-world issues.

Stacey and Rice[38] and Shin[39] have suggested that in order to overcome this apparent deficit in the praxes connection, an integrative and reflective approach is needed. Sarah Shin had further suggested that pre-service teachers should be intellectually coerced through group interaction and reflection to construct their own linkages between personal ideology, knowledge about learning, and classroom practice. This form of learning space could also provide ongoing integration of personal classroom experiences with the broader educational theories taught in other classes. As Lamont and Maton[40] have come to believe, if this process of thinking and connectivity to real-world experiences is not taking place in an e-learning environment, then a "code clash" occurs. That is, unless there is a constant and emerging line of connection between the way in which a student commences to think and act, and the "code" or schema underpinning success in the site in which they are "acting," then a rupture occurs that is almost impossible to repair within the context of a university semester.

However, despite the issues raised in the previous paragraphs, there still appears to be another important point that needs to be addressed regarding the methodological approach conducted in this field. It has been argued that many have been quantitative in nature, in which the control groups and the variables identified have been poorly organized. Indeed, even those conducting the actual research admit that perhaps the variables are impossible to control, and these could have profound unknown effects on the outcomes.[41]

Given all of the facets of concern and need, briefly dealt with in this section, this study sought to add to the qualitative understanding of the field, as well as address the overall concern that "little of the contemporary research focuses on student perceptions. . . . It remains unclear whether students themselves perceive CMC mediums as possessing pedagogical benefit. In other words, what do the learners gain from the technology and its usage?"[42]

3. From E-forum to Research Forum

This qualitative inquiry[43] investigated the perceptions and reactions of one cohort of 100 pre-service teachers undertaking a blended learning course that focused on professional development. Key components of a qualitative investigation included the use of "respondents operating in natural settings," the researchers as a "key instrument" in data collection, and the inductive approach to data analysis and the emergent design of the entire study.[44]

In regard to these components, the researchers had access to all aspects of the e-learning Moodle site and decided to electronically look over the shoulder of the respondents as "distanced virtual ethnographers."[45] Semi-structured interviews with the students were initially planned to be a key component of this study; however, due to the axiomatic foundations of "emergent design" and "methodological appropriateness" of this data-gathering tool, this was not undertaken. As will be discussed in the findings section of this article, because the stu-

dents took ever-increasing responsibility for their own learning, the methodological lens shifted from a qualitative investigation using interviews into one based within responsive evaluation." This methodological approach focused on giving primacy to the "stakeholders about the meaning of their practice."[46] Creating a form of "critical separation" from the students "allowed them to make meaningful and useful distinctions"[47] unhindered by researcher interference. Thus, researchers gained ". . .theoretically a better understanding of the identity performance of the user, and the significance of the interactions taking place."[48]

Respondents were recruited as a convenience sample[49] and approached prior to commencing the course. The majority of research took place through a "bricolage" of data-gathering approaches,[50] which included the use of students' e-learning journals, reflective blogs, and weekly group reflective summaries. Table 1 summarizes the data collected for this study, which was in the form of e-observation, reflective summaries, facilitator reflections, post-class questionnaires, and e-mail responses. Hence we were able to "collect information about multiple factors—and at multiple levels—simultaneously. Like a smart bomb, the human instrument can locate and strike a target without having been pre-programmed to do so."[51]

This collection of multiple forms of data gathering and data sets enabled a process of triangulation across methods as well as data sources and to "increase the expressiveness of the data."[52] As can be seen in Table 2, after data were printed from the actual site, the data analysis process consisted of three coding phases whereby data were analyzed via a "constant comparative method."[53] This process finally resulted in a series of themes or higher-order concepts that emerged from and explained the data.

4. From E-forums to Research Findings

While not without its issues, which will be discussed in the final section, it was clear from the first level coding that in asking "What did the learners gain?" in the e-learning space in focus, the students appreciated the freedom in this subject that allowed them to explore the breadth of related issues to a larger degree than in their previous experience with the lecture-tutorial process. It also allowed them the opportunity to drill down into the topics at hand as well as explore the ideas and ideals of others. As one student summarized the overall outcomes: "I definitely feel more aware and knowledgeable on the topics, and about my own beliefs" (Student M: Student Evaluation Questionnaire). As such, the framework for this entire subject was seen as much more authentic.

Unpacking these overarching outcomes of exploration, freedom, and increased awareness, the following sections represent the related emergent themes arising out of the data. The range of data sources used in this project has been used to illustrate and unpack the means by which the pre-service teacher's blended e-learning experience emerged as self-directed learning. The data selected to illustrate these sections were chosen on the basis that they are a representative sample of the datasets. It should be noted that these themes have been discretely discussed in the next section for the purposes of explo-

Table 1: Data Types and Focus

Data Type	Number of Data Sets	Focus of Data Collection/Analysis
Reflective Group Forum Summaries	25	Explore developing understanding, as well as key markers of learning and reactions.
Facilitator's Reflections	5	Explore links and issues related to his interactions and interjections.
Post-Questionnaire	100	Provide insight into response to this form of learning, and key points of decision making and learning.
Focused Examination of Students' Online Responses	20	Provide insight into response to this form of learning, and key points of decision making, refinement of coding trajectory, and overall learning development.
E-mails	3	Illumination of instances of critical learning.

Table 2: Coding Phases, Emergent Themes, and Data Examples

Coding Phases and Processes of Analytic Delineation	Data Example	Emergent Codes and Themes
1 Line by Line Memoing application of emic labels	October 24 Forum: Initial critical sentence. The **second phase** of the forum settled into **general discussion.** The **third phase** reached **consensus.**	Examples of memos: shared personal reaction, broached and gained currency with the forum, critical appraisal development, developing sense of responsibility, learning to conceptualize through focused discussion
2 Collapsing of Memoed Labels into Emergent Codes, application of critical clustering of themes	1. Post-Questionnaire I think it's a good way to **step back** and see what other people are **thinking.** (Student 75) 2. Week 11 Forum In this forum, we also **put ourselves in other people's shoes.** 3. Connecting Week 9 Group K Forum and Posts We've learned about our **own learning.** (Student 32)	Clusters of Collapsed Categories: (reflection, stepping back, appraisal, engagement, tool of distance, creative discussion, self-reflection)/ (group learning, comparing learning approaches, empathy)/(authentic learning for self, self-belief, ideology transfer, changed perceptions)
3 Collapsing of Codes into Emergent Categories, application of gerunds	• Reflecting/distancing • Engaging • Conditions of learning • Authentic learning	Learning ABOUT Authenticity, Conditions of Learning, Self

ration and understanding, but in actuality they were overlapping and circular in development. While there were definitive learning outcomes for these first-time learners in a blended learning space, underpinning these were several points related to the "hidden curriculum" or the actual nature of authentic learning. As detailed in the following section, data from these students suggest that these elements were just as important as the subject's outcomes, revolving about three key areas of understanding.

4.1 Learning About the Core of Authentic Learning

As this was the first time these students had experienced this form of learning space, the setting up of the weekly response forums in this subject, in which the students had to take control over both the discussion and evaluation processes, had the flow-on effect of leaving the students initially in a state of cognitive dissonance. In essence, there was an almost instantaneous

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recognition that they had to relearn how to learn, come to grips with how to navigate the trajectory of their learning, and figure out the conditions that could enable or inhibit their learning. For this subject, they were no longer alone with a set of course notes and three assignments, but part of a group effort that required thought and appraisal. However, this sense of unease did not last long. In this instance, rather than being an inhibitor in regard to their learning the specific requirements of the subject, participating coerced them into resolving this dilemma by embracing a key understanding, which was taking responsibility for their own learning, both as individuals and as a collective. This entailed entering into a pedagogical self-directed flow of interaction to their own forum posts and the posts of others. Through this interaction with the students, the facilitator, who was initially worried about the efficacy of this subject, understood that this taking up of responsibility was due to the IT mindset of the students. "I should have known that anything of an IT nature the students would take to effortlessly."[54]

However, as the students initiated the discussion process in tandem with the required self-evaluation, they began to realize that they had previously become conditioned to a linear and non-reflective response to tertiary learning. While some initially struggled with this new approach, most engaged with this learning site and space, realizing they were now forced to become innovators of thought and response, whereas previously they had been replicators of others' ideas. Perhaps for the first time, these students began to take ownership of their own learning. Thus, through the online discussion and debate, the majority came to realize that the lock on their poorly developed intuition, or "tacit knowledge,"[55] dealing with how learning occurred had to be released, and could be easily broken through Rourke, et al.'s ideal of a "community of enquiry."[56] Working within an online coterie of engaged individuals in a space that seeks to solve a collective problem provides more than elements of discussion; it additionally provides mechanisms making it possible to take full ownership of the learning process. In doing so, pre-service teachers can begin to operate within and move out of "their zone of proximal comfort."[57]

It would appear that this subject enabled these students to move out of this zone by taking personal responsibility. Thus, their learning became cyclical, and gradually became characterized by a sequence of learning processes typified by "reacting, reflecting, critically responding and refining." While Rourke, et al.'s ideal[58] of a "community of enquiry" was certainly seen to be in play, more importantly, these students came to realize that this entailed an authentic form of IT literacy: one that involves "more than just being able to read and write, it is the ability to comprehend, interpret, analyse, respond, and interact with a growing variety of complex sources of information."[59]

4.2 Learning About the Conditions of Authentic Learning

Linked to the previous component of learning, it would appear another indirect outcome of this subject was the realization by these students that learning was underpinned by a multifaceted set of conditions. While taking responsibility was crucial in the decisions made, and perhaps the initial process in the change from "tacit knowledge"[60] to more explicit realizations, once ownership became a critical factor, it appears that this e-learning space also enabled these students to take risks. While one of the operational drives was to complete an assignment, the students came to realize they were now free to offer up their own opinions without the added layer that they believed was related to judgment. While these opinions could be challenged, each of the groups found the forum spaces free from direct criticism, and in fact, they could now begin to challenge their own thinking.

Within this newfound freedom to explore and respond accordingly, the students sometimes found it difficult to disengage from thinking about this subject. "I found myself constantly thinking about the posts that were there" (Student 73:

Forum Reflection). Not only did reflection become a key component of learning as a whole, but they also believed that using technology in a learning space, the notion of "reflective distancing" came to the fore. While initially these students engaged in a process of posting a retelling of their reactions to the focus at hand, they gradually became engaged in a process of incubating their ideas and responses. Prior to this learning exercise, it seems that they had used technology as a very superficial means of communication, as opposed to a mode of social-collective reflection. Having access to a group of learners with a communal focus and imperative provided a platform by which they not only had to return comments and developing understandings, but they also needed time and distance away from the learning space and the technology to internally unpack and crystallize their reactions to the weekly focus. "I was doing lots of stuff at the same time, like writing and reading. This subject made me think of how I was learning" (Student 4: Final Assessment).

While critical for students, the previous points are perhaps more relevant to the need to identify an ideological praxis for those designing these forms of learning spaces. O'Reilly notes that as tertiary institutions move more and more into this approach, course facilitators set up learning processes that provide opportunities related to knowing "how to mine the data that users are adding, both explicitly and as a side-effect of their activity on your site."[61]

4.3 Learning About the Authentic Self

While these students appeared to begin to understand the constituents of authentic learning through this subject, they also came to understand themselves both as learners and as teachers. Through the ongoing discussions, critique, self-assessment processes, and the apparent reflection that was naturally engendered, a series of realizations related to the teaching-learning nexus came into play. The core element of this new awareness was empathy. "The whole forum went really well, and the forum members became really empathetic, . . . and sensitive. This was new for me, as this was a confronting topic" (Student 14: Week 9 Forum Summary).

In having to negotiate a pathway to personal and group understanding, the ongoing discussions produced a degree of tension. However, this, too, was resolved through the recognition that if optimal learning and understanding were to occur in the discussion and sharing processes, they each had to come to understand others' points of views in a much fuller sense. "We came to some similar resolutions as a group, but we had to see others' points of views and understand them to get to this" (Student 27). Having gained this initial understanding of the need to develop empathy, their responses were now mitigated by the need to push others' understanding as opposed to defending a position without consideration. One student termed this awareness "respectful relationship" (Student 52: Forum Reflection).

Linked to this previous point was the increasing awareness of resilience as a facilitation of the learning process amongst these students. "Everyone is really contributing but we're learning something else as well. This group was able to take this topic down to a personal level and feel free to share personal stories, reflecting on what they had learned firsthand. The members have matured and are empathetic towards one another, and can manage and cope" (Student 68: Forum Reflection). As they began to see the need to reflect and then react to others with an empathetic lens, they also developed a resilience of thought. As the posts to the forum developed, and a corresponding self-reflection process began, these students began to peel back the layers of their belief systems through the writing process, gradually refining their thinking. In other words, resilience in this situation was related to not trusting that their first reaction was correct and engaging in a kind of critical cynicism. This was not undertaken in a negative position of thought but in a positive aspect and direction of really wanting to know what they believed and what others believed. Thus, perhaps for the first time, these students began to see the concept of "multiple realities"[62] in action, as well as think and write their way into a more focused set of meanings.

5. From Here to Where, and For Whom: A Final Summation

While the findings of this study indicate the broad positive outcomes an e-learning site and subject can provide for students, more importantly it is also clear that e-learning provides a platform for both discursive pathways of understanding as well as the intersection of both personal and collective meaning-making. It therefore has the potential to break the learning mindset of transmission and receiving information. However, this gives rise to another key issue. Given the focus these students engendered in regard to developing knowledge from within a focused conversation, or rather from within a discuss-read-reflect-write framework of peer collaboration, can such a collaborative space sit comfortably with the competitive assessment tertiary institutions demand? Is there another way forward that encompasses authentic learning and authentic assessment?

Certainly, the limitations of the project suggested by the students reveal that more focused investigations need to take place into these questions, and other issues that surfaced in the final evaluation. While research needs to further clarify facets such as the specific conditions of e-learning space necessary for developing optimal learning, how writing in a forum situation can be used to enhance understanding as well as understanding the full array of outcomes e-learning can develop, it is also clear that the perceived needs of the students that were not incorporated need to be included and evaluated.

The elements that were deemed necessary by these students in order to create optimal learning to occur were the perceived need for:
• An introductory tutorial on the mechanisms of posting and using forums.
• More face-to-face interaction with the facilitator.
• More focused assessment criteria.
• A space for deeper personal discussions in order to clarify other related issues.

While possessing a common language alone was once the means through which communities were forged, it would ap-

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pear from this study that language unpacked in an e-learning space has the potential to be the new semiotic currency with a "capacity for generating imagined communities, building in effect particular solidarities."[63] ✎

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