

Critical Issues Affecting the Engagement by Staff in Professional Development for e-Learning: Findings from a Research Project within the Context of a National Tertiary Education Sector

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Abstract—This paper focuses on issues of engagement by staff in professional development related to the delivery of e-learning. The paper reports on findings drawn from a New Zealand research project which is producing a sector-wide framework for professional development in tertiary e-learning. The research findings indicate that staff engaged in e-learning in tertiary institutions is not making the most effective use of the professional development opportunities available to them; rather they seem to gain their knowledge and support from a variety of informal means. This is despite an emphasis on the provision of professional development opportunities by both Government Policies and Institutions themselves. The conclusion drawn from the findings is that institutional approaches to professional development for e-learning do not yet fully reflect the demands and constraints that working in a digital context impose.

Keywords—Academic Development, e-learning, Engagement, Professional Development, Tertiary Education.

I. INTRODUCTION

THE rapidly increasing significance of e-learning within the NZ Tertiary sector has focused the attention of the NZ Government, its Ministry of Education, and most New Zealand Tertiary Education Organisations (TEO's) on the domain of e-learning. The increasing importance of e-learning prompted the Ministry of Education to establish an ad hoc working party, The e-learning Advisory Group (Butterfield, 2002) [11] in 2001, made up of leaders in this field, to "explore issues related to the development of e-learning in the tertiary sector". The report produced by this group, entitled "Highways and Pathways: Exploring New Zealand's e-learning Opportunities" was published in 2002, (2002) [11]. The report reflected the interest in e-learning,

and its findings and recommendations have given direction and impetus to the development of a range of e-learning initiatives within the NZ tertiary sector. Among these was a clear imperative for a higher priority to be accorded to professional development in the tertiary sector focusing on the investment in development of human resource capability. As Highways and Pathways noted (p.42) *"It needs to be acknowledged that many, if not most academics have no training in e-teaching. Unfortunately teacher competence in a traditional campus environment does not automatically translate to success as an e-educator in a very different environment."*

However, in making this recommendation, the report recognised the inherent challenges in this approach when it stated (p.46); *"Academics need time, support and room to experiment as they learn to become e-educators. They gain confidence when they have the time and the opportunity to try new things rather than stay with familiar methods. It will be a significant challenge for tertiary education providers to find ways to invest in this critical staff development."*

The Highways and Pathways report has subsequently led to a number of government initiatives supporting and facilitating increased professional capability in e-learning. Included is the development of the interim Tertiary e-learning Framework "Taking the Next Step" (NZ Ministry of Education, 2004), [5] which was published in 2004.

The interim Tertiary e-learning Framework foreshadows the Ministry's tertiary e-learning agenda clearly when it states (Ministry of Education, 2004, p.4) [5]: *"e-learning has a vital role to play in strengthening New Zealand's tertiary education system and helping it to better meet the needs of learners."*

And goes on to add (p4): *"... the challenge now is to create a national e-learning framework which ensures that e-learning is accessible, relevant and of high quality. Developments must be driven by sound pedagogy, not simply by advances in technology."*

Subsequently, a draft New Zealand ICT Strategic Framework for Education (Ministry of Education, 2006) [3] has been published which states its purpose as (p.1); *"...provid[ing] a mechanism to guide and coordinate ICT*

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investment towards the government's vision of improved education outcomes."

The agendas identified in both of these policy documents face significant challenges in realising and promoting a coherent and consistent approach to the delivery of e-learning within the context of the NZ tertiary sector which includes; 8 Universities, 20 Polytechnics (ITP's), 3 Wananga (Maori higher education institutions), 40 Industry training organisations (ITO's), and approximately 1000 Private Training Establishments (PTE's) all operating with a great degree of autonomy and independence. Many of these organisations incorporate e-learning into the delivery of their face to face programmes and their distance offerings where they have them. The challenge for the Ministry of Education is contextual for although the New Zealand tertiary system is largely state-funded, individual institutions have a great deal of autonomy and independence with respect to decision making and government agencies are wary about being overly prescriptive. Nonetheless, the interim Tertiary Framework has an explicit intent (Ministry of Education, 2005, p.5), [5]: *"The Interim Tertiary e-learning Framework will help New Zealand to plan a more coordinated approach to e-learning and will encourage greater collaboration and connection between providers, learners and other stakeholders. A coordinated national approach will also reduce duplication of effort and resources and ensure the best possible return from our investment in e-learning."*

The challenge of bringing a more coherent and coordinated sense to the tertiary e-learning sector also has a significant historical dimension. This arises out of the major reforms of the NZ Tertiary Education System which took place during the early 90's where decision-making and responsibility for much of the curriculum focus and delivery was devolved to individual institutions. This environment makes it difficult for the Ministry of Education to impose, or even facilitate, informed institutional decisions reflecting national priorities and goals such as those encouraging collaboration, endeavouring to minimise duplication, and promoting efficiencies and accessibility for learners and which are articulated in the Frameworks.

The NZ Government Education agencies are very aware of the challenges they face and their response to the Highways and Pathways report included launching a number of contestable e-learning funding initiatives. Among these was the Tertiary e-learning Research Fund, (TeLRF) [4] which supports two or three targeted research initiatives annually for the purpose of; *"...funding research into tertiary e-learning in New Zealand in order to provide a more comprehensive context and framework to inform strategic investment and decision making around e-learning for tertiary education organisations."*

The challenge of engaging tertiary teachers in professional development for e-learning was of particular interest to the authors because of their current roles and involvement in e-learning professional development. In 2005, they were successful in gaining TeLRF funding for a research project

which was focused on the key issue of building e-capability among tertiary teachers.

The objectives of the project, cited from the proposal included;

a. Determin[ing] baseline capability/skills for the adoption of e-learning within the New Zealand tertiary sector

b. Identify[ing] the minimum professional development implementation requirements for the adoption of e-learning within the New Zealand tertiary sector

c. Ascertain[ing] requirements for embedding processes associated with continuous improvement in professional capability

With intended projected outcomes including;

a. Recommend[ing] baseline capability/skills for any faculty to adopt e-learning

b. Minimal professional development implementation requirements for the adoption of e-learning in a tertiary framework

c. Strategies for embedding processes associated with continuous improvement in professional capability

d. Development of an effective model to help identify and support baseline capability building in tertiary e-learning

While the goal of the project was the development of a framework enabling TEO's to identify the baseline professional skills and requirements for effective online teaching in working towards that goal, a number of key objectives became steps on the path. Included among these was the critical issue of teacher engagement with e-learning and identification of factors influencing a teacher's engagement in developing capability as an e-Teacher.

II. THE PROJECT

A. Professional Development for e-Learning (PDeL)

The importance of professional development in producing and maintaining an effective e-learning environment is clear from the literature review carried out in conjunction with the project and was given prominence in the "Highways and Pathways" document where it noted (Butterfield, 2002, p.6) [11]; *"It is imperative that professional development is a priority throughout the tertiary sector so that academic staff have the abilities required for this new medium."*

Other NZ research initiatives reinforced this view. Marshall's survey of e-learning maturity across NZ tertiary institutions found that the teaching capability of staff using e-learning, (Marshall, 2005, p.100) [7]: *"...was easily the worst for the sector of any process assessed, this clearly illustrates the informal and ad-hoc approach taken to teaching staff development prevalent in the sector."*

He went on to note that (p.100); *"Improvement of the capability in this process is challenging and will likely only start once formal requirements for teaching qualifications and performance assessments are introduced, particularly in the University sector."*

Marshall's research clearly showed that staff development in relation to e-learning in the New Zealand tertiary sector

was largely informal and ad hoc. Marshall drew his conclusions from an analysis of institutional documents and policies. Hegarty and her team in their research project looking at staff efficacy with respect to e-learning (Hegarty and Penman, 2005) [6] in a finding related to the e-capability of teachers found that individual staff who were actively involved in e-learning demonstrated a high degree of self-efficacy and tended to engage in informal staff development activities. In her conclusion, Hegarty, (2005), identified professional development as an issue for the great majority of staff (p.117); *“Existing formal staff development models in the six institutions sampled are not adequate to assist staff to fully develop their capability and potential for e-learning. They are merely providing a beginning competency for e-learning. Formal staff development does not extend to the use of many of the informal approaches that participants used.”*

III. RESEARCH DESIGN AND METHODS

The PDeL project objectives reflected an intention to further explore the findings of Marshall's and Hegarty's studies with one of the aims being to gain an understanding of the baseline requirements necessary to promote engagement in effective professional development in e-learning, specifically:

b. Minimal professional development implementation requirements for the adoption of e-learning in a tertiary framework

c. Strategies for embedding processes associated with continuous improvement in professional capability

The project methodology involved gathering empirical data through electronic surveys and subsequent semi-structured interviews. The involvement of managers from the participating institutions provided a broader perspective of contextual and infrastructural dimensions by enabling the identification of differences in expectation of baseline skills and implementation requirements between those engaged in administering and delivering professional development programmes and those engaged in e-teaching. This is important for establishing the requirements for embedding processes to secure ongoing improvement in professional capability (Marshall, 2005) [7].

The investigation into the complex nature and constitution of e-learning and professional development in institutions was approached using *intensive* and *extensive* research designs (Harre, 1979, [17] Sayer, 1984, [17] 1992[16]). The use of *extensive* and *intensive* research designs enables the researcher to explore different dimensions of the experiences, beliefs, practices and preferences of teaching, support and managerial staff in the institutions in which they are embedded.

The first phase of the research comprised *extensive* research – focused around questions of extent – discovering the common properties and general patterns of a population or a phenomenon as a whole in order to draw descriptive or representative generalisations. A quantitative on-line survey was conducted in participating institutions and involved 408

respondents. The survey was intended to ascertain the extent to which individuals were engaging in e-learning and professional development related to e-learning, as well as factors affecting this engagement, whether the professional development activities were effective, and the potential constraints and barriers to building individual and institutional capability.

The survey instrument involved 27 non-compulsory questions in which teaching and support staff gave demographic and employment details, reflected on institutional and personal beliefs about professional development, the type of PD engaged in, engagement and non-engagement in e-learning, the use of e-learning in teaching or support roles, formal and informal professional development activities related to e-learning, their effectiveness and future involvement in professional development for e-learning. The survey was mounted on-line using Survey Monkey [2] and on testing took 10-15 minutes to complete. The on-line survey was administered by a contact person in each collaborating institution so any queries or concerns were able to be directed most easily to that contact person. All responses were anonymous, but respondents could elect at the end of the survey to volunteer for participation in a thirty minute phone interview. The survey was open for a three week period in May and June of 2007, with an email reminder sent out at the midway point. In total 408 participants undertook the survey with 295 completing the survey to the end. After completion, responses were downloaded and the qualitative responses coded.

Intensive research designs are intended to examine processes and mechanisms via a smaller number of cases or people in order to provide causal explanation – to discover how people, things and objects are connected and operate to produce particular outcomes (Sayer, 1992) [15]. The *intensive* phase of the research involved qualitative semi-structured interviews with teaching, support and managerial staff in the TEO's where the earlier survey was conducted.

Both the on-line survey and the interviews were subject to ethical guidelines and the project was approved by the Project leader's University Human Ethics Committee. Members of the research team in participating institutions were responsible for ensuring appropriate ethical approval was obtained in their respective institutions.

IV. CONDUCT AND ANALYSIS OF ON-LINE SURVEY

The survey utilised the definition of e-learning as provided by the Ministry of Education on their website (<http://cms.steo.govt.nz/eLearning/What+is+e-Learning.htm>):

“(e)Learning is learning that is enabled or supported by the use of digital tools and content. It typically involves some form of interactivity, which may include online interaction between the learner and their teachers or peers. (e)Learning opportunities are usually accessed via the internet, though other technologies such as CD-ROM are also used in

(e)learning.”

The survey also drew on Rothwell and Arnolds (2005) work on professional development which reflected strongly the notion of professional commitment. The data collected provided a general picture of the type and nature of professional development activity related to e-learning in the participating tertiary institutions. More specifically it sought to discover academic and support staff views on the importance of professional development and factors that affected their engagement in professional development.

While completion rates for the online survey were reasonably good, overall institutional response rates were relatively low and so inferential tests have not been applied to the findings. Nevertheless the descriptive statistics presented here provide a valuable snapshot of key factors influencing engagement in professional development activities. The information derived from this extensive research provided a baseline for exploring dimensions of an individual's involvement in professional development through the semi-structured interviews. The interviews were particularly helpful in clarifying forms of involvement and engagement in professional development (and e-learning), its effectiveness and in identifying constraints on involvement.

V. QUALITATIVE INTERVIEWS: CONDUCT, ANALYSIS AND PARTICIPANT CHARACTERISTICS

The qualitative interviews were used to explore narratives of e-learning and professional development. A series of open ended questions were asked providing a 'space' for individuals to reflect on their beliefs, and experiences, and to express in practical ways their desires and preferences with respect to professional development. Geertz (1973) [19] argues good qualitative research is comprised of 'thick' descriptions whereby readers are taken to the centre of experiences, events, actions and motivations. These descriptions are richly embedded in the contexts in which they are framed. This study and the use of open ended questions aimed to tease out participants' perspectives of professional development as framed in their own terms.

The forty phone and face-to-face interviews explored experiences, practices, beliefs and preferences related to professional development in e-learning as it occurred in institutional contexts. These interviews were conducted between 26th September and 20th December 2007 and were between 20 – 50 minutes in duration, with the usual length being 30 minutes. Lead collaborators in the participating institutions provided names of at least five participants for interview. These were primarily staff who had volunteered to be interviewed after participation in the on-line survey. However, some additional respondents were sought by the lead collaborators in the participating institutions to ensure staff with a managerial role and staff not involved, or only recently involved in e-learning were also included. Ten interviewees were managers of academic or support programmes, with two of these being Heads of Schools, four staff were employed in a support capacity rather than teaching *per se*. The bulk of participants were female (n=27).

Participants were drawn from a wide range of disciplines including health, education, social sciences, natural and physical sciences, business and media fields.

Interviews were semi-structured and based around the open-ended questions which were developed with colleagues in the participating institutions. The semi-structured interview format was chosen as it allowed key themes to be touched upon, explored and expanded to differing extents based on the experiences and beliefs of participants. Thus the researcher and participants could be seen as 'co-constructors' in the production and interpretation of the interview. Participant interviews were transcribed in full and coded using a conceptual mapping technique which consists of identifying and coding key themes in the participants' texts, by developing descriptive and analytic categories and sub-categories of meaning which emerge from the participant's own narratives (Tolich and Davidson, 1999, [12] Cook and Crang, 1995) [14]. This form of analysis was used to establish a participant centred view of professional development in e-learning and the social and institutional context in which it is constituted, enabling the research to develop a picture of rationales and experiences based on the participants' own understanding of key concepts, experiences and actions. The demographics of the participants are noted in Table I.

TABLE I
PARTICIPANT CHARACTERISTICS

Characteristics	Frequency (n=408)	Percent
Gender		
Male	162	39.7
Female	246	60.3
Age		
< 20	4	1.0
20 – 29	31	7.6
30 – 39	97	23.8
40 – 49	139	34.1
50 +	137	33.6
Ethnicity		
European	131	32.1
New Zealander	205	50.3
Asian	18	4.4
Maori	16	3.9
Other	38	9.3
Employment status		
Academic staff	237	58.1
General staff	162	39.7
Other	6	1.4
No answer	3	0.7
Length of employment		
Less than 1 year	66	16.2
1-5 years	149	36.5
5-10 years	78	19.1
10-15 years	51	12.5
15+ years	61	15.0
No answer	3	0.7

VI. RESEARCH FINDINGS

A. Beliefs about Institutional Importance Accorded to PD

Information was sought on whether staff felt their institution viewed professional development as important. Across the five institutions 74% of staff either agreed or strongly agreed with the statement "I believe my institution views professional development for its staff as important".

There was little difference between academic and general staff in relation to beliefs about this difference with 72.6 % of academic staff and 76.4 % of general staff agreeing or strongly agreeing.

B. Individual Expressions of Belief in Professional Development

Individuals across institutions overwhelmingly believed in the importance of professional development to their job. The numbers of respondents expressing a personal belief in the importance of PD were greater than those who believed their institution saw professional development as important. The responses are noted in Table II. When asked whether they believed that “professional development is an important part of my job” 95.6% of survey participants agreed or strongly agreed, with only 3.9% neither agreeing nor disagreeing and 0.5% strongly disagreeing with this statement.

TABLE II
INDIVIDUAL BELIEFS ABOUT PD ACROSS ALL INSTITUTIONS

Question: I believe that professional development is an important part of my job					
Institution	1	2	3	4	5
	n=142	n=133	n=52	n=43	n=16
strongly agree	57.8	43.6	68.5	60.4	62.5
agree	39.4	48.1	29.6	37.2	37.5
Neither disagree nor agree	2.8	6.8	1.9	2.3	0
disagree	0	0	0	0	0
strongly disagree	0	1.5	0	0	0

C. Forms of Professional Development Engaged in by Staff

Participants were asked to indicate the types of professional development they had engaged in. Examples given included both formal and informal professional development activities, and respondents were able to choose as many activities as they wished. These are presented in rank order in Table III.

The top five ranked activities with 70% or more of respondents participating in are; sharing knowledge with colleagues, spontaneous learning arising from work or personal activities, learning through informal discussions in the workplace, regular reading of journals and books relevant to my profession, acquiring knowledge through browsing websites or ‘surfing the net’. These can all be classified as informal activities, defined by Swartz and Bryan (1998) [13] as “learning by association and affiliation” (23) and for the purposes of the survey as “activities undertaken that increase your knowledge in a particular area but which are not formally acknowledged”. This indicates that much professional development activity occurs as other than as part of “a programme or course that has either an assessment or attendance requirement in order to obtain credit”. Formal professional development activities are nevertheless significant, comprising three of the next four highest ranked activities with between sixty and seventy percent of

respondents engaging in these. Rankings 10-16 in which approximately 30 - 45% of people are engaged in, are primarily comprised of activities in which forms of networking are important, this includes email contact, professional committee and interest group involvement, and action learning. Surprisingly another form of networking

TABLE III
FREQUENCY OF PROFESSIONAL DEVELOPMENT ACTIVITIES

Forms of PD	Frequency (n=408)	Percent	Rank
Sharing knowledge with colleagues	355	87.0	1
Spontaneous learning arising from work or personal activities	336	82.4	2
Learning through informal discussions in the workplace	331	81.1	3
Regular reading of journals and books relevant to my profession	291	71.3	4
Acquiring knowledge through browsing websites or ‘surfing the net’	285	70.0	5
Attending conferences, symposia and or workshops	285	69.9	6
Acquiring generic transferable skills and competencies related to my job	281	68.9	7
Internal training courses	248	60.8	8
Technical Training: e.g. courses where I am learning how to use new computer software or technologies	203	49.8	9
Exchanging emails on professional topics with other members within your institution	185	45.3	10
Engaging with professional interest groups	172	42.2	11
Practising the rules and procedures of my institution	170	41.7	12
External courses my employer has paid for	163	40.3	13
Action learning: learning from development projects	161	39.4	14
Membership of committees relevant to my profession	128	31.4	15
Membership of committees at my place of work e.g. quality, health and safety	122	29.9	16
Undertaking academic study that isn’t necessarily related to my job or profession	118	28.9	17
Keeping a portfolio record of professional development activities I have undertaken	117	28.9	18
Learning professional knowledge: e.g. professional codes of practice	117	28.7	19
Working toward a qualification that is paid for by my employer	103	25.3	20
Taking part in an online discussion forum relevant to my profession	94	23.0	21
Learning that is carefully planned in advance	84	20.6	22
Working toward a qualification that is paid for by myself	52	12.8	23
Keeping a reflexive diary over an extended period	26	6.4	24
Engaged in professional practice	5	1.2	25
Teaching students	3	0.7	26
Sharing research on teaching	1	0.3	27
Other	12	2.9	28

activity, that of taking part in an online discussion relevant to ones profession was mentioned by a much smaller number of respondents (23%). External courses paid for by employers also feature here as the 13th ranked activity. There was a wide range of activities in which less than thirty percent of respondents engaged. These included; working towards a qualification paid for by oneself or an employer, engaging in professional practice, learning through codes of practice and activities connected with recording and reflecting on professional development undertaken (reflective diaries and portfolios).

There did not appear to be any substantive differences between activities indicated academic staff apart from 'regular reading of journals and books relevant to my profession' (chosen by 87% of academic staff and 49% of general staff.). The relationship between length of time employed and type of activity engaged in was complex, with the most identifiable trend being the proportion of activity in each category, which was generally lower for those employed for less than one year.

VII. ENGAGEMENT AND PARTICIPATION IN PROFESSIONAL DEVELOPMENT FOR E-LEARNING

Of the 345 respondents who answered the question "Are you aware of e-learning professional development courses run in your institution" (71 %) were aware of PD courses related to e-learning. For individual institutions there was variance in responses to this question with affirmative responses expressed by 53.6% to 83.2%.

Staff was then asked whether they had participated in any forms (both informal and formal) of professional development within their institution and the results are listed in Table IV. The percentage indicating their involvement in professional development for e-learning was considerably lower than the 95.6% of participants which had indicated they agreed or strongly agreed with the statement "professional development is an important part of my job".

As Table V shows, the majority of e-learning professional development activities involve informal professional development (70.3%) which comprises activities undertaken to increase knowledge and skills in a particular area but which are by support or not formally acknowledged or assessed. The second most frequently engaged professional development activities are the technical training courses run by a training unit. Training courses which focus on both pedagogical and technical aspects had been attended by 36.8% of participants. Attending e-learning events and having one-to-one assistance or being involved in small group sessions with e-learning staff were the third and fourth most frequently engaged in activities.

Participants were asked to rank the effectiveness of e-learning professional development activities on facilitating their e-learning skills and expertise using a scale of 1 - 4 where 1 represented completely effective and 4 completely ineffective. The results are listed in Table VI which shows, that most effective was informal professional development

(35.4%) and working one-to-one with e-learning staff outside of centrally run e-learning courses (25%). Least effective were two institutionally-based forms of e-learning activity - attending e-learning events at 'my' institution (26.3%) and technical training courses run by 'my' institution (21%), both generally regarded as formal professional development activities.

TABLE IV
STAFF PARTICIPATION IN FORM OR INFORMAL E-LEARNING PROFESSIONAL DEVELOPMENT ACTIVITY WITHIN THEIR INSTITUTION

Participation in e-learning PD	Frequency	Percent
Yes	185	53.6
No	160	46.4
Total	345	100
No answer	63	

TABLE V
TYPES OF E-LEARNING PROFESSIONAL DEVELOPMENT STAFF ARE ENGAGED IN

E-learning PD activities	Frequency (n=185)	Percent
Informal professional development	130	70.3
Technical training courses run by a central unit within my institution	103	55.7
Attended e-learning events at my institution	87	47.0
Working one to one or in small groups with e-learning staff outside of centrally run courses	74	40.0
e-learning courses that cover both technical and non technical skills run by a central unit within my institution	68	36.8
e-learning courses/events run by my school department or institute	52	28.1
Courses and/or papers that are run within my institution and that counts toward a formal qualification	38	20.5
Courses that focus on non-technical skills and run by a central unit within my institution	35	18.9
Other	6	3.2

The most commonly stated reason for non-engagement was a lack of time. A substantial number of respondents also felt they did not need to engage in any professional development. A range of reasons were given for non engagement by those who ticked the 'other' category - these included non-applicability or relevance to ones' job, a lack of accessibility of PD opportunities, a lack of institutional support, new to the job and comments such as the one below relating to prioritisation of forms of PD. In the current NZ climate with its strong focus on the Performance Based Research Fund (PBRF), there was a significant view that time spent on teaching-related activities was not valued and the pressure was to produce research outputs.

Respondents were asked to rank the effectiveness of e-learning professional development on their e-learning activities using a scale of 1-4, where 1 represented completely effective and 4 completely ineffective (Table VIII).

The results of Table VIII demonstrate that the most effective form of professional development was informal professional development (32.99%), but in contrast to the

institutional assessments the second most effective form of PD was attending e-learning events (26.03%).

TABLE VI
EFFECTIVENESS OF E-LEARNING PROFESSIONAL DEVELOPMENT ON E-LEARNING
ACTIVITIES IN RESPONDENTS' INSTITUTIONS

e-Learning activities within respondents' institutions	Effectiveness of e-learning						Total
	1 Extremely effective (count, %)	2 (count, %)	3 (count, %)	4 Completely ineffective (count, %)	N/A (count, %)	No answer (count, %)	
Courses and/or papers that are run within my institution and that counts toward a formal qualification	7	16	8	1	5	1	38
	5.30	5.80	6.90	5.26	29.41	3.03	
Technical training courses run by a central unit within my institution	14	52	26	4	2	5	103
	10.61	18.84	22.41	21.05	11.76	15.15	
Courses that focus on non-technical skills and run by a central unit within my institution	4	21	9	1	0	0	35
	3.03	7.61	7.76	5.26	0.00	0.00	
e-learning courses that cover both technical and non technical skills run by a central unit within my institution	8	39	13	2	1	5	68
	6.06	14.13	11.21	10.53	5.88	15.15	
e-learning courses/events run by my school department or institute	8	23	13	3	2	3	52
	6.06	8.33	11.21	15.79	11.76	9.09	
e-learning courses/events run by my school department or institute	10	36	26	5	4	6	87
	7.58	13.04	22.41	26.32	23.53	18.18	
Have worked one to one or in small groups with e-learning staff outside of centrally run courses	33	30	4	1	1	5	74
	25.00	10.87	3.45	5.26	5.88	15.15	
Informal professional development	46	58	17	1	1	7	130
	34.85	21.01	14.66	5.26	5.88	21.21	
Other	2	1	-	1	1	1	6
	1.52	0.36	-	5.26	5.88	3.03	
Count	132	276	116	19	17	33	
%	100	100	100	100	100	100	

The reasons for the 160 staff who stated they didn't engage in e-learning PD are shown in Table 7.

TABLE VII
NON-ENGAGEMENT IN E-LEARNING PD WITHIN RESPONDENTS' INSTITUTION

Reasons for non-engagement	Frequency (n=160)	Percent
I haven't had the time	71	44.4
I haven't needed to do any PD	34	21.3
My institution provides inadequate practical support for e-learning	30	18.8
My institute doesn't offer any e-learning professional development activities	26	16.3
I am not rewarded for engaging in e-learning PD	26	16.3
The e-learning professional development that is on offer is inadequate	24	15.0
I don't want to or can't see the use/purpose for e-learning	21	13.5
Other	18	11.3
Not aware of what is on offer	13	8.1

TABLE VIII
EFFECTIVENESS OF E-LEARNING PROFESSIONAL DEVELOPMENT ON E-LEARNING ACTIVITIES IN RESPONDENTS' INSTITUTIONS

E-learning activities outside respondents' institutions	Effectiveness of e-learning						Total
	Extremely effective (1) (count, column, percent)	2 (count, column, percent)	3 (count, column, percent)	Completely ineffective (count, column, percent)	N/A (count, column, percent)	No answer (count, column, percent)	
Courses that count towards a formal qualification	16	19	12	4	-	-	51
	16.49	12.67	21.82	36.36	-	-	
Technical training courses	12	21	8	2	1	3	47
	12.37	14.00	14.55	18.18	12.50	17.65	
Courses that focus on non-technical skills	7	18	3	1	2	1	32
	7.22	12.00	5.45	9.09	25.00	5.88	
E-learning courses that cover both technical and non-technical skills	9	22	3	1	1	2	38
	9.28	14.67	5.45	9.09	12.50	11.76	
e-learning events	19	32	17	-	2	3	73
	19.59	21.33	30.91	-	25.00	17.65	
Informal professional development	32	36	11	3	1	6	89
	32.99	24.00	20.00	27.27	12.50	35.29	
Other	2	2	1	-	1	2	8
	2.06	1.33	1.82	-	12.50	11.76	

TABLE IX
CONSTRAINTS ON NON-ENGAGEMENT IN PD FOR E-LEARNING

Constraints	Gender		Total
	Male Count, (column percent)	Female Count, (column percent)	
I don't have enough time	69	132	201
%	42.59	53.66	(96.25)
I am not encouraged or rewarded	47	47	94
%	29.01	19.11	(48)
There are not enough PD courses on offer	37	57	94
%	22.84	23.17	(46.01)
I am not interested in e-learning professional development	13	11	24
%	8.02	4.47	(12.49)
Not relevant	1	7	8
%	0.62	2.85	(3.47)
Inflexibility with regard to when PD opportunities are available	2	1	3
%	1.23	0.41	(1.64)
Can't see the value of e-learning	2	2	4
%	1.23	0.81	(2.04)
Insufficient practical support	2	3	5
%	1.23	1.22	(2.45)
Not aware of what is offered	1	3	4
%	0.62	1.22	(1.84)
Lack of discipline or subject specific courses	3	4	7
%	1.85	1.63	(3.48)
Other	12	20	32
%	7.41	8.13	(15.54)

The main constraint was time, followed by “I am not encouraged or rewarded”, and there are “not enough PD courses on offer”. However, 12 percent of respondents indicated that they were not interested in professional development related to e-learning. There were slight gender differences in expressed constraints, with females stating more frequently they did not have time to engage, and males more often stating they are not encouraged or reward, and expressing less interest in e-learning professional development.

VIII. DISCUSSION

The types of activities undertaken by interview participants included a range of both formal and informal activities identified in the survey: attendance at conferences, seminars, and training courses internal or external to the organisation, e-learning and technical courses and conferences, discussion with colleagues, searching the net, reading articles, getting advice and help to colleagues, reading disciplinary content and engaging in research (and relating these to e-learning practice), going to best practice seminars, completing a teaching qualification, learning by experimentation (e.g. blogging), sharing ideas with others in a discussion forum, self directed learning, following a manual. Like the findings of the survey, interview participants described how the majority of their professional development activities were informal in nature. The type and nature of PD did vary significantly between individuals, influenced by modes of learning and learning preferences, and also the stages of one's e-learning trajectory.

There are considerable implications for both institutions and for the sector indicated in the findings of this study. Expenditure on ICT's is a major investment for the Government and for individual institutions. Given the constraints which are inevitable in education funding, it is important to obtain value for money from all such investment. This, amongst other factors means that expenditure needs to be tightly targeted to achieve maximum effectiveness. From the perspective of institutions, this means that their expenditure on e-learning needs to be producing the best possible outcomes for their learners. The findings of this project point to a number of issues, which if they are addressed, will be likely to lead to better student outcomes.

The research identified three key issues related to staff engagement in e-learning professional development. Firstly, there is the issue related to the perceived importance of professional development and the staff views of institutional commitment to providing appropriate professional development opportunities. The second issue is the type and relevance of the professional development available, while the third key issue reflects the level of engagement by staff in professional development opportunities and in particular incentives and barriers to actual engagement in professional development.

It is clear from the research that almost all of those

involved in e-learning are conscious of the challenges they face in ‘coming up to speed’ with e-learning technology and pedagogy and the pedagogy. This is encouraging, especially as Zemsky and Massy (2004) [9] suggested that despite the changes in technology there have not been similar advances in pedagogy. The research findings indicate that there is clearly an awareness of the need for professional development by staff. The official documentation and strategies suggest that at sector level professional development is seen as critical if staff members are to be adequately equipped as eTeachers. It is also clear that staff in institutions see professional development related to e-learning as very important. As Table II shows, more than 95% of those staff involved in e-learning who were surveyed said that professional development was important for their job. The research also showed that 75% of staff believed that their institutions valued professional development. While this is significant, it does suggest that some institutions do not see professional development as important or else they have difficulty communicating the importance to their staff. It might also suggest that some institutions do not match their rhetoric with appropriate resourcing. This view is supported by the data in Table IV which shows that only a little over half of the staff surveyed, participated in professional development opportunities provided by their institution.

The second issue is intimately related to the first. As Table 3 shows, the dominant forms of professional development involvement by the staff surveyed was informal. By that is meant that it was not part of the institution's organized professional development programme. However, it needs to be noted that the organized programmes were still a significant component of professional development provision with about 70% of those surveyed attending such events. Nonetheless, the five most frequently accessed forms of professional development were all of an informal nature (Table III). When looked at from staff participation rates however, a more concerning picture emerged as shown on Table V, where 70% of staff engaged in informal professional development and less than 40% of staff attended formal institutionally-run e-learning professional development courses which incorporated pedagogy and technology (i.e. technical and non-technical components). It is obvious from the figures in Table V, that the internally provided courses are not as effective as they should be in engaging staff. This is further emphasized in Table VI where staff surveyed clearly finds the informal opportunities more effective in enhancing their e-learning development.

The third issue, regarding the level of engagement in professional development related to e-learning by staff will be of considerable interest and concern to institutions and to their professional development units responsible for providing such opportunities. It raises concerns about the effectiveness of such courses, about their focus, and their timing. This is highlighted in Table VII which surveyed factors related to staff non-engagement with e-learning professional development opportunities. As would be

anticipated, time is the most significant issue identified (in the New Zealand environment, this has been accentuated over the period of the project because of the emphasis given to achieving rankings in the Performance-Based Research Fund¹ (PBRF) which has consequently impacted on the priority being given to teaching and learning by staff and institutions).

The research indicates that there is a significant disjunction between professional development opportunities being engaged in (Table 6) and the reasons why staff do not engage in the opportunities provided by their institutions (Table VII). This issue was touched on by Donnelly and O'Rourke (2006) [1] when they noted (p.39) that; "*When utilizing emerging technologies, to support continuing professional development of academic staff, it is essential to reassess the pedagogical methods employed to do so...*"

The question must be asked as to whether the provision of professional development in e-learning by institutions is appropriate or whether it is a 'traditional' professional development format with e-learning content. As Donnelly and O'Rourke suggest, it is likely that the approaches to professional development supporting e-learning do not reflect the pedagogy of e-learning. While this is not surprising given the rapidity of change in the e-learning dimension, it does indicate that when Highways and Pathways talked on p.46 about a; "*...significant challenge for tertiary education providers to find ways to invest in this critical staff development.*"

Institutions still have some considerable way to go to address this issue.

IX. CONCLUSION

The incorporation of Information and Communication Technologies (ICT's) into the academic environment and the enthusiasm for introducing and using e-learning demonstrated by tertiary organizations and their staff continues to grow rapidly. However, as Zemsky and Massy (2004) point out, there does not appear to be a concomitant change in teaching approaches by staff and institutions. Bringing about such a change presents a significant challenge for tertiary education organizations (and their national tertiary education systems). As the move towards an increasingly digital future continues unabated the challenges of accommodating rapidly changing technologies as well as responding to the expectations of an increasingly technically literate student body continue to grow. This was highlighted by Donnelly and O'Rourke when they noted (p. 32, 2006) [1]; "*...the demand for higher education institutions to put e-learning initiatives and the accompanying academic staff training and development firmly on their agenda...*"

Issues that are impacting on this agenda include; the lack of experience of academic staff as eLearners and consequent lack of confidence, the importance of ensuring that there is an emphasis on ePedagogy in any professional development

programme, and the challenge of taking teachers belief structures into account when initiating change. In a major review on the impact of academic development on student learning (Prebble, Hargraves, Leach, Naidoo, Suddaby and Zepke, 2004) [10], the authors explored this area in some depth (pp.42 – 47) and noted in one of the key propositions advanced in the report that; "*Intensive and comprehensive staff development programmes can be effective in transforming teacher's beliefs about teaching and learning and their teaching practice. In particular, teachers can be assisted to shift from a teacher-centred approach to a learner-centred approach, and to align all the elements of the teaching situation in order to achieve positive student outcomes.*"

It is suggested here that on the evidence of this investigation, formal e-learning professional development is not yet meeting the considerable needs of staff, institutions, and the sector with respect to delivering the a key goal of the interim Tertiary strategy (4); "*e-Learning has a vital role to play in strengthening New Zealand's tertiary education system and helping it to better meet the needs of learners.*"

There is a strong need to focus on fully engaging the staff involved in eTeaching and those who will become involved. The evidence indicates that currently, the majority of staff are initiating their own professional development in an informal, ad hoc manner. The challenge for professional development teams and their institutions is to incorporate the factors which make this approach by staff so effective and to provide those opportunities in a more structured and supportive way. Overall three points stand out; the place of, and perceptions about, e-learning professional development; the tension between formal and informal approaches to professional development; and the barriers to engagement in professional development. This research does not provide a solution to the issues of ensuring that staff involved in eTeaching is universally effective and well trained in pedagogy as well as the technology. However, it does provide the foundations for a framework upon which solutions may be able to be constructed.

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