Institutional programme design strategies supporting forced change:
Guidelines derived from case studies Christchurch earthquake on 22 February 2011

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Acknowledgements

Summary

The earthquake of February 22nd 2011 has required Christchurch educational institutions to cope with the consequences of a natural disaster. Christchurch Polytechnic Institute of Technology's (CPIT) ability to deliver education was severely affected as a result of restricted access to CPIT's main campus for six weeks, along with Christchurch city infrastructural disruptions (water, sewage and public transport) requiring much of CPIT's staff and students to continue teaching and learning from alternative learning spaces.

The impact of forced change on CPIT, decisions made with regards to programme design and the accompanying effect on students are investigated. The term 'programme design' refers to processes undertaken to re-develop or design programmes of learning with a focus on student learning and flexible delivery. An integrated programme design framework, as deployed at CPIT, includes aspects of academic staff development, student support and evidence-based research to inform the practice of scholarship of teaching and learning precepts.

In this project, case studies of six selected programmes were analysed to derive a set of guidelines, based on sustainable programme design related strategies, to assist NZ educational institutes to be better prepared for unforeseen disasters. The impacts of the earthquake were collated through focus groups with students and staff and data collected on a wiki of changes made as a result of programmes' re-location to alternative learning spaces. Guidelines were distilled using a qualitative/ inductive methodology through comparative case study using 'building block' approaches for case study theory development.

The guidelines recommend institutions to:
- Be prepared for forced change beyond logistical issues and in the context of this report, to be prepared through institutional and staff development to better cope with forced change.
- Provide resources that will assist the forced change process
- Have planned methods for collecting and evaluating changes made and the decisions that underpin these changes.

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Introduction

In this report, guidelines are presented on how to plan and recover from a natural disaster, as derived from selected case studies of programme design interventions at Christchurch Polytechnic Institute of Technology (CPIT). The guidelines include suggestions for institutional preparation prior to forced change events; supporting programme change through a period of forced change; and using lessons learnt from the event to move into the future.

The report begins with an overview of the project context by detailing events of the: 2010 – 2012 earthquakes and aftershock sequence; role of the CPIT Centre for Educational Development (CED) in supporting programme design; work undertaken as a result of closure of the main CPIT campus in February 2011; and this project's main focus. A short literature review is then followed by a description of the research methodology used to collect and analyse data and develop the guidelines. Findings are then reported through programme case studies, programme changes and sustainability of changes beyond 2011. After a discussion section, the guidelines are presented.

Project Context

On September 4th 2010, the Central Canterbury region in the South Island of New Zealand (NZ)-Aotearoa, was struck by a Richter scale 7.1 earthquake (Stuart, 2010). As a result of this earthquake, faults under the Port Hills and the city of Christchurch became activated (Stramondo et al., 2011). On February 22nd 2011, a strong aftershock of Richter scale 6.3 occurred (Moore, 2001). This earthquake generated some of the strongest gravitational forces ever measured and caused lives to be lost as an outcome of rock falls on the Port Hills and collapse of buildings and structures within and outside the central city and satellite townships (Moore, 2011). The quake also caused severe liquefaction[1] in eastern parts of the city, leading to extensive damage to city infrastructure (roads, electricity supply (Massie & Watson, 2011), water and sewage) and buildings (Stevenson et al., 2011). At the time of writing this report, just over one year after the 2011 event, much of the damaged infrastructure is still under repair (Massie & Watson, 2011) and the NZ government made a decision to condemn over 6000 houses in the suburbs east of the central city ("6000 red zone homes", 2011). Large aftershocks in June 2011, December 2011 and January 2012 have added to the over 10,000 aftershocks the city has experienced since September 2010,

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[1] Liquefaction is a physical process whereby soil, subjected to pressure from an earthquake, changes structure and behaves like a liquid. The liquefied soil is forced through on to the surface, appearing as a sludge that gushes up through the ground, covering homes and sections with a layer of thick, sticky mud which later dries out to a fine, but soggy sand. http://en.wikipedia.org/wiki/Soil_liquefaction

leading not only to continual damage to physical structures but also on-going emotional stress to Cantabrians (Gawith, 2011).

The immediate effects of the initial and continued aftershocks on all educational institutions in Christchurch have been profound. This report focuses on the experiences of one Christchurch tertiary institution. The Christchurch Polytechnic Institute of Technology (CPIT) is one of three of the larger publically-funded tertiary institutions in Canterbury. The main CPIT campus is situated on the south-eastern parameter of Central Christchurch. CPIT also includes a large 'trades'-programmes-based campus in Sullivan Avenue, two kilometers south east of the main campus and a number of satellite Campus Connect facilities. These offer computer-based training in suburban areas of Christchurch located at New Brighton (east of the city), Bishopdale (north) and Hornby (south-west) and in the township of Rangiora (25 kms north of Christchurch). Campus Connect facilities consists of a computer suite with limited space for staff offices. (CPIT, 2012a).

As a result of the severe February 2011 earthquake, CPIT's main campus was closed for six weeks. Safety procedures required the campus to be closed and not re-opened until structural engineers had completed a check of all CPIT buildings. Two other major effects of the earthquake also impacted on CPIT's capacity to continue with normal operation. Firstly, as a result of the NZ government's declaration of a state of national emergency, the CPIT main campus was enveloped into the 'red zone'[2] central city cordon for five weeks. This meant that there was NO access to the campus site. Secondly, during the cordon period, electricity supply was cut, leading to dis-continuation of CPIT's information technology capacity. As a consequence, staff and students were unable to access the campus physically or virtually, affecting CPIT's initial ability to provide teaching and learning facilities and maintain student support services. The time of closure occurred at the start of the first semester of the 2011 academic year. Many programmes had either commenced the week before, on Monday the 21st of February or were planned to begin in the following week. Therefore, academic programmes were at the initial stages or just about to begin.

Following a return to the main campus at the end of March 2011, safety considerations, public transport rerouting, CPIT's proximity to the parameter of the red zone and campus building repairs meant that during the first semester of 2011 (February to July), 70% of CPIT staff and students were physically located away from the main CPIT learning environments.

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[2] The 'red zone' cordon was imposed on 22nd February 2011 and at the time of writing this report, still encompasses the central core of the city due to the need to demolish hundreds of damaged buildings.

Due to the unpredictable nature of the event, rapid response was required by the institution, staff and students to re-design programmes ready for delivery in very different teaching and learning settings. Although CPIT had existing policies for managing campus health and safety, the scale of the disruptions caused by the February earthquake meant that CPIT had a wide range of management, academic, infrastructural and staff/student support challenges. Within the focus area of this report (programme design), there was no formalised process for dealing with rapid forced change. Therefore, this project sought to determine how CPIT organisation, staff and students responded to such forced change in relation to curriculum delivery, how these changes impacted on learning and teaching and the sustainability of these changes.

Role of CPIT's Centre for Educational Development

The Centre for Educational Development (CED) at CPIT was established in mid-2010. The CED's main role is to lead and support the development of high quality, flexible[3] and inclusive learning experiences. CED staff work together with CPIT teaching staff to support programme design, teaching, learning and assessment, and academic professional development. Therefore, the prime goals of the CED are to:

1) support staff with the redesign and development of programmes of study,
2) provide resources useful for redesign or development of programmes of study
3) provide leadership in the development of the scholarship of teaching and learning.

The CED's programme design framework is based on Biggs' (2004) constructive alignment model. In this model, students' deep learning is enhanced through developing and deploying purposefully designed interconnections between graduate outcomes, learning outcomes, learning activities and assessments. The aim of CED programme design framework is to provide learning-centred approaches which place greater emphasis on learning by doing and application than just on learning content and greater weight on what learners do to learn than what teachers do to teach. Learners are actively engaged in the learning environment as active participants rather than being passive recipients of information.

Three weeks after the February 22nd earthquake, the CED along with representatives from non-teaching divisions of CPIT formally re-convened at the Bishopdale Campus Connect.

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[3] Flexible delivery implies providing learning opportunities to students that can be student directed in terms of time/day/space. eLearning is but one example of flexible delivery options.

The CED, Adult Education section and the Academic Evaluation Unit (AEU)[4], were tasked with supporting and recording academic programme changes as individual programmes worked through the challenges of re-establishing learning delivery in a diverse range of learning spaces. Apart from the trades-based programmes situated at Sullivan Avenue, almost all other programmes were faced with between one term to one semester of having to work from alternative localities. The main city campus was firstly cordoned off and then had to be extensively checked and repaired before programmes were finally allowed to re-commence in semester two (late July to beginning of August 2011).

Work on programme changes as a result of the earthquake

As a result of the earthquake, CPIT began negotiations with the Tertiary Education Commission (TEC) and the New Zealand Qualifications Authority (NZQA) as to how to document programme changes. In particular, to document the effect of these required changes on the academic quality assurance requirements CPIT was mandated to meet. NZQA had begun the process of a Targeted Review of Qualifications (TRoQ) at the end of 2010. An objective of TRoQ is to move qualifications from a competency-based to outcomes-based direction. As a result of the disruptive nature of the earthquake on the 2011 academic year, NZQA provided CPIT with dispensation. In effect, CPIT had to ensure students were provided with learning and assessments to meet graduate profile statements, instead of the necessity to meet performance criteria within the many 'unit standards' that make up NZ National qualifications (Wilson, S. Memo from CPIT Academic Division Director to Academic Board, April 29th 2011).

The timeline in Table 1, details the events of 2010/2011 and the consequences on CPIT operational capacity.

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[4] The Academic Evaluation Unit (AEU) provides leadership and guidance in academic matters including programme/course change advice; interpretation of academic policies and procedures, and programme and assessment regulations; degree programmes monitoring; moderation; approval and funding of courses/programmes; and NZQA Review of Qualifications (TRoQ) coordination.

Timeline of 2010/2011

Table 1: Summary of events

Date	Events	Consequences
September 4th 2010 (Saturday)	7.1 Canterbury earthquake occurs at 4:35 am	CPIT closed for a week but sustained no major structural damage.
December 26th 2010	A swarm of more than 32 shallow aftershocks-many centred directly under the city occurred throughout the day.	CPIT was already closed for summer break.
February 22nd 2011 (Tuesday)	6.3 at 12:51 pm	As detailed in this report, CPIT's main campus closed for 6 weeks. It would be July/August before all programmes returned to the Madras Street campus.
February 23rd to 4th March	Staff and students contacted	All campuses closed. Main campus enveloped into 'red zone'. Electric supply cut affecting CPIT IT capability.
Week beginning February 28th	Management team re-convenes	CPIT senior and mid-level management meet to consider logistical issues related to relocating all Madras Street campus programmes.
March 7th	CED convenes with rest of Academic division at Campus Connect Bishopdale.	CED staff allocated programmes to support. Wiki (cpitced) set up providing programme design information. A separate Wiki (cedprogdesign) organized for CED and Adult Education staff to record programme changes.
March 14th	Sullivan Avenue programmes re-start.	Information and enrolments, student support re-located at Sullivan Avenue. CPIT management team and academic divisions located at Campus Connect Bishopdale. CPIT IT capability restored.
April 4th	Many programmes re-start	Programmes reconvene at alternative learning spaces including various clubs', halls, Sullivan Avenue and Lincoln University.
June 13th	3 large aftershocks occur in the early afternoon.5.9, 6.1 and 5.1.	CPIT closed for a week.
July 25th	Snow adds the 'icing on the quake'	CPIT closed 3 days
August 1st	Second semester begins	All programmes return to main campus
August 15th	More snow turns Christchurch into the 'white zone'.	CPIT closed 2 days

Project focus

This project does not study the efficacy of the institution's health and safety or overall management responses. Instead, the emphasis of this project is to record and evaluate the effect of the Christchurch February 22nd earthquake and consequences on the core objectives of CPIT as an educational institution, which is the delivery of programmes for learning. Therefore, this study examined responses to forced programme design change. In particular, this study focuses on the decisions made regarding teaching and learning and assessment approaches and the impact these changes had on the institution, staff and students.

At least one programme from each of the five faculties [5] at CPIT participated in this study. Decisions made at the time of the unexpected/unplanned event, may influence subsequent activities. Changes may have a flow on effect, leading to positive (exampled by insightful changes to programme delivery leading to enhanced student learning) or negative (disengagement by staff and students) outcomes for the institution, staff and students. Hence, this project investigated what decisions were made by the institution and staff and the effect of these changes on students' learning. In particular, to understand the reasons for and ongoing sustainability of these decisions.

Literature background

In this section, a brief overview of the literature relevant to this report is introduced and discussed.

Impact of natural disasters on education

Due to the unplanned and unexpected nature of natural or man-made disasters, the support mechanisms and barriers to institutional change and provision of student support systems in the wake of a natural disaster are important aspects to study (Zevenberger, Sigler, Duerre & Howse, 2000). Through an initial literature search, limited research on the impact of natural disasters at the college or university level in the United States of America (USA) (Piotrowski, 2008) or in New Zealand was found. Change of any kind, including those wrought by natural disasters, bring with them both stress and opportunities (Murrell, 2007). When change is

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[5] In 2011, there were five faculties in CPIT's organisational structure. The five faculties were Creative Industries, Health, Humanities, and Science, Te Puna Wanaka and Trades Innovation Institute. In 2012, the faculty structure was dis-established and the Educational and Applied Research Division (now called Te Waka Ako) was set up to administer all academic programmes.

unexpected or unplanned, institutional, work group and individual reactions can be very different. Some may respond with innovative responses, others may entrench and resort to traditional well-tried approaches (Piotrowski, 2008). Therefore, much can be learnt from the experiences of staff and students as the institution and individuals deal with the forced change brought about by the earthquake of February 2011. As an example, the cultural diversity of CPIT's staff and students, may lead to a variety of responses, for instance from Maori pedagogical approaches (Ka'ai, Moorfield, Reilly & Mosely, 2004; MacFarlane et al., 2008; Mead, 2003).

Dealing with forced and unplanned change

Organisational management literature advocates the use of planned approaches to achieve effective change (Kotter & Schlesinger, 2008). However, forced change wrought by the forces of nature are difficult to forecast or anticipate. Traditional strategies for dealing with resistance to change become unrealistic when an organisation is faced with wholesale disruption and needs to rapidly and nimbly progress to restore 'normal' delivery and services.

Shul and Laanan (2006) use the term 'forced or unanticipated transitions' to describe changes students have to undertake when moving from a damaged college campus to another. Interventions extended across personal (family communications, counseling), administrative (financial advice, re-orientation) and academic requirements (academic advice, student work). The wide range of interventions signals the complexity of the many adjustments required by individual students to change over from one campus to another.

Murrell (2007) describes the phrases for dealing with natural disaster as, *preparation, immediate impact, recovery and lessons learnt*. Within the context of business and corporate organizational management, he provides a case study from experiences learnt after Hurricane Katrina destroyed large parts of the city of Louisiana in the USA. His main advice is the need to learn from the experience and to deploy this learning towards improving the capacity of organisations to cope with future episodes of natural disasters.

Programme changes as an outcome of forced change

There is limited literature on the impact of forced change through natural disasters on programme change. Reports on the impact of the Katrina hurricane show impacts on time, environment and resources, with staff being empowered to make changes (Johnson, 2007). While such reports may note the need for rescheduling, changing assessments and more

flexible delivery there is still a focus on re-establishing the organisation's original capacity (Collins, Savage & Wainwright, 2008; Marsh, Carlson & Irons, 2010).

In considering staff responses at a time of considerable stress, it needs to be recognised that cognitive resources are depleted at such times resulting in a tendency to revert to automatic rather than controlled processes (Logan, 1980). Educational beliefs are perceived to be grounded in personal experience and as a consequence, resistant to change (Kane, Sandretto & Heath, 2002). Hence, educational values and beliefs of staff will strongly influence their responses to sudden change.

Research methodology

The impact of the earthquakes is explored on three levels

1) institutional effects

2) programme design deployment/implementation at a time of forced change

3) impact of institutional/programme design changes on students.

The research questions at each level are as follows:

1) <u>Whole institution focused:</u>

What methods of curriculum delivery have been used to cope with forced change?

By what processes were these methods developed?

What are staff expectations for the sustainability of these changes?

Also, were there key players who influenced change (either to support or obstruct it)?

2) <u>Programme design focused:</u>

What methods of curriculum delivery have been used to cope with forced change?

What was the rationale for these changes?

What were the drivers and barriers to these changes?

What was the process?

What principles did teaching staff follow for programme re-design and why?

3) <u>Student focused:</u>

What methods of curriculum delivery have been used in their programme of study during this period?

Has the focus been on knowledge delivery or engagement in active learning approaches?

How are these different from delivery methods used previously? (where appropriate)

How have you been supported through this period?

How would you describe your overall learning experience during this period?

As the teams from the CED, AEU and the adult education team teaching the Diploma in Tertiary Learning and Teaching (DTLT)[6] programme convened at the beginning of March 2011 to begin supporting programme re-development, initial questions were derived from several meetings discussing the impact of the earthquake on CPIT's ability to respond. These questions were then adapted as based on an interim literature review to write the proposal for this project. The original focus of the questions was broad and represented CPIT's organisational philosophies relevant in February 2011.

In this project, a programme is defined as a course of study that when completed successfully, leads to the award of an accredited institutional or National qualification. It was intended that at least one programme from each of the five faculties at CPIT would participate and this was achieved. Selection of participating programmes used purposive sampling (Silverman, 2000; Cresswell, 2003), to select programmes that were aligned to the research aim to develop guidelines for supporting 'forced change'. Purposive sampling demands careful consideration of the population and the sample to be selected. In this project, a typology of responses, based on monitoring of programme changes was used to inform the sampling (Stake, 1994). This typology included assessing the influence of time, resourcing and space considerations on programme design and the impact these had on teaching and learning. The information entered into the typology was gathered by CED and AEU staff immediately after the CED convened in mid- March, a fortnight after the earthquake of February 2011. Programmes invited to participate in this project were selected from a database, hosted on a web accessible wiki (cedprogdesign) and compiled by the CED, of programme changes occurring post-earthquake. The programmes selected had at least four out of eight quantifiable programme changes including programme re-design, structural changes, assessment modification, delivery methods, increased use of technology, changed tutor/student communication modes, learning spaces and postponement of delivery (See Appendix 1). By nature of this selection process, programmes selected were experiencing the most disruption through losing access to the CPIT main campus. In total, the selected programmes contributed 367.3 equivalent full-time students (efts) out of the total efts delivered by CPIT in 2011 of 5,509 (CPIT, 2012b).

With each of the three 'levels' (institutional, programme design and students) explored, data collection involved using workshops/facilitated focus groups, supported with short questionnaires and collection of programme documentation (programme approval and

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[6] The DTLT is the primary staff capability and development programme provided to CPIT staff. The DTLT prepares academic staff for facilitating and supporting the CPIT student-learning focused learning environment.

amendments) pre and post-earthquake. Focus groups or workshops comprising separate groups of volunteer staff (to investigate institutional and programme design) and students (to understand impacts on students) were convened. The focus group sessions were mainly facilitated by a staff member of the CPIT Adult Education team. Focus group interactions were audio taped and transcribed for analysis. The precepts of participatory design (Spinuzzi, 2005), a form of participatory action research that is useful for providing participative co-construction of knowledge by both research participants and researchers, was used to inform the organisation of the focus groups/workshop objectives.

Data analysis was underpinned by interpretive/constructivist paradigms anchored by theories of change as exampled by the work of Fernandez, Ritchie and Barker (2008) who used sociocultural theories to explore mandated curriculum changes in the New Zealand school context. Initial thematic analysis was completed using qualitative analysis software, nVivo. Guidelines were distilled using qualitative/ inductive methodology through comparative case study using 'building block' approaches for case study theory development as described by George and Bennett (2005). In this approach, commonalities and dis-similarities are sorted and compared to induct meaning. The use of a rigorous case study theory development is crucial towards establishing generalisability of the findings (Eisenhardt & Graebner, 2007). The 'building block' approach provides a proven method for organising, analysing and understanding diverse and copious streams of data (George & Bennett, 2005).

Analysis of programme design adoption may be studied based on stages that innovations move through in educational organisations as adapted from Davis (2010), in turn from work undertaken by the United Kingdom's Learning Skills Network (2008) to assess the adoption of elearning. Stages of maturation of innovation include *localised, internal integration, transformative, embedded and* finally, *innovative*. Establishment of the different levels of maturation/programme development, both pre and post-earthquake, for two levels to be explored (institutional and programme design) provides understanding on resilience of ontological influences (historical/social influences on teaching sections and individual tutors) and how these may be addressed during times of forced change. An analysis of how these influences were addressed may lead to sustained adoption of strategically worthwhile change.

A selected and adapted rubric is used to establish the longer term effect of changes undertaken as a result of the disruptions, caused by inability to access the CPIT main campus. This rubric in Table 2 is a synthesis of work (Davis, 2010 and Learning Skills

Network, 2008) on evaluating the adoption of information and communications technology (ICT) innovations into educational organisations.

Table 2: Stages of adoption of programme design adapted from Davis (2010) and Learning and Skills Network (2008).

Stages of maturation	Characteristics
Localised	Continued use by teaching section/individual tutors
Internal integration	Adopted by teaching section as a norm after cessation of need to use
Transformative	Best practice recognised outside of teaching section and disseminated as example to other parts of institution
Embedded	Practice included into formal changes to programme documentation
Innovative	Organisation changes its scope/activities to leverage off the 'new' practice
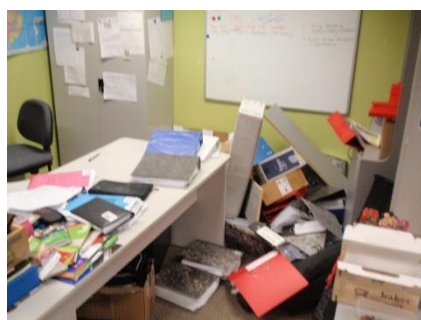
Ground floor after 22nd February
March 2011

Red Zone cordon, by CPIT northwest corner

Findings

In this section the case studies of the programmes participating in this project are reported. To begin, each program is introduced through the first section on programme profiles. Details of the impact of the earthquake and subsequent re-location of each programme to alternative learning spaces follow in the section detailing the programme case studies. The

last section on <u>programme design findings</u> details the programme changes made and how some changes have been retained.

Programme profiles

A summary of the participating programmes is provided in Table 3. For ethical purposes, participating programmes are identified using generic domain titles and not by specific programmme names. Pseudonyms are used for any names of persons, courses or alternative premises (where appropriate).

In table 3, the programme, level of study, number of staff and students participating in focus group meeting and a brief summary of the programme and impact of the earthquake on each programme is provided. An extension of the programme details and earthquake impacts follows in the next section. Of importance is that all of these courses are normally based at the CPIT main campus. Therefore, all of the programmes reported in this project, sustained varying degrees of disruption to normal academic delivery.

Table 3: Details of participating programmes

Programme	Level	No. of staff	No. of students	Impact
Built environment	6/7	5	6 (year 2)	Programme start delayed for four weeks. Re-started programme on-campus
Engineering	5/6	4	6 (year 1)	Programme start delayed for four weeks. Started late at Sullivan Avenue and remained there for 1 term. Lost access to specialised software and teaching /learning resources i.e. drawing boards.
Hospitality	5/6	3	20 (year 2)	Programme start delayed for three and a half weeks. Re-located to alternative campus (Campus Connect in Hornby, Southern Institute of Technology and South Hotel). Lost access to specialist workrooms and equipment.
Recreation	5/6/7	9	14 (year 2)	Programme start delayed for three weeks. Dispersed out of Canterbury to complete out-door based practice activities for entire first term.
Human services	6/7	4	7 (year 3)	Programme start delayed for four weeks. One term in alternative premises (Working Club) and lost access to teaching resources.
Languages	5/6/7	6	7 (year 3)	Programme start delayed for two weeks. Re-convened at South Club for one term. Lost access to teaching and learning resources.

Programme case studies

Details of each programme's responses to the earthquake are derived from focus group interviews with staff and summaries from CED database/wiki and notes. Methods used by each programme to meet the challenge of changed delivery site are summarised in the following sections.

Built environment

Built environment was one of the few programmes to return back to Madras Street campus as soon as the red zone cordon shifted sufficiently to not encompass CPIT. The programme was originally planned to begin in the first week of March 2011. Therefore, in effect, this programme had a delayed start of four weeks. One important aspect with the foreshortened 2011 programme was the removal of the normal student orientation/induction activity. This programme had a comprehensive orientation at the beginning of each year to establish shared understanding of programme aims and philosophies, including preparing students with academic skills. The removal of induction for year one students impacted later on students' preparedness for the academic expectations of the course. Assessments were reorganised to assess only the 'essentials' and assignment dates were also shifted to allow students more time to work on projects.

Engineering

This programme began delivery at the CPIT Sullivan Avenue site. The normal programme learning and teaching resources in the form of drawing boards, computers and library books were inaccessible for the first few weeks of the course. Learning activities were computer suite-based with extensive hands-on practice to learn the intricacies of specialised software. Therefore, tutors had to improvise quickly to replicate some of the facilities required to deliver course content. The courses in the programme lost four weeks due to a later than planned start but these were recouped through shorter student and staff breaks after the first term and first semester. Courses in this programme usually ran for one semester. Therefore, by the second semester, students were back to 'normal' delivery.

Hospitality

Hospitality programmes suffered severe disruptions due to loss of access to specialist learning areas. Learning activities were centred around well-equipped 'work realistic' work-rooms and purpose built facilities at the Madras Street site. The programme relocated to learning spaces which included theory classrooms based at the Southern Institute of

Technology (SIT)[7] campus, tutors' 'offices' at a CPIT Campus Connect and make-shift practical facilities at a local pub, the South 'Hotel'. The School provided vans to assist with transporting students between classes as each of the three learning spaces were located several kilometres from each other.

Extensive pastoral support of students was detailed by staff and these were corroborated by students. Students appreciated the efforts taken to ensure students were able to travel out to the alternative premises and transportation between the three learning spaces.

Recreation

Before February 2011, existing recreation programme had little student interaction across the three years of study. The school took three weeks to reconsolidate and reorganise students from all three years of the programme. As it was usually the time of year when students embarked on actual out-doors activities (NZ summer/early autumn time being December to April), the tutors decided to combine year one, two and three students into activity groups. Each group then participated in an outdoor based activity (kayaking, rock climbing, tramping/backpacking) outside of Canterbury. Main outdoor sites in Canterbury (Port Hills, Hurunui River) were considered to be logistically too difficult to access due to closed public access and ongoing aftershocks.

Senior students were assigned roles as assistant instructors and carried out some coaching and formative assessment sessions. Content across several courses was integrated and assessment requirements were adjusted to allow for shorter course duration. The emphasis was on building a community of learning. Assessments were also streamlined and assessment dates which were normally distributed through the semester were shifted towards the end of the semester.

Human services

This programme started about a month later than planned. The normal programme was based on traditional didactic teaching with no use of blended learning/elearning. After February 2011, human services students and staff reconvened at the Working Club where the usual format of theory sessions was followed. Some tutors also started using the CPIT learning management system (LMS), Moodle, to supplement face to face delivery.

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[7] All the Christchurch-based public tertiary institutions pooled resources. Many CPIT programmes were relocated to SIT and Lincoln University hosted almost all the programmes from CPIT's Faculties of Commerce and Health, Humanities and Science for the first semester of 2011.

A major impact was the difficulty with work placements for student. Many agencies had been affected and were closed or their changed circumstances meant they were not able to take a student.

In Year 3 the one course was converted to mainly distance delivery using CPIT LMS, Moodle, delivery with face to face tutorials once a fortnight. Class access to computers was problematic e.g. for library database sessions. Staff provided more hardcopy articles.

Assessments were unchanged except for requiring fewer words in an assignment and altering some dates for submission e.g. the one assessment has reduced the number of annotations required from 10 to 5 and other assessments had a reduction in essay word count requirements.

Languages

Before February 2011, class and year-based classroom activities meant there was limited learning activity interaction during class time between different language learning levels. Therefore, this programme took the opportunity to exploit the physical structure of their alternative learning space, to model and practice 'whanau' learning approaches and strategies (Kaʻai T. M. et al., 2004). All classes were delivered in the same large room, meaning each class was not physically separated from another. Junior classes could observe their more senior peers using the language competently, providing opportunities for modeling to take place. The effect of the wananga-style of learning was more intense students' learning. This meant the assessment process was not compromised.

There were challenges around supporting degree students who had chosen a distance delivery option. Student support extended to negotiations with South Library, a public library close to the South Club. Through this, students were granted access to at least thirty computers. In so doing, students who had lost hardware or had intermittent access to power supplies due to the on-going aftershocks, were assisted to progress their studies.

Programme design findings

Data obtained from various student and staff focus groups included information on how individuals, schools and faculties coped with logistical issues caused by loss of access to CPIT's main campus and the consequential requirement for classes to be held in alternative physical spaces. This may have been due to the intensity of the February 2011 earthquake and associated disruptions to individual's personal, work and study. Responses from focus groups became a platform for sharing personal experiences and for frustrations to be vented.

In keeping with the objectives of this study, the main themes established and reported here have a programme design focus.

Changes made to programmes

The consequences of the earthquake impacted on the time, resources and learning environments available to deliver programmes. In response to this, CPIT teaching programme teams adopted a range of strategies, often employing multiple strategies.

A summary of the impact on staff and students significant programme changes, as identified through analysis of staff and student focus group transcripts are reported in Table 4. In this table, *selected* programme changes and their impact on staff and students, as derived from the wiki established by the CED to record programme changes and supported by focus group data are summarised. These strategies included: restructuring the programme; wholesale programme re-design; changes to assessments; use of technology; changing delivery approaches; postponing programmes; and providing additional learning support. The impact of a changed programme on students' course completion is also provided in Table 4. Selected focus group transcripts are presented in the next section to support the summarised impacts.

Table 4: Changes made to programmes and impact on staff and students

Programme	Programme changes	Impact on staff	Impact on students	Course completion 2011	Course completion 2010
Built environment	Not running orientation as planned	Ongoing need to work on addressing learning environment culture	Less cohesiveness and awareness of learning environment requirements	92.4%	89.5%
Engineering	Shortened course	Had to select crucial skills and concentrate on these	Aware some content missing but unsure as to what has been removed	87.3%	85%
Hospitality	Re-timetabling to fit into a range of disparate learning spaces	Worked as 'mobile tutors' becoming completely self-sufficient and innovative	Extra travel time coupled by loss of some practice components	82.5%	84.5%
Recreation	Integration of all three years	Dispersal of students to	Some senior students	80%	No data as revised programm

	of the programme into learning activity groups	outdoor learning environments.	unprepared for roles as assistant instructors, preferring to retain student roles.		
	Assessments rationalised	Clearer and more targeted assessments retained			
Human services	Movement of some courses to blended learning	Allowed tutors to try out blended learning so as to make decision to adopt for more courses in 2012.	Students were resistant and unprepared for requirements for self-directed learning.	94.7%	90.2%
	Assessments modified	Word count lessened.	Lessening word count made assessments more difficult to some students		
Languages	Implemented whanau model of teaching/learning due to physical configuration of learning space.	More sharing of limited resources and greater opportunities for students' language practice not only in teaching/learning situations but also informally outside of 'class'.	Junior students had opportunity to see and experience the language in action. More advanced and senior students could become 'older brother/sister' to assist junior students.	79.4%	81.9%

Impact of programme design decisions

The following findings reported are derived from transcripts of the focus group interviews.

This section provides information on how the programme changes described in the section above, impacted on staff and students*.*

Staff responses to programme change

Many staff responses were focused on the challenges imposed by having to make rapid changes to their teaching delivery. Many had to adjust to changes not only in their professional lives but also in their personal lives due to the impact of the earthquake on their homes and families.

Examples of changes made to programmes and tutors' reflections on the adoption of new practices include one tutor's transition into considering blended learning as an option and

reflection on need to develop their skills with the CPIT learning management system (LMS), Moodle.

"Oh, there weren't that many major changes that I made in terms of the courses that I was teaching. I guess there was more content to fit in over a shorter period of time, so, those students, I gave them self-directed learning tasks outside class time. More of that, tried to use Moodle a bit more but my skill was at a kind of beginning level, though."

Another tutor who was more familiar with the LMS reflects on the extra workload that eventuated and how the students coped with using Moodle.

"I kind of had to up skill my Moodle knowledge and I used Moodle a lot. I did a lot of worksheets so that students were prepared for both courses. So it meant that I could fit more content, whereas I would have done it as more active learning. Did mean I made hell of a lot of marking cos I gave feedback to every single student. So it was great, doing all these worksheets, but it meant it just took me hours to do all this feedback. And they were really open to it and I think that they are far more savvy with Moodle and communicating that way than the first year students I saw last year "

As with the above tutor, other staff commented on the high workload that eventuated due to the truncation of the first semester of 2011. Workload issues were compounded by the need to travel further to alternative learning facilities, having to redevelop teaching resources, lack of dedicated office space to work from and accumulation of assessment events to end of semester due to timetable changes.

"The hardest thing for us is that all our assessments ended, at once, at the end of the semester, just because [of] the way it had been."

Some staff found it difficult to replicate their normal mode of teaching delivery and had to rapidly and creatively develop alternatives. Again, this added to the workload of tutors.

"And the teaching impact on me is not getting, not being able to use the crags. You have to improvise and use indoor venues and having to modify our teaching methods to cope with changes and there are big craters around, not having those teaching venues. Have to use your imagination."

Student responses to programme changes

Student responses were more diverse, covering the following issues.

Difficulties in making comparisons
Many student groups were unsure as to what they might have missed out as they had no basis for making comparisons between pre and post-earthquake course delivery. Examples of students' statements include:

"You know, we are only assessed on what they had time to teach us, assessments are down, lessons are down, so we are unsure."

"It's hard to sort of measure it against anything, you know, as far as that goes, it sort of, if we had been given a normal amount of time, then maybe to compare it to, it would have seemed harder. But, yeah, being as we had less to do, possibly it seemed to work out OK. "

"I think, I think this is quite difficult question to answer, cos we had gone through the process, we got all the papers but we've got nothing to compare it against."

"I mean, typically, at the end of the year, the year three sort of hand over to the year twos. I don't think any one of us are in that position to do that this year. To give them some insight into what the year will look like next year, cos I really don't think that we got the year that we should have got."

Different staff and student expectations
Changes made to programmes by teaching teams were viewed differently through students'

perspectives.

For example, here is one student's experience as a 'senior stduent'/ 'assistant instructor' on

the Recreation programme where the three years of the programme were integrated.

"Like you were more skill development whereas I was more teaching, assisting that sort of stuff. So I think the focus of it was quite different. I don't think it was necessarily bad, it was just a different focus and I think that potentially, could have been more, you know, like development for myself."

Here are examples of students who were challenged by having to move from a mainly

didactic form of delivery into a blended learning environment.

 "I feel like it was more like they were trying to push on to us, like self-directed learning."

"And which I found really hard. And with the self-directed and you know, losing those face to face contact, yeah."

Many students also expressed their focus on 'learning the content' and voiced worries about

missing out on important learning content.

"I think you could tell, our teachers like, it's nothing that has been, we asked, they were trying hard to fit everything in, but I mean you could tell it was different, like in the back of their minds, they are thinking like, Ok we gotta get through this stuff so that we can make up for work without taking away, like that, knowledge that we have gotta be given, but at the same time we were also, like rushing through it. "

"I felt we had crammed learning and we might have missed out on quite a bit of the stuff we should have been learning. But they just cut it out and they said Ok we are just gonna to focus on this."

"So, my assumption would be that the information that they chose to teach was based around the assignment, they already had setup, so the information we lost was what would have completed in the assignment, so probably be about it, isn't it?"

Assessments
The above statement leads to students' perspectives on assessments. Some changes to

assessments made the process more difficult for students.

For instance, lowering the word limit on essays made it harder for some students to

complete an assessment activity.

"Five hundred words, its approximately off each one, but that actually sometimes caused an issue for some people because just by removing five hundred words, actually sometimes made it more challenging."

Re-timetabling of programmes caused assessments from various courses to be shifted to

the end of the semester. This caused high workload issues for students.

"You know like, I sort of like, hell, we had all these assignments tacked in to a small amount of time. It would be neat if we could have gone, and I am not sure if the tutors could have done it, if we could have gotten our assignments, just to have a look."

<u>Need for a break from studying</u>

Many student groups commented on how they appreciated that teaching delivery was not compromised by reducing traditional term breaks. However, many student groups also stated how a lack of a proper break from studying was detrimental to their learning progress.

"I found it quite hard with getting only one week break because I think, you know, it was pretty stressful times for everyone."

"For me personally, I worked right through the holidays, and I come straight back into studies, I haven't actually had a break which it means I couldn't concentrate on my assignment this semester as much as I should have done."

"And we didn't have holidays, and we do need the holidays and I found that a lot more stressful, personally really."

Positive perspectives
Many positive comments were gathered from students and staff. Of note, is the recognition

by staff and students of the use of the Maori pedagogical whanau model.

"For us, for us, I think it's for that experience we had at South Club, like brought everyone, like tighter together. Like the guys were saying before, the role models and now they know what is needed to be done, they are just getting on with things and, myself and the other tutor just loving our jobs, I mean, they were just getting on, instead of chasing up people, we were teaching more content or the required content but different ways of doing it."

"Orally, I thought that was good. I thought it helped the students grow in terms of hearing [the language] rather than reading it and transcribing it on. So we were able to hear it and it would sort of stick in."

Changes to teaching and learning practices that were retained
The data revealed many good teaching and learning practices that were important to retain.

<u>Student induction/orientation</u>

The loss of student orientation was found to be important in several programmes, reinforcing for the retention of this aspect of the programme.

"And we do all this practical stuff, so we are physically in this space, how did it get build. The idea is that we bond and it's that sense of trust, and we don't have that." (staff)

"The sudden shift, cos your First Years get a library session, APA session, various coaching

things to get them into that first semester, first term. And they didn't get that and so then they had things crammed in at the start of the second term." (staff)

<u>Staff induction/orientation</u>

The aspect of staff orientation and induction was also brought up as a factor that assisted the teaching team's cohesiveness and contributed to the team's enhanced ability to cope with the logistical challenges of finding, resourcing and teaching from a new learning environment.

"So, all our staff were on the same page, we knew exactly how the year was going to be running, we were all fresh and we were all, like we were all on the same page. So when the earthquake did hit, it was all these drivers, we were a lot more unified in our front to the students, everyone, it was ask us a question, we didn't have to see [heads of school], everyone just knew. So, I think that certainty, certainly portrayed to the students, their confidence and the certainty, in the fact that we weren't running around like headless chooks trying to chase our own tails. It gave people lot more confidence, in a new space." (staff)

<u>Integration of more than one level in a programme</u>

The bringing together for several stages of a programme was a hallmark of two programmes. Both programmes came quickly to a realisation that integration of students and staff from several programme levels, contributed to positive learning experiences for students.

"We do use the vertical integration anyway, perhaps not to the same extent. Anyway we used to stagger our staff where we can. I think the school will continue to do some vertical integration but not as complete. We will have it spread." (staff)

"I think one of the other positives too was, the younger classes, you could see them sort of start listening to the more senior classes and seeing what they were aiming to. And they could see, they got a bit of an insight into the content, over the whole year, sort of, oh, like I am going to be able to talk like that one day, you know, those sorts of things come up and conversations just happened." (staff)

Adoption of programme changes

Comparisons of the on-going adoption of programme design changes, brought about by logistical and timetabling requirements, are detailed and discussed in this section. Table 5 summarises the main changes as an outcome of the disrupted beginning to the 2011 academic year and the changes' continued sustainability through programme delivery. The 'stages of maturation' reflect how well changes worked and whether these were retained in semester two. Details of the 'stages of maturation' were introduced in the research methodology section in Table 2.

In the section following, the information provided in Table 5 is extended through analysis of CED records of the 'programme changes wiki' and supported by focus group data.

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Table 5: Comparison of impact of programme changes made to accommodate changes

Programme	Programme effect	Stage of Maturation
Built environment	Confirmation of the important contribution of sound student orientation and induction processes towards constructing an effective learning environment.	Internal integration
Engineering	Increased discussion on teaching methodology and delivery modes led to improved awareness of innovative teaching approaches used by individual tutors in the programme.	Localised
	Assessments / projects being 'disaggregated' so that not all assessment marks occur at the end of the course but progressively through the course.	Transformative
Hospitality	Focus on main learning objectives, learning activities and assessments.	Localised
Recreation	Integration of students from all three years into single outdoor activity groups caused reflection on building group community.	Internal integration
	Assessment processes also evaluated and streamlined.	Transformative
Human services	Use of Moodle for one course has led to opportunity to evaluate of blended learning approaches to other courses in degree programme for 2012.	Internal integration
Languages	Deployment of whanau model of teaching and learning provided opportunity to evaluate the advantages and disadvantages of this learning approach.	Transformative

Built environment

Traditionally, these students are provided with an intensive programme orientation and induction at the commencement of each academic year. The orientation programme provides an opportunity for relationships between staff and students to be forged. Importantly, the programme also provides academic skills training for all students, ensuring all students begin study with similar requisite academic skills. Expectations from staff are also included in the orientation leading to the beginning of the learning journey for students to learn not only technical skills and knowledge but also begin to acquire the dispositions of the profession. The pragmatic decision to shorten orientation and induction for first year students in 2011 therefore led to realisation by staff, of the essential nature of the orientation activity, leading to an affirmation of this crucial activity towards assisting staff and students in constructing a sustainable effective learning environment.

Engineering

Before February 2011, this teaching team was generally dispersed as various tutors taught across a variety of programmes. There had been few opportunities for the teaching team to meet regularly to discuss teaching and learning practice. Therefore, the focused planning time that eventuated to consolidate delivery in the first part of 2011 provided the team with an opportunity to share teaching practice. Loss of course time and continued interruptions through 2011 leading to closure of classes meant student class contact and practice time (using specialist software not available out of class) were identified as potential obstacles to students completing final course examinations successfully. Disaggregation of assessments was adopted to collect ongoing student progress through working on 'projects' and these were implemented as a means to gather students' continuing skill progression.

Hospitality

Hospitality had to work with extremely challenging logistical circumstances due to the need to replicate highly specialised teaching and learning facilities. However, the school as a whole was well-prepared with regards to teaching and learning resources. Tutors were able to retrieve resources on a backup school-based external drive despite loss of access to the CPIT ICT network. The constrained facilities did lead to the need to focus on 'core content' and caused the team to re-evaluate teaching and learning delivery objectives.

Recreation

This teaching team exhibited innovative thinking and made a substantial programme learning delivery change. It was fortunate the disruption occurred during the time that this programme would normally be involved in off-campus learning activities. Therefore, all three years of the programme were integrated into 'activity groups' based around outdoor skills learning (e.g. rock climbing, kayaking). The focus was for the students and tutors to form communities of learning with the senior/third year students under-studying tutors and assuming 'instructor' status. The on-going constrains of tutor contact time also led to evaluation and streamlining of assessment processes.

Human services

The need to fit a large number of students/courses into limited teaching space meant that this programme began to utilise Moodle. The opportunity to build capability through 'learning by doing' afforded this teaching team, the prospect for evaluating Moodle and 'blended learning' as a potential future learning delivery option.

Students and staff were brought together into a large hall, with individual class clusters. This provided this teaching team with the opportunity to evaluate the Maori pedagogical 'whanau' approach. The teaching team drew on their cultural values to provide an enhanced learning environment to their students.

Discussion

In this section, the findings presented through the above section are discussed. We present CPIT's organizational prepareness, through analysis of the six participating programmes studied and from the programme design perspective.

Teaching/learning organisation

Murrell's (2007) recommendations for dealing with natural disasters are used as a template for evaluating CPIT's responses to the challenges and forced changes caused by the February 22nd earthquake. Each of the recommendations relevant to this project, *preparedness*, *immediate impact, recovery and lessons learnt* are now posed as questions towards a discussion of CPIT's responses as derived from the case studies of the participant programmes.

Were we prepared and did we cope with the immediate impact?

In the main, the programmes sampled to participate in this project, exhibited strengths in working through the logistical challenges presented by closure and subsequent limited access to the CPIT main campus. A large amount of time and effort was deployed on timetabling issues caused by the shortened teaching/learning time period and the need to provide basic replication of specialised learning environment requirements. Several programmes were nimble in adapting innovatively and adjusting to the changed situation. Good examples are in the Recreation and Languages programmes. Both utilised the logistical reorganisation and tutors' understanding of good pedagogy, to improve student learning.

There was evidence of a lack of capability in engaging with alternative delivery modes, including the adoption of blended or distance learning tools. The reluctance may be traced to a lowering of confidence in the role of digital technologies due to losing access to the CPIT ICT system after the February earthquake. Additionally, for some students and staff, there were challenges with access to digital equipment, caused by damage to homes, intermittent electricity supply and limited or lack of access to workplaces. Therefore, the data reveal the need for greater development of staff capability in all aspects of programme design,

selection and deployment of alternative teaching and learning delivery and assessment processes.

The project findings show that staff exhibited leadership in managing the disruption caused by having to find and adapt to alternative learning environments. The majority of programmes displayed strong empathy to students' needs and much effort was put into ensuring that disruption to students' learning was minimal. There was urgency in programmes' responses to ensuring that courses could be re-commenced in a timely manner. Teaching teams were cohesive in their responses with many tutors sacrificing their own personal needs for the betterment of their students. Comparison of programme completion data from 2010 and 2011 as detailed above in table 4, reveal the disruptions did not affect student completions. The maintenance of student completion is a testament to the efforts of staff and students towards ensuring the continuance of 'normal' teaching and learning activities.

Pragmatic programme changes were made. Of note was the focus of many programmes (e.g. Hospitality, Built environment) to 'concentrate on the basics'. The rapid decisions made on selecting the important salient aspects of a course of study, reveal strengths in our academic staffs' content knowledge. This reflects a bedrock of 'content-focused' programme delivery aligned with the need to meet student pastoral needs. Students were also attentive towards ensuring the 'content was covered'.

What were our plans for the future?

This is an area that CPIT needs to explore further. There was no organisation wide system to allow staff and students to evaluate the impact of the changes that had to be made. Standard course and programme evaluative processes were followed but no changes were made to the evaluation documents to account for the 2011 change of circumstances.

Of importance is the need to collect the programme changes made, based on 'delivering the basics'. For instance, as described in the above section, decisions made with regards to prioritising course topics are a significant part of the process for 'decoding the discipline' (Middendorf & Pace, 2004) and useful for future programme reviews or re-development.

Another aspect to explore further is the need to extend opportunities for staff to continually up-skill in the area of flexible teaching and learning delivery (technology or non-technology assisted/enhanced). It is important for staff to be able to develop, trial and learn innovative

approaches, before attaining the confidence to deploy into mainstream institutional practice (Garrison & Anderson, 2003).

What are the lessons learnt?

From this study, the main learning on CPIT's programme design capability revolves around exposure of CPIT's strengths and weaknesses. There is need to leverage on CPIT strengths and to work through weaknesses.

Strengths include:

- High levels of understanding by teaching teams, of CURRENT overall structure and learning objectives of programmes.
- Examples of best practice teaching and learning delivery garnered from all the participating programmes.
- High levels of student pastoral care.
- Sensitivity and empathy from CPIT management, staff and students of each other's circumstances and willingness by all to make the most of a difficult situation.
- Agility in coping with the complex logistical issues posed by finding, preparing/equipping and deploying alternative learning facilities within short timeframes of several weeks.

Weaknesses include:

- Limited capability in harnessing alternative teaching/learning strategies.
- A culture of individualised teaching resource development.
- Poor understanding of CED role in supporting programme design re-development.
- A 'silo' view within teaching teams, leading to a lack of awareness of best practices beyond their own school.

Programme design

Due to the need to respond swiftly, programmes moved towards solving logistical challenges (e.g. finding physical learning spaces, communicating with students) before dealing with learning issues. In the main, teaching teams made programme design decisions based on discipline and context specific institutional knowledge. There was little recourse to embarking on wholesale shifts in delivery modes (e.g. changing from face to face to distance) as major changes would involve not only substantial staff and resource development but also the need to help students (from some programmes) adjust from semi-dependent to self-directed learners.

The focus of staff on logistical issues, instead of teaching and learning pedagogies, signals to CED, the need to work on embedding the principles of programme design and alternative modes for learning delivery, through all sectors of CPIT. An objective of the CED could therefore be to assist staff to adopt programme design principles, which if subsumed into individuals' internal belief systems, become the 'first port of call'.

Helping individuals and the organisation to override 'post-traumatic stress'

The main themes derived from data analysis showed reluctance by teaching teams to 'change for the sake of change'. Academic teams 'fell back on what works best'. This required replication of, as far as possible, what was originally available in terms of learning environment and resources. This response was perhaps based on the need to provide a sense of normality, missing immediately from the lives of many Christchurch residents as a consequence of the earthquakes (Gawith, 2011). The provision of 'being able to return to a normal routine' was in part, a means for staff and students to find an oasis of security when everyone was surrounded by significant challenges in their personal, work and social lives.

Therefore, the programme changes reported here are examples of 'sticking to the known to ride out the storm' and may be viewed as a mechanism for dealing with the continual stresses caused by the on-going aftershock sequence (Kane et al., 2002; Gawith, 2011). At the time of the disruption, cognitive load was such that priority was placed on concrete, physical changes to provide students with a learning space. In effect, tutors worked on meeting the lower levels of Maslow's (1943) Hierarchy of Needs, thereby assuring students' physical, security and social needs. In doing so, students' physical welfare and security needs were met, preparing the way for students to return to a routine of study.

Guidelines

The guidelines provided here are to assist other institutions to be better prepared, from a programme design perspective, to cope with unforeseen natural disasters. Each organisation's context will be different and the guidelines presented here have been derived from an analysis of ONE institution's experiences and based on case studies of selected programmes and selected programme changes.

Building the guidelines

The following guidelines have been distilled from thematic analysis of the data (focus group responses and reports collated in the wiki, cedprogdesign). Initial thematic analysis revealed the impact of programme design decisions on students and staff (as reported above). These

impacts were then re-collated into broader categories providing the basis for the discussion above on teaching and learning organisation and programme design. The guidelines were then synthesised through an understanding of the impacts created by the forced changes brought about by the consequences of the February earthquakes and learning experiences CPIT has derived (from the programme design perspective).

Preparation prior to forced change

From analysis of the data, the importance of prior preparation, in the form of clear, shared understandings of the influences of programme change on students' learning experiences is required.

- Do a stocktake of institutional capability in the area of understanding programme design principles.
- Undertake to ensure identified gaps in tutorial staffs' understanding of programme design are addressed.
- Continue programme design professional development for all staff, especially for staff with responsibility for academic leadership and non-academic staff managing programmes.
- Ensure non-tutorial staff have access to programme design principles and are cognisant of the influence of logistical (timetabling, facilities planning) decisions on programme teaching and learning delivery.
- Prepare a checklist/guide for undertaking programme design changes in the event of a disruption in the institution's services which may be caused by natural /man-made disaster.
- Maintain a web-based repository for programme design related information.
- Have in place, an organisational culture that supports and empowers staff to make appropriate teaching and learning innovations.
- Provide opportunities and resources to incubate flexible delivery teaching and learning options.

Supporting programme design through forced change
During an emotionally intense time, the need to make clear decisions is paramount.

Institutional support is required at all levels and functions.

- Maintain up-to-date web- and mobile-based contact lists of all staff.
- Ensure CLEAR directions are made, in a timely manner, from academic management with regards to parameters for programme delivery changes negotiated with external academic quality agencies (i.e. NZQA)
- Provide timely support to staff as they work through programme re-design issues.
- Provide students with frequent and valid updates as to status of programme and campus accessibility.
- Provide students with clear information on the process to access student support services (i.e. computer hardware, library and learning support).

Moving on into the future

Although the earthquakes caused substantial disruption, they also offer CPIT an opportunity to find out how its organisational and academic systems coped with forced and rapid change. Therefore, it is important for institutions to have planned methods for collecting and evaluating changes made and the decisions that underpin those changes. Results from the evaluative process may be incorporated into future organisational and academic preparation.

- Provide staff and students with an opportunity to evaluate and reflect on the impact of 'forced change'.
- Record changes made and their effects as some of the changes may be contribute towards future programme review of re-development.
- Ensure evaluations gathered are considered, addressed if appropriate and collated into interventions that will assist the institution in the event of another interruption to organisational capacity.
- Extend community of practice BEYOND schools/faculty/discipline area silos.
- Provide opportunities for programmes that displayed innovative changes to be showcased.

Second floor Library after 22nd February opposite CPIT
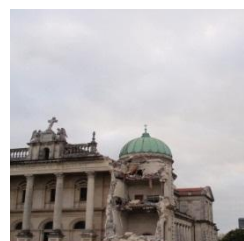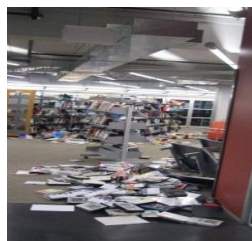
Damage to Cathedral of Blessed Sacrament

Following on

As a result of the completion of the study reported above, CPIT has undertaken to work through several of the guidelines detailed in the above section. At the beginning of 2012, a discussion document, drawing from the items reported in the discussion section was circulated through the CED. At the time of completing this report, the following had occurred to address the 'weaknesses' in CPIT organisation capacity.

- Limited capability in harnessing alternative teaching/learning strategies.

- o CPIT had developed a new Design, Development and Approval of Programmes of Policy in December 2010. The long-term impact of this policy will be that all programmes will be re-developed in line with clear educational principles. There will be some lag time before all programmes complete the re-approval process and this time gap will need to be addressed through the provision of CED workshops as below.

- o Professional development is being provided in different formats, this includes: Course Design Intensives (CDI) – concentrated two-day workshops; targeted professional development for programme teams; and generic workshops. The TRoQ process initiated by NZQA will also create impetus for professional development activities with departments and teaching teams.

- A culture of individualised teaching resource development

  - o New programme developments are team-based and approaches such as the CDI encourage collaborative approaches. This is because the CDI requires a holistic approach for curriculum design and programmes are developed to ensure there is integration in learning activities and assessments between courses and stages.

- Poor understanding of CED role in supporting programme design re-development

  - o With the CED being a relatively new unit, the a lack of institutional awareness is recognised, and is addressed through the round of programme developments, CED workshops, creation of a web-presence and continual relationship building with departments and divisions.

- A 'silo' view within teaching teams, leading to a lack of awareness of best practices beyond their own school.

  - o Mechanisms to ensure a better sharing of practice still need to be developed within CPIT

  - o Learning Technology Support unit introduction of a resource sharing tool (Equella) in mid-2012 will provide for another opportunity for sharing of learning resources between departments and teaching teams.

Additionally, CPIT is currently engaged on a number of initiatives that will help to address the issues raised, these include:

- Principled approach to programme development.
- Development of a Workforce Capability Framework for all teaching and non-teaching staff.
- Targeted professional development for programme teams as development or redevelopment of programmes occur.

Conclusion

The Christchurch earthquake of 2011 affected the lives of every individual living in Christchurch and mid-Canterbury. As a result, Cantabrians also experienced a revival of community spirit as everyone supported each other through a stressful time. As an institution, CPIT has also learnt much through meeting the challenges. In this report, the effect of the earthquake, from a programme design perspective, has been presented. It is hoped that what CPIT has developed from their experience can now be used to inform other New Zealand institutions on preparedness, from the programme design, staff capability development and student support perspective, for dealing with the immediate and continued effects of a natural disaster.

Kia Kaha.

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Appendix 1

Typology for selection of programmes –

only participant programmes included

Programmes	Re-design	structure	assessment	Changed tutor/student communication	Delivery approach	Increased use of technology	Learning spaces	postponing
Built environment		√	√	√	√	√		
Engineering		√	√		√ (short time only)		√	
Hospitality	√	√	√	√	√		√	
Recreation	√	√	√	√	√		√	
Human services		√	√	√	√	√	√	
Languages			√	√	√	√	√	