

E-learning activity in New Zealand industry training organisations: Perceived benefits and barriers



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Recent research in the New Zealand tertiary education sector, indicated more information was required to identify the observable trends and drivers of change that were likely to have significant impact on the future of “e-learning” in Industry Training Organisations (ITOs). A three-phase research project was undertaken to ascertain the current status of the use of e-learning technologies by New Zealand ITOs. The data reported here, from the second phase, was derived from a multi-part survey of the perceived benefits and barriers to e-learning activity in New Zealand ITOs. Key findings include a pan-sector awareness of the benefits of e-learning for increasing flexibility in training, while at the same time seeing costs and lack of technical infrastructure as real barriers to implementation.

Keywords: Industry Training, e-learning, Benefits, Barriers, Online survey

Context

The New Zealand Tertiary e-Learning Research Fund (TeLRF, 2007) was established to support research into tertiary e-learning in New Zealand. It was decided the best use of the money was to fund e-learning research to provide a more comprehensive context and framework to inform strategic investment and decision making around e-learning for tertiary education organisations. In particular, research was required to identify the observable trends and drivers of change that are likely to have a significant impact on the future of tertiary e-learning in New Zealand. Consultation was undertaken with the Ministry of Education and external stakeholders to identify what the major knowledge needs were in regards to e-learning in the tertiary sector. One major identified need supported by the Ministry’s own gap analysis, was to determine the answer to the question of ‘how effective e-learning has been in a vocational/ workplace context both in terms of meeting learner/business needs and in increasing organisational productivity’ (TeLRF, 2007). One of the aims of the ‘*e-Learning activities in New Zealand Industry Training Organisations*’ research project was to identify the perceived barriers and benefits of introducing e-learning in the Industry Training Organisation (ITO). This paper outlines the findings of this investigation.

Overview of study

During an extensive review of the literature on e-learning in industry and vocational training both nationally and internationally (Clayton and Elliott, 2007), a number of benefits (Ferl, Becta, Learn Frame and E-Skills, 2007) and barriers (Muilenburg and Berge, 2001, E-Skills, 2007) to the introduction to e-learning were identified. As part of the review of e-learning activity in New Zealand ITOs, an online survey was developed. The survey contained checkboxes, responses to ordinal scales, and text boxes for informed comment by the respondents. 14 benefits and 10 barriers were identified in the initial literature review. These were converted into general questions. A 5-point ordinal scale was then used in a drop down menu incorporating a range of responses from strongly disagree to strongly agree. All of the benefits and barriers identified previously were included in the survey instrument and participants were invited to select an appropriate response from the drop down menu. Results were analysed and converted as a percentage of the overall response to each question by the total number of respondents.

All e-learning managers, or their equivalent, in the 39 Industry Training Organisations (ITOs) in New Zealand were sent an e-mail which provided a link to the online survey and asked for their co-operation in completing it. A follow up e-mail was distributed after the survey had been open for 10 days. This e-mail thanked those who had completed the survey and once again solicited the co-operation of others who had yet to respond. All e-learning managers, or their equivalent, were also contacted by phone for a short interview by a member of the research team. During the interview each respondent was asked to identify any particular reasons why e-learning was or was not used and if they didn’t use it were there any plans in place for future adoption. If they did use e-learning technologies, they were also asked for feedback on how well it was working.

Sample

Twenty three of the 39 potential ITOs responded to the survey (approx 58%). For the purpose of analysis it was decided to stratify the sample into 3 types of enterprise, small organisations (enterprises with below 1000 trainees enrolled) medium organisations (enterprises with between 1000 and 5000 trainees enrolled) and large organisations (enterprises with over 5000 trainees enrolled).

The small enterprise group consisted of 10 respondents which represent 25.5% of possible number of ITO respondents (39) and 43.5 % of actual respondents (23). The medium enterprise group consisted of 7 respondents which represent 18% of possible number of ITO respondents (39) and 30.5% of actual respondents (23). The large enterprise group consisted of 6 respondents which represent 15% of possible number of ITO respondents (39) and 26% of actual respondents (23).

Benefits

The benefits of e-learning identified in the initial literature review and incorporated into the online survey are shown below in conjunction with an analysis of the survey and interview responses from the ITOs who participated.

- **A significant degree of flexibility for the trainees:** A significant majority (17/20) of all respondents saw the introduction of e-learning as bringing moderate to major benefits for its trainees. This was notable for all organisational types, large (5/6), medium (5/6), and small (7/8). No respondent regarded e-learning as not providing benefits in flexibility.
- **Allows “just time in time” learning to be offered:** A significant majority (15/18) of all respondents saw the provision of “just in time” learning as bringing moderate to major benefits for its trainees. This was notable for all organisational types, large (5/6), medium (5/6), and small (5/6). Few respondents (2/18) regarded “just in time” learning as not beneficial.
- **Trainees can complete activities at their own pace:** Providing trainees with the ability to study at their own pace was considered a moderate to major benefit for all but one of the respondents (20/21). The respondent from one small enterprise considered the provision of flexibility of pace to be of minor benefit and no respondent regarded flexibility of pace as not beneficial.
- **Resources and activities can be accessed from anywhere at anytime:** The ability to access course materials anywhere anytime (flexibility of place) was considered a significant or major benefit by a substantial majority of respondents (17/20). Only 1 medium sized enterprise considered flexibility of place as not beneficial.
- **Activities can be simultaneously delivered to an unlimited number of trainees:** Providing employees or training organisations to deliver course materials simultaneously to trainees across the sector (flexibility of delivery) was considered a significant or major benefit to a substantial majority of organisations (17/20). Only 1 small training organisation considered flexibility of delivery as not beneficial.
- **There will be an assurance of consistency of delivery of learning and teaching across the industry:** Ensuring consistency in the delivery of teaching by using ICT tools was considered as a moderate to major benefit for a substantial majority of organisations (19/20). Only 1 respondent, from a medium sized enterprise, did not consider this consistency to be beneficial.
- **Will help reduce costs of delivery:** The potential of reducing the costs of delivery of courses does not appear to be a significant driver for ITOs with a significant majority (15/20) noting this was at best a moderate benefit. However, it is notable that for smaller enterprises (5/8) this ability to reduce costs was a significant or major driver.
- **There will be a reduction in time it takes to deliver training:** The potential of reducing the time it takes to delivery of training does not appear to be a significant driver for ITOS with a majority (13/20) noting this was at best a moderate benefit. However, It is notable that for smaller enterprises (6/8) this ability to reduce time in training was a significant or major driver.
- **It will attract new trainees:** The potential of attracting new trainees appears to be only a moderate to minor benefit for a majority of organisations (15/20). However, it is notable that for smaller (6/8) and

medium (4/6) enterprises attracting new trainees through e-learning initiatives was a moderate to major driver.

- **It will meet trainees' expectations:** Meeting the expectations of trainees was considered to be a moderate to major benefit for a substantial majority of respondents (17/20). Only three respondents (one each from small, medium and large organisations) considered meeting the expectations of trainees as a minor benefit.
- **It will meet employers' expectations:** Meeting the expectations of employers was considered a moderate to major benefit for a large majority of respondents (15/20). However, it is notable a majority of small enterprises (5/8) considered meeting employers' expectations to be only a moderate or minor benefit.
- **Raising the ICT skill and competence level of trainees:** Raising the ICT skill and competence level of trainees was considered to a moderate to major benefit for a significant majority of respondents (15/20). However, half the number of small enterprises (4/8) considered this to be only minor or no benefit to them.
- **Accurate tracking and recording of individual achievement and competency:** Accurate tracking and recording of individual achievement and competency was considered a moderate to major benefit for a significant majority of respondents (15/20). However, it is notable a substantial number of small enterprises (5/8) considered this to be only moderate or no benefit to them.
- **Will help with our Quality Management system for NZQA reporting and compliance:** While a reasonable number of organisations believe e-learning would be beneficial in quality management processes (8/20) half (10/20) consider this to be at best a minor benefit and a smaller number (6/20) do not perceive any benefits to quality management from the introduction of e-learning.

Barriers

The barriers to adopting e-learning identified in the initial literature review and incorporated into the online survey are shown below conjunction with an analysis of the survey and interview responses from the ITOs who participated:

- **The current technology infrastructure deployed within the organisation:** A significant majority of respondents felt the lack of appropriate technical infrastructure could be a moderate to major barrier in the introduction of e-learning in their organisation (16/22). It is significant, small (8/9) and medium (5/7) organisations, viewed this as a greater barrier than large (3/6) organisations.
- **The provision of ongoing technical and learning support for participants with limited IT Skills:** This was perceived as moderate to major issue for a substantial majority of respondents (19/21). Only two respondents one each from medium and large organisations considered the provision of support as a minor barrier.
- **Gaining support and commitment from senior and middle management:** While almost half the respondents believe gaining the support of senior managers would not be a barrier to the introduction of e-learning (9/21), a similar number (8/21) believe gaining support from management would be a moderate barrier. However, it is notable no respondent considered gaining the support of senior managers to be a significant or major barrier.
- **The costs (time, financial and human) of e-learning implementation:** A substantial majority of respondents (18/21) regarded the costs associated with e-learning implementation as a moderate to significant barrier. It is notable small organisations (8/8) regard costs as a significant or major barrier. While large organisations (6/6) consider costs to be a moderate to minor barrier.
- **The organisation being able to source (access) educationally designed, organisation-specific and engaging content:** A substantial majority of respondents found the ability to source appropriate content as a moderate to major barrier (17/21). Small organisations (5/8) regarded this issue as a significant or major barrier while large organisations (4/6) did not rate this barrier as highly.
- **Resistance to change from those familiar and comfortable with traditional learning and teaching approaches:** A substantial majority of respondents did not regard staff resistance to change

as a barrier to the implementation of e-learning in their organisation (17/21). However, it is notable half the number of small organisations consider this issue to be a significant or major problem (4/8).

- **Lack of basic ICT skills in our industry:** A significant majority of respondents perceived the lack of ICT skills within their industry sector would be a moderate to major barrier in the uptake of e-learning (16/21). It is useful to note small organisations regarded this as a significant to major barrier (4/8). While large organisations (5/6) consider this to be a moderate to minor barrier.
- **Motivating our particular learners to complete e-learning courses:** A significant majority of respondents perceived motivating students to complete courses independently could be a major barrier to e-learning acceptance (16/21). This was particularly true of small organisations where a majority regarded this as a significant barrier (5/8).
- **Organisational lack of knowledge on how to plan for the implementation of e-learning:** A significant majority of respondents perceived the organisational lack of knowledge on e-learning could be a moderate to significant barrier to e-learning implementation (16/21). This is most notable in smaller organisations where a majority (5/8) considers lack of organisational knowledge as a significant barrier.
- **The costs (time, financial and human) of maintaining e-learning activities in the organisation:** A significant majority of respondents (17/21) perceived the costs of maintaining e-learning initiatives to be a moderate to major barrier. It is significant small organisations consider costs to be a significant to major barrier (7/8). Large organisations (5/6) consider this to be only a moderate to minor barrier.

Summary

The majority of Industry Training Organisations in New Zealand are conscious e-learning increases organisational flexibility in the presentation of training at the right time (flexibility in time), the design and deliver materials to suit the trainees pace (flexibility of pace), in the location the trainees choice (flexibility of place) and to a number of trainees simultaneously (flexibility of delivery).

The initial implementation and ongoing maintenance costs (time, financial and human) associated with e-learning approaches are seen as a major barrier to small and medium sized organisations adopting e-learning technologies in their education and training programmes.

The result of this survey will be used in a final report which will incorporate the outcomes of the three phases of the project (the third phase being a number of case studies). This will provide recommendations for shaping future national policy for e-learning in New Zealand ITOs.

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