Benefits of e-Learning Benchmarks: Australian Case Studies

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Abstract: In 2004 the Australian Flexible Learning Framework developed a suite of quantitative and qualitative indicators on the uptake, use and impact of e-learning in the Vocational Education and Training (VET) sector. These indicators were used to design items for a survey to gather quantitative data for benchmarking. A series of four surveys gathered data from VET providers, teachers, students and their employers. The data formed baseline indicators that were used to establish organisational goals and benchmarks for e-learning. These indicators were the first known set for benchmarking e-learning in Australia.

The case studies in this paper illustrate ways in which VET providers have approached e-learning benchmarking, the benefits achieved and the lessons that they learned. The cases exemplify how VET providers have adapted the baseline indicators, how the indicators informed organisational plans and e-learning outcomes. The benefits of benchmarking are categorised under three purposes: reporting, performance management, and service improvement. A set of practical strategies is derived from the cases for consideration by other organisations interested in benchmarking e-learning services.

Keywords: e-learning indicators, e-learning uptake and outcomes, benchmarks, planning for e-learning benchmarking, case studies.

1. Introduction

Over the last six years, the Australian Government has invested over $95m to enhance e-learning in the vocational education and training (VET) sector. This investment was based on the espoused benefits of e-learning. There is much anecdotal evidence and some research to corroborate the benefits of e-learning and provide support for the return on investment in e-learning technologies (see Block and Dobell, 1999; European Commission, 2000; Phillip, J., Phillip, P. and Zuniga, 2000; Roffe, 2002). However, there is variance in how such benefits are measured. Benchmarking for e-learning is very much in its infancy in Australia. In 2004, the Australian Flexible Learning Framework developed a set of twelve indicators to benchmark the uptake use and impact of e-learning in the VET sector. It was the intention of the Framework to develop the indicators, test these and make them available for users to adapt these to establish organisational goals and benchmarks for e-learning. The purpose was not to impose the benchmarking activity or use the indicators for comparison between institutions. Data against these indicators were used by VET institutions to assess the benefits of e-learning using the benchmarks at the organisational level, within their own contexts. A national dataset against the benchmark indicators was populated during 2005 and forms a baseline that illustrates trends in the uptake and impact of e-learning and the use of e-business services.

This paper reports three case studies that illustrate ways in which VET providers have approached e-learning benchmarking, the benefits

they experienced and the lessons that they learned. The cases exemplify how VET providers have adapted the baseline indicators, how the indicators informed organisational plans and e-learning outcomes. Benefits of the benchmarking exercise served three purposes: reporting, performance measurement, and service improvement. A set of practical strategies is derived from the cases for consideration by other organisations interested in benchmarking e-learning services.

2. e-Learning

The last decade has seen a significant expansion in e-learning technologies for enhanced access to education and training in Australia. e-learning is conceptualised in a number of ways. Essentially, it is about the transmission of learning content using information technology and often refers to delivery using intra or Internet. The actual learning which involves identification of information, conceptualising and making meaning to enhance user's knowledge base, understanding and skills, as well as finding the time and space for learning is left to the individual. Henry (2001) explains that the total e-learning solution comprises the integration of three elements: content, technology and services. His concept is also underpinned by the assumption that learners will be responsible for the cognitive tasks that will lead to learning. A leading researcher, Laurillard (2001), cautions that the way in which teaching is approached should be considered more important than the technology medium. This point is supported by Butson (2003) who stresses that technology is

limited in helping learners to understand how to think.

There are compelling arguments for e-learning. "E-learning, when done well, can be as good or better than being in the classroom. It offers students a rich, compelling, and motivating experience" (Neal 2001). According to Roffe (2002) e-learning not only enhances access, but improves engagement, enhances learning, extends experiences in exploring, and empowers the learners to take responsibility for scheduling and managing the learning journey. His claims assume that the learner already has the skills and attributes to use the technology and adequately contextualise, integrate and apply the content to create new knowledge and understanding, and be transformed by the experience. Many organisations recognise the benefits of e-learning because it provides just-in-time, contemporary learning and can be accessed from any site using the right technology (Roffe, 2002). It is seen as a cost effective approach to facilitating learning to large groups using information and communication technology. The content could be personalised and is embedded in a learner centred framework. Many e-learning programs are interactive and can be updated rapidly. These and similar benefits were acknowledged in Young's (2002) research on the first major benchmarking study of e-learning organisations in the United Kingdom.

Initial investments in e-learning are costly, hence the performance, quality, usage, effectiveness and efficiency as a learning solution is of interest to many. However, the current research base informing evaluation of e-learning from a wide range of stakeholders or comprehensive return on investment remains limited. Despite the paucity in this field of research benchmarking exercises are used by organisations to define a level of performance, and identifying or establishing good practice to improve on that performance (Butson 2003). According to Dublin (2004 p294) there are six fundamentals to ensure that e-learning is used by learners and embraced by the organisation. These fundamentals are premised on the understanding that e-learning is about:

- Business and providing a business solution;
- Providing a "return on expectation", not just a return on investment;
- Enabling learning and driving performance, not training;
- People – learners, managers and executives – not technology;
- Motivating learners and energizing organisations; and

- Becoming invisible; interwoven into the very fabric of your organisation and its culture.

The above are familiar to Ettinger, Holton and Blass's (2005 p289) research with 29 companies who were e-learning pioneers. Ettinger et al. (2005) identified six key factors that underpinned e-learning:

- Delivering what the business needs
- Putting the learner at the heart of e-learning
- Providing high-quality content and technology
- Gaining support at senior levels for e-learning
- Providing pro-active support for e-learners (and their managers) through communication, promotion and marketing
- Creating an organisation that genuinely values learning.

Most organisations implementing e-learning do so with a view to improving learning services, thereby achieving certain business goals (eg. Ettinger, Holton and Blass 2005, Dublin 2004, Roffe 2002, Young 2002). These organisations believe that improving learning services improves business outcomes. E-learning solutions have been known to support strategic outcomes (Fry, 2001). Many educational institutions seek e-learning solutions to maintain or enhance their market position in a highly competitive environment with declining public subsidy. E-learning services relates mainly to the management of e-learning as opposed to e-business. To distinguish between e-learning and e-business, the 2005 E-learning Benchmarking project adopted the following definitions: E-learning uses electronic media to deliver flexible vocational education and training. It includes access to, downloading and use of web, CD ROM or computer based learning resources in the classroom, workplace or home. It also includes online access to and participation in course activities (e.g. online simulations, online group discussions), directed use of the Internet for learning and research purposes, structured learning-based email communication and online assessment activities. E-learning does not include email dissemination of course information, email communication between a teacher/trainer and learner on a single learning issue, or online administration of learning activities.

The following definition of e-business was adopted by the Benchmarking project: E-business services include client support and administrative services offered by training organisations that are delivered or supported by information and communications technologies. For example: online publication of general course information and relevant policies, regulations and strategies; online enrolment; online payments and electronic

forms; online access to student records; online library services; online information on student support services; online access to and delivery of student support services; and online access to results.

The Australian Government considered e-learning a significant vehicle in transforming the VET business of teaching and training in more responsive ways. This became the key imperative for e-learning initiatives implemented through the Australian Flexible Learning Framework.

3. E-learning in the Australian VET sector

While information technology revolutionised the delivery of education and training, virtues of e-learning have principally modernised flexible delivery in the Australian VET sector. Investments in e-learning technologies were aimed at improving quality and access, fostering innovation and increasing flexibility in service provisions. Since the 1990s the Australian Flexible Learning Framework (Framework) has invested substantially and supported the uptake of e-learning through a range of national, state and organisational initiatives. Some initiatives provided professionals with access to the latest e-learning products and resources. To ensure that VET professionals are adequately equipped to meet a highly technology-driven learning environment the Framework has provided high quality professional development opportunities and support networks. Until 2005, no consistent sets of data were collected to assess the level of uptake and outcomes of e-learning in the VET sector. A benchmarking approach was undertaken to assess the return on investment in e-learning.

4. Indicators for benchmarking e-learning

Over 250 indicators for e-learning were identified in an environmental scan of Australian and international research and education agencies (Australian Flexible Learning Framework, 2004). However, literature surrounding benchmarking on e-learning is very limited. Interest in data about return on investment in e-learning in terms of uptake, use and outcomes on VET clients and providers inspired the Framework to develop and trial a set of 12 indicators that informed three areas of interest:

Uptake and outcome of e-learning in the VET system

- % of VET unit enrolments that use e-learning.
- % of VET providers offering units that use e-learning.

- % of VET learners who through e-learning have increased skills and confidence in using information and communication technology (ICT).
- % of VET learners who through e-learning have or expect to have improved employment outcomes.
- % of VET clients who believe e-learning and e-business gave them flexibility in when, where and how they engaged with VET.
- % client satisfaction with e-learning experiences in VET.

Uptake and impact of e-business

- % of VET providers offering e-business client, support and administrative services.
- % of VET clients using e-business client, support and administrative services offered by providers.
- % Client satisfaction with e-business experiences in VET.

Uptake, use and outcomes of e-learning on VET teachers and trainers

- % of VET teachers/trainers delivering units that use e-learning.
- % of VET teachers/trainers who through e-learning have changed teaching practices in the design, development and delivery of units.
- % of VET teachers/trainers who believe increased access to e-learning resources has improved teaching and learning outcomes (Australian Flexible Learning Framework, 2005, p.6).

5. Benchmarking survey

National surveys using the 12 indicators were conducted with students, employers, training organisations, teachers and trainers across Australia. A convenience sampling approach was used for the national survey. Networks of the Framework were utilised to access the samples in each State (6) and Territory (2) in Australia. An online survey was completed by 1000 VET students from 100 training organisations across all States and Territories in Australia. The students represented public as well as private training organisations. Computer assisted telephone surveys were completed by 400 employers or their representatives from all States and Territories. Representatives from 400 Registered Training Organisations completed print based surveys. They represented 100 large, private and enterprise training providers and 200 small training organisations. One thousand VET teachers and trainers from 100 training organisations (public and private) across all

States and Territories supplied data by completing an online survey. The data and findings of the survey provided a baseline for VET stakeholders to benchmark their services and provisions and inform decision-making processes at organisational and State levels. (For further details see flexiblelearning.net.au/e-learningindicators).

6. The case studies

Three case studies reported in this paper exemplify how different institutions approached e-learning benchmarking, the benefits they achieved and lessons they learned. The cases focus on different purposes for benchmarking. The first case study relates to the process of conducting a survey with young learners aged 15-19 years and learners with a disability to collect data against identified indicators for benchmarking. The second study focused on collecting data for evaluation, monitoring and reporting to inform the Institute's stakeholders (Board, managers, teachers, student support staff, administration staff and industry) about performance, planning, implementation and future directions for e-learning. The third case study concentrated on collecting data on the usage and quality of its online learning services to inform managers and teachers and to plan the next stage of development and improvements. The purpose of the case studies was to provide examples of how VET providers were organising benchmarking activities. A panel of the Framework, using a set of criteria, selected the sites. Rather than including well-established providers with significant advancements in e-learning, the panel sought sites that were relatively new to e-learning. This meant that providers with less established e-learning systems would be able to easily relate to the cases in this study. These examples were included to inspire other providers to engage in e-learning benchmarking. Participation in the case studies was voluntary.

The case studies in this paper focused more on the management of e-learning as opposed to e-business. Each case study 'aligned' it's benchmarking exercise against the indicators developed by the Framework. As such, the indicators and data sets are not exactly the same, however, have a degree of comparability. Considering the distinct peculiarity of each site, it would be erroneous to make any direct comparisons using the quantitative data against the indicators. Quantitative data collected by each site remained commercial-in-confidence. Data for the three case studies reported in this paper was collected from face-to-face and telephone interviews with the project managers and their e-

learning support staff in each site. Data for the first case study was gathered from the project reports and interviews with two project managers. The second case study was prepared using data from the project documents (plans and reports) and interviews with three staff at the training organisation. Data for the third case study was gathered from the project report and an interview with the project manager.

6.1 Case study 1: e-Learning for target learner groups – youth and learners with a disability

The 2005 e-learning for Target Learner Groups (ELTLG) focused on young people in the 15-19 age group (including VET in Schools, disengaged youth and school-based apprenticeships), and learners with a disability. The main aim was to improve employment-related training opportunities and employment skills through the use of appropriate e-learning programs and resources. This case study trialed the survey process with young learners in selected organisations spread across Western Australia, New South Wales, Victoria, South Australia and Queensland. Fifty-two youths and fifty-four students with a disability responded to items on the survey which was made available on-line. The URL address for the survey was provided to trainers in each of the participating states to encourage their students to complete the survey.

6.1.1 Benefits of the survey

The datasets for this survey verified anecdotal data about young learners and those with a disability. Quantitative data was presented to managers to make informed decisions about e-learning services for young learners and learners with a disability. The data informed decision making for organisational planning and allocation of resources. Knowledge about how e-learning tools and technologies can be better used to assist learners is essential to improve services and course delivery to enable young learners and those with a disability to participate fully and equally in VET. When combined with data from other sources such as the networks and intranet usage statistics, a holistic picture of the service provisions emerged. The data enabled teachers to monitor, evaluate and reflect on the impact of changes in teaching strategies and choice of content and resources. Teachers gained confidence from the positive responses from students about e-learning tools and technologies. Benchmarking data provided support staff with information about communication and support strategies that involve e-learning tools and technologies, and the use and appropriateness of these services. The information is then used for

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future planning and development of e-support services.

6.1.2 Lessons about the survey process

The trialling of the survey presented several learning experiences that can be used to improve the process and achieve a better return rate.

> *"We expected this to be an easy task, but learned that just placing the survey online and expecting students to fill them out does not get us far,"* explained Bruce Enting, project manager.

The project highlighted the importance of detailed planning, networking and regularly keeping in touch with those assisting with administering the survey. There was evidence of low literacy problems levels among some young learners and these presented problems with reading and interpreting the survey items. The survey with youths noted some variation in the way e-learning and e-business were conceptualised. Not all students participating in e-learning had regular access to technology or to the internet. If it is available only during the contact hours or only in classrooms, a time period needs to be negotiated with the survey administrators to allow participants to complete the survey during these times. The context and environments in which e-learning for young learners takes place is diverse.

6.2 Case study 2: Building sustainability – performance indicators for educational delivery

E-business systems and facilities at the Hunter Institute of TAFE were put in place to facilitate and serve organisational business goals. e-Learning structures support blended learning which is most appropriate for learners from the catchment served by the Institute. Together, the two were set up to provide quality client services that contribute to sustainable regional development. Benchmarking is used to measure how e-business and e-learning impact on the institute's service delivery. The indicators are used to collect data for evaluation, monitoring and reporting to inform the Institute, its Board and other stakeholders about performance, implementation issues and future directions. The set of key indicators used by Hunter Institute maintained a balance between practicality in collection and analysis, usability of the data, and costs. The process is inclusive of all stakeholders including the Board, managers, teachers, student support staff and the local community. The institute is mindful of its learners and their communities' readiness to embrace technology and e-learning. Hence decisions informed by the benchmarking data consider the context of the learners, and the local communities and industries. Data sets against the agreed indicators are analysed at multiple levels to report on findings at the Institute, faculty, unit and team levels. The data sets offer options for:

- Monitoring performance using time series data
- Comparisons with other TAFE institutes in New South Wales
- Comparisons with other registered training organisations and best practice examples nationally and internationally.

The institute does not compare the data sets between faculties largely because of the diversity in the student cohorts and their learning needs. Data sets against the performance indicators would be supplemented with data from evaluative case studies to obtain more contextual understanding about performance measures and the related outcomes.

6.2.1 Benefits experienced by the institute:

> *"The potential benefits of the data are recognised by some stakeholders who expressed interest in more data to make informed decisions. Others need more time to come on board,"* said Louise King, Director, Educational Development.

The data verified anecdotal information; tested assumptions held by the stakeholders and informed economic decisions about resources and efficiencies. The benchmarking data informed decision-making at various levels by different internal stakeholders such as teachers, administrators, student support and management staff. At an organisational level, the data sets helped monitor performance against the Australian Business Excellence Framework standards and assisted with setting targets to exceed the average ratings of the standards, as well as monitor progress against agreed measures and goals. Data for the Hunter Institute is added to the central database for the whole of the TAFE New South Wales (NSW) network. The Educational Development unit provides data on a quarterly basis, enabling each team to monitor progress against each indicator. The survey data informs performance at the team level and provides recognition and encouragement to improve services and innovation. Teams that show improvements are recognised by their managers and the Institute. News of their outstanding achievements is shared with other staff and key industry partners who support their activities. The local community and industries that supports the activities of the institute recognise the Institute's progress and support further improvements. "This is important for our relationship with local industries and communities.

They all show pride in the achievements of the Institute," explained Louise King, Director, Educational Development. The project recognised the potential in undertaking benchmarking to improve products, content, and service development, professional development, change management for e-learning, IT planning, business planning and marketing.

6.2.2 Lessons from the impact of e-business and e-learning on service delivery:

Benchmarking takes a lot of time and planning. "One must not assume that the student support officer will have time to collect data on top of his/her normal duties," advised Louise King, Director, Educational Development. It is critical to be inclusive of all stakeholders to ensure progress at all levels without expecting everyone to come on board from the start. "Some individuals and teams need time and space. It is best to focus and start with those who are keen and ready," observed Louise King. Through this project, the survey team learned that a phased approach to cultural change at the organisational and community levels would improve engagement and commitment to the benchmarking exercise and goals of improving e-learning services.

7. Case study 3: Evaluation of Learnline

Charles Darwin University (CDU) is a dual sector institution with approximately 17,000 students and nine campuses located across the Northern Territory. Web-based learning was formally introduced in 2003 using a learning management system, called Learnline. Learnline integrates web-based learning, other e-learning resources and student administration data into a centrally managed system that is accessed by staff and students. The system is based on licensed Blackboard software and includes Horizon Wimba LiveClassroom and Voice Tools plug-ins, locally developed websites and blogs. Since the implementation of Learnline, the University has experienced a large increase in enrolments in units offered on-line. A very diverse group of learners spread across urban, regional and remote areas were able to access learning and training using Learnline. On-line delivery of higher education units were steadily increasing, but Vocational Education and Training units needed more input and improvements to encourage the move to blended and on-line delivery modes.

Prior to the evaluation of Learnline, there was no hard data available to show what helped or hindered staff moving to online delivery. Evidence about the usage and quality of its online learning services was needed. The university provided strategic support to carry out the exercise and funded an external consultant to undertake a survey of staff who were both users and non-users of Learnline. This initiative and support led to increased staff interest, support and participation in the evaluation. Eighty teachers (approx. 15% of academic staff) participated in the survey. The survey used a combination of focus groups, telephone and face-to-face interviews, and email surveys for data gathering. The response rate was high (more than 80%).

7.1.1 Benefits of the evaluation of Learnline

Data highlighted the specific areas of e-learning services that were considered satisfactory and those that needed further improvement. For example, the existing introductory staff training sessions for Learnline, were rated highly. On the other hand customised training in some subject areas, for some of the less commonly used features of Learnline, and for sessional and remote area staff were identified. The information helped with the review of professional development content and delivery and in shaping strategies for equipping teachers with the right sets of knowledge and skills so that the quality of online content and services to students could be improved. The data, which provided solid evidence on the performance of Learnline, was submitted to management to provide justification for additional resources such as IT hardware and software, and for staff time. This aligned well with the evidence-based framework that the university uses when making decisions. The findings gave an understanding of the advantages and disadvantages of collecting data against the indicators. There was much interest in the outcomes from teachers, CDU management and external networks of the university who were considering similar exercises. The university is now able to extract data on the use of e-learning in terms of the number units and access to those units. It now has data on a set of 24 indicators (3 on teaching and learning and 21 on course development, institutional support, course structure, faculty support, student support, and evaluation and assessment) that benchmark the quality of web-based learning resources. The findings of the survey inform and align with Northern Territory's Flexible Learning Plan and the Australian Flexible Learning Framework.

7.1.2 Lessons from the evaluation of Learnline

The findings highlighted the need to allocate teaching staff with more time for the development of the online content, especially for new courses and units, or those undergoing major revisions.

8. Key benefits of e-learning benchmarking

All three case studies recognised the potential in undertaking benchmarking to improve products, content and service development, professional development, change management for e-learning, IT planning, business planning and marketing. Key benefits of undertaking e-learning benchmarking, as experienced by the case studies, are listed under three broad purposes: reporting framework, performance measurement and service improvement.

8.1 Reporting framework

E-learning benchmarking data provides real evidence that informs an evidence based decision making framework. Benchmarking datasets contribute to reporting frameworks by verifying anecdotal data and testing of assumptions held by the stakeholders. They provide real evidence of performance against the indicators. The datasets inform decision making at various levels by different internal stakeholders such as teachers, administrators, student support and management staff. They provide substantiate justification for additional resources such as IT hardware and software, and for staff time. Datasets inform decision making for organisational planning, efficiencies, effectiveness and allocation of resources. When combined with data from other sources a more holistic picture of the service provisions develops. Benchmarking data could be added to a larger database for future data mining by central agencies as well as other contributing organisations for comparisons and drawing evidence based conclusions. The datasets inform and align with strategic directions of the organisation, as well as State and National goals for e-learning.

8.2 Performance measurement

Monitoring progress using performance measurement is a common approach in all organisations. Datasets from benchmarking could be used to help monitor performance against existing standards, and assist with setting targets to exceed existing ratings of the standards, as well as monitor progress against agreed measures and goals. They inform performance at the team level and could contribute to internal recognition and reward systems. Outstanding performance stories could be shared with key stakeholders, advocates and supporting networks. Dissemination of high success and achievements increases staff confidence. Datasets provide a bearing on how particular groups of learners compare with others regarding common sets of services.

8.3 Service improvement

Analysis of benchmarking datasets could identify service areas that are highly regarded by clients and those that are limited and in need for improvement. Benchmarking data identifies specific areas for improvement to enhance services and course delivery. They enable teachers to monitor, evaluate and reflect on the impact of changes in teaching strategies and choice of content and resources. Datasets provide support staff with information about communication and support strategies that involve e-learning tools and technologies, and the use and appropriateness of these services. The information is then used for future planning and development of e-support services. Benchmarking data helps review professional development content and delivery and shape strategies for equipping teachers with the right sets of knowledge and skills so that the quality of online content and services to students could be improved. Datasets provide a point of reference to improve and be competitive as well as innovative in educational delivery.

9. Suggested strategies for e-learning benchmarking

The following strategies are drawn from lessons that the three case studies highlighted. They are grouped under three main actions for benchmarking: data collection, data interpretation and implementation of e-learning.

10. Data collection

- Allow flexibility in the way the survey is conducted to collect data. For those who do not have access to technology, hard copies of the survey should be supplied to be completed and posted back to the survey administrators. Some students being surveyed may like to complete these in their own time and place, others may like to do it in class with the teacher/trainer assisting with reading and interpreting the items.
- Support for those with literacy problems must be made available.
- Key terms such as e-learning and e-business should be defined clearly. Include examples of what constitutes e-learning and e-business.
- A supportive relationship with the trainers or teachers (administrators) of the survey would ensure improved response rates.

11. Data interpretation

Data must be interpreted within the contexts of the team, faculty and the organisation, to draw valid

conclusions or make comparisons. Interpretation of data may get clouded by focusing on embracing technology for e-learning. Serious consideration must also be given to client and staff capability and capacities to take up and use e-learning.

12. Implementation of e-learning benchmarking

- A clear change management process that considers the changing roles and responsibilities of all stakeholders will minimise confusion about task allocations and timelines for collecting, analysing, interpreting and disseminating data. A phased approach to introducing and implementing e-learning benchmarking would ease the cultural change. When planning for benchmarking managers need to engage and work in partnership with all stakeholders including IT, HR and management staff as active players, not just adversaries.

- Clearly defined goals and timelines should be communicated to all stakeholders so that they all know what and when to expect. Both, a change communications plan and a marketing communication plan are needed (Dublin 2004).

- Invest adequate time in planning and development of e-learning content.

- Include a framework of recognition and reward. According to Ettinger et al. (2005) a positive framework of recognition and reward enhances motivation.

The above strategies form a guide for others interested in undertaking benchmarking exercise to improve e-learning services.

13. Summary

The case studies in this paper illustrate ways in which VET providers have approached e-learning benchmarking, the benefits achieved and the lessons that they learned. These cases exemplify how VET providers in Australia have adapted the baseline indicators, how the indicators informed organisational plans and e-learning outcomes. The data sets obtained by the three case study sites informed three main organisational purposes: reporting, performance measurement, and service improvements. The benchmarking datasets provided evidence on current performance and progress as well as improvements in products, content and service development, professional development, change management for e-learning, IT planning, business planning and marketing. The experiences from the benchmarking exercises highlighted a set of strategies for others interested in e-learning benchmarking to gain the most benefits. Other users could adopt strategies for data collection, data interpretation and implementation of e-learning benchmarking at the organisational.

Acknowledgements

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