

# Training: The Way to Retain Valuable IT Employees?

**Thomas Acton**  
**National University of Ireland**  
**Galway, Ireland**

[Thomas.acton@nuigalway.ie](mailto:Thomas.acton@nuigalway.ie)

**Willie Golden**  
**National University of Ireland**  
**Galway, Ireland**

[Willie.golden@nuigalway.ie](mailto:Willie.golden@nuigalway.ie)

## Abstract

The IT workforce of a company is an important strategic asset, an asset that needs to be managed. This paper details the results of a survey administered to 200 employees across 39 software companies in Ireland between July and August 2001, with a response rate of 102 (51%). It presents a descriptive study, which assesses the impact that training practices have on employee retention. It also gathers data on the effects of training initiatives, the types of training in use, and the influence of training on knowledge retention. IT staff were chosen for this study as they embody the new "knowledge worker" operating in the information economy. The study finds that training helps in retaining knowledge within the organization, but may not help in retaining employees. The predominant method of training delivery is by instructor-led formal sessions, followed by self-training and workshops. Findings show that more modern methods such as web-based and computer-based training are not pervasive.

**Keywords:** IT employees, training, employee retention, knowledge transfer

## Introduction

From a company perspective, training and development of company employees are essential for organizational operation, and organizational advancement. From an employee perspective, these same factors are both crucial and critical for skill development and for career advancement. Retention of employees, and the retention of valued skill sets, are important for continued business achievements (Mak and Sockel, 1999). The successful retention of employees leads to knowledge preservation within the organization (Cappelli, 2000). Employee turnover may lead to a loss of human resources weakening competitive positions. At a company level, mechanisms that allow for and promote knowledge transfer amongst employees can help minimize the effect of the loss of skilled staff to other companies (Cappelli, 2000).

Training employees leads to increased employee satisfaction, facilitates the updating of skills, leads to an increased sense of belonging and benefit, increased employee commitment to the organization (Bushardt, Fretwell et al., 1994), and strengthens the organization's competitiveness (Hughey and Mussnug, 1997; Burden and Proctor, 2000). Job-related training increases an employee's ability to perform job-related tasks. Job satisfaction is an important motivator for employee performance and is negatively related to turnover (Mak and Sockel, 1999).

Company commitment to the training needs of its employees positively influences employee satisfaction, leading to an increase in employee motivation and an increase in retention (Mak and Sockel, 1999; Ranft and Lord, 2000). Such commitment culminates in employee exposure to quality job-related training, leading to better employee morale, an increased sense of employee achievement and accomplishment (Elizur, 1996), and ultimately to an increase in organizational competitiveness.

---

Material published as part of these proceedings, either on-line or in print, is copyrighted by Informing Science. Permission to make digital or paper copy of part or all of these works for personal or classroom use is granted without fee provided that the copies are not made or distributed for profit or commercial advantage AND that copies 1) bear this notice in full and 2) give the full citation on the first page. It is permissible to abstract these works so long as credit is given. To copy in all other cases or to republish or to post on a server or to redistribute to lists requires specific permission from the publisher at [Publisher@InformingScience.org](mailto:Publisher@InformingScience.org)

## Training

Whilst company commitment to training for its employees positively affects retention and leads to desirable outputs, there are many different categories and types of training (Switzer and Kleiner, 1996; Huang, 2001; Mathews, Ueno et al., 2001). To have positive results, organizational commitment to training must tie closely to appropriate effective training methods and training delivery mechanisms. In terms of training methodologies, what may be appropriate for one company (or employee) may not be for another.

This paper describes a descriptive study, which assesses the impact of training on employee retention, and examines the relationship between organizational commitment to training and benefits accrued. Results of the study demonstrate that organizational attitudes and provision for training relate positively to employee expectations and requirements. Findings indicate that well-engineered training initiatives lead to increased organizational strength, job-related employee competencies, and job satisfaction. The study finds that training helps in retaining knowledge within the organization, but may not help in retaining employees. The predominant method of training delivery is by instructor-led formal sessions, followed by self-training and workshops. Findings show that more modern methods such as web-based and computer-based training are not pervasive. Almost one third of respondents believe that training received has not helped to reduce job-related stress. More than one quarter of respondents indicate that their organization does not structure training based on employee feedback on requirements. There are many cases where the training needs of employees have not been adequately addressed, and cases where organizations have not evaluated the quality or effectiveness of training programmes, making return on investment hard to measure.

## Staff Retention

To thrive, an organization must create an environment that not only attracts people to join and give their best every day, but one that also strives to retain existing staff. The retention of talented experienced, productive and knowledgeable employees can be a source of competitive advantage for companies (King, 1997; Cheng and Brown, 1998; Roepke, Agarwal et al., 2000). The retention of employees provides staff stability, which aids organizational knowledge retention (Cappelli, 2000), offers the opportunity to raise quality standards through continuous improvement practices (Motwani, Frahm et al., 1994) and facilitates the achievement of more consistent customer care (Rowley and Purcell, 2001). It is important for employers to identify and to understand their employees' viewpoints on what the employees consider to be the most important aspects of their jobs, if employees are to be more content (Ventakesh, 1999; Mulder, 2001).

While staff retention in general is important, the retention of IT employees is vital for business success (Mak and Sockel, 1999; MacDonald, Gabriel et al., 2000). Insightful IT leaders recognize that the greatest impediments to success are often related to people rather than to information, technology, and systems (Roepke, Agarwal et al., 2000). Considering the high costs associated with replacing IT staff and their experience, it makes sense for companies to invest in mechanisms designed to keep IT staff longer (Mak and Sockel, 1999; Moore, 2000).

One such staff retention mechanism is the use of employee training programmes for existing members of staff (Mulder, 2001). The use of such programmes in recent times by employers may have more to do with securing employee commitment in uncertain times than about transforming skill levels (Hallier and Butts, 1999). As such, for some organizations the key objective of training is to increase employee commitment to the organization and to create a culture that underlines the value of long-term employment. Mak and Sockel (1999) found that most IS employees consider career development a priority motivational tool; and once motivated, they are more likely to be devoted to their job and the company's retention rate should improve. As such, management commitment to the development of the employee can significantly affect retention, even in situations where economic incentives such as incremental salary increases do not (Ranft and Lord, 2000).

## Training

Notwithstanding the over reaching goal of staff retention, specific training initiatives have specific goals. These include: the improvement of employee job performance, employee development (Burden and Proctor, 2000), the development of skills, knowledge, and attitudes (Al-Khayyat and Elgamal, 1997), and a means of achieving a competitive edge (Hughey and Mussnug, 1997; Hallier and Butts, 2000). Given the rapid obsolescence of IT specific skills there is a continual need to provide opportunities for employees to update their technical skill sets. The failure to provide such training increase the chance of failure and such companies may pay more in the long run (Auer, 1995). Organizations must respond to demands for change while at the same time realizing that advances in technology and knowledge are rendering many traditional employee skills obsolete, while simultaneously developing needs for new ones (Read and Kleiner, 1996). It is this continuous threat of knowledge obsolescence that makes training and retraining necessary, not only for individual growth but also for organizational growth (Read and Kleiner, 1996).

Within the IT sector, training can be considered to encompass organized, structured, formal events and sessions offered to IT employees as a company initiative. This paper does not consider on-the-job daily experiences to be classed as formal training, although such experiences can aid the development of skills related to job functions (Sadler-Smith, Down et al., 2000; Smallbone, Supri et al., 2000).

### ***Organizational Commitment to Training***

Effective training programmes require the dedicated support of top management (Motwani, Frahm et al., 1994). Such organizations provide training mapped to employee and organizational needs (Mann, 1997), and provide this at the proper time. Yet, not all companies place the same emphasis on, or show the same commitment to employee training (Roberts and McDonald, 1995; Hughey and Mussnug, 1997). Some companies work hard to recruit the best people and yet spend relatively little effort to retain them once hired (Cappelli, 2000). There is evidence to show that benefits accrue to organizations that are committed to employee training (Wills, 1994).

Organizations that place a high value on training commit resources to the management of the training process. They devote time to ensuring that employees get the training programmes that is most appropriate for them given their existing IT skill sets (Eighteen, 1999). Such firms are most successful at maximizing the effectiveness of their training programs (Huang, 2001). Organizations that commit effort and finances to training programmes and employee development do so with the objective of a pay-off in terms of increased skill-sets, increased motivation, increased knowledge transfer (Pate, Martin et al., 2000), more positive psychological and organizational dynamics, as well as a measurable competitive edge.

### ***Evaluation of Training***

The use of training courses far outstrips what is known of their usefulness (Foxon, 1989; Schonewille, 2001). Mann (1996) maintains that despite heavy investment in training, organizations can frequently fail to evaluate adequately the value or success of their training programmes. Organizations that devote considerable resources to training also understand the value of evaluating the training process (Motwani, Frahm et al., 1994; Mann, 1996). Such evaluation is a key phase in any proposed training and development process (Al-Khayyat and Elgamal, 1997). While such appraisal is desirable in principle it is difficult in practice (Morris, 1984). Even those companies who do carry out evaluations often use measures later considered ineffective (Schonewille, 2001). The most common metric of evaluation is trainee perceptions (Bostrom, Olfman et al., 1988; Foxon, 1989; Mann, 1996; Huang, 2001). Such assessments are ad-hoc, unsystematic, informal, and unstructured evaluations of training programmes, which tend to be post-training appraisals rather than approaching the evaluation of training programmes from their design stages (James and Roffe, 2000).

## **Types of Training**

Many forms of training exist (Wiedenbeck, Zila et al., 1995; Switzer and Kleiner, 1996; Huang, 2001; Mathews, Ueno et al., 2001). The range of training techniques has been expanded by the application of technology in its "hard" (for example through computing technology) and "soft" (for example through instructional design) (Sadler-Smith, Down et al., 2000). In relation to IT training, many methodologies for the approach to and delivery of training can be used: forms of training include instructor console training in a classroom situation, stand-alone terminals with remote instruction, computer based training (CBT) without instructor, hypermedia training (a computer based method of non-sequential reading and writing, a technique with which chunks of information can be arranged and rearranged according to an individual's needs, previous knowledge, and curiosities (Borsook and Higginbotham-Wheat, 1992; Murray, 1998)), self-paced training using a variety of delivery methods (Compeau, 1995), distance learning (whether by videoconferencing, email, or other method), learning networks, simulations, groupware communication, use of mentors or coaches, job rotation, management games, role playing and behavior modeling (Williams, 2001), or Internet based training.

While many new training approaches based on new technology exist, these modern training methods have been subjected to comparatively little empirical or critical scrutiny (Sadler-Smith, Down et al., 2000). The literature suggests that some of the most effective training techniques are not new, but are merely the application of old-fashioned common sense to the assessment of training needs (Switzer and Kleiner, 1996; Sadler-Smith, Down et al., 2000; Smith, 2002). Sadler-Smith et al. (2000) believe that flexibility of delivery is a fundamental issue for smaller firms, to which open/distance/technology-based learning may present a viable solution; however, the modernity of some delivery methods may in itself lead to presumption of applicability and efficacy. Bostrom et al. (1988) argue that the delivery method can directly influence the effectiveness of, and the benefits accrued from training.

Read and Kleiner (1996) present the most commonly used training methods across non-industry specific U.S. companies. They found that the top ten training methods used in business, listed in order from highest to lowest use, were: videotapes, lectures, one-on-one instruction, role plays, games/simulation, case studies, slides, computer-based training, audio tapes, and films. In a survey carried out by 450 respondents, Mathews et al. (2001) studied the incidence of training delivery methods across non-industry specific organizations in the U.K., Portugal, and Finland within the context of benefits accrued. They found that training methods most commonly used tended to be traditional, with little impact evident of more hi-tech methods. Traditional methods included external short courses, internal lectures and seminars, issuing of training manuals and materials to be self-taught, using training videos, short demonstrations, and the delegation of training responsibilities to training consultants. This study found that in-house participative seminars were the preferred training delivery method in the UK, whereas external short courses were the preferred method in Finland and Portugal. Impersonal methods such as training videos, and internet or computer-based training, were viewed across the UK, Finland, and Portugal as poor methods. In contrast, highly personal methods of training such as participative courses and seminars were viewed as the most effective and highly regarded methods.

## **Research Methodology**

The purpose of this research is to evaluate the impact of training on staff retention rates. In addition, the research sought to discover if any significance existed between organizations that were committed to training versus those that were not, and if employees who were gaining significant benefits from training differed from those who did not receive such benefits. In choosing a population to carry out the research on it the IT staff in the software industry were chosen as they embody the new "knowledge worker" operating in the Irish information economy. In addition, such employees are likely to be more familiar with, or have exposure to, technology-reliant training methods such as computer-based training (CBT) and/or web-based training (WBT).

Companies were selected for this study based on membership of the Irish Software Association (ISA), a body facilitating the needs of software company management. As a pre-test, the questionnaire was mailed to human resource managers in 3 representative companies, to assess the likelihood of acceptance, and of subsequent distribution to employees. Elements of the questionnaire were updated in accordance to pre-test feedback.

The primary research method used was a postal survey, which was administered to 200 employees across 39 software companies in Ireland between July and August 2001. The response rate achieved was 51%. Questionnaires were mailed to a contact person in each of these companies along with a personally addressed covering letter to this person. This person was requested to distribute the questionnaires to their employees, and to attach a large stamped and addressed container envelope (provided) to an appropriate notice board. Employees were asked to (anonymously) complete the questionnaire, and deposit the questionnaire into the container envelope. The contact person was asked to seal and mail the envelope back to the investigator within 2 weeks of receipt. Of the 200 questionnaires mailed, 102 were returned (51%). The contact person in each company was contacted by telephone within 3 days of the return deadline as a reminder to do so. All 102 responses were returned within the time frame of 2 weeks indicated on the covering letter.

Non-response bias was assessed by treating responses received more than 1 week after the deadline given (three weeks after the first mailing of the questionnaire) as being representative of non-respondents. Chi-Square significance tests were used to test for significant differences between the first respondents and the late respondents in the study. The early and late respondents did not differ significantly (at  $p < .05$ ) in the answers they gave to randomly selected questions.

The results of the questionnaires were analyzed using SPSS version 10.1. Cluster analysis was used to obtain two company groups – those committed to training and those not committed to training. In addition, cluster analysis was used to discern two groups of employees – those receiving high levels of benefits from training and those obtaining low levels of benefits. Significances between these clusters were then evaluated using the t-test with the chosen level of confidence for the research being 0.05.

## **Profile of Organizations and Respondents**

The main business activity of the majority of the companies was software production (84%), with a further 13% in software consultancy. The business activity of the remaining 3% was not classified by the survey. The majority of the companies are small to medium sized firms – 70% have less than 100 employees and the remaining 30% have less than 500 employees. The turnover of the respondent companies was as follows – 53% less than €1.9m, 21% €1.9m-€6.35m and 26% over €6.35.

The breakdown of respondents on the basis of sex was 75% male, 25% female. 90% of the respondents had third level educational qualifications in the area of IT – 22% had a masters degree, 47% had a degree, 13% had a diploma and 9% had a certificate. 69% of the individuals' respondents who returned the questionnaire were aged between 25 and 35 years of age, 16% were under 25 and the remaining 15% were aged between 36 and 60 years of age. 70% have at least 4 years experience in an IT related job (Table 1.). A considerable number however have moved jobs as only 29% are in their current job for at least 4 years (Table 1). 67% are happy in their current job and 84% believe they contribute to the success of their organization.

## Training

	<1 year	1-2 years	2-3 years	4-5 years	6-8 years	>8 years
Years in total worked in an IT-related job	11%	14%	6%	29%	15%	26%
Years worked in current job	31%	35%	6%	16%	7%	6%

**Table 1: Years worked in IT, and years in current job**

The most prevalent job description is that of software developer (40%), 16% are project managers, 12% are software testers, 8% are IT support staff and the remaining 26% have other job descriptions.

The goal of staff retention is high on the agenda of the companies interviewed. 60% of current employees believe that their organization actively tries to retain existing skilled IT staff, 56% think that their company sees staff retention as an important contributor to continued business success, and 58% believe that their firm provides a work environment that helps staff retention. The atmosphere being provided by firms is in general positive – 70% of employees believe that their firm values their competencies, 76% see their organization as a good place to work yet only 61% believe that their organization acknowledges the contribution they make to its success.

In general, organizations appear to be committed to training. 67% of employees think that their organizations see training as important to business success. 48% provide training based on feedback from employees about their training needs. Line managers predominantly take the decision regarding what training is to be carried out, and in only 10% of cases is the human resources department responsible for the decision. The decision on what training is to be undertaken is generally achieved through a consultative process in 58% of cases, yet 54% of employees have undertaken training where no prior consultation was engaged in. 40% of organizations carry out a post-evaluation of the effectiveness of the training provided, and 46% evaluate employee feedback on the training they received.

The inadequacy of training within a particular company is not a major reason for changing employment – only 21% see it as a factor. In addition, the majority of potential employees are not influenced in their decision to work for a particular company on the basis of the training being provided by the prospective company. Only 26% indicated that the availability of training was a factor in their decision to take up their current employment. Yet 90% consider ongoing training to be important for career advancement within the organization and the same percentage (90%) consider training to contribute to employee job satisfaction. In addition, 93% believe that there are areas of their job in which they require further training.

The most popular training method being used is instructor-led formal training (Table 2). In the previous year 22% have received zero days job-related training, 18% have received 1-3 days, 22% 4-5 days, 24% 6-10 days, 15% over ten days. The survey assessed to particular types of training – induction training and on-going training. 61% believe that the on-going training is of substantial benefit, but only 31% believe that their initial induction training provides the same level of benefit. The overall impact of all training received by employees

Training Method	Available	Undertaken
Instructor-led formal training	90%	85%
Workshops	77%	64%
Computer-based training (CBT)	67%	42%
Seminars	61%	48%
Conferences	54%	30%
Instructor-free Web-based training	36%	22%
Instructor-led Web-based training	34%	16%

**Table 2: Training methods available, and undertaken**

is that it has improved the job performance of 68% of respondents, increased the job satisfaction of 63%, reduced the job-related stress for 46% and made 47% happier in their job.

## Findings

To facilitate the analysis, this research used cluster analysis and found that two types of organizations exist in this study – those organizations that are committed to training and those that are less committed. 60% of organizations fell into the committed cluster, with the 40% remaining in the less committed cluster. The basis on which the two organizational clusters were derived was from questions that assessed the extent to which organizations provided training – both initial job training and on-going training and the organizations perceived attitude to such training. These two groups were then used as the basis on which standard t-tests were carried out to assess if any significant differences exist between the two types of organizations. The degree of commitment to training is not a function of the number of training days provided to each employee - no significant difference was found between the two groups on this basis. As such, it is not the quantity of training days provided that distinguishes the committed organization, but rather the extent to which they manage the training that is provided.

The first research question sought to ascertain whether organizations that have a high commitment to training have better staff retention rates. Staff retention was assessed on the basis of the number of years employees are in their current job, and the extent of IT staff turnover. No significant difference was found between the two types of organizations on either of these factors. Thus, organizations that provide higher levels of training do not have significantly better staff retention rates. While these organizations do not gain in terms of staff retention their commitment to training could be aiding their staff recruitment, as a significant positive relationship ( $p < .01$ ,  $R = .315$ ) exists between committed organizations and employees who indicated that the availability of training within the organization was a factor in their decision to work for the firm.

Committed firms are significantly more involved in the management of the training process (Table 3). These firms make sure the training is relevant both to the employee and the business and also evaluate the training once it has occurred. Such attention to detail provides rewards as the employees of the committed firm derive significantly more benefits from their training (Table 3). These benefits include improved job performance, increased job satisfaction and reduced levels of job related stress.

The committed firm also provides a broader range of training methods, and allows employees to participate in a variety of training methods. The employees of committed firms derive significantly more satisfaction from their work and believe that the firm is a good place to work (Table 3).

The final research objective was to assess the extent to which differences exist between employees who are gaining significant benefits from training and those who do not receive such benefits. Cluster analysis was used and two groups of employees were derived. The breakdown of the two groups was: 71% fell into the high benefit cluster, and the remaining 29% were in the low benefits cluster.

Training

<b>Construct</b>	<b>t-value</b>	<b>R</b>
<b>Management of Training Process</b>		
Organization involves employees in deciding on training	3.282**	.284**
Organization provides training based on feedback	5.470***	.504***
Training is relevant to business requirements	6.120***	.496***
Training is relevant to employee job requirements	6.552***	.506***
Organization evaluates effectiveness of training provided	4.728***	.393***
Organization evaluates employee feedback on training	4.183***	.353***
<b>Benefits from Training</b>		
Benefit of induction training	5.661***	.552***
Benefit of ongoing training	4.347***	.437**
Training has improved current job performance	3.389**	.338**
Training received has improved job satisfaction	3.613***	.358**
Training received has reduced job related stress	2.402*	.247*
<b>Type and Degree of Training Received</b>		
Number of Training methods available	4.242***	.410**
Number of Training methods undertaken	3.938***	.385**
<b>Organizational Staff Management</b>		
Employee believe firm is a good place to work	3.103**	.322**
Employee is happy in my job	3.638***	.360**

\*\*\*p<.001    \*\*p<.01    \*p<.05

**Table 3: Committed V's Non-Committed Training Organizations**

Construct	t-value	R
<b>Respondent Profile</b>		
Happy in my job	2.485*	-.231*
Organization acknowledges my contribution to its success	4.095***	-.343**
<b>Organizational Staff Management</b>		
Actively tries to retain existing IT skilled staff	2.339*	-.218*
Provide work environment to retain existing staff	3.742***	-.343**
Values the competencies of its employees	2.609*	-.266*
Is a good place to work	3.087**	-.257*
<b>Respondent Type and Degree of Training</b>		
Training days last year	Not Sig.	Not Sig.
Training days last month	Not Sig.	Not Sig.
Number of Training methods available	Not Sig.	Not Sig.
Number of Training methods undertaken	Not Sig.	Not Sig.
<b>Organizational management of Training</b>		
Organization involves employee in deciding on training	4.373***	-.456***
Organization provides training based on feedback	3.307**	-.361**
Training provided is relevant to business requirements	3.504**	-.379**
Training provided is relevant to employee job requirements	3.026**	-.336**
Organization evaluates effectiveness of training provided	2.942**	-.326**
Organization evaluates employee feedback on training	2.513*	-.282*

\*\*\*p<.001    \*\*p<.01    \*p<.05

**Table 4: Employee training benefits - high benefits vs. low benefits**

Employees who receive high quality training from their organization also work in organizations that are significantly more likely to provide a work environment conducive to helping retain staff (Table 4). In addition these organizations are significantly more likely to be perceived by employees as a good place to work and to value the competencies of their employees. Those who are gaining higher benefits from the training they have received are also significantly happier in their job and believe that the organization recognizes their contribution (Table 4). However, while these employees gain more benefits from training and work in a more conducive work environment these factors show no correlation with the length of time worked for the organization or in the number of IT staff leaving the firm. Thus it appears that employees do not reward organizations that provide a good work and training environment by staying significantly longer than normal with the organization.

Employees' perceptions of the benefits they derive from the training they have undergone is not significantly correlated with the amount of training they have undertaken, the number of training methods avail-

## Training

able, or the number of training methods undertaken (Table 4). On the other hand, the extent to which the organization is perceived to be actively managing the training being undertaken is significantly correlated to the benefits derived from such training by employees (Table 4). In particular, high training benefits are derived by employees of organizations who consult employees with respect to their training, target the training to specific business and job related objectives and carry out a post-training evaluation process.

## Conclusion

Staff retention is an important issue for companies in general, and is a particularly important issue for IT related positions due to the potential to lose valuable knowledge and skills with the departure of key IT people from within a company. Organizations are cognizant of this fact and the majority sees staff retention as an important priority for their firm. One avenue that has been proposed in the literature to aid staff retention is the provision of training for employees. The key conclusion from this research is that the provision of training does not have any impact on staff retention rates. Organizations that provide high quality training do not see their employees stay longer with them. Similarly employees who receive high quality training with a particular firm do not reward such training by staying with the firm longer than normal. An explanation for this might be in the fact that while employees see training as important for career development it is not one of the key factors that influences the decision to stay in a particular job.

While not gaining increased staff retention rates from training, organizations do derive other direct and indirect benefits from training. In particular the employees who are part of organizations that are committed to training gain significantly more benefits from their training in terms of improved job performance, increased job satisfaction and reduced levels of job related stress.

This research was conducted on IT personnel, and given their level of expertise with technology they are likely to be early adopters of new training methods that incorporate computer and communications technology. The research found that technology driven methods such as CBT and web-based training were not pervasive. The most popular training method is instructor led formal training.

The evaluation by employees of their organization's commitment to training appears to be driven to some extent by perception. For example, organizations perceived to be committed to training were found to offer significantly more training methods and their employees had participated in significantly more of these training methods. Yet when the benefits derived from training by employees were evaluated the number of training methods available or undertaken was not significantly related to the perception of the benefits achieved from the training. Thus, to be seen to be a good training organization it is beneficial to offer many training methods; yet when employees undertake training it is the actual training experience that is of most importance in terms of assessing its quality.

## References

- Al-Khayyat, R. M. and Elgamal, M.A. (1997). A macro model of training and development: validation. Journal of European Industrial Training **21**(3): 87-101.
- Auer, K. (1995). Smalltalk training as innovative as the environment. Communications of the ACM **38**(10): 115-117.
- Borsook, T. K. and Higginbotham-Wheat, N. (1992). A Psychology of Hypermedia: A Conceptual Framework for Research & Development. Association for Educational Communications and Technology, Washington, D.C., USA.
- Bostrom, R. P., Olfman, L. et al. (1988). The importance of individual differences in end-user training: The case for learning style. Special Interest Group on Computer Personnel Research Annual Conference. Proceedings of the ACM SIGCPR conference on Management of information systems personnel, College park, MD USA.
- Burden, R. and Proctor, T. (2000). Creating a sustainable competitive advantage through training. Team Performance Management **6**(5,6): 90-97.
- Bushardt, S. C., Fretwell, C. et al. (1994). Continuous Improvement through Employee Training: A Case Example from the Financial Services Industry. The Learning Organization: An International Journal **1**(1): 11-16.

- Cappelli, P. (2000). Managing Without Commitment. *Organizational Dynamics* **28**(4): 11-24.
- Cheng, A. and Brown, A. (1998). HRM Strategies and labour turnover in the hotel industry: a comparative study of Australia and Singapore. *International Journal of Human Resource Management* **9**: 136-154.
- Compeau, D. R., and Higgins, C. A., (1995). Computer Self-Efficacy: Development of a Measure and Initial Test. *MIS Quarterly* **19**(2): 189-211.
- Eighteen, R. (1999). Training needs analysis for IT training. *Industrial and Commercial Training* **31**(4): 149-153.
- Elizur, D. (1996). Work values and commitment. *International Journal of Manpower* **17**(3): 25-30.
- Foxon, M. (1989). Evaluation of Training and Development programs. *Australian Journal of Educational Technology* **5**(2): 89-104.
- Hallier, J. and Butts, S. (1999). Employers' discovery of training: self-development, employability and the rhetoric of partnership. *Employee Relations* **21**(1): 80-95.
- Hallier, J. and Butts, S. (2000). Attempts to advance the role of training: process and context. *Employee Relations* **22**(4): 375-402.
- Huang, T.-C. (2001). The relation of training practices and organizational performance in small and medium size enterprises. *Education and Training* **43**(8,9): 437-444.
- Hughey, A. W. and Mussnug, K. J. (1997). Designing effective employee training programmes. *Training for Quality* **5**(2): 52-57.
- James, C. and Roffe, I. (2000). The evaluation of goal and goal-free training innovation. *Journal of European Industrial Training* **24**(1): 12-20.
- King, A. S. (1997). The crescendo effect in career motivation. *Career Development International* **2**: 293-301.
- MacDonald, C. J., Gabriel, M. A., et al. (2000). Factors influencing adult learning in technology based firms. *The Journal of Management Development* **19**(3): 220-240.
- Mak, B. and Sockel, H. (1999). A confirmatory factor analysis of IS employee motivation and retention. *Information and Management* **38**: 265-276.
- Mann, S. (1996). What should training evaluations evaluate? *Journal of European Industrial Training* **20**(9): 14-20.
- Mann, S. (1997). Implications of the response-shift bias for management. *The Journal of Management Development* **16**(5): 328-336.
- Mathews, B. P., Ueno, A., et al. (2001). Quality training: findings from a European survey. *The TQM Magazine* **13**(1): 61-71.
- Moore, J. E. (2000). One Road To Turnover: An Examination of Work Exhaustion in Technology Professionals. *MIS Quarterly* **24**(1): 141-168.
- Morris, M. (1984). The Evaluation of Training. *Industrial & Commercial Training* **16**(2): 9-16.
- Motwani, J. G., Frahm, M. L., et al. (1994). Quality Training: The Key to Quality Improvement. *Training for Quality* **2**(2): 7-12.
- Mulder, M. (2001). Customer satisfaction with training programs. *Journal of European Industrial Training* **25**(6): 321-331.
- Murray, L. (1998). CALL and Web training with teacher self-empowerment: a departmental and long-term approach. *Computers and Education* **31**(1): 17-23.
- Pate, J., Martin, G., et al. (2000). Company-based lifelong learning: what's the pay-off for employers? *Journal of European Industrial Training* **24**(2,3,4): 149-157.
- Ranft, A. and Lord, M. (2000). Acquiring new knowledge: the role of retaining human capital in acquisitions of high-tech firms. *The Journal of High Technology Management Research* **11**(2): 295-319.
- Read, C. W. and Kleiner, B. H. (1996). Which training methods are effective? *Management Development Review* **9**(2): 24-29.
- Roberts, C. and McDonald, G. (1995). Training to fail. *The Journal of Management Development* **14**(4): 16-31.
- Roepke, R., Agarwal, R., et al. (2000). Aligning the IT Human Resource with Business Vision: The Leadership Initiative at 3M. *MIS Quarterly* **24**(2): 327-353.

## Training

- Rowley, G. and Purcell, K. (2001). 'As cooks go, she went' : is labour churn inevitable? *International Journal of Hospitality Management* **20**(2001): 163-185.
- Sadler-Smith, E., Down, S., et al. (2000). "Modern" learning methods: rhetoric and reality. *Personnel Review* **29**(4): 474-490.
- Schonewille, M. (2001). Does training generally work? : Explaining labour productivity effects from schooling and training. *International Journal of Manpower* **22**(1,2): 158-173.
- Smallbone, D., Supri, S., et al. (2000). The implications of new technology for the skill and training needs of small- and medium-sized printing firms. *Education and Training* **42**(4,5): 299-308.
- Smith, P. J. (2002). "Modern" learning methods: rhetoric and reality - further to Sadler-Smith et al. *Personnel Review* **31**(1): 103-113.
- Switzer, M. and Kleiner, B. H. (1996). New developments in training teams effectively. *Training for Quality* **4**(1): 12-17.
- Ventakesh, V. (1999). Creation of Favourable User Perceptions: Exploring the Role of Intrinsic Motivation. *MIS Quarterly* **23**(2): 239-260.
- Wiedenbeck, S., Zila, P., et al. (1995). End-user training: an empirical study comparing on-line practice methods. Conference on Human Factors in Computing Systems, Denver, CO USA.
- Williams, S. (2001). Increasing employees' creativity by training their managers. *Industrial and Commercial Training* **33**(2): 63-68.
- Wills, M. (1994). Managing the Training Process: Putting the Basics into Practice. *Journal of European Industrial Training* **18**(6): 4-28.

## Biographies

Thomas Acton has been a Lecturer in Information Systems within the School of Business & Economics at the National University of Ireland, Galway since 2000. Before joining the university, he worked in the software industry as an Oracle database administrator. Prior to that, he was a teacher for eleven years. His main research interests lie in interface usability for small devices; multimedia object development; IS training; and IS education. He is a graduate of the National University of Ireland, with qualifications in mathematics, education, and software design. He is currently undertaking a Masters of Commerce degree by research at the National University of Ireland, Galway.

Dr. William Golden is a lecturer in Information Systems at NUI, Galway. He has held this position since 1991. He completed his doctorate on B2B Electronic Commerce at the University of Warwick, England. He has presented papers at both national and international conferences. He has co-authored a book, contributed chapters to other texts and published papers in the areas of Electronic Commerce and Information Systems in *Omega*, *The International Journal of Management Science*, *International Journal of Electronic Commerce*, *Journal of Agile Management Systems* and *Journal of Decision Systems*.