

**Disengaged and denied,
or supported and skilled –
the journey to a learner-centred model for rural
and remote older learners**

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Foreword

Background

In August 1999, the Australian National Training Authority Chief Executive Officers (ANTA CEOs) endorsed the *Australian Flexible Learning Framework for the National Vocation Education and Training System 2000 – 2004*. The Australian Flexible Learning Framework (Framework) has been developed by the Flexible Learning Advisory Group (FLAG) and represents a strategic plan for the five year national project allocation for flexible learning. It is designed to support both accelerated take-up for flexible learning modes and to position Australian vocational education and training as a world leader in applying new technologies to vocational education products and services.

Role of the Flexible Learning Advisory Group (FLAG)

FLAG is a strategically-focussed group of senior vocational education and training personnel advising ANTA CEOs, the ANTA Board, the Department of Education, Science and Training, the Australian Information and Communication Technology Education Committee, on national issues relating to the directions and priorities for flexible learning in vocational education and training, with particular reference to online technologies.

Executive summary

Introduction

This research project is one of six funded nationally by the Australian National Training Authority (ANTA) through a series of initiatives within the Australian Flexible Learning Framework (Framework). It seeks to analyse issues relevant to supporting the implementation of flexible learning as it aligns with the HLT50402 Diploma of Paramedic Science (Ambulance) Training Package introduction.

That introduction enables recognition of learning at work, learning in different ways and learning in different modes. It attempts to put the learner at the centre of the learning process and does not focus wholly on delivery. The accent has moved to outcomes measured by performance with the critical assessment being workplace-based. Within this flexible learner context, learners are able to access learning materials at times and places that suit their life or their work. One of the options that is becoming increasingly popular is that of technology-based offerings where there is a wide range of options. A selection of several types of offerings is known as blended learning. However, the range needs to include options that suit the learner's stage of development, situation and interest.

The project

This action research project was conducted within the Queensland Ambulance Service (QAS) between June and October 2004. Its purpose was to establish:

3. the features of a blended learning model that would meet the needs of rural and remote employees in the over 45 age bracket
4. the level of success of the model trialled, and
5. policy recommendations.

Although the research was undertaken within QAS, it was representative of any large and dispersed organisation that is its own registered training organisation (RTO) but has relationships with other education institutions for specific offerings. It was undertaken within the contexts of a service undergoing the pressures of a growing State where medical practitioners have been withdrawing their immediate presence from many small country areas leaving the local ambulance officer as the first responder in medical emergency situations. In addition, the first of the programs associated with the Diploma of Paramedic Science (Ambulance) HLT50402 were being undertaken. In the background were factors such as the worldwide skills shortage, the opportunities for well-qualified officers to leave the service, and the ANTA objectives of learner and business-centred vocational education and training (VET) services that were inclusive of Aboriginal and Islander people.

Factors considered in the relevant literature included:

6. Lifelong and Adult Learning
7. Individual Learning
8. Organisational Learning
9. Workplace Literacy and Computer Literacy
10. Support for Change
11. VET in Australia.

Action research methodology was used and involved four stages:

- clarification of the problems to be dealt with.
- trial of some interventions and review of others already underway.
- analysis of the effects of the interventions.
- make recommendations to contribute to future planning.

Stage 1: Clarification of the problem

The problem of access to staff development opportunities was seen as a major problem within the organisation. While problems of distance and cost of transport were issues, as were access to effective technology, it emerged that the personal factor of disengagement was a critical issue. The issue of learner engagement became paramount.

Telephone survey

This formed the backbone of the research and canvassed issues such as:

12. How do you prefer to learn?
13. How do you learn?
14. How do you relate to technology?
15. What is your preferred learning style?
16. In what clinical areas do you want up-skilling?
17. What combination of ways would you like this to happen?

The results showed people eager to learn, but in their own preferred ways. These tended to be at the low end of the technological continuum such as face-to-face, personal contact, CD-ROMs to be used in their timeframes, emailed notes, emailed PowerPoints and video-conferencing or a combination of several. It appeared that some assessment requirements were deterrents to recognised learning and performance. In response to these results it was possible to plan interventions and reviews.

Stage 2: Planned interventions and review of initiatives

The purpose of these activities was to ascertain the effectiveness of different types of blended learning combinations for teaching skills as well as for engaging and for re-engaging learners.

Activity one

This consisted of two different video-conferencing activities. Both were designed to test video-conferencing as a means of engaging learners in key activities while using relatively easy, tried technology. One activity was in far north Queensland - Cairns and Weipa. Its sole purpose was to re-engage the disengaged learner by personal interaction and confirmation of his existing knowledge base by way of a presentation about the cardio-vascular system.

The other activity was in Toowoomba to seven remote stations. This was a teaching session on the use of the Laryngeal Mask Airway. It enabled officers to see a demonstration carried out by a specialist anaesthetist who explained his every move on the airways manikin. The issues that officers had or felt that they could encounter in the use of this equipment were raised and answered immediately. Clarification was sought and given immediately. At the officers' request, a recording was made onto DVD so that the stations could all have an in-station reference. As all officers had received a

copy of the doctor's PowerPoint by email before the event, this was a well executed, blended learning activity which received complete satisfaction among the participants.

Activity two

This was a review of the effectiveness of online discussion forums either already in existence in QAS or in the process of being set up. One was the Medical Director's Forum where any officer could pose a problem of a clinical nature and receive direct communication from the Medical Director. This was an effective mode of learning - albeit informal learning. It ensured that participants were using the technology as a problem-solving tool. This appeared to be a useful bridging process to the acceptance of technology as a tool instead of the "monster to be mastered".

Another forum was the "Wouldn't it be great if...". This enabled a flow of ideas to be established. Some were creative solutions while others were mere personal venting. However, it appeared that both served a useful purpose. Again the technology was merely a tool and enabled people to have a say.

Activity three

This was a review of an innovation trialled recently in one part of the State where staff were rotated from remote locations for a block of time, allowing them to bring spouse and family with accommodation provided. This enabled the staff member to undertake more varied duties, undergo assessment of performance and have face-to-face educational experiences to supplement distance learning activities.

Activity four

This was a review of several internal activities designed to ensure effective performance by educators. This is critical if disengagement is to be avoided in the learning and assessment processes.

These included:

18. Clinical Call Responsibility where educators were required to serve as back-up call for road duty. This ensured currency in a clinical sense.
19. Workplace Trainer and Assessor Networks and Staff Development activities through Flexible Learning Leaders and associated programs to ensure an understanding of and an ability to implement effective use of technology as well as effective training and assessment activities.
20. Educators' Conference to showcase examples of excellent practice, expose educators to a range of expert models and ensure that educators were able to use the occasion as a forum to raise issues with those able to solve them.
21. Linking of individual development plans to performance management to assist in the prevention of the disengagement phase.

Stage 3: Analysis of the four activities to form a model

With the video-conference activities, two major conditions for success were determined. Firstly, it was necessary to have access to superior digital equipment. Secondly, it was necessary to ensure that preparation for the presentation was thorough and that the material was presented in a challenging manner.

While some internal issues arose relating to moderation with the online discussion forum, this medium which was currently used successfully for informal teaching could be extended to form a basis for extended formal contributions. The partially formulated Educators' Forum could form the basis for this. It was also seen as critical that all employees, including student paramedics, had effective access to these services.

Staff rotation has proved successful in engaging learners to date. This was particularly successful where learners were already self-aware of performance needs and self-directed.

With reference to the educator staff development, analysis showed the necessity for provision of individually-based programs. These need to enable access to a range of suitably designed materials, offered by highly capable educators. Alongside these requirements were the needs for access to technology services of a high quality and to opportunities for time dedicated to learning. The relevance and the timeliness of activities were important, as was the need for challenge and consistent underpinning frameworks.

Stage 4: Reflections, implications and recommendations

Analysis of the activities, revealed concerns with stimulating and engaging teaching and learning materials, as well as the need for individual attention or some face-to-face activities. This needed to be supported by effective technology and offerings that would enable employees to manage themselves, their learning and their work environment. Included in this range of offerings would be workplace and computer literacy support. However, those facilitating the learning needed support to build an innovative range of teaching skills.

Recommendations in brief centre on a series of actions essential to effective blended learning models:

It is recommended that RTOs, employers and trainers cooperate in order to:

- provide learning materials that are challenging to the learner.
- provide learning materials that have a strong underpinning framework to enable learners to build a complete picture.
- provide timely access to high quality, technology services.
- use simple activities to bridge people from their existing skill levels to a more complex use of technology in a way that technology becomes a tool to master problems, not a problem to be mastered.
- extend the use of informal online discussion to a more formal structured use of asynchronous discussion.
- use high quality video-conferencing to enable the personal face-to-face aspect to be utilised for immediate feedback and problem resolution, with the use of DVD copies for in-station reference.
- use management opportunities to build communication loops for problem-solving and feedback and blended learning.
- encourage learners to be proactive in negotiating their learning plans and assessment times and types, taking responsibility for the outcomes.
- provide workplace literacy and computer literacy activities to assist learners who are dealing with new styles of information or who have gaps in their literacy skill range.
- provide management programs that are workplace-based but linked to national qualifications.
- extend the capabilities of educators by a range of means to ensure that delivery, planning and creation of learning materials provide a range of best-fit options for the stage, style and situation of the learners.

- undertake additional research to determine what different teaching strategies should be adopted to maximise effectiveness of competency-based teaching as opposed to curriculum-based strategies currently employed.

In short, a successful blended learning model for adult, remote, rural and diverse employees focuses on challenge, personal support and offerings appropriate to the learners, supplied by highly skilled educators who are comfortable with using technology and with assisting learners in bridging the gap to using high quality technology as a tool for effective learning.

Introduction

This research project is one of six funded nationally by the Australian National Training Authority (ANTA) through a series of initiatives within the Australian Flexible Learning Framework (Framework). It seeks to analyse issues relevant to supporting the implementation of flexible learning as it aligns with the training package introduction.

The introduction to the training package enables recognition of learning at work, learning in different ways and learning in different modes. It attempts to put the learner at the centre of the learning process and does not focus wholly on delivery. The accent has moved to outcomes measured by performance with the critical assessment being workplace-based. Within this flexible learner context, learners are able to access learning materials at times and places that suit their life or their work. One of the options that is becoming increasingly popular is that of technology-based offerings. However, within the technology-based material there is a wide range of options. A selection of several types of offerings is known as blended learning. However, the range needs to include options that suit the learner's stage of development, situation and interest.

The key issue is that many Queensland Ambulance Service (QAS) employees who are 45 years or over, work in rural and remote areas and it is challenging to ensure that they maintain clinical currency as well as having the ability to access the latest information by technological means. This double disadvantage; of need coupled with discomfort with the use of technology, render this group of employees vulnerable - as vulnerable as those employees of a decade ago who could not read.

Background of multiple contexts

QAS has a large population of workers in the 45 plus age group. Thirty-two per cent of the 2400 operational and communication staff belong to this category. Of the 259 QAS ambulance stations, 25 are in rural and remote areas with 13 serving predominantly Aboriginal communities. There is a major problem with workers in the 45 plus age group who live and work in remote locations. These people find it hard to retain currency of skills and even harder to gain new learning skills such as those required to access elearning opportunities. Many of the workers in the rural/remote and Aboriginal stations work alone or with only one other officer, providing little opportunity for exchange of learning or ability to travel. This is a concern within QAS as well as across all of the branches of Emergency Services Australia.

The fact that QAS services remote and rural areas and many of the staff work as volunteers in other branches of emergency service provision, means that they are the key personnel in the event of major crisis situations. Some Aboriginal and Islander staff members are not comfortable with technology as is the case with many of the older staff. However, they usually enjoy credibility within their communities and it is essential that this credibility be based on both confidence and competence with the technology that enables them to stay clinically up-to-date. It is imperative that regular up-skilling is available to ensure compliance within the newly adopted Health Training Package for Pre-hospital Care provided to Student Paramedics and Honorary Staff.

A flexible model to service these employees with multiple impediments must be at the centre of equity policy debate, research and provision. This research is set within the immediate context of the QAS, which has registered training organisation (RTO) status.

This research focuses on participant issues rather than specifically technological ones as other activities within the organisation such as the Flexible Learning Leaders and their up-skilling, and use of tools and Toolboxes are advancing the technological issues. However, wider contexts must be considered. Within the State of Queensland a unique situation exists of a steady population growth not experienced by other States. The demographic blend of this population growth is towards the older age group, as Queensland is a very attractive retirement venue. However, a study completed by Monash University (ABC News, Oct 04) showed that for the first time, in an annual period, the migration of more than 80 000 to Queensland was made up of young professionals and children for the most part.

It is also the most decentralised of the States, with major regional cities along the eastern coastline and transport and other services radiating from each. The north of the State has foreign borders with Papua New Guinea and the northernmost city is closer to overseas centres of population than to the capital city, Brisbane. Within the health services field, medical practitioners are gradually withdrawing from smaller remote centres and the first line of service is often being provided by the ambulance officers. Within Australia, there is a decline in population within the under 25 years age group and it is clear that with longer life expectancy, individuals will need to work longer to attain some degree of economic sustainability. However, at the same time, workplaces are changing and technology is part of the change. No longer are traditional methods of teaching and learning able to ensure that employees are adequately up-skilled. On the world scene, the notion of lifelong learning is no longer a neat option, but is a point for serious economic debate. This is underlined by the amount of funding being expended by the European Union and the Scottish Government at the Stirling University Centre for Lifelong Learning.

For the first time, the world is experiencing a high-level skills shortage. This is particularly noticeable within the health care industry as a whole. There are shortages of doctors, nurses and other associated staff. This was the major topic for discussion at the Global Conference for Nurses' Registration and Recognition, Melbourne 2003. When linked to the situations peculiar to Queensland, the retention of expertise in rural and remote community employees becomes even more critical.

The contexts mentioned to date have made change essential and relentless. Attuning people to accept change and to embrace it is a difficult process and Vilgoen (1997) points out the standard processes of strategic management do not accommodate the change requirements of the organisation and that it may be necessary for the organisation to focus on managing change within the strategic management plan. The models of Kotter (1996) with his steps to seize on the urgency of change, Cummings and Worley (1997) with the notion of strong visioning to create a unified reason for change to Burns (1996) with his planned and emergent approaches, one using the planning power and the other using the bottom up powered approach, all have a place in the change agenda. However, action research can be a compelling change agent.

This is because action research is essentially a collaborative activity in which the stages are:

22. Self reflective enquiry to determine the problem
23. Develop and implement a plan
24. Observe the outcomes of the action
25. Reflect on the outcomes for use in further planning, subsequently through implementation and further reflection. (Kemmis and McTaggart 1990:27)

ANTA sets the directions for VET after consultation with industry and education representatives. The espoused objectives for ANTA include:

- industry will have a highly skilled workforce to support strong performance in the global economy.
- employers and individuals will be at the centre of vocational education and training.
- communities and regions will be strengthened economically and socially through learning and employment.
- indigenous Australians will have skills for viable jobs and their learning culture will be shared.

This changes the focus from delivery to the learner.

The flexible learning context in Australia aligns with the training package introduction that enables learning at work, learning in different ways and learning in different modes. It attempts to put the learner at the centre of the learning process and not focus wholly on delivery. The accent has moved to outcomes measured by performance with the critical assessment being workplace-based. Within this flexible learner context, learners are able to access learning materials at times and places that suit their life or their work. One of the options that is becoming increasingly popular is that of technology-based offerings. However, within the technology-based material there is a wide range of options. A selection of several types of offerings is known as blended learning. However, the range needs to include options that suit the learner's stage of development.

Research questions

The research questions are:

26. What are the features of a blended learning/assessment model that meet the needs of remote, rural, over 45 years of age employees in QAS?
27. How successful is the model trialled within the action research?
28. What policy recommendations can be made to support or amend its use?

While the implications of a trial can contribute to strategic direction for QAS, it can also form a useful tool to develop excellence in the workplace across many industries Australia wide.

Included in this project are, for example, rural and remote workers, older workers and Aboriginal employees. However, they will not be differentiated. Trialling a working model and ensuring that policy recommendations are based on real applications of theory advances links between policy and practice in VET. Additionally it gives direction to future models related to national and international trends, emerging issues, needs and challenges likely to affect the future of e-learning in VET. This will lead to effective policies and strategies for breaking down the barriers to e-learning, blended learning and blended assessment.

Literature review

The issues that appear to impact on this series of contexts include:

29. Lifelong learning and adult learning
30. Organisational learning
31. Individual learning
32. Workplace literacy and computer literacy
33. Support for change
34. VET in Australia.

While there are numerous references that could be cited, the following selection appears to encapsulate the issues under discussion within the confines of this study. Burns (1995:99) defines learning as: 'A relatively permanent change to behaviour with behaviour including both observable activity and internal processes as much as thinking, attitudes and emotions'.

Lifelong learning and adult learning

In adult and lifelong learning the issues of individuality, relevance, stages, rates and processes were critical to the review.

Adult learners are the subject of an immense quantity of literature since the initial writing of Malcolm Knowles and the coining of the term andragogy. By 1989 Knowles (pp.83-4) had established some major points about adult learners that in summary can be listed as:

- adults need to understand the relevance of learning before undertaking it.
- adults need to be responsible and viewed as responsible for their own lives and learning.
- adults enter learning situations with a wide range of experience and knowledge.
- adults are ready to learn things that are needed in real life.
- adults are life or problem centred in their approach to learning.
- adults respond to some extrinsic motivation like better jobs and pay, but respond most effectively to quality, intrinsic motivators.

Given these features of adult learning, it is easy to understand why some rural and remote learners have disconnected from learning.

Rogers (1996) notes that adults are developing from their particular knowledge base and may be at different stages. These can range from a vague and ill-articulated sense of need to those who have a clearly identified problem to be solved to improve performance in their social or vocational roles. In addition Rogers (1996) makes the significant observation that adult students move at their own rates and frequently fail to engage wholeheartedly in the subject matter prepared according to the logical sequence of the teacher. In fact Rogers (1996) notes that adults are not just there to be taught they are our greatest resource in the learning process.

Kolb (1984) and Hunt (1987) shed light on the processes often associated with how adults learn and develop their practice.

Both affirm a process that moves a learner from:

35. awareness to implicit theory to
36. changed practice to
37. reflection to
38. feedback.
- 39.

Taylor (1979) talks of the change as one from disorientation to exploration and reorientation to equilibrium. It has since been established that the process might not be strictly linear.

Much adult learning theory assumes that learning is done in groups. For the remote and rural, this may not be possible unless the groups are virtual. Vella (1995) states a series of twelve principles that include the need to:

40. clarify needs
41. affirm the learner
42. build relationships
43. use sequences logical for the learner
44. provide sufficient repetition within a context
45. ensure doing and reflecting
46. ensure interpersonal respect
47. provide learning that includes ideas, feelings and actions
48. provide immediacy of use
49. use roles and teamwork, and
50. ensure accountability and engagement.

It thus appears that any blended learning model would need to incorporate these features.

Organisational learning

Within the organisational dimension of learning, the presence of structures that promote and use two-way communication is the key factor presented in the literature.

As the organisation is the context for most vocational learning of older and remote learners, it has a critical role in the learning of individuals. Organisational learning is achieved only when there is communication to enable individual wisdom to be channelled into the organisational culture, policies and processes. Kuhn (1970) notes that dialogue is critical to change and to learning. Vella (1995) observes that when hierarchical relationships in an organisation are maintained, dialogue is defeated and thus adult learning is defeated.

Individual learning

The existence of learning styles and their implications for types of effective teaching or learning facilitation were the key factors in the range of literature reviewed for this topic. Mackeracher (1996) reviews the learning styles debate and notes that styles are values neutral and no style should be devalued. Language, numerical and auditory-visual-kinaesthetic learners prefer different modes of presentation or engagement. Where traditionally, language-based instruction has been the norm, the other learners will be disadvantaged. Taylor (1990) also emphasises phases of learning and notes that if

learners are unable to move from one phase to another, learning and performance are often inhibited. Learners who skip a phase or move between only two of the four major phases, Disorientation, Exploration, Reorientation and Equilibrium are limited in their ability to use the information in a range of situations.

Taylor (1990) sees it as critical that learning is part of one's model of reality and self-esteem. This is linked to the notion of emotional intelligence (Goleman 2002) where the barriers or the support given to the learning process by emotional factors is explained. So meeting the needs of individual learners is critical. While this may lead to a lack of uniformity in the way people learn, it should not be construed that the learning outcomes or the performance vary if the learning modes differ. The goal is consistency of performance.

Workplace literacy and computer literacy

The literature selected for this topic focussed on the effect change has on increased workplace literacy requirements. Workplaces change on a regular basis and the speed of change is accelerating. Within this context of life, one of the components frequently overlooked is the changing role of literacy in the workplace and the changing definition of literacy. The definition of workplace literacy adopted by the Industry Training Advisory Boards of Queensland in 2003 was:

The ability to process, generate and respond to workplace information using the skills of:

- reading and writing
- listening and speaking
- numeracy
- critical thinking and
- technology appropriate to a developing organisation. (Roberts 2003:3)

It has also been noted that the growing complexity of the workplace demands an ability to compile, synthesise, analyse and utilise complex information (not just charts and graphs) for quality control and assurance, but also that the processing and use of information of many kinds demands a new range of skills.

These changing requirements of a workplace, ensure that all who work and learn require a widened range of skills in the workplace literacy area. It is important in the planning process of any organisation that literacy be integrated into the activities desired by employees (Roberts 2000). Levett and Lankshear (1994) note that adequate support for workplace literacy determines who is marginalised and who moves from the position of marginality.

Support for change

The literature selected in this section refers to the organisational support required for effective change. Disincentives to learning for adults, especially learning involving technology, have been outlined nationally in a range of studies including the pharmacy study, *Barriers to e-learning in the Community Pharmacy Sector*, (Mallet et al. 2004) while review within QAS (Russell 2002) illustrates the need for major work to be done to ensure both access and ability during work time to gain the most effective learning.

The question of ready access to high speed internet services continues to be a problem for those in remote and rural communities, as does access to computing services during work time (Russell 2002). Access to learning opportunities and to up-

skilling, upgrading and requalifying opportunities, while of concern to all, can be of critical concern to those who already have a high degree of technological literacy and who earnestly desire to up-skill and ensure their currency. This is clearly illustrated in the *Department of Families Review of Social Workers 2002*. However, the older employees of most concern are those who are in rural and remote postings and who are either reluctant or fearful of up-skilling.

Power (2000:2) noted in an Organisation for Economic Co-operation and Development (OECD) publication that a major tension of the 21st century would be among others: 'The unlimited expansion of knowledge and the limited capacity of human beings to assimilate it'. This highlights the need for the use of filters to ensure that learners are not swamped with data but are presented with logically prepared material to suit their mindset.

VET in Australia

Literature in this section was selected to give a snapshot of directions and issues. Lamshed et al. (2003) note that VET has energetically embraced the internet to promote and publicise its services, however, they also note that many do not conform to standards of accessibility for those with certain forms of disability. Despite this Madsen (2004:1) notes that the introduction of online learning has a potential to challenge and to extend established training practices: '...to overcome distance, provide immediate access to information, link individuals and whole organisations through digital communication and employ database software to automatically generate reports and maintain records'.

However, it is necessary to ensure that design of online materials and online facilitation skills are part of staff development opportunities and that IT and dedicated training staff are available to give immediate support to those experiencing technological problems (Madsen 2003).

In addition, numerous training packages are being used in a wide range of industries. The report on the status of training packages in Queensland, correct at 14.09.04, showed 75 training packages in use either as endorsed or in review stages. The availability of Toolboxes and a range of support material accord with the literature in VET to show a wide-ranging, sophisticated training provision in the making but with some distance to travel.

Methodology

In establishing a methodology to advance debate and practice on the issue of remote and rural older learners the initial issues discussed by Haase and Myers (1989) show that:

The qualitative approach assumes that realities are multiple, interrelated and determined by context... Variables are considered interdependent rather than dependent or interdependent. Conversely, in the quantitative approach, reality is singularly focussed. It can be reduced to its simplest form by delineating the objective definition of variables. Through knowledge of the parts, which are objectively defined and quantified, knowledge of the whole will be accumulated. The objective perspective also requires rigorous external validation that strives to minimise subjectivity (p.133).

Table 1: The differences between Quantitative and Qualitative Research

(Haase and Myers 1989:4)

Quantitative Approach	Qualitative Approach
Reality is singular	Realities are multiple and related
Objective reality comprises the domain of science	Subjective experiences are legitimate as objective information
The appropriate approach to discovering reality is reductionist	An ecological approach provides a full understanding of reality
Through knowledge of the parts, knowledge of the whole can be accumulated	The whole is greater than the sum of the parts
Discrepancies in data must be accounted for or eliminated	Discrepancies may be existentially real

The choice of a qualitative research model was clearly needed to take into account the multiple contexts of the study. Within the available qualitative research models, the action research methodology appears appropriate. Tesch (1990:50) cites the purpose of action research as, 'Improving practices by or in cooperation with practitioners'. Kemmis and McTaggart (1990:27) require collaboration within action research and describe four major stages:

- plan a critically informed action to improve what is already happening
- act to implement the plan
- observe the effects of the actions or interventions
- reflect on the outcomes for use in further planning or improvements in a succession of cycles.

In the time span available for this research a modified form of action research was adopted:

- clarification of the problems and plans to make offerings to encompass these needs
- trial some interventions and review other interventions already underway within the organisation
- observe the effects of these interventions
- reflect on the outcomes for future planning.

Stage 1: Clarification of the problem

In order to clarify the strands of the problem of non-participation in staff development, data were gathered from earlier research within the organisation, from insights of Regional Managers of Staff Development (RMSD) and from the employees who are in rural and remote postings. This was the basis for the interventions and reviews that followed.

Building on previous research

Previous internal research had been conducted by Russell (2002) into issues related to distance and remoteness and the problems associated with staff development. To support previous research, structured discussion was held with each Regional Manager of Staff Development and other educators as detailed in Appendix 1.

Reasons for non-participation

The issue of non-participation in staff development cannot be attributed entirely to difficulties of isolation. It appears, from discussion with QAS RMSD, that some non-participation can be attributed to the extreme difficulties of distance and some can be attributed to the personal issues of disconnection and disengagement. By disconnection and disengagement, officers meant that offers for staff development were sometimes not accepted and staff were not following through to complete assignments. Some negative attitudes were displayed as some officers withdrew from contact with educators. Others claimed activities were irrelevant. While there is almost certainly some overlap with these two issues of remoteness and disconnection both bear some investigation (Appendix 1).

Disconnection–Easing out

Little direct evidence can be elicited regarding the reasons behind disconnection. However, it was noted that many who chose to live and work in remote areas often had introverted thinking patterns (Briggs Myers & Myers 1989). This means that thinking is an internal and independent activity. When thinking is not necessarily put into words, the thoughts themselves can become imprecise. It is even possible to observe the loss of precise vocabulary in those who do not exercise their interactive speech skills as evidenced in the life story of Helen Keller.

Difficulty in explaining what is needed

Thus it is possible that those who live and work in remote areas find it difficult to explain what up-skilling they need and how they prefer it to be delivered. When they are not sure of what they do not know or cannot do, it may well be easier to shrug it off as irrelevant rather than face the difficult reality of exploring and isolating the areas of reduced performance. As the people who are the subjects of the QAS research are dedicated to helping others, it is more likely that the lack of clarity and fear syndromes are driving non-participation in staff development rather than the espoused sentiments often observed by the RMSD.

Defensive behaviour

This behaviour suggests that it is someone else's fault if their skills are outdated - training does not do enough - not enough trainers are seen in the workplace (Russell 2002). This is directly contradicted by the records showing regular workplace visits during the period cited. Distance is often given as a problem alongside poor telephone and download services. Distance makes it difficult when an employee has to travel for a day to access a day of staff development. The difficulty of replacing staff when in a one-officer station situation trebles when one day of staff development costs six days in

wages alone. While one-to-one tuition onsite may be a solution, in terms of delivery without interrupting service, however, it is costly and time consuming.

Long communication lines

Those who find themselves at the end of a long line of communication, particularly when the two-way communication is not an active feature of the organisation, are often not well informed. This can be due to the mindset with which they read written communication or it can be due to a gradual decline in the habit of reading, so that an imperfect message is received. For those who have little face-to-face communication with other professionals, but day-to-day contact with another world, it is easy to understand how the faraway communications can be interpreted as irrelevant.

Signs of ease out masked

Discussion regarding the problem with the seven QAS RMSD raised an interesting observation, which was agreed on by all. This was that the pattern of easing out was apparent in the forties-plus age group. However, the signs and symptoms of the ease out were visible in the thirties age group. This was often associated with family issues and community involvement, which to some degree masked the problem until it was well established. One younger, very well qualified educator who had himself reached thirty declared that the problem was initially established in the twenties age group when many young employees were struggling to complete degrees by part-time or external study in the belief that when this study was complete, it would be enough.

Goal of lifelong learning

Thus it appears that the concept of lifelong learning is still one that needs to be transferred from paper into life. While the implementation of the Pre-Hospital Care Training Package was an initial catalyst to reviewing the teaching, learning and assessment strategies of QAS, other projects appeared to focus quite rightly on delivery as the primary issue. However, as it was possible that an aspect of this research may touch upon a degree of reluctance of potential participants, it appeared necessary to ensure that the preferences of these participants should drive the formulation of the interventions of the action research and which could lead to the development of a comprehensive model.

Other programs designed to up-skill QAS Staff have been trialled at the same time. These include Reframing the Future and Flexible Learning Leader projects. These projects tackle the problems encountered from different angles but are essentially complementary. The particular focus of this project is learner-centred: of how to engage prospective students so that they are willing to start the journey of using modern forms of technology to bridge the gap between their current performance and their most recently required one.

Engaging learners

Whatever the difficulties or the reasons, it is critical that these employees are engaged in meaningful debate about their own learning styles and the ways in which their current skill gaps can be bridged without loss of personal dignity, loss of respect and loss of workplace productivity. While the nature of the paramedic's work is essentially reactive in that the routine is to wait for the phone to ring, proactive planning and problem-solving must be a feature of future performance given the changes of the workplace already noted.

The critical nature of the work

The peculiar nature of a paramedic's work makes it vital that skills in the use of life saving equipment are constantly at a mastery level, and that prioritising and judgment skills are finely honed to cope with a range of emergencies. The performance levels must be based on sound clinical expertise.

Telephone survey

Having gained some understanding of the issues involved from those who manage the processes of staff development delivery, it was necessary to gain a closer understanding from those who formed the target group. This took the form of a telephone questionnaire (Appendix.2).

The choice of a telephone survey was for a range of reasons. Firstly, for those who do not have regular communication with the hierarchy on policy issues, it seemed appropriate to involve them personally by way of a phone call. Secondly, it also enabled some respondees to reveal that extra factor of attitude that cannot be discerned in a written communication. Thirdly, it also negated the use of slow mail, poor written communication skills with non-routine paperwork, or the depth of the in-tray as an excuse to not answer a written one. Lastly, it gave the researchers some immediate information to enable the next stage of the research.

In brief, the telephone survey was initially conducted by QAS Staff under guidance from the researchers (Appendix 4). As release from other duties became an organisational problem, the researchers completed the telephoning. It was important that initial use of the survey was made by QAS employees as the later interviewees had usually heard about the questionnaire and so while 107 employees answered the survey from their remote locations, only two refused to answer the survey and two were unable to do so as the phone system was limited to emergency calls within mining sites.

The main thrust of the survey was to ascertain:

51. How do you prefer to learn?
52. How do you learn?
53. How do you relate to technology?
54. What is your most effective learning style?
55. In what clinical areas do you think you could be up-skilled?
56. What combination of ways would you like this to happen?
- 57.

Goals

The goals of the survey were two-fold. Firstly, the goal was to gather information about these critical issues. Secondly, it was designed to force the respondents to reflect on some issues and refine their thinking so that their answers were pertinent. The telephone medium allowed for follow up questions and for respondents to clarify the questions when necessary. The data gathered were protected by protocols introduced to the staff undertaking the interviewing before the commencement of the activity to ensure that undue leading of the respondents did not occur to skew the results (Appendix 4).

How do you learn in the workplace?

The most common form of on-the-job learning was from mistakes. While this was not the preferred learning mode, it was seen as the most effective. Clearly, within an ambulance scene, it was the least preferred mode and some respondents were

reluctant to discuss this (Appendix 3). The questions were designed to test attitude as much as skill and comfort.

The questions on learning styles were primarily designed to bring the participants to conscious reflection on a range of issues and the answers showed an interesting variation of learning styles. Most respondees clarified what was meant in this question and reflected on their learning styles before answering.

The question about relationships to technology and willingness to embrace it showed a marked change from the findings of Russell (2002). While most officers had not attended formal instruction in the use of their computers, the majority agreed that computers were the way of the future and they were willing, if not eager, to work with them. The degree of comfort and familiarity varied, but the change in attitude was notable. It could thus be assumed that considerable learning of an informal nature had occurred in the intervening period.

On the issues of clinical competence, there was a high level of agreement that the topics of drugs procedures, airways management, cardiac and respiratory treatments, metabolic disorders and pain relief were critical. However, while obstetric emergencies were rated as important, they were not rated as critical. Further discussion of the results revealed that the percentage of cases that involve obstetric emergencies was relatively low. However, when it was considered that two lives were involved, the percentage may reflect differently. Two respondees noted that while obstetric emergencies were rare, they required highly skilled management. From a risk management point of view they represented a minority viewpoint but did so very emphatically.

The results on how they preferred to be up-skilled, showed a natural tendency to a range of ways or a mix of blended learning options (Appendix 3). However, they were not the high end of the technology continuum. There was a strong trend to want some face-to-face along with some other means such as notes by email, CD-ROMs, and video-conferencing.

Analysis of telephone survey

As a result of the initial telephone survey, and the discussion that went with it, it appeared that a video-conference intervention on one of the critical clinical areas would help to engage or re-engage some very remote older learners. This did not require extensive print literacy, nor did it require extensive technological literacy. It also enabled feedback to be gained instantly.

The additional advantage was that it used facilities currently available, but under-utilised in many towns in Queensland. All Queensland Hospitals have the equipment and it is also available at all Local Government Chambers, and at every Government Services Centre. Furthermore, TAFE Colleges and University campuses have excellent facilities. While the cost effectiveness in delivery terms is more than favourable, in outcome terms it appears to be even more so.

Stage 2: Planned interventions and review of initiatives

Activity 1a: Video-conference held 3 September at Toowoomba Base Hospital

These activities were planned to test the hypothesis that video-conferencing could satisfy the needs for face-to-face interaction, save travel, confirm the importance of individuals, teach both hands-on skills and significant theoretical underpinning knowledge as well as to ascertain gaps in knowledge that needed further attention

The stations whose officers took part were from:

58. Surat
59. St George
60. Cunnamulla
61. Charleville
62. Injune
63. Meandarra, and
64. Taroom.

Most stations had two attendees.

Preparation phase

The topic was 'Airways Management' and the presenter was a well qualified medical practitioner who specialised in anaesthetics. He had previous country experience and was well attuned to the issues of distance and the role of Ambulance Officers.

- while the selection of the speaker was of critical importance, discussion with individual stations on the suitability of the topic was essential. This was undertaken in the weeks before the event. The interpersonal nature of the promotion was also a significant feature in the virtual attendance.
- the success of the video-conference was due in large part to the conscientious preparation undertaken by the team involved. This included briefing of the Guest Speaker as well as briefing of all the remote stations. Great attention to detail was given by both the administrator at the Queensland Health conference facility and the presenter himself.

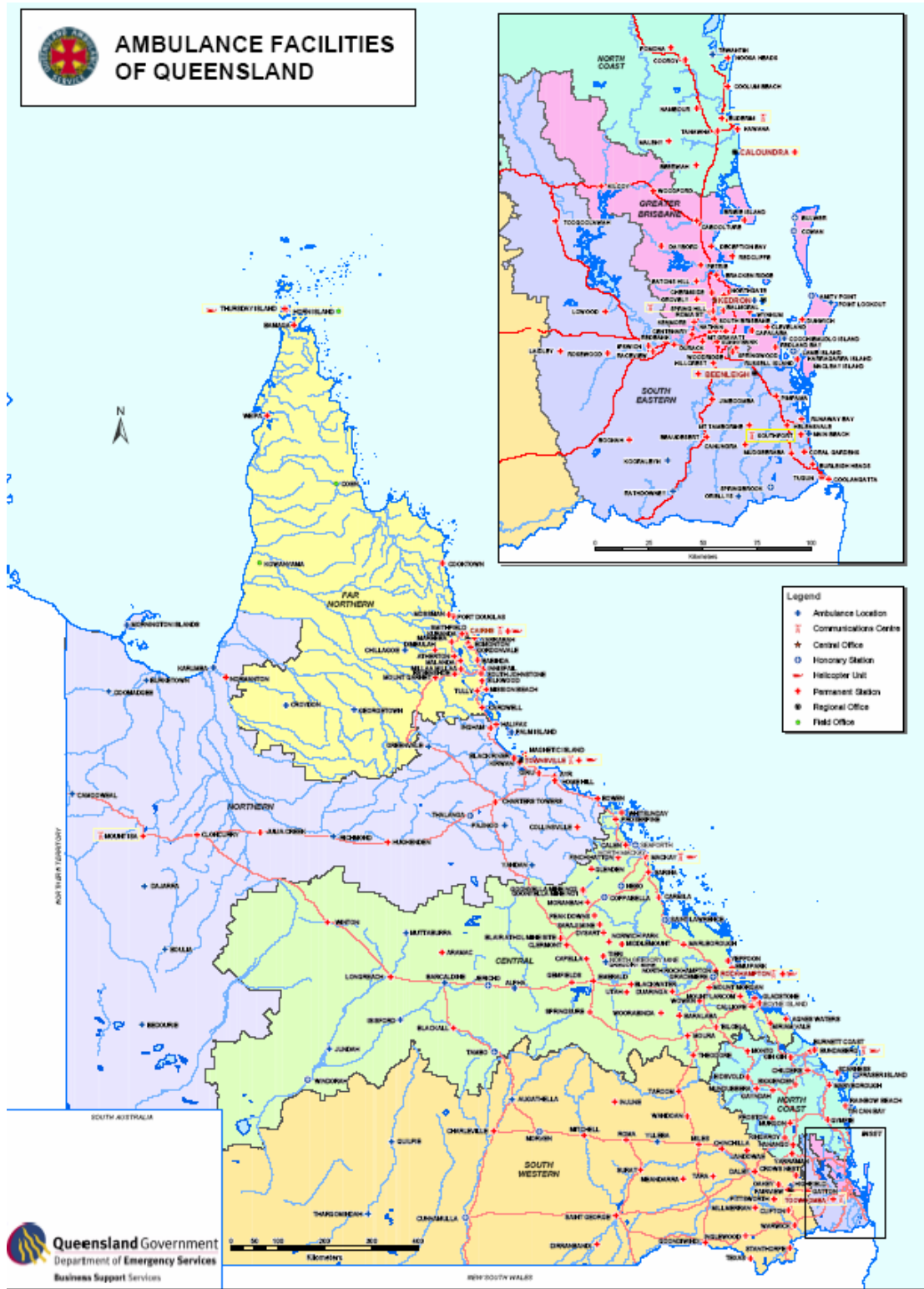
The Virtual Event

Email Use

All stations had received a copy of the PowerPoint presentation to be used in the event. Its quality was also a feature in engaging the audience (Appendix 5). While there were some minor alterations at the last minute to show some better graphics, for the most part all participants were able to follow the presentation on paper as well as on screen.

Figure 2: Map of Queensland

This illustrates the distances between the centres using the video-conferencing links. One is centred in Toowoomba and reaches stations to the west or south-west and the other is centred in the north of the State in Cairns and links with Weipa in the far north of the Gulf of Carpentaria.



(Reproduced by permission of QAS.)

Multiple Views

It was useful that the equipment was able to allow alternative views such as the laptop version of the PowerPoint presentation, head to waist shots of the presenters, and a zoom focus on the manikin and the equipment used. The focus of the discussion was the Laryngeal Mask Airway (LMA). It commenced with some interesting history of the device and the growing use of the many varieties. Reference was made to the research, which showed how well it could be used by relatively untrained operators.

The main speaker was particular in noting the existence of QAS protocols and strongly supportive of their use in pre-hospital situations. However, as a regular user in the operating theatre situation, he had some down-to-earth practical advice on the range of insertion techniques as well as the contra-indications and problems. He also advised on the effective parameters for use.

Demonstration

This was followed by a demonstration of all the matters discussed. This was where it was very useful to have the zoom feature. For example, it was agreed by the participants that to have the difficulties that necessitate a jaw lift demonstrated was useful.

Feedback and questions for clarification

The question period brought queries that enabled clarification of issues such as:

65. securing the line for a long road trip
66. removal, and
67. use of a bite block.

Internet use

The blended learning theme was extended when the presenter referred participants to a relatively new website www.LMAC.com. From here it is possible to download manuals on all types of LMA masks in PDF format.

Evaluation

Evaluation questions covered:

- How would you relate the usefulness of this video-conference on a scale of 1-5 with 5 being most useful?
- What were the benefits of learning about the use of LMA using this approach?
- What were the main challenges this presentation raised to your learning about LMA usage?

Responses

All stations gave a rating of 5 to all three questions. The unusual nature of such a whole-hearted response was qualified by the comments.

Comments included:

68. It was possible to talk to a doctor and clarify things.
69. It was good to see it demonstrated and to be able to ask for something to be repeated.
70. The demonstration was precise and showed how achievable effective use can be.
71. Each station can now have a copy and start its own library of this sort of presentation, so that it can be referred to easily and quickly.

72. The background wall was blue and the way the back lighting was arranged, it made seeing detail a little difficult - an off-white background was suggested.
73. During periods when the PowerPoint slides were being displayed, a split screen could have been used as the doctor's non verbals were lost.
74. The time lag between question and answer took some getting used to.
75. At times picture quality was a little blurred.

The general feedback was that this was an exceptional staff development exercise and those in remote stations expressed the view that they would be eager to attend more sessions of this type.

However, a note of caution should be sounded before wide scale adoption of this blend of learning methodologies. There are real pressures for excellent performance on the presenter and effective preparation and follow up are essential. The use of outdated video-conferencing equipment would not have achieved the same result. Nevertheless, this shows a cost effective blend of learning technologies well received by participants.

Activity 1b: Report on video-conference initiative held between Cairns and Weipa QAS Officers on 5 October 2004.

Preparation phase

As Cairns is almost 2000km from Brisbane, it can, by some measures, be classified as remote. However, in reality it is a vibrant city in the far north of Queensland and closer to overseas capitals than it is to its own State capital. Weipa is approximately 700km away as the crow flies. In order to arrange a video conference, the distance factor appears to lengthen the timeline. Weipa is a gulf town where the wet closes the road access in an average year from Christmas to Easter and in a big wet year, from early December to late April. Air transport is the only viable option and this is expensive. For the first time there is a trial of an early flight, allowing a passenger to fly in and out the same day, but only on Thursdays. Leave provisions also make it difficult for synchronising arrangements as there are fewer replacement and relief personnel available.

This conference was held between the video-conference facilities of James Cook University (JCU) and Weipa Hospital.

Goal

The immediate goal was to assist the officer in Weipa who has experienced some difficulty with the upgrade requirements of the Advanced Care Paramedic Program. It was fortunate that a second officer was able to be present. Within the Weipa Ambulance Station, one officer is rostered on at a time and only one day in every eight is there a day when two officers work together. There is no time when all three officers work at once unless there is an emergency.

Both officers present had previous experience with early video-conferencing and were impressed with the sharpness of the picture and the speed of response. Picture, voice and teaching material pictures were exceptionally clear.

This conference had a specific goal to engage and support an officer who is representative of those who are being investigated within the overall study. At the outset, it was stated that this was to be revision of Cardiac Anatomy and Physiology so that the treatment regimes of Pre-hospital Paramedics relating to this theory-based session could be demonstrated at a following session.

Processes

A series of black and white sections of the heart were used to demonstrate the different parts of the heart, the functions of the parts and the problems that each part could experience. This covered the operation of each atria, each ventricle and the composition of the valves. The critical position of the nerves was related to spinal damage and the effect that has on a patient's circulation.

Comments

Several changes of arrangement immediately before the video-conference meant that it was not possible to send study material out ahead of time. In retrospect this could have shortened the time taken. Despite this, the outcome was excellent without the pre-reading material.

76. Coloured pictures could also have been more effective and print could have been larger. However, the ability to zoom in on the items with the document camera ensured effective use of pictures and diagrams.
77. The summing up at the end also assisted the recall of the material. The lead in for the next session was clearly explained so that the learners had a frame of reference and something to look forward to.

Outcomes

This video-conference had different goals from the Toowoomba-based one. It was designed to engage a reluctant learner and to embed training and suitable support into the organisation's planning. The feedback at the end of the program was positive with the reluctant learner showing that he had remembered much of his physiology and the new graduate had refreshed his memory.

However, the negotiation that followed was the critical part. It was arranged that two visits per year from senior training staff could be planned and budgeted for. This could be supplemented with video-conferencing four times per year. If this was organised ahead of time, it would be possible to use the video-conferencing to bring a doctor online and to complete assessments with the corroboration of an educator onsite in Weipa. The other option was to use the teleconference medium to brief Weipa doctors to assist in the in-field assessments. The principle of networking with other professionals in the same field was thus maximised and showed a flexibility in assessment that matched the flexibility in learning options.

Personal outcomes

The result of this teleconference was that the personal interaction was effective in re-engaging a reluctant learner. The tools were not just the video-conference but the personal issues that underpinned it. His status among the hospital staff was enhanced. He personally felt he mattered and the video-conference itself was to be copied and sent to him for ready reference and revision. He was also given clear notice that he needed to think of the things that the three officers at Weipa needed to know, so that a staff development plan could be formulated with his major input. This collaboration is necessary for an adult learner and for the use of action research. However, the critical issue is that the learner and the manager are making the vital link between managing and learning and building an informal performance review.

Noteworthy features

It should be noted that the equipment at the JCU site was superior and thus the delay of response and the slight blurriness of the picture experienced within the Toowoomba intervention were not encountered.

It thus appears that the needs of the learners were met in different ways by a blended learning approach, which uses video-conferencing. At a later date this will be replicated by a similar service presented through video-streaming. However, the low-tech

approach to this through video-conferencing was an effective bridging mechanism (Appendix 5).

Activity 2 Review of Online Discussion Forums

It was hoped that by reviewing this existing pair of discussion forums that some gauge could be made of the usefulness, the limitations and the possibility of using this type of discussion to bridge the digital divide.

Approach

The approach in this instance was not to create a discussion forum for formal learning in the style of Broadbent et al. (2004) but to review the current offering from the view of the real or potential users. The researcher accessed the range of discussion forums and interviewed twenty potential or active users.

Within the Department of Emergency Services, QAS hosts a series of discussion forums. One of the critical ones is facilitated by the Medical Director and known as the Clinical Forum.

Goal

This forum was created for the express purpose of enabling those who are in remote areas to access medical expertise as issues arise. The Medical Director answers these questions promptly and in a detailed manner. Often the situations discussed are not straightforward and the finer details may or may not have been covered within classic texts.

Those who post questions may do so under their own name or anonymously. This is at one time advantageous as some posters may be concerned about the possibility of a mistake. Others may feel that their questions could appear foolish. In these situations, it is important that people can access expert medical opinion or information as perceived necessary and the shield of anonymity is probably useful.

However, some staff members are resentful that the forum enables them to post anonymous complaints, rather than ask questions alone. At times these have been unsubstantiated and vexatious. However, it is possible that this is a stage of development where they are becoming familiar with email communication as a problem solver.

Comparison of discussion forums

Another forum online is the "Wouldn't it be nice if...". Here staff can post suggestions to solve real or sometimes unsuspected problems. The suggestions here range from the need for warmer issue underclothing in the far south west to serious issues of staff significance. While technically all online discussion forums are moderated and nothing offensive can be posted, the difference between this and the Medical Director's Clinical Forum is that this one is largely moderated by peers. Outlandish comments are usually handled quickly by peers. However, if this forum enables employees to vent their issues in a harmless manner, it may well be serving a useful purpose. It is impossible to teach, or assist someone to learn while the mind is occupied with a major irritating concern.

Concerns voiced

Within the Medical Director's Clinical Forum, while there can be a range of responses, generally the interaction is reasonably well managed.

However, while the Medical Director is recognised as committed to excellence in both knowledge and performance, some problems have arisen. At times the level of detail or the situation discussed appears to give a direction which is not exactly as described in

the Manual of Clinical Practice. This gives rise to concern as to whether some of the answers should be taken as new policy, or whether they represent an addition to the Manual. This aspect needs clarification. It is important that moderation ensures that discussion stays clinical. For example, other forum discussion should handle education and human resources issues. However, development of new expert forums currently underway should resolve this concern.

Strict moderation

Advice from QAS staff who regularly access other chat rooms on the web tell of rigorous moderation. For example, a query in the chat room in the spare parts' section would be speedily directed to the segment on Volkswagen Sales. It would appear that similar moderation principles should be applied to ensure that the Forum maximises its effectiveness.

Access issues

However, by far the most difficult issues associated with the use of online discussion forums is that currently the access for student paramedics to these valuable sources of discussion is subject to local decisions by an Officer in Charge. Feedback indicates that many student paramedics are not permitted access to these online services, which could be a valuable form of supplementary learning to engage their interest.

Another online discussion, which is in its infancy, is that of flexible learning. This is being developed to give support to those who are coming to terms with teaching by technological means. Educational problems are being framed to challenge learners and educators. It also assists educators to understand and use tools, Toolboxes and video-streaming. This is an essential stage of learning if the full potential of the technology available is to be used for the learners' benefit (Appendix 6).

Activity 3 Review of remote staff rotation

The review was focussed on trying to find what factors would maximise the outcomes of what appeared to be an excellent innovation which could be implemented in other areas.

Review approach

The facilities were viewed and responses sought from the RMSD on the effectiveness of the initiative.

Staff rotation

In the far north of the State another innovation has been trialled and well received. When new premises were arranged for the Regional Education Centre, it was possible to include a two bedroom, fully-furnished flat within the building. This was in addition to the usual night accommodation of an ambulance station. The concept was to enable cost effective relocation of families for periods of one month.

Purpose

It is job rotation with a difference. An officer from a remote station can bring spouse and family and work in the new location for a period while another officer relieves in the remote station. . This then ensures that the remotely-based officer works with those who are handling a heavy and varied caseload where expert assistance and support is nearby. It also enables critical workplace assessment to be carried out on the more varied range of work.

Result

Those who have undertaken this rotation have found it very useful in engaging them in current thinking and raising awareness to the problems of currency of clinical practice. It has been very effectively used where employees were already aware of what they did not know or were out of date with skills application (Appendix 7).

Activity 4 Review of staff development to support blended learning

Within this segment four major activities were reviewed:

78. The Policy of Clinical Call Responsibility
79. Workplace Trainer and Assessor Network and Flexible Learning Leaders
80. The QAS Educators' Conference, and
81. Linking of Individual Development Plans to Performance Review.

This review was mounted to try to ascertain the factors that contributed to excellent clinical knowledge and exemplary practice on the part of educators as well as the factors that contributed to their skill levels as educators.

Within QAS the ability to present blended learning offerings has been supported by a range of interventions internally. One, which has a profound effect on the style and currency of learning management, comes from the policy of On-call Responsibility.

The policy of clinical call responsibility

It is policy within QAS that all clinical educators are on-call for on-road work should an emergency arise. All members of the hierarchy who are clinically qualified are similarly on-call. On one visit to a provincial city it was revealed that the previous night had been a busy one with the Assistant Commissioner and every other available officer working road calls.

Outcomes

While it may be disconcerting that all educators wear active mobile phones or beepers, it reinforces the immediacy of the work. When face-to-face portions of programs are available to participants, the application of their work is always in front of them. This expectation of performance has a powerful influence on the teaching paradigm of the educators. The focus is teaching to ensure performance at the roadside of wherever the calls lead. This is far from the constraints of the large bureaucratic training delivery where the pressures of the training institution's demands are the prime drivers of service to learners.

Significance

This policy support mechanism is a major factor in affirming the purpose of learning and the learner as central to organisational activities (Appendix 8).

Workplace trainer and assessor networks and Flexible Learning Leaders

In addition to clinical staff development, educators are being encouraged to take an active role in the workplace assessor network as well as to take advantage of staff development options such as skill update sessions on teaching within a competency-based system. Flexible Learning Leaders are also playing a major role in the up-skilling of educators and learners. While these activities are being recorded and reviewed within other projects, they form a critical segment of any model to service remote and older learners.

The outcomes

These are still being formally evaluated.

The Educators' Conference

Another activity which is part of the organisation's plan for educator development is the Educators' Conference (Appendix 9). This is an annual event attended by all available regional and metropolitan educators. It is a varied program with a mix of external speakers, internal experts, activities, discussion, working sessions and forums. It is designed to engage the educators in debate and in reflective practice. If educators are not themselves engaged in their own learning, it is difficult to expect that they would be able to manage the engagement of other learners.

The other factor which is apparent in the program is exposure to the range of learning offerings and formats being developed to support blended learning for those in rural and remote areas as well as other officers thus ensuring equity of offering.

Outcomes

Conference evaluation indicates a high level of needs met by attending educators (Appendix 9).

Individual development plans linked to performance review.

The two major issues emerging from the study are disengagement of staff and development of staff, and systems to offer blended learning opportunities to suit the participants.

In proactive management, it appears to be possible to prevent disengagement and to negotiate suitable blended learning opportunities simultaneously. In some districts where individual development plans and negotiated blended learning activities have been linked to well managed performance plans, the results in terms of motivation and achievement are apparent.

Outcome

Currently this has not been applied routinely, but where both educators and paramedic staff are working in this way, staff satisfaction is clear. It is only when this level of commitment to staff educators and to other staff occurs, that effective ranges of learning options can be offered successfully. Using blended learning models of teaching and assessment depends on engagement, planned best fit of options and delivery of high quality, relevant offerings related to the styles and preferences of the users to ensure a competent and confident outcome for the learners.

Stage 3: Analysis of the four activities to form a model

Learning preferences

The preferences for learning modes were revealed to be strongest in the areas of learning by interacting with others, thinking outside the square, practising skills and solving problems. The least preferred mode was learning from mistakes. This is not surprising in light of their professional standing in a life and death industry.

The actual learning contrasted with this slightly in that officers do learn from their mistakes and they do learn for themselves in many informal unrecognised situations. They do learn predominantly through solving problems and thinking outside the square, followed by practising skills and interacting with people. It appears that much learning appears to be done in informal ways and as the needs of the situation drive it.

Learning styles

The results showed a diverse series of learning styles, but most officers preferred to work using known information bases and applying them in their work. There was also a keenness for experimenting with theoretical information and reflecting on results.

This correlates with the thinking outside-the-square of the learning preferences and is consistent with the world they face where “the protocols” are an incomplete guide to all problems.

Attitudes to technology

This could be summed up in the statement that “they are good when they work”. There was a reasonable acceptance of technology as the way of the future, with some even being fascinated by it. Generally speaking, QAS officers in rural and remote Queensland do welcome the inclusion of technologies in their work. However, there is still a number of officers who need additional learning opportunities and operational support to maximise the use of technology in their operational and their learning activities.

In this area, it appears that attitude and ability are prerequisites to success in the use of technology.

Clinical issues

The range of clinical issues that were suggested by educators as critical, all achieved mean score ratings of more than 4. In addition, the following areas were indicated:

82. Trauma Management
83. ECP
84. Maxalon
85. Wound care
86. Paediatrics
87. Driving 4x4 vehicles
88. Clinical abilities
89. Psychological support
90. Effective bandaging
91. Self-defence
92. Head injuries and fracture management, and
93. Indigenous health issues were requested as those necessary to support effective practice.

The responses indicated a strong desire for additional information. However, this is in direct contrast to the level of disengagement of many officers. It would appear that the unsuitability of the service offered has much to answer for.

Forms of delivery

Most officers wanted the delivery in their own stations and were keen for a form of blended delivery, provided the blend contained some face-to-face component (actual visit, video-conference or a rotation experience). While there was an acceptance for the need for some economies and the usefulness of CD-ROMs, the varying work load and the shift work situation, allied to the fact that many are experienced adult learners, pose the problem of how they can access both technology and a block of designated time for learning activities.

Activity 1 – Video-conferencing

This activity was highly successful in both modes, firstly to teach a skill and secondly to have a personal interaction to reassure a disengaged learner. A real benefit was that it was cost effective when travelling time and expenses were considered. It also used readily available resources that are under-utilised in most centres. Furthermore, it enabled staff to take part in what is, for them, a low tech interactive and focussed learning activity. Had there been callouts during these sessions, the recorded version was made available. The major benefit was the immediacy of clarifying issues and the ability to negotiate in real time.

The use of video-conferencing that is well-planned and executed in a challenging and informative manner is recommended at regular intervals. This enables the linking of experts in their discipline with paramedics in the field. This communication builds both confidence and competence. It appears necessary to plan the topics in collaboration with those who are able to take part so that personal needs and organisational needs can be met.

While relatively inexperienced with the medium, two separate groups of officers were able to conduct highly successful video-conferences. However, close attention to colours of background, use of full colour illustrations and the time to move from one camera to another so that expressive non-verbals are captured on screen need to be taken into account.

Activity 2 – Online discussion forums

The major benefit of online discussion is the asynchronous nature of the discussion. However, that depends on whether sufficient people are able to access the discussion. It is suitable in essence because learners can post problem questions when the need arises and receive an answer quickly. This answer usually involves some comments from other people who have encountered similar issues. This builds communication and provides a bridge to the use of technology as a problem-solving tool, not a problem itself.

However, it is clear that tight controls in the form of moderation are needed - whether the discussion is informal or whether it is moved to the more formal structured use of the medium as described by Broadbent et al. (2004).

Activity 3 – Staff Rotation

This activity enables the bridging of distance in an effective and cost-efficient manner. By enabling the officers to bring spouse and children, family disengagement is avoided and learning on the job as well as assessment are facilitated. While this is currently a one-off trial, extension of such a trial would benefit the organisation. This is a useful

supplement to distance-based modes of program offering and provides the interpersonal face so necessary to successful blended learning.

Activity 4 – Educator Staff Development Support for Blended Learning

Within QAS a range of activities has been conducted to raise awareness of technological opportunities for preparation of learning materials. These have been funded by other agencies and while linking to this research, they do not form an integral part of it. Other activities to support training and assessment skills development have been also been undertaken and contributed to the overall model.

Clinical on-call responsibility

In terms of ensuring that all educators stay current in practice to ensure a sound basis for teaching of any material, either blended or traditional, this is a basis for excellence. It also ensures that illustrative examples used are current. It avoids the problem of material prepared on the basis of past experience that is no longer current.

Trainer Assessor Networks and Learning Leader initiatives

The establishment of this network with the supporting bank of validated assessment materials is useful in building the communication so necessary to effective use of teaching, learning and assessment strategies to support blended learning. The provision of learning activities to up-skill the educators in the use of technology is an essential component of building capacity for construction and adaptation of suitable blended learning materials.

Educators' Conference

This activity, according to the evaluation, showed that educators were able to problem-solve and bring their concerns to those who had the power to make changes. It also exposed them to the range of possibilities to stimulate change in their teaching methodologies to include blended teaching, learning and assessment activities that challenge and engage the paramedics and the student paramedics who are their target audience. These activities ranged from hands-on in a modern computer laboratory to hearing world class speakers.

Linking of Performance Appraisal and individual development plans

While this is standard practice in many management texts, it is not usually effectively done in workplaces. While this activity has not been mastered for widespread use, where it has the individual nature of the negotiated training needs, it ensures a ready reception for blended learning. This is a critical activity as it ensures that the personal element that has been the theme of the research is acknowledged. If this is well used and done so across the State, it could be a key to the re-engagement of the disengaged. When they negotiate their own learning and assessment modes and times, they are more likely to take responsibility.

Figure 3: QAS Learner-Centred Provision Model

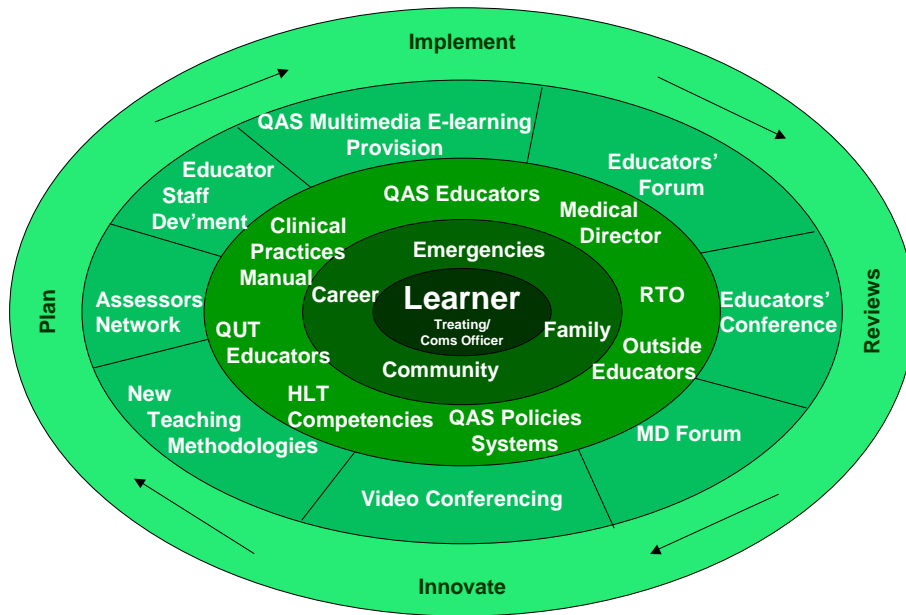


Figure 3 illustrates the proposed overall approach to blended learning for rural and remote older learners of QAS. This graphic provides a summary of the issues of concern to learners in a learner-centred model. They have demonstrated their ability to respond to emergencies and to take part in their communities as well as to learn in a range of different ways. Their preferences are to drive the support systems and offerings that enable learning provision to be linked with service provision.

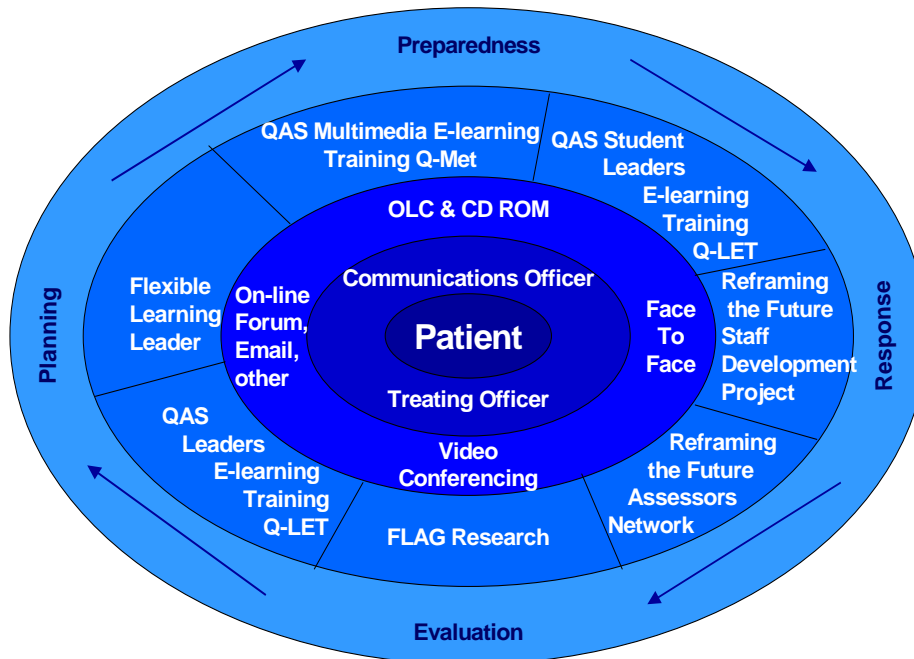
Figure 3, to some extent, mirrors the organisational model for patient care. Here the learners, in the form of the treating or the communication officers, are at the centre of effort. The second circle outlines the pressures that intervene between them and the organisational support and reinforcement services of the third circle. Outside that again are the developing support services that enable the work of the outer circle to proceed, namely that of planning, implementing, reviewing and innovating.

Stage 4: Reflections, implications and recommendations

Reflections and implications for QAS

Within QAS an overall strategy for patient care has been planned. It incorporates the findings of this research and a range of other activities into a patient focussed plan, which shows the range of support planned for the treating and the communications officers.

Figure 4: QAS Patient-Centred Service Model



This figure illustrates the overall approach to patient care in the whole organisation to enable planning to provide preparedness to ensure appropriate response times and quality service that can be evaluated for improved planning. It is entirely appropriate that the patient-centred approach to service of Figure 4 should be mirrored in Figure 3 in the learner-centred approach to service provision of training.

The learner-centred approach suggests that a range of learning and assessment options to suit the stage of development, the learning style and the learning preference of the employee are critical considerations. Allied to this is the need for support for employees in managing themselves and their own learning and assessment while having access to appropriate technology.

In addition, QAS educators need to retain their clinical skills to absolute currency as well as increase their range of teaching strategies to ensure that their learning offerings are engaging and relevant.

Management generally, even at Supervisor or Officer in Charge level, needs to ensure that collaborative development planning is linked to performance appraisal in a meaningful manner that encourages commitment to performance and to continued formal and informal learning. This forms a part of the encouragement of strong two-way communication, which is a hallmark of the successful learning organisation.

Reflections and implications for VET

These findings reinforce some major directions already espoused by VET in the learner-centred approach. However, the all-consuming nature of the push to elearning as a dominant part of a blended learning methodology may be ahead of its time. Not all learners in isolated situations want to master a totally new medium of learning unless they perceive an advantage for them in timeliness or ability to access when it suits them, in the timeslots they can cope with. Real attention needs to be given to the bridging of employees' abilities from where they are to where they are able to make a choice on preferences and learning styles, not on capability with the medium.

It is also noteworthy that face-to-face communication and simulated forms of that learning interaction appear to be critical in retaining some learner engagement. Some learners, who have a degree of comfort with the technology, do not need a face, or can be satisfied with a photo and are happy to have an email exchange. However, those who have not reached that comfort level are unlikely to make the most of what can be perceived as disembodied communication. The confidence – competence syndrome is very clearly a critical part of the blended learning approach.

Once initial computer usage has been mastered, much of the usage and skill levels are dependent on practice, familiarity and the willingness to point and click to see what happens. However, complex technology can be difficult and the disenchantment with technology can easily slide to the detachment and disengagement described earlier. While there is scope for asynchronous discussion for online communication and structured use of asynchronous postings as part of formal learning and assessment, it needs to be matched to the skill levels of the learners to extend - but not to over extend them. While there are conventions in written dialogues that can to some extent replace the tone of voice, the query, the attitude of direct communication; those in remote areas need real interactive face-to-face activities where they do not have to wait for an answer, where they can clarify a misunderstanding before it takes root and be confirmed in their developing concepts, behaviours and knowledge bases.

A disengaged learner is a danger in our workplaces, a drain on our economy and a stressor for our managers, but above all is an indictment on our developmental approaches to date.

Recommendations

Analysis of the activities revealed concerns with stimulating and engaging teaching and learning materials, as well as the need for individual attention or some face-to-face activities. This needed to be supported by effective technology and offerings that would enable employees to manage themselves, their learning and their work environment. Included in this range of offerings would be workplace and computer literacy support. However, those facilitating the learning needed support to build an innovative range of teaching skills.

Recommendations centre on a series of actions essential to effective blended learning models. It is recommended that RTOs, employers and trainers cooperate in order to:

- provide learning materials that are challenging to the learner.
- provide learning materials that have a strong underpinning framework to enable learners to build a complete picture.
- provide timely access to high quality technology services.
- use simple activities to bridge people from their existing skill levels to a more complex use of technology in a way that technology becomes a tool to master problems, not a problem to be mastered.
- extend the use of informal online discussion to more formal structured use of asynchronous discussion.
- use high quality video-conferencing to enable the personal face-to-face aspect to be utilised for immediate feedback and problem resolution, with the use of DVD copies for in-station reference.
- use management opportunities to build communication loops for problem-solving and feedback and blended learning.
- encourage learners to be proactive in negotiating their learning plans and assessment times and types, taking responsibility for the outcomes.
- provide workplace literacy and computer literacy activities to assist learners who are dealing with new styles of information or who have gaps in their literacy skills range.
- provide management programs that are workplace-based but linked to national qualifications.
- extend the capabilities of educators by a range of means to ensure that delivery, planning and creation of learning materials provide a range of best-fit options for the stage, style and situation of the learners.
- undertake additional research to determine what different teaching strategies should be adopted to maximise effectiveness of competency-based teaching as opposed to curriculum-based strategies currently employed.

Conclusion

In short, a successful blended learning model for adult, remote, rural and diverse employees focuses on challenge, personal support and offerings appropriate to the learners, supplied by highly skilled educators who are comfortable with using technology and assisting learners in bridging the gap to use technology as a tool for effective learning. This can only be achieved when systems, policies, and leaders and managers at every level work together to establish an environment of challenge, support, engagement and recognition.

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Appendices

Appendix 1

Discussion with Regional Managers of Staff Development and other Educators

Discussion Questions were:

- Have you remote and rural over 45 ambulance staff in your region?
- Are there problems with providing staff development to ensure that they are current in their skill levels?
- As a provider of services, what are the problems?
- Are there any other issues that this project needs to be aware of?

N=20

Answers

- All except the metropolitan region answered Yes. However, the Metropolitan region noted that the heavy caseload experienced caused an isolation of its own and that the over 45 age group still had problems.
- All noted problems with providing adequate staff development activities to enable currency of competencies to be either ascertained or maintained for all officers.
- While difficulties of distance and quality and quantity of access to online services were cited, every officer noted that there was a concerning problem of disengagement. Officers in remote and rural locations claimed neglect of their needs to senior management despite the honest endeavours of the training providers.
- Ten of the 20 interviewed expressed a concern that the project was targeting over 45 year olds as they noted that the disconnection/disengagement started in mid to late thirties and became apparent in the mid forties. One even suggested that it started in the very early 30s or even late 20s.

General comments

General comments from the providers covered the weight of assessment in QAS as a concern in ensuring that employees remained engaged in their own professional development. Others noted that the nature of the workload made it very difficult for sustained learning activities. Another noted that the regard with which most remote Ambulance Officers are held within their towns or communities is itself a disincentive to improving. In other words, if my town thinks I am good enough, I surely am. Others cited that long communication chain that enabled these officers to have a poor appreciation of how far behind they were sliding and also to have the feeling that when communication did arrive that “They do not understand what it’s like here” response enables them to disregard or not bother about the content.

Appendix 2

Flexible learning telephone survey

DATE.....
 INTERVIEWER.....
Q.A.S. PERSONNEL
 NAME.....
 Q.A.S. DISTRICT
 POSITION.....
 PHONE.....
 ADDRESS.....

[Opening protocol]

Hello, my name is I'm phoning from Q.A.S. Brisbane Office in regard to the Australian Flexible Learning Framework Research Project. Q.A.S. is conducting this study to develop a model of flexible learning so that all employees can improve their performances. I believe that you have agreed to participate in this survey to provide us with information which we may use to develop this model.

We assure you that we will not identify you as the source of any information that you give us, without your expressed permission. You are free to stop this interview at any time for any reason without obligation.

Are you happy to continue with the interview?

Thank you.

[Assuming that person agrees to engage in the interview]

We would like you to answer each of these sets of questions as precisely as you can. I will record each of your answers and send them to you to check for accuracy.

You are able to adjust any of your answers and then return them to us within 7 days of you receiving them.

The first set of questions are concerned with how you learn in your work.

1. How do you **prefer** to learn new material in your job?

Please answer by giving a rating score from "5" to "1". "5" equals "I strongly agree". "4" equals "I agree". "3" equals "I am not sure". "2" equals "I disagree with the statement". "1" equals "I strongly disagree with the statement."

	5	4	3	2	1
Making mistakes and learning from them					
Self education at work or away from work					
Applying theory to work tasks					
Practising skills					

Solving
problems

Interacting
with other
people

Offering
leadership
to
colleagues

Thinking
outside of
the square

Speaking up
for others

2. How do you **actually** learn new material in your job? Rate each statement using the above 5-point scale.

5 4 3 2 1

Making
mistakes
and learning
from them

Self-
education at
work or
away from it

Applying
theory to
work tasks

Practising
skills

Solving
problems

Interacting
with other
people

Offering
leadership
to
colleagues

Thinking
outside of
the square

Speaking up
for others

3. Please rate each of the following statements on **how you prefer to learn** using the above 5-point scale.

[Note: These statements may need to be contextualized for ease of understanding.]

	5	4	3	2	1
I learn by experimenting with information in my work					
I learn by thinking about information in my work					
I learn by thinking about theories or imagined information					
I learn by experimenting with theories or imagined information					

4. Please rate each of the statements about **your attitudes to technologies** by rating each statement as follows: “5” equals “strongly agree”; “4” equals “Agree”; “3” equals “I am not sure”; “2” equals “disagree”; and “1” equals “strongly disagree”. By technologies, we are thinking of the different forms of computing, videophones, email, Internet and other ways that people today use to communicate and to learn.

	5	4	3	2	1
Technologies are the way of the future					
Technologies fascinate me					
I use technologies whenever I can					
I fiddle with any new technologies to see how they work					
I like to experiment with different communication technologies					

I read about new technologies a lot, but rarely use them

Technologies are only tools to do things

Technologies are expensive

Technologies are useful when they work

Technologies require a great deal of training to work well

Technologies are scary and threatening

Technologies take away people's power to think

I don't have the time to use new communication technologies

I see no benefits in mastering new technologies

5. Please say how important each of these **clinical issues** is for your career development. Please rate each issue as follows: "5" equals very important; "4" equals important; "3" equals undecided; "2" equals unimportant; and "1" equals of no importance at all.

[QAS to identify 5 key priority clinical issues to be listed below.]

	5	4	3	2	1
Drugs procedures					
Airways management					
Cardiac & respiratory treatments					
Metabolic disorders					
Pain relief					
Obstetric emergencies					

Can you please identify **any other clinical issues** that you believe are important for your career development? Please rate each of them using the same 5-point scale.

5	4	3	2	1

6. Please indicate how important you believe that each of the following **forms of delivery** of flexible learning modules are in your career development. Please rate each form of delivery as follows: “5” equals very important; “4” equals important; “3” equals “I am not sure”; “2” equals unimportant; and “1” equals not at all important.

5	4	3	2	1
Printed materials				
CD ROMs				
QAS				
Intranet				
Internet				
Local tutors				
Blend of forms, eg. face-to-face, email and CD ROMs				

Can you identify **any other forms of delivery that would suit your career development in your local area**? Please rate each one on the above 5-point scale.

5	4	3	2	1

7. Are there any other comments that you wish to make about anything in this survey?

(Please make notes of any comments in the space below.)

.....

.....

.....

.....

.....

Thank you for your assistance. If you wish to see the copy of your recorded survey please contact me. Otherwise we will take the read back information as your contribution.

Elaine Roberts

Appendix 3

Results of the Telephone Survey

Q.A.S. FLEXIBLE LEARNING TELEPHONE SURVEY

[N=104]

SUMMARY OF WEIGHTED MEAN SCORES BY ITEM

1. Comparison of preferred and actual ways by which Queensland Ambulance Service Staff learn in their work

Question	Mean Score Preferred Way of Learning in one's Work	Mean Score Actual Way of Learning in one's Work
1	2.88	3.55
2	3.63	3.96
3	4.04	4.00
4	4.48	4.12
5	4.30	4.28
6	4.58	4.09
7	4.14	3.82
8	4.51	4.30
9	4.05	3.77

The key results from these two sets of mean scores are as follows:

1. In terms of their preferred ways of learning, QAS officers in rural and regional Queensland prefer to use a large number of ways to learn in their work. Their strongest preferences are for learning by: interacting with other people; thinking outside of the square (that is, thinking innovatively and creatively); practicing skills; and by solving problems. The only way that they did not prefer to learn was by making mistakes and learning from them (a reflection of the professional training in a life-and-death industry).

However, their actual ways of learning in their work were of a different pattern because of the circumstances in which they operate. Generally, the mean scores were lower, but not in the case of learning from one's mistakes. It seems that officers do engage in many learning experiences based on the mistakes that they make in their operations.

Also, their scores on learning through self-education were slightly higher, indicating that they were forced to learn some things by themselves. The predominant ways in which they actually learn were mainly through solving problems and thinking outside of the square, followed by practicing skills and interacting with other people. This group of officers demonstrated that they actually learn across a very wide set of ways.

What is interesting from this set of results is to establish how much of this learning occurs in formal learning and how much occurs through informal or non-formal learning. It is suspected that most of the learning that these officers do occurs through informal means.

2. Preferred Learning Styles of Queensland Ambulance Service Staff

Learning Style	Mean Score
Concrete Active Learning Style	3.42
Concrete Reflective Learning Style	4.06
Abstract Reflective Learning Style	3.40
Abstract Active Learning Style	3.27

The QAS officers are quite diverse in their preferred learning styles. The most prevalent style was that of thinking about their work using known or existing information. This suggests that their learning is based on taking known information and applying it to their work context. Then, there is evidence of the desire to learn by experimenting with known information and reflecting on or experimenting with theoretical information. This corresponds to their responses in Sets 1 and 2, in which the officers engaged in considerable thinking “outside of the square” to produce results.

These results indicate that the officers do want to be challenged in their learning through their work. They do not want to simply follow a set of prescriptions in a manual. The reality that they experience is that they are beset with challenges and problems, which are not solved by “following the manual”.

3. Attitudes to Technologies Expressed by Queensland Ambulance Service Staff

Attitude to Technologies	Mean Score
Technologies are the way of the future	4.63
Technologies fascinate me	3.95
I use technologies whenever I can	4.02
I fiddle with any new technologies to see how they work	3.78
I like to experiment with different communications technologies	3.81
I read about new technologies a lot, but rarely use them	2.75
Technologies are only tools to do things	3.23
Technologies are expensive	3.63
Technologies are useful when they work	4.70
Technologies require a great deal of training to work well	3.20
Technologies are scary and threatening	2.18
Technologies take away people’s power to think	2.37
I don’t have the time to use new communications technologies	1.72
I see no benefits in mastering new technologies	1.55

The attitudes toward technologies that are held by these officers are relatively positive considering the contexts in which they work and their experience in QAS. They also reflect the realities of their work situations. Therefore, the strongest response was for the proposition that technologies are good when they work. This was followed by positive affirmation of the value of technologies for the future of our society, using them whenever possible, being fascinated by them, and experimenting with them whenever possible. As well, the most negative responses were reserved for statements which downplayed the merits of technologies for professional and social improvements, for example, “I see no benefits in mastering new technologies” and “I don’t have the time to use new communications technologies”. These results indicate that QAS officers in

rural and regional Queensland do welcome the inclusion of new technologies in their work and that they are enthusiastic to use them for learning in their work. These comments are true for the vast majority of officers. However, there are still a limited number of officers who will need extra learning and operational support to maximise these technologies in their professional operations and learning activities.

4. Queensland Ambulance Service Staff Ratings of Clinical Issues to be used in their Professional Development

Clinical Topic	Mean Score of Ratings
Drugs – Procedures	4.66
Airways management	4.84
Cardiac & respiratory treatments	4.74
Metabolic disorders	4.50
Pain relief	4.77
Obstetric emergencies	4.34

Clearly, there is a hunger for additional professional clinical training for ambulance officers in rural and regional Queensland stations. Their response on which clinical issues should be included in flexible learning modules suggests strong support for all of the above-mentioned topics. In addition, they expressed strong interest in other training modules in such clinical areas as: trauma and its management, Extended Care Program (ECP), maxalon, wound care, paediatrics, driving 4WD vehicles, clinical abilities, psychological support, effective bandaging, self-defence, head injuries and fracture management, and Indigenous health issues.

5. Queensland Ambulance Service Staff – Preferred Forms of Delivery of Flexible Learning Modules

Form of flexible Delivery	Mean Score of Ratings
Printed Materials	3.84
CD ROMs	4.03
QAS Intranet	3.52
Internet	3.98
Local Tutors	3.53
Blend of forms	4.60

The officers expressed strong support for most forms of learning in their dispersed stations. Strongest support was offered for some form of blended delivery. From their comments this would certainly involve some form of face-to-face interaction (by actual visits from QAS experts or rotation in larger hospitals or video-conferencing), interpersonal interaction via reliable electronic communications (QAS intranet or the conventional internet), and access to some materials that will enable the officers to refer to some reference material or guidelines to assist them in their learning in rural or regional contexts (CD-ROMs or conventional print materials).

Clearly, there was very strong support for the use of available, economical technologies to promote learning across these far-flung centres. There was also a strong plea for human interaction to be included in this learning in differing forms.

However, it needs to be remembered that these officers are experienced adult learners who operate varying or unusual work hours (not unlike some shift workers). Therefore, the flexibility of opportunity to learn needs to be afforded to these officers. In addition, they would hope for some time when they can engage in learning activities in a

designated block of time. This is probably a plea for some formal learning activities to support the large amount of informal learning that these officers do in their normal working lives.

Rod Gerber
15 July, 2004

Appendix 4

Briefing sheet for phone survey telephonists

JULY 2004

Goals

The goal of this research is to find a model or models of learning delivery and assessment that suit QAS personnel who have any of the following problems with accessing suitable learning activities:

94. distance or isolation
95. discomfort with technology
96. difficulty with release for staff development
97. dislike with the styles of learning offered currently, or
98. hold a perception that they are too old to learn in new ways

In order to frame new approaches we are trying on the one hand to have possible participants think about their preferred learning styles and on the other hand to enable us to gain some perspective on the range of concerns they have so that any models trialled fit their requirements.

Advantages

We have arranged to gather this information by way of telephone interviews. This is because the response rate is usually very high when compared to mailed out survey responses. Having you, as fellow QAS personnel, talking participants through the questionnaire will, we hope, allow people to communicate naturally. Should this not be the case, they can talk to an “outsider” if that makes them more comfortable. Rod and I will be available if this should occur.

Possible problems

It is possible through familiarity to fall into the role of a leader when interviewing, because sometimes it is necessary to explain the meaning of the questions. While this is important, it is critically important to ensure that we do not put “answers into mouths” as that would destroy the credibility of the results and compromise the end result. Awareness is the best defence here and if we hear someone slipping into this habit, it is professional to bring it to their attention. We all get tired after a while.

Strategies

The scoring is very important.

5. I strongly agree 4 I agree 3 I am not sure 2 I disagree 1 I strongly disagree

There are those who feel it is the safe option to say 3 to everything. This is not reasonable for many answers but is fair enough for a few of the answers or for a section that puzzles an individual.

It is important that we are all clear what each section of the questionnaire is about.

99. Section 1 is about how people prefer to learn new material/ information/ procedures on the job.
100. Section 2 is about how you actually do learn on the job even if it is not your preferred way.
101. Section 3 is about your learning preferences and your response to some suggested ways.
102. Section 4 is about your attitude to technology and its use as a learning tool.

103. Section 5 is about the clinical issues you regard as requiring attention. Some have been suggested, but you may add any others you think you would like or need
104. Section 6 is about your preferences for the support methods or materials in your learning and development processes.

Please advise participants that :

When you check your answers, please be sure to get in touch if you disagree with what has been coded against your name. If we receive no answer we will assume that the answers are correct.

Many thanks Elaine and Rod

Appendix 5

Video Conference Evaluation

Questions asked of Participants in Toowoomba Based Video- Conference

N=20

1. How would you relate the usefulness of this video-conference on a scale of 1-5 with 5 being most useful.
2. What were the benefits of learning about the use of LMA using this approach?
3. What were the main challenges this presentation raised to your learning about LMA usage?

Answers

1. All respondees answered 5.
2. It was possible to talk to a doctor and clarify things.
 - It was good to see it demonstrated and to be able to ask for something to be repeated.
 - The demonstration was precise and showed how achievable effective use can be
 - Each station can now have a copy and start its own library of this sort of presentation, so that it can be referred to easily and quickly.
3. The background wall was blue and the way the back lighting was arranged, it made seeing detail a little difficult- an off-white background was suggested.
 - During periods when the PowerPoint slides were being displayed, a split screen could have been used as the doctor's non verbals were lost.
 - The time lag between question and answer took some getting used to.
 - At times picture quality was a little blurred.

The general feedback was that this was an exceptional staff development exercise and those in remote stations expressed the view that they would be eager to attend more sessions of this type. However, a note of caution should be sounded before wide scale adoption of this blend of learning methodologies. There are real pressures for excellent performance on the presenter, and effective preparation and follow up are essential. The use of outdated video conferencing equipment would not have achieved the same result. However, this shows a cost effective blend of learning technologies well received by participants.

Activity 1b

Evaluation on video-conference initiative held between Cairns and Weipa QAS Officers on 5 October 2004.

N=2

Questions asked

- How would you relate the usefulness of this video-conference on a scale of 1-5 with 5 being most useful?
- What were the benefits of learning about the use of LMA using this approach?
- What were the main challenges this presentation raised to your learning about the cardio-vascular system?

Answers

- Both respondees answered 5
- Benefits included:
 - the immediacy of feedback and revision that showed quickly what boundaries of knowledge existed and how these related to practice.
 - allowed participants to reconnect with where they wanted to go.
 - enabled proactive planning of how upgrade could be completed
 - enabled negotiation of assessment possibilities, and
 - enabled a copy to be sent to Weipa for reference and revision
- Challenges included:
 - Better learning could have been achieved if some support documentation had been emailed prior to the videoconference.
 - Coloured diagrams would have been useful.

General comments

It was reiterated that the style of learning was appropriate and personally satisfying and more would be appreciated.

Appendix 6

Responses form Online Discussion forums

Evaluation of Online Forum Discussions

Questions asked of all regional Staff Development Managers and of selected Educators in Queensland Ambulance Education Support Unit

N=12

- Have you or your staff accessed the online discussion forums, specifically the Medical Director's Forum and the "Would it be good if...." Forums?
- Have you found them to be useful?
- Have you experienced any concerns with their use?
- What e are your recommendations for making them more useful?

Responses

- All regional Staff Development Managers had accessed the sites. Of the five educators from the QASEC Unit, only one had already accessed these sites and the reasons given were lack of time because of a heavy workload associated with the fact that as the vast majority of the students they were teaching were prevented by local management from accessing these sites, there seemed little point.
- All who had accessed the sites noted that they were either very useful or potentially very useful. This included the QASEC Educators who accessed them at the researcher's request.
- Opinions were expressed with the possibility and the actual activities experienced on the Medical Director's Forum.

The Medical Director was to be congratulated on the detailed and prompt nature of his responses. This was greatly appreciated.

Advice which appeared to fall outside the Clinical Practices Manual was sometimes given and there was confusion as to whether this constituted a new procedure sanctioned by the Medical Director. If this were to be the case, it needs to be flagged as either a matter to be the subject of a Medical Director's Circular, the current official method of clinical updating between publications of the Clinical Practices Manual. If this is not so it needs to be flagged as simply a discussion of interest not designed to replace Clinical Practice Guidelines.

Advice sometimes went beyond the scope of the pure clinical nature of the forum. It was acknowledged that as the Educator Forum strengthened, it was likely that education questions would be addressed there.

The ability to submit anonymously enabled some complaints that were frivolous to be aired. Some felt that this was a deliberate attempt to skip the chain of command in the dispute resolution process. However, some felt it was a useful device which enabled people to believe they had another way to air problems if the routine ways had not worked. Others felt the ability to submit anonymously was wise so that problems could be resolved.

Re the 'Wouldn't it be good if...' forum opinions included:

Some comments appeared frivolous.

Some people seemed to be venting their anger about issues rather than making creative solutions.

Many of the suggestions put forward were excellent.

If that was a way for people to unload their angst and get it off their chests, it was a very useful activity.

Conclusion

Online discussion has a distinct place in the formal and informal learning of QAS Officers in rural and remote locations. This is subject to

Provision of access to all during working hours or ensuring access on home computers via password.

More rigorous moderation by impartial forum managers.

Clarification of the exact status of advice given by the Medical Director.

Development of additional use of the medium to cover more formal teaching as per the Broadbent et al. model 2004.

Appendix 7

Responses on Staff Rotation

N=8

Evaluation:

Questions

- How effective were the accommodation and other arrangements made for your safety and comfort?
- How effective was the rotation in terms of your learning and competence?

Answers

1. Additions required to make the accommodation effective for its intended use included:

- A privacy door to separate the accommodation from the rest of the QAS Complex.
- Desks in the bedrooms to assist study requirements.
- Clock radios beside beds.
- Provision of maps of the locality and who provides what services.
- Initial food supplies.

Concerns that they never feel that they are away from work.

2. Results were mixed:

- Those who were clear on what they wanted to achieve and who demonstrated their motivation, achieved very well.
- Some came unaware of what could be achieved, believing that their program would be defined for them. These people took some time to make the most of the offerings.

Comments

There is need for some preparatory work with those coming on rotation as is the need for some arrangements for people to clarify what is needed. Officers in Charge need to ensure that this is done prior to arrival. An individual program that suits the needs identified can then be negotiated and planned to maximise the effectiveness.

Appendix 8

On-call Responsibility Policy

N=6

Question1

How effective is on-call responsibility as a means of ensuring currency in teaching Ambulance Skills?

Answers

There was a general acceptance of the need to stay current in the teaching role but several saw this as only one option to maintaining currency. Others included:

work a full shift per week, or

ride as a second officer with a student.

Comment

There was clear feedback that teaching theory itself was a form of maintaining currency. However, it was acknowledged that in the teaching of applied skills, it was necessary to retain use of current skills by practice.

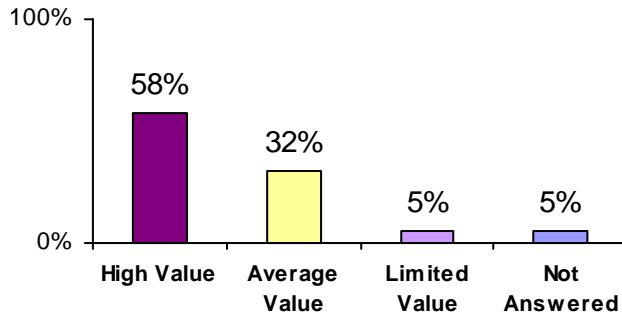
Appendix 9

Evaluation on Educators' Conference

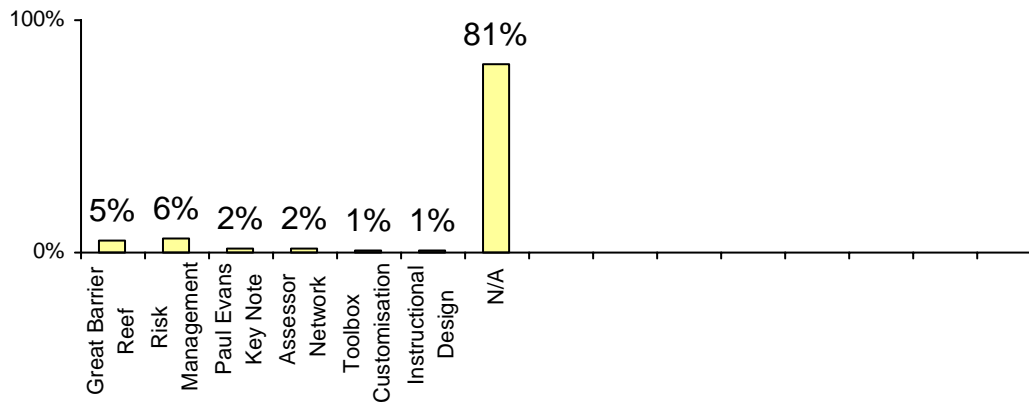
Number of attendees:

Number of completed forms: 19

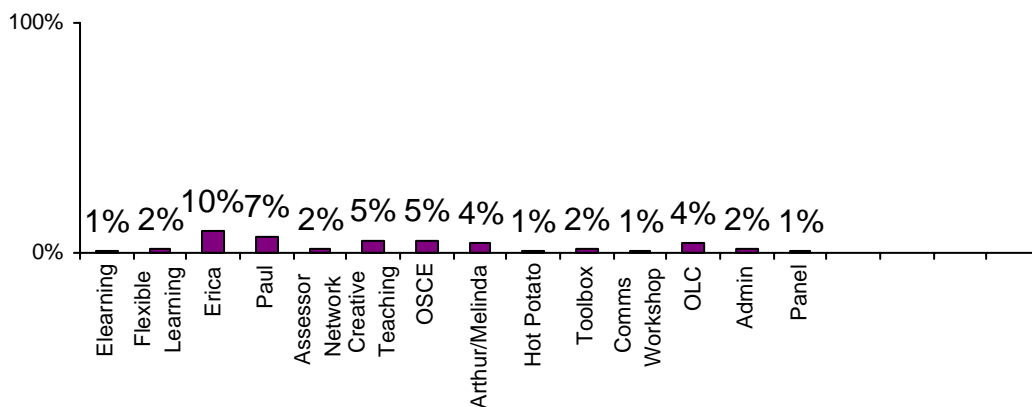
1. The overall value of this years Educators' Conference:



2. Which keynote speakers, presentations and workshops were of most value?



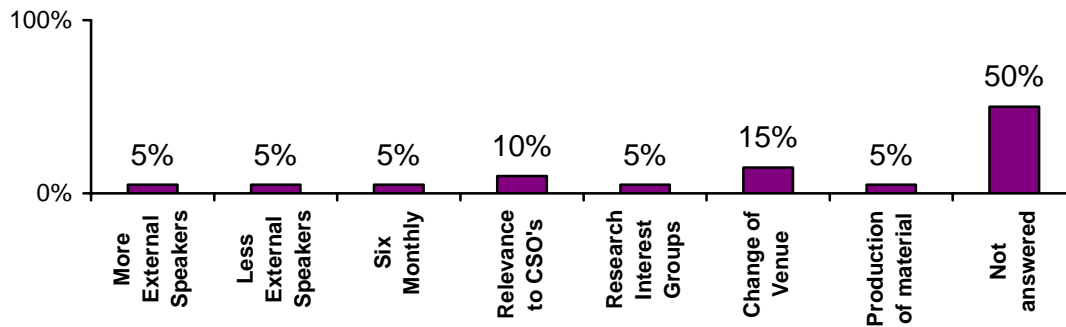
3. Which keynote speakers, presentations and workshops were of least value?



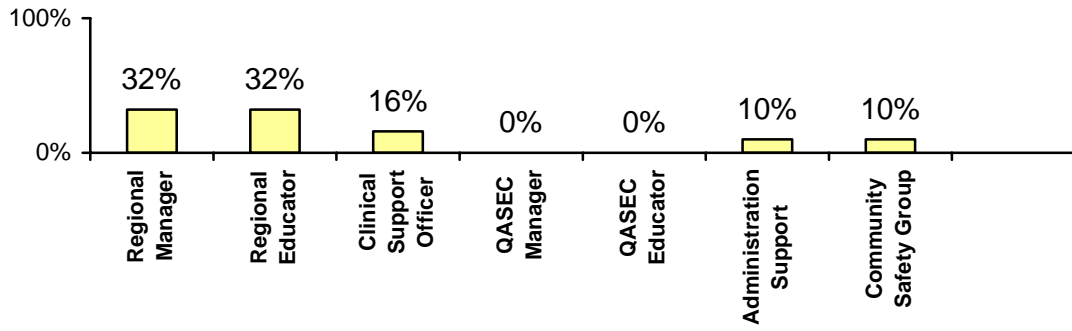
Did this Conference meet your needs/ expectations?

5. Reasons for this response:
 - ✓ Networking capabilities with QASEC regarding sharing of information and gaining a perspective of how we can work together to benefit QAS products and programs to the community.
 - ✓ A forum on us as educators not just ambulance educators.
 - ✓ I found something new each day.
 - ✓ I would like to see more "in house" material, I see this forum as a means to 'catch up' and learn about the changes and trends and how they effect us as educators, particularly in the regions.
 - ✓ If it gives me another view on education in any forum, challenges me to think about innovative ways to educate, and inspires me to provide more leaner focussed education then you have had a great conference. These were met for me.
 - ✓ Good review of current and future issues surrounding education and potential ways to develop individuality and as an organisation.
 - ✓ Needed to be updates on current trends in education and also become better informed on e-technologies relative to QAS delivery.
 - ✓ Much better than last year's forum. There were some admin components which were great.
 - ✓ Most of the subjects were topical and relevant to education or educational host practice.
 - ✓ Good chance to network with other regions and develop ideas, procedures, structure, systems.
 - ✓ The presentations lost my interest early on in the session.
 - ✓ Some of the breakout groups were slow, not structured and seemed to be delivered Ad Lib. Eg - Pain Management.
 - ✓ Able to network with other educators, put faces to names, share ideas and brainstorm. Learn or be exposed to developmental tools. Remember we're still part of the big picture.
 - ✓ Gave me the opportunity to meet colleagues, and develop my understanding of educational requirements and processes.
4. Further comments:
 - ✓ Enjoyed Keynote 1 speaker, but a bit too long.
 - ✓ Well organised, great program.
 - ✓ Venue. No data points in rooms.
 - ✓ There is still a real problem with communication between QASEC and the regions, this has improved greatly, but I see these conferences as one of the ways that we can bridge the gap if we use it that way.
 - ✓ Enjoyed the chance to network. This is obviously of great benefit to all as it is rare for the group of educators to get together in this forum.
 - ✓ Disappointed by attendance. Understand both some regions and QASEC had courses but limited time to network and gain information from QASEC Principals.
 - ✓ Well done ESU.

- ✓ Short workshop duration - give quick snippets, plant seeds, promote discussion.
 - ✓ Very valuable, keep up the good work. Very informative and innovative with great speakers.
 - ✓ Far too focussed on QASEC issues/interests. There are several interest groups who need more representation. CSO's, RAE's, Mentors and Administrators.
 - ✓ Food was terrible. Didn't like the share bathrooms - got locked out by person next door not unlocking it after use.
 - ✓ The food was of a very poor quality. I mean tea mainly I did not appreciate being served left over salads from lunch time for tea.
 - ✓ Breakout groups.
 - ✓ A good programme, certainly adds value from years past.
 - ✓ 1st one very informative overall.
 - ✓ Well organised and a credit to the team - Well Done. Food at dinner was abominable but lunch was great.
7. What would you like included next year?



8. Current role in education



Appendix 10

Draft Literacy Strategy designed to meet needs noted by expert Regional Staff

DRAFT WORKPLACE LITERACY STRATEGY FOR QUEENSLAND AMBULANCE SERVICE-for comment

Rationale

Workplace Literacy is often misunderstood as a concept. It really represents a group of skills that together enable people to learn and function effectively in the workplace. Inappropriate levels of workplace literacy are major safety hazards in the workplace situation. These inappropriate levels of literacy can be caused by many factors:

- ineffective basic skills
- lack of use of skills, and
- changes to the literacy demands of the workplace.

The last one is the most common and most of us would have experienced that at some stage especially when computers were introduced as a regular workplace tool. A useful definition of workplace literacy was adopted by the Industry Training Advisory Boards of Queensland in 2002.

Workplace literacy is the ability to process, frame and respond appropriately to workplace information using the skills of:

- *reading and writing*
- *listening and speaking*
- *numeracy*
- *critical thinking, and*
- *technology appropriate to developing workplaces*

Many definitions and many literacy screening tools look only at reading and writing and ignore the fact that reviews of accident reports (Morrow and Roberts 1994) show that misunderstanding of verbal commands was central to some 80% of accidents and incidents. This has been substantiated in other organisations.

Critical thinking is a skill that enables problem-solving and prioritisation. These are crucial parts of paramedic duties. Discussion in regions has confirmed that many managers and supervisors are concerned by the ineffective problem-solving abilities of staff and their inability to comprehend and follow what appear to be simple directions or answer simple questions.

There is often recognition of the problems that Aboriginal and Torres Strait Islanders (ATSI) have with print literacy. However, there is also a widespread concern with other forms of literacy for other people that inhibit effective learning and high workplace performance. In order to address these issues, which are quite complex, with no one size fits all solution the following strategy has been devised.

Initial stage

There are four significant areas where initial attention needs to be focussed to achieve immediate results.

AREA 1 Supervisors and Mentors

- The first is to equip Mentors and Supervisors to recognise the clusters of behaviours that indicate problems of any type. (While the leaving behind of glasses has been a well used excuse for asking someone else to read something- it would be unwise to assume that this alone is an indication of poor print literacy. We have all left our glasses behind sometimes! However, when the glasses behind story is associated with another cluster of behaviours such as always wanting to take it home because it is too noisy to read or write at work or getting the message wrong and imagining people are out to get them or the system is no good.)
- The next is to ensure that these mentors can get specialist advice quickly and implement the support strategy developed.
- The next is for supervisors and mentors to be able to provide basic support that is appropriate and protects the dignity of the individuals.

This is because supervisors and mentors see the student paramedics within the work scene and are in a unique position to observe and to support. It is envisaged that this stage could be achieved in 20-30 hours of program work for area 1.

AREA 2 Educators

- It is critical that all educators at all levels have a thorough understanding of the issues involved in workplace literacy and are able to observe the indicators of problems quickly so that early learning is not inhibited.
- They should be able to interpret the workplace literacy indicator tool and prepare simple interventions.
- They should also be able to develop strategies and to review the work outcomes of the student paramedics.
- They need to be able to adjust teaching styles to accommodate the needs of different students.
- This level of expertise would require approximately 40-50 hours of program work for area 2.

AREA 3 Tools

The development of tools needs to be a parallel activity to support areas 1 and 2.

- An initial literacy assessment which forms part of the initial pre-employment interview needs to be devised. This should focus on functional capabilities and involve the facets of the literacy definition. It should be a regular part of the interview and care must be taken that this is not discriminatory but linked to work necessities.
- A more detailed literacy indicator should be developed to enable diagnosis of the nature of any literacy issue. This enables targeted literacy support to be offered.
- The Skill Builder Series needs to be given the QAS customisation so that these can be used routinely and distributed as a support tool throughout the State. This can be supplemented by CD or server presentation and form a useful bridge.

AREA 4 Networks

Already within QAS there are networks being established for workplace assessors and for the Flexible Learning Leaders. These networks, which are so critical to building a learning environment in the organisation, can be a practical support for those who are supporting people with literacy and learning difficulties.

Assessment

The work within networks can assist in enabling the variances that can and should be made to assessment instruments to enable those with disabilities to undertake reasonable assessment. These disabilities include literacy. However, any variances sanctioned must take into account the level of literacy required to do the job.

This is of particular importance when dealing with a group of ATSI students. It may be possible to allow for a mainly oral assessment process, if the workplace assessor does a substantial recording job to establish the evidence as valid, sufficient, authentic, current, consistent and reliable and the to ensure the principle of fairness is observed. It is important to have ATSI people as instructors and trainers. However, when they fill that role, their workplace literacy has to be adequate for that job. So the principle of bridging literacy has to be built in to the practices of the organisation.

Levels

In order to make judgements on this the use of the National Reporting System (NRS) could be of assistance. This enables anyone skilled in its use to ascertain what levels of literacy need to be used in a range of jobs. The use of these levels would inform the assessment items, the indicator items and the pre-selection activity.

Policies

In turn policies within the organisation could be framed to embed these strategies in practice.

It is expected that these issues in Areas 3 and 4 could be resolved by approximately eight - ten weeks of a consultant's time.

Advanced stage

Graduate Certificate

In order to ensure that gains made by undertaking the initial stage become a feature of the organisation, it has been suggested that educators undertake additional study. The current Level 4 Assessor and Workplace Trainer (AWT) is seen as a basic qualification. Full time educators need to extend their educational capabilities. One way of doing this would be to negotiate it within an Enterprise Bargaining Agreement and offer Study and Research Assistance Scheme (SARAS) definition at 100% refund of costs. It is envisaged that a Graduate Certificate in Education would be the desirable qualification in addition to the AWT. This should be negotiated with tertiary institutions and units on workplace literacy would be compulsory components.

Additional Skill Builders

Using the model of the Skill builders of - Think, Do, Review, some additional texts could be written to incorporate some essential skills. These are at the moment being covered in a range of programs but it may well be useful to have ready reference materials.

The topics suggested include:

- Coaching and Mentoring
- Understanding Self and Others
- Conflict Resolution
- Negotiating
- Applying for Jobs
- ARF Writing and Coding, and
- Clinical Description.

Reviewing language levels of program material and references

Many organisations have seen the need to rewrite their operating manuals and standard references to simplify and modernise the language used. Not to do so can be interpreted as a discriminatory practice if the language is more difficult than the work it describes.

Action plan and funding

Budget

As this topic is critical to current and ongoing performance of QAS staff both Paramedic and Communications, it is important that it becomes a budget line at both Regional and QASEC levels.

However, funding sources are available for workplace literacy, particularly so when the initiatives are developed within an overall strategy. It is believed that this paper could be the basis for a submission to SEM and for the QAS Strategy Plan. This would then enable other forms of funding to be sought.

WELL (Workplace English Language and Literacy)

This funding source has been used previously in QAS and technically this disqualifies QAS from seeking further funding. However, it can be proven that adequate strategy did not drive the funded interventions within that grant and that new measures proposed would give a better result. It can also be argued that not all employees were able to benefit from the last funding and that a different group of people would benefit from a new funding proposal. This approach to further funding is being explored.

National Council for Vocational Education and Research (NCVER)

This organisation has currently advertised for application for a research proposal. If an action research model was proposed and successful, it would give an opportunity to frame one of the interventions in detail, trial it, analyse and report it in such a way that QAS would benefit. This could fit within research funding guidelines.

Other Smart State money could be sought and a watching brief needs to be kept on ways to further the development work while defraying the cost to QAS while showcasing QAS as a progressive organisation.

Action plan

4. Commence work on Area 1 by 1 February 2005 – Regions to fund. (Apply for WELL Grant if possible.)
5. Commence work on Area 2 by 1 February 2005 – QASEC to source. (Apply for WELL Funding if possible.)
6. Commence work on Tools immediately. Some initial work may be done within the current projects, but all of it cannot be completed.
7. Plan consultancy work for 2005 to ensure that all is delivered to an acceptable standard.

Immediate action plan

8. Please give me immediate feedback so that I can adjust this prior to the next AEC.
9. Please set aside a 15-minute block at the Educators' Conference to clarify any issues.
10. Please make this an agenda item at AEC and have the revised version agreed formally.
11. I can then prepare an SEM Submission Paper and a Briefing Paper so that you can brief your Assistant Commissioners prior to the SEM.

Many thanks

Elaine Roberts

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