"Let's not reinvent the wheel": A qualitative investigation of collaboration in the Australian GP education and training sector

B. Denny¹, A. Chester¹& J. Brown²

Abstract

Introduction: E-learning collaboration in the Australian GP education and training sector represents one way to improve sustainability, innovation and reuse of existing data sources. However, few collaborative e-learning projects are currently undertaken within the sector, with previous joint ventures resulting in variable success. The purpose of this study was to investigate the potential of increased e-learning collaboration, with specific focus on exploration of the beliefs and perceptions of key stakeholders within the GP education and training sector.

Methods: A total of 78 personnel and 16 CEOs participated in focus groups and interviews held at training sites across Australia. Independent and group qualitative analysis was used to derive key themes.

Results: Six key themes related to e-learning collaboration were identified: benefits of e-learning collaboration, maintaining focus on educational outcomes, competitiveness within the RTP sector, individual identity and regional differences, establishing relationships and enablers to promoting collaboration.

Conclusions: Considerable goodwill and enthusiasm towards collaboration exists within the sector. Congruent with established literature regarding collaboration, key recommendations are detailed for the advancement of prospective collaborative e-learning projects, including a need for early and ongoing stakeholder engagement,

Correspondence: Bianca Denny Division of Psychology School of Health Sciences RMIT University PO Box 71 Bundoora, VIC 3083 Australia Tel: +61 3 9925 7376 Email: bianca.denny@rmit.edu.au

¹ RMIT University, Melbourne

² Southern GP Training, Churchill, Victoria, Australia

a focus on educational outcomes, respect for matters of individual identity and consideration of regional differences.

Keywords: e-learning; collaboration; medical education; general practice training.

Introduction

E-learning is an integral component of modern medical education (Ellaway & Masters, 2008; Ruiz, Mintzer, & Leipzig, 2006). Lauded for the perceived benefits of flexibility, cost-effectiveness and efficiency, e-learning refers to an educational approach in which some or all content is based on the use of electronic media and devices (Sangra, Vlachopoulos, & Cabrera, 2012). With potential to improve access to communication and to facilitate interactive learning opportunities, e-learning is widely used to complement face-to-face and traditional learning, and training opportunities within the Australian GP education and training sector (Tam & Eastwood, 2012; Trumble, 2011).

The education and training of GP registrars in Australia is managed via a regional program tailored to each region's needs, with 17 regional training providers (RTPs) responsible for the delivery of the Australian General Practice Training (AGPT) program across designated geographical areas. The RTPs share a common goal of preparing registrars for examination and subsequent independent practice. While overseen and accredited by governmental regulatory agencies, the independent operation of each RTP has resulted in predominantly local production, ownership, management and storage of e-learning platforms and electronic educational resources. Significant changes to the structure of AGPT and RTPs came into place in late 2015 and early 2016; however, issues related to collaboration are likely to continue.

Collaboration in the area of e-learning has been proffered as one way to improve sustainability, innovation and reuse of existing data sources within Australia's health care system (HWA, 2011). More specifically within the GP education and training sector, collaboration between RTPs has been encouraged to overcome challenges presented by the current localisation of e-learning. Duplication of effort impacts finances and time, potentially limiting ability to capitalise on prospects for innovation. Inconsistency may also arise regarding online learning opportunities and resources available to registrars across RTPs, possibly impacting individual learning experiences of GP registrars across Australia. More broadly, benefits of e-learning collaboration may include promotion of shared knowledge and cost efficiencies derived from a reduction in individual planning, training and resource development and production (Gray, 1989; Mason & Lefrere, 2003).

While collaborative e-learning ventures have been successfully negotiated in fields such as higher education (Alves & Uhomoibhi, 2010; Salmon, 2005) and in the education of health professional students and instructors (Childs, Blenkinsopp, Hall, & Walton, 2005), previous collaborative e-learning projects in the RTP sector have resulted in variable success. Five RTPs engaged in a joint venture to build and develop a purpose-built education management and administration tool. While this resulted in

a successful outcome overall, the project experienced major delays, cost blowouts and contraction of scope. In another example, two shared online repositories of clinical references and educational resources have been developed: the Self-Directed Training and Resource System (STARS) and the Collaborative Online Medical Education and Training Platform (COMET). STARS was built by one RTP in collaboration with two others. While still active, the repository is irregularly maintained and has experienced limited uptake. COMET, a predecessor to STARS, was similarly under-utilised and was consequently decommissioned.

It has been suggested within the RTP community that the lack of success of STARS and COMET were due to several issues, including:

- insufficient consultation with stakeholders during preparatory project stages
- lack of funded maintenance and resources
- limited marketing
- restricted awareness among intended users.

Despite the variable success of past joint ventures and general acknowledgement of the difficulties experienced during previous collaborative efforts, there has thus far been little formal consideration of the factors that may inform the design and process of future collaborative e-learning projects within the Australian GP education and training sector.

Beyond the RTP sector, considerable literature exists to explain successful collaboration between organisations (Czajkowski, 2006; Gray, 1989; Mattessich, Murray-Close, & Monsey, 2001). Factors identified as important to collaboration include appropriate selection of collaborators, favourable political and social climates, strong structure and process, good communication, clear purpose and sufficient resources (Mattessich et al., 2001). Similar factors have been identified as specifically relevant to e-learning collaboration. For example, in a case study of a higher education collaborative e-learning project, Connolly, Jones and Jones (2007) noted that skilled leadership and frequent and open communication is integral to the development of good working relationships. Additionally, allocation of sufficient resources (i.e., appropriate staffing, financial support) is acknowledged as particularly important to group e-learning projects (Childs et al., 2005; Connolly et al., 2007; Davies et al., 2012; Ruiz et al., 2006). A paucity of knowledge, however, exists regarding factors specifically relevant to a collaborative e-learning project between RTPs; their unique structure and the characteristics of the sector are important considerations prior to embarking on further collaborative e-learning projects.

The qualitative research design of the current study was informed by the perceived lack of input from RTP stakeholders in the planning and preparatory stages of previous collaborative projects, with recognition of the need to consider a wide range of perspectives prior to embarking on further collaborative e-learning ventures. The investigation was undertaken as part of a larger project examining the quality and sustainability of e-learning in the sector. The overall objective of the current study, therefore, was to investigate the potential of increased e-learning collaboration, with specific focus on exploration of the

beliefs and perceptions of stakeholders within the RTP community. It is anticipated that the results will inform the progress and direction of prospective collaborative e-learning projects, therefore improving and increasing future collaboration.

Method

Participants

In order to promote inclusivity and provide comprehensive and valid results, representatives from all RTPs were invited to participate. Personnel and CEOs from each of Australia's 17 RTPs participated in focus groups and one-on-one interviews, respectively. Key contacts at each RTP assisted with the recruitment of suitable staff with knowledge and experience related to medical education e-learning. Written informed consent was obtained from all participants following ethics approval from RMIT University.

Procedure

Separate data collection activities for personnel and CEOs were held to encourage open discussion and promote expression of diverse perspectives (Morse, Barrett, Mayan, Olson, & Spiers, 2002). Focus groups of 30–45 minutes duration were conducted at each RTP. Groups typically comprised 4–6 participants, including a variety of medical educators and supervisors, administrative staff, information technology personnel and GP registrars. Short interviews with CEOs were conducted onsite or via telephone (< 30 minutes). Open-ended questions (Table 1) were developed to guide discussions. The principal author, who was not a direct employee of the RTP sector, facilitated sessions in order to reduce potential bias (Chenail, 2011; Mehra, 2002). Data collection activities were conducted in late 2013.

Table 1 Questions Used to Guide Focus Group Discussions and CEO Interviews

No.	Question
1	What specific aspects of e-learning may be suitable for collaboration?
2	What are the potential benefits of an e-learning collaboration for your RTP and for the RTP community as whole?
3	What are the potential barriers to an e-learning collaboration?
4	What factors unique to this particular RTP are relevant to collaboration?
5	As individuals, what may be your potential roles in an e-learning collaboration between RTPs?

Data analysis

Sessions were audio-recorded and data were de-identified and transcribed verbatim by a research assistant. NVivo software (QSR, 2012) was used for data storage, management and analysis. Congruent with the six-stage approach recommended by

Braun and Clarke (2006), all researchers familiarised themselves with the transcripts and undertook independent coding, followed by a group analysis session in which agreement on coding and emergent themes was reached. Independent coding activities were undertaken to increase inter-rater reliability and validity (Morse et al., 2002). The principal author assumed responsibility for final thematic analysis.

Results

In total, 78 personnel and 14 CEOs across 17 RTPs participated in focus groups and interviews over a 3-month period. Focus group participants were mostly female (68.4%), ranging in age from 21 to 66 years (M = 42.01, SD = 10.30), while CEOs were generally male (75%) with an age range of 36 to 61 years (M = 45.75, SD = 7.52). Time of employment in the RTP sector for focus group participants ranged from one month to 13 years (M = 4.53, SD = 3.46), and 1 to 12 years (M = 7.38, SD = 4.07) for CEOs.

Six key themes relating to e-learning collaboration were identified across personnel focus groups and CEO interviews: (1) benefits of e-learning collaboration, (2) maintaining focus on educational outcomes, (3) competitiveness within RTP sector, (4) individual identity and regional differences, (5) establishing relationships and (6) enablers to promoting collaboration. Quotations are provided to illustrate themes as discussed below.

Theme 1: Benefits of e-learning collaboration

Most participants were enthusiastic regarding the potential for increased e-learning collaboration. Prospective benefits of efficiency, productivity and shared knowledge were identified.

Regarding efficiency, participants commonly remarked on the duplication and redundancy occurring across RTPs. Considerable time and effort is exerted in the creation of similar learning resources, sample exam questions and online modules. The phrase "re-inventing the wheel" was mentioned nine times across focus groups and interviews.

"You certainly don't want 17 providers reinventing the wheel every single time." (administrative personnel, RTP 7)

"It certainly takes a lot of time and energy to produce some of the stand-alone things, so it would be incredibly useful to not reinvent the wheel and have everyone doing it on their own." (medical educator, RTP 17)

Several participants acknowledged that long-term benefits of efficiency are likely to be achieved only following substantial short-term increases in costs and workload, potentially leading to some reluctance to engage in collaboration.

"It will take time and money, but I figure doing it together will be cheaper and more efficient than trying to do it myself." (CEO, RTP 9)

"Collaboration will actually lead to more efficiency, but the process to get there is actually very time consuming. So people may be frightened off." (administrative officer, RTP 17)

Collaboration was seen as a way to overcome issues of duplication and redundancy, thus promoting greater productivity for the sector as a whole.

"There's little point to 17 of us each producing our own little learning module, with a slightly different bent on it, if it's been done well before." (medical educator, RTP 4)

Congruent with the notion of increased productivity, several participants advocated for greater sharing of knowledge and information across the sector. This was viewed as an important initial step in establishing prospective collaborative relationships.

"Not knowing what other RTPs have developed, probably the initial step is finding out where other RTPs are using e-learning successfully or what projects they've done already that they feel are working well." (GP/medical educator, RTP 5)

"There's a lot of expertise out there, and it would be a shame if we were all just working in our little footprints, with our heads down, not looking at what's going on in other parts of the country." (CEO, RTP 8)

Theme 2: Maintaining focus on educational outcomes

All participants acknowledged registrars as the ultimate beneficiaries of e-learning collaboration. Increased collaboration was viewed as an effective way to provide registrars with a greater amount of high quality electronic resources, thus increasing positive learning outcomes. Additionally, achieving consistency in educational and training opportunities regardless of training location was viewed as important to maintaining high quality GP services.

"You guys [registrars] will have more resources and you'll achieve a lot more." (education officer, RTP 1)

"To be confident that it doesn't matter which RTP you're in, you're able to access a good care standard and therefore not be marginalised or disadvantaged by where you train." (medical educator, RTP 2)

To this end, participants emphasised the need to maintain focus on promoting education, rather than creating and using "technology for technology's sake".

"The end goal is to produce a good GP." (IT officer, RTP 14)

"Our focus needs to be what makes people good doctors." (medical educator, RTP 4)

Registrars' input to e-learning design and dissemination was recognised as important to the success of any collaborative project. With several previous e-learning endeavours perceived to have been negatively impacted by limited uptake (e.g., STARS, COMET), registrars' involvement in the planning stages of a collaborative e-learning project was acknowledged as essential.

"Student focus. We need to provide what they want, not what we think they want." (medical educator, RTP 4)

"We need to find out from registrars what they like, what works, what doesn't work." (CEO, RTP 4)

Theme 3: Competitiveness within RTP sector

The competitive nature of the RTP sector represents a possible barrier to e-learning collaboration. Perceived to have arisen from the tendering process in 2001, in which the Australian GP education and training sector was reformed and the current RTP structure established, competitiveness was viewed as restrictive for opportunities of sharing and collaboration. However, a reduction in competition during recent years was widely noted. This has been encouraged by a substantial increase in applicant numbers, which has resulted in a considerable surplus of unsuccessful candidates and support for a collaborative approach by personnel and CEOs new to the sector.

"There tends to be some things which are open territory and other things which some RTPs hold very close and don't seem as prepared to share. I think that was the case probably pretty strongly until a couple of years ago. There are now more efforts and understanding in collaboration. I still think there are a few old walls to break down." (medical educator, RTP 15)

Despite observations of decreased competitiveness, several factors were identified as perpetuating a culture of competition. Considerable reluctance among CEOs towards collaboration was noted (including by CEOs themselves), with perceptions of individualistic approaches exemplified by assertive personalities and previous professional experiences outside the not-for-profit sector.

"People who become CEOs tend to be competitive, and they want their organisations to be successful." (CEO, RTP 7)

"At least 30% of CEOs will be unwilling to collaborate, despite stating otherwise." (CEO, RTP 11)

Further, despite a surplus of candidates, providers strive to recruit the "best" registrars. High-quality trainees are viewed as less demanding of resources, easier to work with and positive for an RTP's reputation.

"We're still competing for registrars, for good registrars, for practices and supervisors and trying to maintain our funding and keep our jobs." (research director, RTP 8)

While most focus group participants viewed competition to be problematic and expressed a desire for increased collaboration, several CEOs noted the value of competition in promoting innovation and providing motivation for each RTP to deliver high quality services.

"The whole structure of the RTP is set up to be competitive and to a degree that's an advantage. It drives innovation and product distinction." (CEO, RTP 11)

Theme 4: Individual identity and regional differences

Strong feelings related to individual identity, personal pride and ownership were evident. Staff expressed concern that high levels of collaboration may lead to a homogenised sector in which personal contributions and individual differences are minimised or

undervalued. Issues of individual identity and regional differences may also be of concern following planned changes to the RTP structure.

"Do you become a blancmange? Do you all become the same if you share everything, then what's the point of having a regional training provider?" (CEO, RTP 1)

"CEOs might perceive that we become too homogeneous. If we're all the same, what is the point of difference other than geography?" (medical educator, RTP 8)

Further, many participants emphasised the importance of maintaining local control of training programs. The diverse nature of medicine across Australia was cited as a barrier to increased collaboration; several participants viewed the regional needs of registrars to be best met by the current independent design and production of programs and resources.

"The reason we are RTPs is because it's location-specific and the needs for the GPs that are going to work in this region in the future is a little different to what's going to be required elsewhere." (director of training, RTP 2)

However, a number of participants stressed that RTPs share more similarities than differences. Several areas for potential collaboration were suggested based on these similarities, including a bank of exam questions, development of online supervisor training modules, shared communication technology and joint development of medical education resources.

"The actual content isn't hugely variable in medical education, and certainly there's regional differences, but that content, as long as it's valid and peer reviewed, could be shared." (CEO, RTP 12)

Theme 5: Establishing and maintaining relationships

Establishing and maintaining strong relationships between RTPs was identified as essential to collaboration. Long-term staff reported previous collaborative projects and sharing of information to have been initiated through networking opportunities, such as conferences. Consistency at CEO and senior management levels was viewed as important to forming relationships and identifying potential collaborators, while staff turnover was recognised as an impediment.

"Making sure that relationships are built? That is the collaboration." (IT officer, RTP 1)

"It's the same in any field: you just work out who's like-minded and thinks the same as you, and you work with them. It's almost as simple as that." (CEO, RTP 6)

Importantly, trust was identified as central to collaborative relationships.

"It [collaboration] comes out of appropriate mature relationships. You don't get collaboration where there's not an element of trust." (GP/medical educator, RTP 5)

"Trust. Trust between the organisations, between individuals, CEOs and everything. If there's a trust issue or if there's a political thing, then it's just not going to work." (IT officer, RTP 17)

Theme 6: Enablers to promoting collaboration

Several factors were considered crucial to promoting effective e-learning collaboration: clear purpose, preparation and planning, governance and leadership, and maintaining a manageable number of collaborators.

Similar to views on the need to maintain an educational focus, participants emphasised that proposed outcomes of a collaborative project must have a clear purpose and meet an existing need.

"Just making sure there's a demand for it. It happens in all organisations, but you jump in and think, 'Oh, that's a really good idea,' without actually asking, 'Do we actually need to do this?' 'Is it being done somewhere else?' and 'If it isn't, is it really in demand?'" (administrative officer, RTP 4)

Based on previous collaborative projects in which challenges included scope retraction and missed deadlines, participants were wary of embarking on collaborative projects without sufficient preparation and planning.

"That's where we've probably become unstuck in the past ... you have a great idea like STARS, but possibly there's not enough research done on how we can do this to make it work, rather than implement it and then turn around say, 'Why didn't that work as well as we would have liked?" (administrative officer, RTP 4)

Related to preparation and planning, timely establishment of appropriate governance (i.e., objective setting, rules and regulations, resource allocation) was strongly endorsed. This was viewed as essential to pre-empt potential difficulties between collaborative partners. CEOs strongly advocated for their close involvement in any collaborative project.

"Whenever you do something that involves two or three or four different organisations, you really do need to put structure around it. And then give it support—management support, financial support, systems support." (CEO, RTP 8)

"It's got to be CEO driven. One of the fail points in any technological development is the lack of most senior management involved. They've got to have a broader more systemic view of the operation and be able to make some more strategic decisions about what gets done." (CEO, RTP 6)

Lastly, both personnel and CEOs expressed reservation at embarking on a large-scale collaboration involving all or the majority of Australia's 17 RTPs. Working with a small number of collaborators was viewed as the best way to capitalise upon current momentum for an e-learning project.

"It's probably better to do something doable, get some runs on the board, rather than try and tackle the world and come up short." (GP/medical educator, RTP 15)

"Too many cooks spoil the broth. Small is beautiful. Sometimes the most efficient way is to have a smaller group of people. You get lost before you get started sometimes." (GP/ medical educator, RTP 17)

Discussion

Collaboration has been proposed as one way to improve sustainability and innovation in medical education (HWA, 2011); however, previous collaborative e-learning projects in the Australian GP education and training sector have resulted in variable success. The aim of the current study, therefore, was to investigate factors relevant to promoting successful e-learning collaboration within the sector. While confirming a general willingness towards collaboration, findings also indicated the complex nature of collaboration in this area of medical education. Emergent themes identified in the current study represent key issues to be considered in the development and implementation of collaborative e-learning projects.

Several key recommendations arose from the review of the literature and findings of the current study:

- Maintain focus on education and training, rather than technology
- Promote individual identity by recognising achievements of specific RTPs, as well as collaborative efforts
- Recognise and accommodate regional differences
- Start small and grow to a larger collaboration involving more training sites
- Prioritise preparation and planning of any collaborative effort
- Ensure ongoing evaluation of collaborative projects
- Take time to foster trust between collaborative partners.

Overall, stakeholders were enthusiastic regarding the potential for increased e-learning collaboration. Personnel and CEOs acknowledged benefits that may be derived from minimising duplication across the sector. Consistent with previous research, efficiency, productivity and shared knowledge were identified as likely positive outcomes of collaboration (Gray, 1989; Mason & Lefrere, 2003). However, while general enthusiasm and goodwill towards joint e-learning ventures was evident, participants also expressed reservations, including potential loss of individuality between RTPs and lack of recognition for individual achievements.

Congruence between themes identified in the current study and factors recognised in the literature as important to successful collaboration indicates a clear way to progress with inter-organisational projects within the sector. A three-phase model is widely recommended for the implementation of collaborative projects (Gray, 1989). Consistent with themes identified in the current study, careful preparation and planning has been long recognised as central to successful collaboration. Iterative stages include problem setting (definition of problem, commitment, identification of collaborators), direction setting (establishing ground rules, agenda setting, reaching agreement) and implementation (working with co-collaborators, building external support, monitoring agreement, ensuring compliance). Ongoing evaluation and reflection is posited as key to successfully progressing through the phases of collaboration (Taylor-Powell, Rossing, & Geran, 1998). This may also be useful in ensuring an education focus is maintained, as continual appraisal would provide an opportunity to ensure objectives are being met.

This does not, however, counter the need to consider the unique composition and characteristics of the sector and tailor a collaborative approach accordingly. Indeed, this represents a key emergent theme of the current study—strong views were apparent regarding the need to maintain individual identity and regional program ownership. An element of trepidation regarding collaboration may stem from fear of roles being superseded if the production of e-learning resources and materials moves away from its current localised context. The prospect of redundancy is likely to be worrying, particularly in a highly specialised sector such as GP education and training. In addition to these practical concerns, a strong sense of ownership and pride is apparent; control of e-learning design and implementation is viewed as one way to demonstrate the skills and abilities of each RTP. The residual competitiveness arising from the tendering process by which RTPs were established is also implicated, with many RTPs keen to demonstrate independence.

Results of the current study indicate that any potential e-learning collaboration should be a gradual process that features open discussion and extensive consultation with stakeholders. Related to this is establishing and maintaining strong relationships between collaborative partners. To this end, early involvement and sustained engagement of stakeholders is essential. Also evident is the importance of building and sustaining trust between collaborative partners, widely acknowledged within previous research as key to advancing collaboration (Connolly et al., 2007; Czajkowski, 2006; Mattessich et al., 2001). Stakeholders in the RTP were in general agreement regarding the need for mature, trusting relationships at all levels of the sector in order to advance collaboration.

While it is necessary to consider individual identity and regional ownership, recognising similarities and finding common ground between RTPs is essential to identifying areas in which e-learning collaboration could occur. With the common central objective of preparing registrars for examination and independent clinical practice, suggestions for specific areas of potential collaboration arising from the current study include sharing of peer-reviewed medical education materials, establishing a bank of practice exam questions, development of online training modules for supervisors and shared licensing of conferencing and communication platforms. Further, with online repositories noted as worthwhile if properly developed and maintained, a collaborative project could focus on furthering and refining previous attempts in this area. Current findings also highlight a desire within the sector to "test the waters" of collaboration by initiating a relatively small project with limited collaborators. This echoes established findings regarding the advantages of commencing a minor project with a select number of partners (Mattessich et al., 2001).

In addition to identifying key aspects relevant to advancing e-learning collaboration in the Australian GP education and training sector, the current study provided several additional and somewhat unexpected benefits. First, the process of conducting this project mirrored several of the tasks necessary for the success of any prospective e-learning project, including inviting RTPs to participate, establishing clear communication and organising logistical considerations around data collection activities. Strong relationships with many key personnel were also established. In

this way, the project modeled aspects of collaboration, creating a link between discourse and reality (Mathiassen, 2002). Additionally, anecdotal evidence collected during site visits indicates the project prompted reflection regarding e-learning and collaboration. For instance, several personnel and CEOs noted both formal (i.e., staff meetings and debriefing sessions) and informal (i.e., spontaneous conversations between colleagues) consideration of the RTP's organisational culture and e-learning strategy arising from participation.

While the findings presented here provide novel and insightful information regarding the potential for e-learning collaboration in the GP education and training sector, results should be considered in light of several limitations. All RTPs were represented; however, the level of input from personnel and CEOs differed across sites. A more accurate or complete picture of the current standing of the RTP sector may have been derived through equal participation. Further consideration and analysis of demographic differences of participants (e.g., gender of CEOs, RTP locations) may also prove insightful. Indeed, this in itself reveals information regarding potential collaboration within the sector. While most RTPs volunteered the time, expertise and logistical assistance necessary to engage in the project, willingness and enthusiasm regarding participation varied across sites. This may be indicative of intentions towards future collaboration and perhaps supports the view of an e-learning venture encompassing all 17 RTPs being an unrealistic prospect. A further limitation centres on the voluntary nature of recruitment; this may have resulted in personnel with particularly strong views on collaboration (whether positive or negative) opting to participate, potentially resulting in biased results.

In conclusion, the current study has highlighted the importance of early, respectful and sustained engagement with stakeholders in relation to e-learning collaboration in the Australian GP education and training sector. Promoting open dialogue and establishing relationships, however, is a necessary but not sufficient aspect of collaboration. A broad range of factors is essential to consider in relation to e-learning collaboration, including maintaining a focus on education, ensuring the project has a useful purpose and clear focus, and respecting individual identity and regional differences. While some aspects may be difficult to advance in the short-term, others are more amenable to change and indicate ways in which initial goodwill and ongoing momentum towards collaboration may be fostered. Despite recent significant changes to the sector, collaboration remains an important prospect in medical education and training. The restructure may provide new opportunities to form alliances and collaborative relationships, with the lessons learned from this study and previous collaborative efforts imperative to promoting success in the new sector. Overall, general enthusiasm and realistic reflections on the challenges inherent to collaboration suggests promising potential for future joint e-learning projects in the Australian GP education and training sector.

Acknowledgement

We wish to acknowledge the contribution of our project manager, Mexie Butler. We also wish to acknowledge the contribution and participation of the RTP CEOs and personnel.

Funding source

The current research was sponsored by the Education Innovation Program (EIP) of Australian General Practice Education & Training (GPET).

References

- Alves, P., & Uhomoibhi, J. (2010). Issues of e-learning standards and identity management for mobility and collaboration in higher education. *Campus-Wide Information Systems*, 27, 79–90. doi:10.1108/10650741011033053
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
- Chenail, R. J. (2011). Interviewing the investigator: Strategies for addressing instrumentation and researcher bias concerns in qualitative research. *The Qualitative Report*, *16*(1), 255–262.
- Childs, S., Blenkinsopp, E., Hall, A., & Walton, G. (2005). Effective e-learning for health professionals and students: Barriers and their solutions. A systematic review of the literature: Findings from the HeXL project. *Health Information and Libraries Journal*, 22(2), 20–32.
- Connolly, M., Jones, C., & Jones, N. (2007). Managing collaboration across further and higher education: A case in practice. *Journal of Further and Higher Education*, *31*(2), 159–169.
- Czajkowski, J. M. (2006). Success factors in higher education collaborations: A collaboration success measurement model. Unpublished docteral dissertation, Capella University.
- Davies, B. S., Rafique, J., Vincent, T. R., Fairclough, J., Packer, M. H., Vinent, R., & Haq, I. (2012). Mobile medical education (MoMEd): How mobile information resources contribute to learning for undergraduate clinical students—a mixed methods study. *BMC Medical Education*, 12(1), 1–11.
- Ellaway, R., & Masters, K. (2008). AMEE Guide 32: e-learning in medical education. *Medical Teacher*, 30, 455–473. doi:10.1080/01421590802108331
- Gray, B. (1989). *Collaborating: Finding common ground for multiparty problems*. San Francisco, CA: Jossey Bass.
- Health Workforce Australia (HWA). (2011). *National health workforce innovation and reform strategic framework for action 2011–2015*. Adelaide, Australia: Author.
- Mason, J., & Lefrere, P. (2003). Trust, collaboration, e-learning and organisational transformation. *International Journal of Training and Development*, 7(4), 259–270.
- Mathiassen, L. (2002). Collaborative practice research. Information Technology & People, 15, 321–345. doi:10.1108/09593840210453115
- Mattessich, P. W., Murray-Close, M., & Monsey, B. R. (2001). *Collaboration: What makes it work* (2nd ed.). St Paul, MN: Amherst H. Wilder Foundation.
- Mehra, B. (2002). Bias in qualitative research: Voices from an online classroom. *The Qualitative Report*, *7*(1), 13–17.

- Morse, J. M., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). Verification strategies for establishing reliability and validity in qualitative research. *International Journal of Qualitative Methods*, 1(2), 13–22.
- QSR. (2012). *NVivo 10* [Computer software]. Retrieved from http://www. qsrinternational.com
- Ruiz, J. G., Mintzer, M. J., & Leipzig, R. M. (2006). The impact of e-learning in medical education. *Academic Medicine*, *81*(3), 207–212.
- Salmon, G. (2005). Flying not flapping: A strategic framework for e-learning and pedagogical innovation in higher education institutions. *Research in Learning Technology*, *13*(3).
- Sangra, A., Vlachopoulos, D., & Cabrera, N. (2012). Building an inclusive definition of e-learning: An approach to the conceptual framework. *International Journal of Instructional Technology and Distance Learning*, 13(2), 145–159.
- Tam, C. W. M., & Eastwood, A. (2012). Available, intuitive and free! Building e-learning modules using web 2.0 services. *Medical Teacher*, 34, 1078–1080. doi:1 0.3109/0142159X.2012.731105
- Taylor-Powell, E., Rossing, B., & Geran, J. (1998). *Evaluating collaboratives: Reaching the potential*. Madison, WI: University of Wisconsin.
- Trumble, S. C. (2011). The evolution of general practice training in Australia. *Medical Journal of Australia*, 194(11), S59–S62.