The More We Get Together: Communities of Practice for Behaviour Analysts

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With limited opportunities for peer-to-peer interaction and formal training outside of conferences or fee-for-service workshops, some behaviour analysts may find it challenging to acquire and maintain important clinical and professional competencies. Time constraints, heavy caseloads, deficient professional networks, and limited organizational resources may lead some clinicians to conduct outdated, unsupported, or contextually inappropriate assessment and treatment procedures. Although the effectiveness of behavioural skills training for teaching specific skills to behaviour analysts is well established in the literature, it can be time consuming and may not be feasible to develop every skill that practitioners need to stay competent in their areas of practice. In contrast, communities of practice are flexible peer-based groups that facilitate learning through repeated engagement in joint activities. We first evaluated self-reports of participant satisfaction and then evaluated pre- and posttest scores on 3 practice topics to determine the utility of the community of practice meetings. Results showed that behaviour analysts responded favorably to membership and that participation in the sampled community of practice meetings led to improvements in all targeted skills. This article explores the concept of community of practice and its potential utility for behaviour analysts.

Public Significance Statement

It has been suggested that practicing behaviour analysts may find it difficult to set aside time from their busy schedules to learn and/or maintain important professional skills. In this study, we found that a community of practice meeting (i.e., a peer-based group that facilitates learning on practice-based topics) produced an increase in three important skills for practicing behaviour analysts.

Keywords: community of practice, behaviour analysis, professional development

The implementation of procedures based on the best available evidence is of central concern to practicing behaviour analysts (Smith, 2013). The field of behaviour analysis is rapidly evolving, as evidenced by the ongoing improvement and development within the basic and applied domains (Deochand & Fuqua, 2016; Laties, 2008). The technology developed from both domains can provide useful scientific tools for practitioners; however, the rapid rate at which such developments are disseminated means that some behaviour analysts may find it challenging to integrate these empirically validated practices into their work (Lerman, 2003).

The Behavior Analyst Certification Board’s (BACB) Professional and Ethical Compliance Code for Behavior Analysts states...
that behaviour analysts (hereafter referred to as practitioners) must “maintain a reasonable level of awareness of current scientific and professional information in their fields of activity and undertake ongoing efforts to maintain competence in the skills they use” (BACB, 2016, p. 4). Despite their best efforts, many barriers can prevent practitioners from identifying and incorporating empirically supported methods into their day-to-day practice (Carr & Briggs, 2010). Time constraints, heavy caseloads, deficient professional networks, and a lack of organizational resources may lead practitioners to implement outdated, unsupported, or contextually inappropriate assessment and intervention procedures.

With limited opportunities for peer interaction outside of conferences or intermittent fee-for-service workshops, independently employed or consulting practitioners may face limited opportunities to acquire important clinical competencies and develop other skills relevant to their professional development (Parsons & Reid, 2011). Moreover, specific topics presented at conferences or workshops might not be directly relevant to their practice (Critchfield, 2011). This may explain why some practitioners turn to social media for direction on clinical challenges, a practice that can be wrought with misinformation and ethical pitfalls (Kelly, Martin, Dillenburger, Kelly, & Miller, 2019; O’Leary, Miller, Olive, & Kelly, 2017) and could result in a loss of public confidence in behavioural services. At best, these patterns can contribute to practices that are not in line with the latest standards and, at worst, may expose consumers to countertherapeutic, ineffective, or harmful procedures.

Communities of practice are characterized by three central concepts: a domain of shared interest, a community that regularly engages in joint activities, and a shared area of practice (Wenger, McDermott, & Snyder, 2002). The concept of a community of practice originated within the social sciences and is often associated with Orr’s (1990, 1996, 2006) study of a group of photocopier repair technicians who met for breakfast each morning to “swap war stories” before beginning their service routes (Orr, 1996, p. 125). Although these early morning meetings were unstructured and voluntary, the technicians quickly developed innovative solutions to complex mechanical challenges. By providing examples of their successes and failures, sharing troubleshooting techniques, and demonstrating quick fixes, the community that emerged replaced the service manual as the primary resource for honing one’s practice and led to procedures that greatly improved the effectiveness and efficiency of the technicians’ work. The extension of the community or practice framework is said to have saved Xerox over $100 million (Powers, 1999).

As a precursor to their seminal work on communities of practice, Lave and Wenger (1991) proposed a conceptual framework for workplace learning that emphasized knowledge transfer through informal social interaction, dubbed situated learning. In educational research, this marked a significant shift from approaches that focused on mental models, didactic instruction, and expert-guided curriculum to a perspective that emphasized task-based learning from others (Cox, 2005). Situated learning focuses on the assumption that learning tends to be specific to the situation in which it occurs and may not have automatic generalizability. That is, learning theoretical content in a classroom or workshop may have limited usefulness in real-world practice settings. Although presented from a different philosophical and methodological perspective, similar concepts are in rich supply in the behaviour-analytic literature (e.g., Smith, Parker, Taubman, & Lovaas, 1992; Stokes & Baer, 1977; Stokes & Osnes, 1989).

Communities of practice have a number of defining characteristics. They lack formal governance; allow members to share information quickly and fluidly; and can vary significantly in size, communication modality, and longevity (Snyder & Wenger, 2010). Members are self-selecting, share common perceptions of the external environment, and typically share a common verbal repertoire, including jargon, stories, or “inside jokes” (Kerno, 2008; McDermott, 2000). The focus on practice-based activities and learning from peers and “thought leaders” rather than relying exclusively on content experts or managers differentiates communities of practice from other academic or professional gatherings such as reading groups, workshops, webinars, research-based special interest groups, or project-focused work teams.

Communities of practice require ongoing engagement in a series of practice-based interactions over time. Unlike the formalized training programs that practitioners may encounter in their workplaces with clearly discriminated participant and instructor roles and defined expectations for performance and engagement during a predetermined—and typically brief—time frame, communities of practice allow for varying levels of participation over a flexible and often extended life cycle. Wenger et al. (2002) described community membership as containing (a) a small core group that engages intensively while leading discussion and practice-based activities, (b) an active group that attends regular meetings but may be less invested than the core group, and (c) a larger peripheral and even transient group that is passive in its involvement but that may still benefit from its contact with the community. Lave and Wenger (1991) described the process of individuals transitioning from passive to core membership as legitimate peripheral participation, a phenomenon that is central to the community of practice conceptual framework. Wenger et al. described the life cycle of a community of practice as organic, variable, and finite, with its longevity dictated by its value to the participants (rather than its value to an employer or trainer). Communities of practice are said to occur in five stages of development: (a) a potential stage, in which individuals with similar practice issues make contact and discuss their common needs; (b) a coalescing stage, where members come together and negotiate the functioning and structure of the community; (c) an active stage, where joint activity enriches a shared practice repertoire; (d) a dispersing stage, in which the frequency of meetings and communication is reduced but remains a useful resource for members; and (e) a memorable stage, when the community no longer functions but remains in the repertoires of the former members in the form of stories, reunions, or the retention of memorabilia (Wenger et al., 2002).

Communities of practice have recently become a popular approach to knowledge transfer and innovation in health care settings (Li et al., 2009). Research has suggested that participation in a community of practice may be an effective approach to facilitating professional skill and knowledge acquisition for physicians (Parboosingh, 2002), children’s mental health clinicians (Barwick, Peters, & Boydell, 2009), occupational therapists (Wimpenny, Forsyth, Jones, Matheson, & Colley, 2010), and nurses (Tolson, McAlson, Hotchkiss, & Schofield, 2005). Barwick et al. (2009) investigated the benefits of participation in a community of practice in a children’s hospital with a focus on the impact of community membership on the implementation of evidence-based...
practices of front-line social workers and children and youth workers. The researchers randomly assigned 37 participants to either community of practice or practice-as-usual groups. The researchers then examined the frequency and accuracy of the participants’ use of the Child and Adolescent Functional Assessment Scale (Hodges, 2003). Additionally, the authors administered a practice change questionnaire, a knowledge questionnaire, a satisfaction survey, and a readiness for change questionnaire. Although the groups did not differ significantly on readiness for change or self-reported practice change measures, the community of practice group demonstrated more frequent use of the tool, improved content knowledge, and higher satisfaction with the implementation supports than did their practice-as-usual counterparts, suggesting that communities of practice may promote practice improvements in health care settings. Despite these promising findings, there are few studies that examine the impact of peer-to-peer professional development activities within the behaviour-analytic community.

In one recent example of a behaviour-analytic community of practice, Hall (2015) studied the practice of 12 graduates from the first cohort of a masters in special education program at six years post-graduation in an attempt to determine the extent to which the graduates sustained use of evidence-based practices as defined by the National Professional Development Centre’s guidelines on the treatment of autism spectrum disorder (Wong et al., 2013). The master’s program specialized in autism and contained a course sequence approved by the BACB. Half of the participants were Board Certified Behavior Analysts at the time of follow-up while all worked with children and youth diagnosed with autism. Using surveys, interviews, materials reviews, and video samples, the researchers concluded that the graduates collected and graphed data and employed evidence-based approaches in their practice 6 years after graduating. Hall attributed the sustained use of evidence-based procedures to the community of practice that was formed by the cohort following graduation. Unfortunately, the author did not describe the structure or function of the postgraduation community of practice and did not employ any empirical methods to assess the relationship between community participation and the use of evidence-based practices.

The current study attempts to promote discussion about community-based learning and to further explore the utility of communities of practice for behaviour analysts. To this end, we first requested survey data from 86 members who attended community of practice meetings that had been occurring semiregularly for approximately three years in Ontario, Canada. The genesis of the community followed a multiagency pyramidal staff training initiative that prompted eight practitioners to convene monthly to discuss obstacles to training front-line staff within their respective organizations and to problem-solve as a group. The practitioners, who were in isolated consultative roles at the time, found the informal meetings of such value that following the completion of the training initiative, all agreed to continue to meet to seek support on complex cases and to share literature, strategies, and tools. Over the years that followed, the community grew considerably in numbers and in scope. Topics were proposed by members after most meetings and included complex case reviews, discussion of ethical dilemmas, review of specific research and practice content, sharing of clinical tools or practice-based tutorials, and other topics deemed by members to be relevant to their practice. In an attempt to empirically validate the effectiveness of the meetings, we then evaluated pre- and posttest scores on a sample of four community meetings focused on three topics: research publication, behaviour support plans, and graphing conventions.

Method

Setting and Participants

We held community of practice meetings during work hours at local sites where group members were employed, including two psychiatric hospitals, a rehabilitation hospital, and a center providing services to individuals with developmental disabilities. Meetings were held during the workday in the afternoon. Group members were predominantly female (74%) and ranged in age from 20 to 45 years ($M = 34, SD = 6.06$). The majority of group members (92%) worked as practitioners and had between 6 and 10 years of behaviour-analytic practice experience on average; 83% were certified by the BACB. Twenty percent of group members had an undergraduate degree, 46% had a master’s degree, and 10% had a doctoral degree. Not all members attended all community meetings, and the number of participants at each meeting varied ($n = 16, n = 10, n = 12, n = 12$, and $n = 21$ attended the first, second, third, and fourth meetings, respectively).

Procedure

Survey. We distributed an anonymous electronic survey to identify the extent to which the existing 86 members of the community of practice valued the community-based learning format. Twenty-six members completed the survey. We administered this survey prior to sampling the four community of practice meetings; as such, these survey outcomes do not depict participant demographics within each meeting or the group members’ satisfaction with the four specific meetings we sampled in this study. The survey consisted of two parts and nine questions. In Part 1, we requested the following demographic information: (a) age, (b) sex, (c) practice area, (d) years of experience, (e) certification level, and (f) education level. In Part 2, we asked group members to rate the extent to which they agreed that community of practice meetings (a) were relevant to their practice, (b) led to improvements in the quality of their practice, (c) helped build relationships with other behaviour analysts, and (d) increased their knowledge of behaviour-analytic subject matter according to a 5-point Likert scale that ranged from 1 (strongly disagree) to 5 (strongly agree).

Community of practice meetings. Throughout the year, group members suggested potential topics for the community meetings. A coordinator recruited members, all local professionals, to facilitate these meetings or members volunteered their time. Each community of practice facilitator developed a 1- to 2-hr workshop on a topic based on member suggestions, pre- and posttests, and corresponding answer keys or checklists to score the accuracy of participant pre- and posttests. Group members provided consent to participate in this study by submitting survey responses, quizzes, behaviour support plans, and graphs. All group members were invited to participate in the study but were not required to submit their work to take part in the community of practice meetings.

Publication process meeting. During this meeting, the facilitator presented on several topics relevant to the publication process, including the definition of research, types of research, the
scientist–practitioner model, developing a research question, the scientific method, replication, types of peer review (e.g., single-blind, double-blind), and common reasons for article acceptance and rejection. The facilitator also provided an overview of the publication process and typical time lines for publication. Following the presentation, participants asked questions, shared their experiences with the publication process, discussed problem-solving strategies, and shared ideas for future research.

Pre- and posttests. At the start of the meeting, the facilitator administered a 10-item multiple-choice quiz to assess the accuracy of responding to questions on the topics listed above. The facilitator readministered the quiz with questions randomly reordered at the end of the meeting. An investigator scored each quiz using an answer key and calculated the percentage of correct answers by dividing the number of correct answers by the total number of quiz questions and then converting the ratio to a percentage.

Interrater agreement. A second investigator used the same answer key to score 100% of the publication process quizzes. We compared investigators’ scores on each quiz question and then calculated interrater agreement by dividing the total number of agreements by the total number of agreements plus disagreements and multiplying the resulting quotient by 100. Mean item-by-item interrater agreement was 100% at pretesting and 99% (range = 90%–100%) at posttesting.

Behaviour support plan meeting. During this meeting, the facilitator reviewed the research on the critical components of a behaviour support plan (Horner, Sugai, Todd, & Lewis-Palmer, 2000; Vollmer, Iwata, Zarcone, & Rodgers, 1992; Williams & Vollmer, 2015; Wright et al., 2007) and guided participants through a review of relevant legislation governing the mandatory content of support plans in the region (O. Reg. 299/10). Prior to the meeting, the facilitator asked members to bring an electronic copy of a deidentified behaviour support plan that they had recently developed. The facilitator provided participants with approximately 10 min between concepts to work on deficient sections of their support plans with a partner. Participants shared their experiences, provided examples, and made suggestions for improvement with a partner and as a larger group.

Pre- and posttests. At the start of the meeting, the facilitator asked participants to upload an electronic copy of their deidentified behaviour support plan using an online survey. At the end of the meeting, the facilitator asked participants to submit their revised behaviour support plans via a second electronic survey. Two independent reviewers evaluated the pre- and posttest behaviour support plans for the presence or absence of the 20 critical components recommended by Williams and Vollmer (2015), including, for example, target behaviour definitions, replacement behaviours, objectives, baseline, functional assessment results, data collection methods, and functional reinforcers. An investigator calculated the percentage of correct behaviour support plan components for each plan by dividing the number of correct behaviour support plan components by 20 and then converting the ratio to a percentage.

Interrater agreement. A second investigator scored 100% of the behaviour support plans using the same 20 critical components described by Williams and Vollmer (2015). We compared investigators’ scores on each criterion per graph type. Mean item-by-item interrater agreement was 97% (range = 95%–100%) for the changing criterion design graph at pretesting and 98% (range = 95%–100%) at posttesting. Mean item-by-item interrater agreement was 96% (range = 90%–100%) for the reversal design graph at pretesting and 98% (range = 92%–100%) at posttesting.

Statistical Analyses

For each community of practice meeting, we used a paired-samples t-test and descriptive statistics to examine the nature of the differences between pre- and postmeeting test scores for each dependent measure.

Results

Survey

Figure 1 displays the results of the satisfaction survey. When asked whether the topics presented during the community meetings were relevant to the members’ practice as behaviour analysts, 22% strongly agreed, 72% agreed, 3% were indifferent, 0% disagreed, and 3% strongly disagreed. When asked whether member-
ship in the community of practice had led to improvements in the quality of their practice, 9% strongly agreed, 56% agreed, 28% were indifferent, 6% disagreed, and 0% strongly disagreed. When asked whether the community of practice had helped to build relationships with other behaviour analysts, 23% strongly agreed, 61% agreed, 16% were indifferent, 0% disagreed, and 0% strongly disagreed. Finally, when asked whether the group had contributed to increased knowledge of behaviour-analytic subject matter, 22% strongly agreed, 66% agreed, 13% were indifferent, 0% disagreed, and 0% strongly disagreed.

Publication Process Meeting

Figure 2 depicts the pre- and posttest results for this meeting. All 16 participants in attendance completed the 10-question multiple-choice quiz before and after the meeting. At pretesting, the mean questions answered correctly was 49% (range = 20%–70%). Quiz scores increased to a mean of 86% (range = 50%–100%) following the meeting. It is unlikely that the mean difference was due to chance alone, t(15) = 12.11, p = .0012.

Behaviour Support Plan Meeting

Figure 3 displays the pre- and posttest results for this meeting. Eight of 10 participants in attendance submitted behaviour support plans at the beginning and end of the meeting. At pretesting, a mean of 52% of components identified by Williams and Vollmer (2015) were present (range = 0%–80%). Following training, a mean of 68% of the components were present (range = 35%–80%). It is unlikely that the difference in scores was due to chance alone, t(7) = 2.960, p = .0105.

Graphing Meeting

Figure 4 displays the collapsed pre- and posttest results for the two meetings on this topic. Across both meetings, 20 of 33 members submitted changing criterion graphs, and 18 of 33 members submitted reversal graphs at the beginning and end of the meeting. For the changing-criterion graph, participants scored a mean of 57% of graph components correct (range = 29%–88%) at pretesting and a mean of 92% correct (range = 81%–100%) after
the meeting. For the reversal graph, participants scored a mean of 54% of graph components correct (range = 20%–84%) at pretesting and a mean of 89% correct (range = 56%–100%) after the meeting. For both meetings, the mean difference in scores for the (a) changing-criterion-design graph was unlikely to be due to chance alone, $t(19) = -8.23, p = .000$, and (b) the reversal-design graph was unlikely to be due to chance alone, $t(17) = -7.38, p = .000$. For both meetings, the mean difference in scores across both graphs was unlikely to be due to chance alone, $t(37) = -10.93, p = .000$.

Discussion

Behaviour analysts face a number of barriers in keeping abreast of current research and best practices. Time, resources, and network constraints may prevent practitioners from staying up-to-date in their practice area, which could lead to deleterious outcomes for the individuals and families they serve. With this study, we hope to spur interest in a low-cost, peer-run, practice-based solution to this problem by presenting the outcomes of a survey and four community of practice meetings on three separate practice topics. The results of the survey suggest that membership in a community of practice may contribute to improvements in knowledge and professional skills relevant to behaviour analysts.

Certainly behavioural skills training in a formal workshop or professional development seminar has many benefits and has been rigorously demonstrated in the literature. We do not expect communities of practice to replace behavioural skills training, nor do we recommend communities of practice as a replacement for formal skill development. In fact, many of the community of practice meetings incorporated components found in behavioural skills training, such as instruction and opportunities for rehearsal and feedback, albeit in a less systematic fashion. Because workshops that provide behavioural skills training can be infrequent, communities of practice may be an appropriate adjunct to access resources and share information about current practices in behaviour analysis. Moreover, behavioural skills training is a labor- and cost-intensive endeavor compared to communities of practice, which harbor nearly zero cost. Because the group described in this study was composed of practitioners who volunteered to serve in the facilitator position on a rotating basis and offered their workplace facilities for the meetings, costs were minimal.

Conferences, expert-led in-service workshops, and even subscriptions to scholarly journals may be cost-prohibitive in some organizations (Parsons & Reid, 2011) and may not be sufficient to change practice even when they are accessible (McCall, 2009). Communities of practice offer a promising learning medium for behaviour analysts that may be a more practical and cost-efficient way to share and gain practice-based skills and knowledge. Several studies have suggested that community-based learning increases the significance of knowledge content for practitioners in mental health settings, helps to translate knowledge to practice, and may contribute to increased sustainability of evidence-based practices (Hall, 2015; Thomson, Schneider, & Wright, 2013; Wimpenny et al., 2010).

Communities of practice are not without challenges. Despite much research and practice-based interest and products over several decades, there remains some ambiguity and differences of opinion concerning what does and does not constitute a community of practice (Cox, 2005). As such, differentiating communities of practice from workshops, conferences, professional working groups, and other structured professional development mediums may be difficult. Piat, Briand, Bates, and Labonté (2016) identified a number of other challenges, including difficulty in maintaining participant engagement, tensions related to silos and resources, and members’ perception of conflict between the community’s agenda and that of their employer. Of note, the quality of learning in a community of practice is contingent on the expertise and involvement of its members. This means that there could be risks involved with communities comprised exclusively of novice members. Behaviour-analytic communities should include seasoned practitioners as members, and involvement in a community of practice should not be viewed as a suitable replacement for academic training, formal skills training, or regular contact with the scholarly literature.

Conclusion

The results of this study provide promising directions for future research and insights for the development and maintenance of
compartunities of practice in health care settings; however, this study was not without limitations. First, the pre-/posttesting methodology did not allow us to evaluate changes in participant behaviour at the level of the individual (e.g., controlled single-case designs), may have been susceptible to test–retest effects, and may not effectively capture the continuous learning within a community as a dependent variable. A design that demonstrates a functional relation (multiple-baseline, changing criterion) and evaluates changes that result from ongoing involvement may instil more confidence in the causal impact of community involvement on the behaviour of practitioners. Second, because we did not collect data on actual practice behaviours occurring within applied settings, this precludes any firm statements about changes in professional practice beyond what was observed during the meetings. Finally, the absence of long-term follow-up data prevents a demonstration of the maintenance of professional skills.

A behaviour-analytic approach could contribute to research on communities of practice. Ramnuthugala et al. (2011) found that most research on communities of practice applied qualitative methods and struggled to validate findings and demonstrate value empirically. Single-subject research designs may provide educational researchers with the tools necessary to operationally define and link the concepts of situated learning and legitimate peripheral participation with measurable professional-, patient-, and system-level outcomes. Further operationalization of community-based teaching and learning behaviours, an analysis of the effective components of community-based professional interaction, and an examination of treatment integrity would be important areas of future research. This study offers a starting point for further discussion. We hope to encourage behaviour analysts to investigate this and other pragmatic and innovative ways to remain productively connected to their peers and to stay informed of developments in the science and application of behaviour analysis.

Compliance With Ethical Standards

This study was approved by the Research Ethics Board at the Centre for Addiction and Mental Health and by the Conjoint Faculties Research Ethics Board at the University of Calgary. All procedures performed involving human participants were in accordance with the ethical standards of the institutional research committees and with the 1964 Helsinki declaration and its later amendments (World Medical Association, 2001).

Résumé

Avec des occasions limitées d’interaction entre pairs et de formation officielle en dehors des conférences ou des ateliers de rémunération à l’acte, certains analystes de comportement peuvent trouver cela difficile d’acquérir et de maintenir d’importantes compétences cliniques et professionnelles. Les contraintes de temps, les charges de travail lourdes, les réseaux professionnels déficients et les ressources organisationnelles limitées peuvent amener certains cliniciens à mener des évaluations et des procédures de traitement désuètes, non prises en charge ou inappropriées contextuellement. Bien que l’efficacité de la formation sur les compétences comportementales dans l’enseignement des compétences spécifiques aux analystes de comportement soit bien établie dans la littérature, cela peut prendre du temps et il peut s’avérer impossible de développer toutes les compétences dont les praticiens ont besoin pour rester compétents dans leur domaine de pratique. En revanche, les réseaux de praticiens sont des groupes flexibles basés sur les pairs qui facilitent l’apprentissage par l’engagement répété dans des activités conjointes. Nous avons d’abord évalué les rapports d’autoévaluation de la satisfaction des participants, puis avons évalué les scores avant et après les tests sur trois sujets de pratique afin de déterminer l’utilité des réunions de réseaux de praticiens. Les résultats ont montré que les analystes de comportement ont réagi favorablement à l’adhésion et que la participation aux réunions de réseaux de praticiens échantillonnées a permis d’améliorer toutes les compétences ciblées. Cet article explore le concept de communauté de pratique et son utilité potentielle pour les analystes de comportement.

Mots-clés : réseau de praticiens, analyse des comportements, perfectionnement professionnel.

References


Thomson, L., Schneider, J., & Wright, N. (2013). Developing communities of practice to support the implementation of research into clinical practice. *Leadership in Health Services, 26*, 20–33. http://dx.doi.org/10.1108/1751871131291705


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