

Group writing, reflection, and discovery: A model for enhancing learning on wilderness educational expeditions.

Abstract

Background: Understanding strategies for enhancing learning is central to developing effective teaching practices. Students' perceptions of these practices are critical for deepening this understanding. **Purpose:** To investigate students' perceptions of a group journal activity (GJA) on learning enhancement and to present a model that illustrates the reflective-learning process of the GJA. **Methodology/Approach:** Three questionnaires (pre, post, and two-months after) were distributed to 22 expedition participants in 2013 and 2015. Responses were analyzed to identify the learning benefits of the GJA and grounded theory was used to develop the process model. **Findings/Conclusions:** A positive relationship exists between students' participating in the GJA and self-reported perception of learning. Students report the GJA as having similar benefits as traditional personal journal-writing with the added benefits of promoting learning from others' perspectives, enhancing understanding of others, promoting reflective communication skills, and providing a tangible record of experience which enables continued reflection and learning. A process model illustrates the recursive cycle of writing, sharing, and discovery that the GJA enables. **Implications:** This research presents the GJA as an uncommon form of journaling in outdoor education and demonstrates the GJA's potential for enhancing learning. The model outlines the effective use of the GJA.

Keywords: learning enhancement; reflective-learning; journal-writing; educational expeditions; outdoor education.

Group writing, reflection, and discovery: A model for enhancing learning on wilderness educational expeditions.

Attempts to understand, explain, and improve the practice of the teaching and learning process has been going on for centuries. In the past 100 years or so, learning has been strongly linked with reflection (Dyment and O'Connell, 2011). There are many terms used to describe teaching and learning practices that embrace "reflection" as a central element. These terms include, for example, reflective practice (Moon, 2006), reflective learning (Fullana, Pallisera, Colomer, Peña & Pérez-Burriel, 2014), deep learning (Dummer, Cook, Parker, Barrett & Hull, 2008), experiential learning (Kolb, 1984), and adventurous learning (Beames & Brown, 2016). Rodgers (2002) writes: "How to think reflectively, after all, is not a bandwagon issue. It is not a fad whose time has come and gone but perhaps the most essential piece of what makes us human, of what makes us learners" (p. 864). Fullana et al. (2014) call for further research to identify best practices in reflective teaching and learning, pointing specifically to students' perceptions of those practices as critical to further understanding and developing reflective-learning practices. After many years of using a group journal activity (GJA) on wilderness educational expeditions (WEE), we perceived that it was a valuable reflective practice that promoted learning. Based on our experience and the reflective and learning literature, this paper examines whether students perceive the reflective-learning practice of group journal-writing as enhancing their learning. The specific goals of this research are to (1) investigate the relationship between students' participation in a GJA and their self-reported learning, and (2) to create a model that illustrates the reflective-learning process students engage in when participating in a GJA, and the many factors that can facilitate and/or impede their learning.

Literature Review

Reflection

Educational philosopher John Dewey (1938/1963) is often credited with centralizing reflection in the teaching and learning process (Dyment and O'Connell, 2011). His pattern of inquiry includes both primary (predominantly non-cognitive and action-oriented) and secondary (principally cognitive and reflection-oriented) experience bridging the rationalist (thinking) and empiricist (sensing) paradigm by providing equal footing for both experience and reflection which he termed reflective experience (Dewey, 1916). On the surface, Dewey's ideas about learning appear straightforward yet debate continues regarding what constitutes meaningful reflective experience (e.g., Blenkinsop, Nolan, Hunt, Stonehouse, & Telford, 2016; Boud & Walker, 1998; Morrison, 1996; O'Connell & Dyment, 2013, Roberts, 2016).

Rodgers (2002) seeks to “restore some clarity to the concept of reflection and what it means to think” (p. 842) by examining reflection through a Deweyan lens. Rodgers is concerned that the meaning of reflection in the educative process has been lost. Based on her examination of Dewey's ideas, particularly from his book *How We Think* (1933), Rodgers extracts four criteria of reflection to help shape and define this elusive concept. First, reflection is a meaning-making process that promotes continuity of experience and deep understanding; second, reflection is a “systematic, rigorous, disciplined way of thinking” (p. 845); third, reflection happens best in community where there is a high level of interaction; and finally, “reflection requires attitudes that value the personal and intellectual growth of oneself and others.” (p. 845). She also points out that reflection is a complex and emotional process that requires thoroughness and intellectual thinking.

Boud, Keogh, and Walker (1985) describe reflection as “an important human activity in which people recapture their experience, think about it, mull it over and evaluate it” (p. 19). They

go on to define reflection as “those intellectual and affective activities in which individuals engage to explore their experiences in order to lead to new understandings and appreciations” (p. 19). Ryan (2013) describes reflection as “taking the unprocessed, raw material of experience and engaging with it as a way to make sense of what has occurred. It involves exploring often messy and confused events and focusing on the thoughts and emotions that accompany them” (p. 146) and she goes on to define reflection as a process that includes “(1) making sense of experience in relation to self, others and contextual conditions; and importantly, (2) reimagining and/or planning future experience for personal and social benefit” (p. 146). Taken together, these descriptions and definitions point to reflection being a process of making sense of *all* the experiences of life and learning such as interactions with self, others, and the environment as well as new ideas and content that come from reading, lectures, and other sources.

Journal Writing and Reflection

Individual or personal journal-writing is a popular form of reflection in education today (O’Connell & Dymont, 2013). Personal reflections in the form of personal narrative and memoir writing are also popular (Baldwin, 2005; Smith & Watson, 2010), pointing, perhaps, to a universal human need to make sense of our experiences through story and writing. Many authors have written about their experience of using journals in a variety of disciplines such as outdoor education (Bennion & Olson, 2002), geography (Dummer et al., 2008), teacher training (Jarvis, 2001), nursing, environmental sciences, psychology, and social education (Fullana et al., 2014).

Moon (2006) proposes the learning journal as a “vehicle for reflection” (p. 1) which promotes learning. Moon uses the term ‘reflective practice’ to describes her use of journal-writing and describes learning journals as:

an accumulation of material that is mainly based on the writer's processes of reflection.

The accumulation is made over a period of time, not 'in one go'. The notion of 'learning' implies that there is an overall intention by the writer (or those who have set the task) that learning should be enhanced." (p. 2)

Moon (2006) also claims that journal-writing facilitates six favorable conditions for learning that are particular strengths of the journal-writing process: slowing the pace of learning, increasing sense of ownership, acknowledging the role of emotion, giving learners an experience of dealing with ill-structured material, encouraging metacognition, and enhancing learning through writing.

Moon (2006) is not alone in her advocacy for facilitating reflection through journaling. For example, Dymont and O'Connell (2010) also promote journaling and their research demonstrates that open and honest reflection is facilitated when there is dedicated time to journal and there is a trusting relationship established between the teacher and student. Boud (2001) suggests that the reflective processes, such as journaling, are best done in groups rather than in isolation. If reflection is isolated and private, there is a risk of reinforcing current views. Further to this point, Mezirow (1997), while not addressing journaling specifically, claims that we learn together, that learning is a social process where dialogue is critical to "validate what and how one understands, or to arrive at a best judgment regarding a belief" (p. 10). Similarly, Aoun, Vatanasakdakul & Ang's (2016) research identifies feedback from others on one's reflection as a critical element of the reflective learning process.

Previous research also shows that reflective journal-writing can facilitate learning outcomes, such as deepened understanding, stronger connections between theory and practice, enhanced skills needed in practical situations, and better understanding of new material (i.e., Dymont & O'Connell, 2010; Vivekananda-Schmidt et al., 2011). Overall, students' perceptions

of journal-writing are aligned with many of its purported benefits regarding learning enhancement and engagement in the learning process (Fullana et al., 2014). While previous research identifies many benefits of journal-writing—primarily those of the traditional personal journal—as improved writing skills, enhanced problem solving, personal growth, critical thinking and providing a foundation for future learning (Dyment & O’Connell, 2010; Hiemstra, 2001; Mills 2008; Moon, 2006; Pennebaker & Beall, 1986; O’Connell & Dyment, 2013), this same research acknowledges drawbacks of journal-writing including writer’s block, having unclear expectations of what is expected, writing for the teacher, seeing the journaling process as annoying busy work, and that journaling is not well suited to all students and their learning preferences. Reflecting on her life as a writer, Annie Dillard (1989) states:

When you write, you lay out a line of words. The line of words is a miner’s pick, a wood carver’s gouge, a surgeon’s probe. You wield it, and it digs a path you follow. Soon you find yourself deep in new territory. Is it a dead end, or have you located a new subject? You will know tomorrow or this time next year. (p. 3)

Dillard’s thoughts mirror many of the views of the educators and researchers reported in this paper, pointing to the organic and powerfully transformative force that writing can be.

To deepen our understanding of the GJA, this research has two overarching goals. First, using quantitative data, we will investigate the relationship between students’ participation in a GJA and their self-reported perception of learning. To address this goal, we developed two hypotheses. Hypothesis 1 states that students will report that participating in the GJA enhanced their learning (postexpedition and two-months after). Hypothesis 2 states that students’ perception that participating in the GJA enhanced their learning will be strengthened as a result of experiencing the GJA (preexpedition to two-months after). Second, we will develop a model

that describes the reflective-learning process students engage in when participating in a GJA, and the factors that may facilitate and/or inhibit learning.

Methods

Research Design

This study used a longitudinal mixed-methods approach. A mixed-methods approach was deemed appropriate to ensure accurate measurement of specific constructs of interest as well as allowing us to compare students' perceptions over time without detaching this information from its original 'real-world' context (Leech & Onwuegbuzie, 2007; Tashakkori and Teddlie, 2010). Therefore, we asked closed-ended questions that required students to respond using Likert-type scales (e.g., "*Overall, the GJA will facilitate my learning*") as well as open-ended questions (e.g., "*What benefits did the group journal activity have on your learning and expedition experience?*") and "*What specific learning did the group journal facilitate for you?*"). The qualitative component ensured that we captured rich, detailed accounts of the participants' experiences such as their emotions, beliefs, and behaviours, which are less likely to be captured with measurement scales alone (Guba & Lincoln, 1994).

The Group Journal Activity

The GJA was outlined for students in the preparatory class before the expedition began however the GJA did not begin until the first day of the summer expedition. Instructors provided a few examples of past group journal entries, a wide range of examples of what students might write about, and explained the process of the GJA. Student were encouraged to write freely and with few limitations. The most common form of group journal entry has been prose but has also included poetry, art, songs, and skits. The GJA shares some similarities with team journals,

interactive journals, and reflective journals described by O'Connell & Dymont (2013). No course grades were associated with the GJA.

On each day of the expedition, one person (including students and instructors) wrote in the group journal (a hardcover blank journal) and the next day read aloud their piece to the group. We believe that including the instructors in the GJA is important because as Mezirow (1997) points out, "the facilitator models the critically reflective role expected of learners" (p. 7). After that, the group requested a volunteer for the next day; sometimes this involved a game to select the next writer. With the group size (14 in 2013 and 12 in 2015) and length of expedition (28 days), students and instructors wrote two or three times each. Students were rarely reluctant to participate, and the group soon eagerly anticipated the group journal reading each day. The entire group journal was read aloud near the end of the expedition and the group received a copy of the group journal soon after the expedition ended. In addition to the group journal, students also kept a personal journal. For a more detailed explanation of the GJA, see (AUTHOR).

Participants

We contacted all 22 students (and all initially agreed to participate) who participated in a wilderness canoe expedition in the Canadian north in either 2013 or 2015. Students took these for-credit courses at a western Canadian university (see AUTHOR). In short, the course objectives were to develop personal, social, and technical outdoor skills while also learning about the history, geography, and current issues in the Canadian north. The responses rates were 22/22 (100%) for the preexpedition questionnaire, 20/22 (90%) for the postexpedition questionnaire, and 18/22 (82%) for the two-month follow-up questionnaire. Overall, 16/22 (73%) participants completed all three questionnaires. When the expeditions took place, the mean (SD) age of respondents was 21.2 (1.3) years, ranging from 19 to 24 years. The sample was 59%

female and 41% male. Most respondents (68%) had participated in a previous expedition at the university that incorporated a GJA.

Procedure

We asked students to complete a similar questionnaire at three stages. The first questionnaire (preexpedition) was completed on campus on the first day of the expedition. The second questionnaire (postexpedition) was completed on the last day of the expedition before travelling back to campus the day after the group journal had been read as a part of the expedition closure activities. The third questionnaire (two-months after) was circulated via email approximately two-months after returning from the expedition. Before completing the third questionnaire, students were asked to first read the group journal and then complete the questionnaire.

Group Journal Activity Questionnaire

A questionnaire was developed to assess the GJA based on a review of the reflection and journal-writing literature (e.g., Boud, 2001; Hiemstra, 2001; Moon, 2006; O'Connell & Dymont, 2013) and on our past GJA experiences. Since 1993, we have used the GJA on over 25 WEEs. Only those components of the questionnaire addressing learning enhancement are reported here. The questionnaire included five demographic questions, eight close-ended questions (e.g., "*Writing in the group journal facilitated my learning*"), and three open-ended questions (e.g., "*What benefits/drawbacks did the group journal activity have on your learning and expedition experience*") to examine perceptions of the GJA and learning. Each close-ended question was measured on a 5-point Likert scale with response options ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), and mean scores were calculated, with higher scores reflecting more positive perceptions of the GJA.

Data Analysis

Quantitative.

We merged data from the three sets of questionnaires from the 2013 and 2015 expeditions. To test for internal consistency, we used reliability analyses and reported the Cronbach's Alpha for the eight closed-ended questions dealing with learning for each of the three time periods. An alpha coefficient of 0.7 or higher is acceptable for most social science research (Nunnally, 1978). Because of the small sample size, we could not use typical analyses of variance tests to compare means; instead, we used the Related Samples Wilcoxon Signed Rank Test (Zar, 1999) to examine differences among time periods. For all variables, we reported the standardized Z or Wilcoxon values and p -values. To test for the strength of differences, we used a Cohen's d effect size in which 0.2-0.3 is "small", around 0.5 is "medium", and 0.8 and higher is "high" (Cohen, 1988).

Qualitative.

To analyze the open-ended responses from the questionnaires, we used a grounded theory approach. Grounded theory is an inductive method of generating a new theory that explains how some aspect of the social world "works" instead of verifying an existing theory (Glaser 1992; Strauss and Corbin 1998). We deemed grounded theory an appropriate approach for the present study given that GJA and its relation to learning on WEEs are not fully addressed by existing theories, and the experiences and perceptions of stakeholders (i.e., student participants, instructors) who participate in GJA are not fully understood. Also, developing a theory using this method allows us to present the data in a more meaningful way because it unifies the responses to tell a story about the experience of GJA that cannot be easily captured by simply reporting categories of responses.

According to Glaser and Strauss (1967), using grounded theory means analyzing data without pre-conceived notions and without the influence of existing theories. Therefore, in an effort to remain open to the data, all stages of data analyses were completed by the three authors, one of whom (RP) had limited knowledge of the research and theorizing in the field and no experience of WEEs.

Following Strauss' and Corbin's (1998) guidelines, data analysis proceeded through closely-linked stages of open, axial, and selective coding. Open coding involves a line-by-line review of participant's responses to generate a list of codes that reflect ideas, concepts, or thoughts. Each code was given a label, categorized, and further refined. Next, axial coding involved understanding the relationships between the codes and core variables. Once complete, selective coding involved identifying a core category that seemed most significant to the participants and hypothesizing how it relates to the other codes or variables in the study. The goal of this stage was to integrate the codes around this core category to develop a single storyline, or theory, to best explain the phenomenon under investigation. The researchers met regularly and coding discrepancies were discussed and resolved through consensus. Coding was completed by hand because of the manageable size of the data set.

In order to promote qualitative validity, we employed four of Creswell's (2014) eight validity strategies. First, we triangulated the data. We did this by converging a variety of data sources including quantitative and qualitative data and collecting data at three different points in time. Second, we presented the negative aspects, or drawbacks, of the GJA. Third, the first author (MA) has spent prolonged time in the field with students using the GJA (over 25 WEE totaling over 625 days) and as a result has an in-depth understanding of the GJA. Finally, the third author (RS) served an important role as a peer debriefer throughout the research process.

The third author was well positioned as a peer debriefer because of her extensive experience as a qualitative researcher and because she has no experience using the GJA or participating in WEEs.

Results

Quantitative Results

Testing for internal consistency with the eight closed-ended questions, the Cronbach's Alpha was 0.858 for the preexpedition, 0.917 for the postexpedition, and 0.925 for the two-months after results. Thus, we concluded that the internal consistency for these questions was acceptable.

The results of the research reveal that there is a positive relationship between students' self-reported perception of learning and participating in the GJA (Table 1). This is demonstrated in a number of ways. First, when asked to rate their level of agreement or disagreement with the statement: *Overall, the group journal activity will/did facilitate my learning*, the mean scores were 4.00 or higher (agree or strongly agree) at all three measurement points and students' perception increased significantly from preexpedition to two-months after ($p=.021$). Second, there was general agreement with the statements: *Writing in, reading aloud and listening to others read their group journal entries facilitated my learning*. Of these elements, students agreed most strongly with the statement that writing in the group journal enhanced their learning; the mean scores were 4.00 or higher at all measurement points. The lack of statistically significant changes over time may be partly due to 68% of the study group having had previous experience with the GJA and therefore had already experienced the learning impact of the GJA which raised their preexpedition ratings.

[Insert Table 1 Here]

Students' perception that their learning was enhanced by reading their group journal entries aloud to the group and listening to others read their group journal entries to the group, increased significantly from preexpedition to two-months after ($p = .035$ and $p = .034$ respectively). Furthermore, students' reported enjoyment of writing in, reading from, and listening to the group journal was also strong ($M = 3.00$ or above) and increased over time. Specifically, students' enjoyment of writing in and reading from the group journal increased significantly from preexpedition to two-months after ($p = .008$ and $p = .002$ respectively). Finally, students strongly recommended the GJA for future expeditions such as these and that recommendation increased significantly from preexpedition to two-months after ($p = .008$).

Qualitative Results

To highlight students' experience of the GJA, we asked students to describe the benefits of the GJA, drawbacks of the GJA, and specific learning attributed to the GJA.

Benefits of the group journal activity.

Five themes were identified from our analysis of reported benefits that we labeled *promoted learning from other's perspectives, enhanced reflection and facilitated learning, enhanced sense of community, preserved memories, and avenue for expression and fun*. Each theme is briefly described below.

Promoted learning from other's perspectives. Students reported that the GJA expanded their scope of learning because they were able to share in the learning and insights of other students. For example, one student wrote: "the group journal opened up possibilities by creating more perspectives and new ways to think or learn" (#14, female). Another student noted the GJA "brought in new perspectives that helped to facilitate my learning" (#23, female).

Enhanced reflection and facilitated learning. The GJA helped students think more deeply about their experience, write deliberately, and hone their reflection skills. Specifically, one student commented that the GJA “provided an opportunity to think reflectively and critically” (#15, female) and another wrote that the GJA “gave us time to come together as a group and be united in story and reflection” (#2, female). Two-months after the expedition, student comments reported the GJA facilitated their learning. One student commented that, “Most importantly, it [GJA] offered a method and opportunity to synthesize the learning that occurred during the trip” (#22, male). Another student responded saying:

I didn’t realize before taking the time to sit down and read the group journal again, just how much of an impact it had on my learning and expedition experience. Because while the activity itself is valuable, it is what it did that was most valuable, it was a facilitator of learning” (#13, female).

Enhanced sense of community. Students described the GJA as a key contributor to building emotional connections with each other, feeling that they were part of a group, and that their participation mattered. Specifically, one student commented that they “felt more connected to the group because of this experience [of the GJA]” (#12, female). Another student remarked that the GJA “it helped foster healthy sense of community” (#7, male).

Preserved memories and enhanced meaning. Students indicated that the GJA was a beneficial medium of preserving the day-to-day memories created on the expedition and provided a tangible way to revisit or re-live those memories experienced as a group or individually. For example, one student commented that the GJA “allowed recollection of memories” (#10, male) while another stated that “the journal is undoubtedly a memorable keepsake through which, to some extent, we can relive our Arctic Dream” (#20, female).

Similarly, two-months after the expedition the GJA was described as enhancing meaning. One student stated that “it created added meaning to the trip” (#2, female) and another explained that “it took the trip from being a ‘canoe trip’ to an impactful group wilderness experience that I have grown immensely from (#3, female).

Avenue for expression and fun. Some students noted that the GJA provided a new and creative way to express themselves. Indeed, the novelty of the GJA may have mirrored the novelty of the expedition itself, in that both experiences were relatively new and thus allowed students the freedom to “try something new”. Students were free to write about whatever they wanted to and had dedicated time to share this with the group and receive feedback. One student commented “it provided me with a means to be heard” (#2, female) while another wrote that “it allowed me to express my opinion to the rest of the expedition group in a new way” (#17, male). Student comments also noted that the GJA was a fun activity. One student wrote that the GJA “was an enjoyable activity” (#6, male) while another expressed that “the group journal readings were one of the highlights of the trip” (#15, female).

Drawbacks of the group journal activity.

Students identified fewer drawbacks compared to benefits of the GJA. Two themes were identified from our analysis of the reported drawbacks that we labeled *student anxiety* and *time commitment*. Comments were divided nearly evenly into these categories.

Student anxiety. The prospect of having to write something to be later shared with the group made some students nervous or apprehensive. For example, one student wrote: “I am apprehensive about reading my journal entry aloud” (#7, male) and another was concerned that they “may feel pressure to come up with something original and creative” (#4, female).

Time commitment. Students noted that they feared they would not have time to commit to writing in the group journal. Specifically, students were concerned that they would have to make difficult choices about engaging in expedition activities (i.e., hiking, fishing, exploring) or writing in the group journal as reflected in these comments: “Stressing time put into writing rather than being in the place and setting” (#9, female) and “it was kind of time consuming but the benefits it gave made it worth the time” (#11, male).

The Group Journal Activity and Learning.

Four themes were identified from our analysis of students’ specific learning that we labeled: *understanding others*, *personal growth*, *group dynamics*, and *reflective communication skills*.

Understanding others. Many students noted that the GJA helped them understand the other members of the expedition group in terms of their insights, experiences, and opinions. Although most of the students knew each other before the expedition, the GJA became a vehicle for learning more about the group members. For example, one student said: “The group journal helped me gain insight into the ways in which others were experiencing the trip and how it was impacting them” (#6, male) and

I learned a lot about my fellow classmates through the group journal, a sense of openness was created by sharing as an entire community and giving everyone a chance to be heard. For the people that I did not converse with on more personal subjects, it gave me a chance to better understand them and to grow closer to them” (#2, female).

Personal growth. Students identified that the GJA specifically enhanced their understanding of themselves. For most, this was an unexpected outcome but one that was appreciated. For example, one student commented that “the journal facilitated learning about

self, providing me with the opportunity to be self-aware of my abilities, vulnerabilities, inhibitions, fears, anxieties and lack of self-compassion/worthiness” (#22, male) while another noted: “I think it helped me to learn to be me and think insightfully, knowing that my insights would be accepted and have an impact on people and that it is meaningful to share that” (#20, female).

Group dynamics. Students also learned more broadly about group functioning and how individuals can positively and/or negatively influence the group experience. One student explained that “it helped me learn about group dynamics and how important everyone’s quirks are to the experience as a whole” (#3, female) while another felt that the GJA “helped me understand the importance of consulting the opinions of the whole group, particularly in leadership positions” (#7, male).

Reflective communication skills. Students revealed that the GJA helped them become more reflective in what they wrote and how they communicated. Because the GJA required students to write about their experiences—and they were aware that this information would be shared with others and forever documented in the journal—students seemed to be more thoughtful and deliberate in what they wrote and put great effort into ensuring their opinions or thoughts could be understood by the group. For example, one student wrote that the GJA “made me think deeper and ponder and develop insights” (#20, female) and another stated that “one had to think about the significance of experiences for the group and then communicate that to them in a meaningful way” (#6, male).

The Group Journal Activity Model

Our GJA process model attempts to synthesize the results of our study and demonstrate how the GJA enables learning, as well as identify what factors facilitate and/or impede learning

(Figure 1). As shown in the figure, certain inputs and resources need to be established before the GJA begins, which include providing clear instructions and expectations, dedicating daily time and space for students to write their entries and also for reading their entries to the group, as well as ensuring there is a blank journal book that can be passed from student-to-student.

[Insert Figure 1 here]

The GJA process itself involves an ongoing, recursive cycle whereby students write a journal entry on their own, share the journal entry with the group, which leads to discovering something new, and this influences the next round of writing. That is, this writing-sharing-discovery process is an ongoing cycle that occurs daily, and each stage involves an element of reflection. For example, while the *writing stage* is an individual activity, students only have an opportunity to write a few entries per trip and they are aware that their entries will be shared with their peers, which may motivate them to be thoughtful in what they write in the journal. The *sharing stage* is a group activity and it is the stage where new perspectives are shared and emotions are present. The *discovery stage* is both an individual and group activity whereby students engage in both formal and informal discussion—whole group and one-on-one—drawing upon their experiences and thinking about what was shared which facilitates enhanced learning.

The GJA process can lead to certain outcomes, which we have labelled individual learning and sense of community. The *individual learnings* refer to understanding others, personal growth, group dynamics, and enhanced reflective communication skills. The *sense of community* (McMillian & Chavis, 1986) refers to the positive group development that occurs over time as students share stories, build emotional connections, learn together, and preserve their memories in a journal (see AUTHOR). We have an arrow connecting the two outcomes to highlight a dual influence on individual learning and group functioning. During the GJA process,

there are certain factors that can impact the outcomes. For example, the instructor plays a key role and must model writing, sharing, and discovery while nurturing a safe and respectful environment. Moreover, the instructor must be mindful of time and student anxiety which can inhibit achieving the benefits and learning of the GJA. Importantly, an underlying assumption of the model is that learners engage in a shared meaningful learning experience—such as a WEE—where a safe and respectful environment is created and maintained, emotions are valued, and reflection is encouraged. Without a shared meaningful learning experience that is rooted in safe and respectful environment, positive learning is not likely to be achieved.

Discussion

This research set out with two purposes: (1) to examine the relationship between students' participation in the GJA and their self-reported learning, and (2) to create a process model illustrating the many factors and interactions of the GJA process that influence learning. Overall, the combination of quantitative and qualitative data gathered in this study point to students perceiving the GJA as a valuable tool for enhancing learning on WEEs. Our model (Figure 1) improves our understanding of the dynamic nature of the GJA process and the factors facilitating and/or impeding this process in the context of WEEs. In fact, our model affirms much of what others have theorized and demonstrated through research about the value of reflection and journal-writing in the learning process (i.e., Boud, Keogh & Walker, 1985; Dewey, 1933; Dymont & O'Connell, 2010; Hiemstra, 2001; Moon, 2006; Rodgers, 2002, Ryan 2013). However, the model identifies a number of unique benefits and outcomes of the GJA that are not readily associated with traditional personal journal-writing. Specifically, the GJA is particularly effective at promoting learning from others' perspectives and enhancing understanding of other people. In addition, the GJA is distinctive in its ability to facilitate reflection and serving as an

avenue for expression where emotion is valued. Finally, the GJA is a powerful tool for revisiting shared meaningful experiences which enables continued reflection and learning.

One of the unique benefits of the GJA is its public and shared nature. This allows all members of the group to consider their expedition experience from the perspectives of others in the group as well as to carefully consider their own experience as they articulate that experience in their writing. As Boud (2001) points out, reflection is best done in groups rather than in isolation because isolated reflection risks reinforcing current views. Similarly, Mezirow (1997) argues that learning is a social process where dialogue is critical to validate and test perceptions and understanding. By creating a daily ritual of reading the group journal, the GJA helped students become aware of their peers' viewpoints which expanded their own interpretations and subsequent learning as well as provided a portal into the mindset of their expedition partners. Overall, students' reported promoting learning from other's perspective and enhanced understanding of others to be important benefits of the GJA that deepened their learning.

In addition to promoting learning from other's perspectives, the GJA enabled students to engage in the raw, unrefined material of their experience in a manner not possible without some form of regular group sharing of that experience. The daily ritual of the GJA was an important strategy for designating time and space for reflection. Students valued this time and space for reflection and critical thinking claiming it synthesized learning, united them in story, and was a facilitator for learning. While these findings align with Ryan's (2013) description of reflection, they also align closely with Moon's (2006) six conditions for favorable learning. For example, by setting aside time each day for journal-writing and reflection, the learning pace was slowed down which gave students an opportunity to stop and think about their experience which in turn enhances learning.

Moreover, Moon (2006) makes important insights about the role of emotion in learning through journal-writing and taking ownership of this learning. As our results showed, the GJA allowed students to discuss their learning through a variety of mediums including stories, poems, or pictures that often promoted expressing thoughts, opinions, and emotions in an open forum. Indeed, when students took ownership of their learning, as they did when reading their group journal entries to their peers, they often expressed emotion. Moon makes a strong case for emotion being necessary for complete learning which is long-lasting. She looks to Rogers (1969) who points out that learning isn't an "only from the neck-up" (p. 163) experience but a whole-person process that includes "the logical *and* the intuitive, the intellect *and* the feelings, the concept *and* the experience, the idea *and* the meaning" (Rogers, 1983, p. 20). Moon (2006) also asserts that emotion can both block and enhance learning; emotion can influence the ability and willingness to consider new knowledge, engage in the learning process, and can arise from the learning process. Therefore, being aware of emotion, making room for emotion, and acknowledging the influence of emotion on learning is an important element of the teaching and learning process which the practice of the GJA enabled. Without this avenue for expression, the emotional element of learning may have been lost.

Having the GJA as a physical document was valued by students. As O'Connell and Dymont (2013) point out, one benefit of journal-writing is that the physical journal becomes a permanent record of learning. The same is true for the GJA with the added benefit that it is permanent record of shared group learning. In addition, having the physical group journal document allows the group to read the group journal from start to finish as a part of the expedition closure activities. In this way, the group can revisit their expedition experience as a part of the final reflection and meaning-making process of closure. Furthermore, students can

revisit their experience for many years afterwards. In this respect, the group journal serves as a foundation for continued and future learning.

A unique contribution of this research is the development of the model describing the GJA process and its relationship to learning. As outlined in the model, having a shared meaningful experience and a safe and respectful environment are essential to realize the benefits of the GJA. As well, the instructor must provide clear instructions and set clear expectations while modeling critical reflection, facilitating a meaningful experience, and maintaining a safe and respectful environment. With these conditions in place, the GJA process of writing, sharing, and discovery can take place. By valuing emotion and encouraging reflection while minimizing the barriers of time and anxiety, the likelihood of experiencing the positive outcomes of the GJA are heightened. To our knowledge, no other model exists in the literature to describe this process.

Implications

In addition to providing a model that can be used to inform future WEEs, our research has a number of implications for outdoor education and teaching more broadly. First, while it would be an overstatement to claim that the GJA was solely responsible for the valuable learning that students experienced on these expeditions or that there would have been no learning without the GJA, the data indicate that students perceive the GJA as an effective method for enhancing learning on WEEs. Therefore, we suggest that outdoor educators consider including the GJA in their programs to further enhance learning beyond the benefits of the traditional personal journal.

Second, the results of this research combined with the results of (Author) affirm Boud, (2001) Mezirow (1997) and Ryan's (2013) notion regarding the importance of reflection taking place in groups in order to enhance learning. For example, Mezirow (1997) states: "Discourse is necessary to validate what and how one understands, or to arrive at a best judgement regarding a

belief. In this sense, learning is a social process, and discourse becomes central to meaning making” (p. 7). As students pointed out in this research, establishing a safe and respectful learning environment was central to the GJA’s success and we suspect that this is true for all learning regardless of whether or not a GJA is included (Fink, 2003; McKinney, McKinney, Franiuk & Schweitzer, 2006). Therefore, regardless of what mechanism of reflection an instructor uses, we encourage group reflection and the development of a strong sense of community to enhance learning. Third, regarding reflection, we believe that as educators—particularly outdoor educators who are commonly guided by experiential pedagogy—we continue to seek a deeper understanding of the essential elements of meaningful reflection, develop strategies to enhance reflection, and examine the vital link between experience and reflection in order to maximize student learning.

Limitations

Despite the strengths of this research, there are several limitations. First, we did not include a control group of students who did not participate in the GJA, which means we cannot state with absolute certainty that the reported learning outcomes resulted from GJA. As well, some students had previous experience with group journals, which may have influenced their perception of learning associated with the GJA. Nevertheless, the combination of the quantitative and qualitative data support our hypotheses that students will report that participating in the GJA enhanced their learning (postexpedition and two-months after) and that students’ perception of participating in the GJA enhanced their learning was strengthened as a result of experiencing the GJA (preexpedition to two-months after). Last, our sample size was limited due to the relatively few expeditions offered and small group sizes on those expeditions.

Future Research

There are a number of potential future research questions that arise from this investigation. It would be interesting to consider if the GJA is an equally effective tool on shorter programs, for males vs females, with culturally diverse groups, and in non-wilderness settings (e.g., traditional classroom settings). As well, examining the role of the GJA in recalling and revisiting experiences in order to maintain or even strengthen learning over time may provide useful insight into life-long learning. It may also be useful to investigate the impact of providing students with more structure (e.g., more specific guidelines for writing in the group journal) on enhanced learning (O'Connell and Dymont 2013). Finally, in light of the result of this research and that reported in (AUTHOR), it would be beneficial to examine the relationship between sense of community and learning enhancement.

Conclusion

The results of this research reveal a positive relationship between participating in the GJA and students' self-reported perception of learning. Specifically, students tell us that participating in the GJA enhanced their learning by writing in the journal, reading from the journal, and by listening to others reading from the group journal. Furthermore, these perceptions strengthened over time. In addition, students strongly recommend the GJA for future expeditions. Although students identified a number of benefits of the GJA, (e.g., promoting learning from other's perspectives, enhancing reflection and facilitating learning, enhanced sense of community, preserving memories and enhanced meaning, and that the GJA was an avenue for expression and was fun), they also identified anxiety and time commitments as primary drawbacks or impediments to learning. Overall, these results are grounded in theory and provide evidence that the GJA is an effective tool for enhancing learning on WEEs, providing many of the same benefits of traditional personal journal-writing with a number of added benefits.

Specifically, the GJA is particularly effective at promoting learning from others' perspectives, enhancing understanding of others, promoting reflective communication skills, and providing a tangible record of the shared experience which enables continued reflection and learning. In short, the GJA facilitates reflection which in turn enhances learning.

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