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Peer mentoring and collaboration in the clinical setting: a case study in dental hygiene

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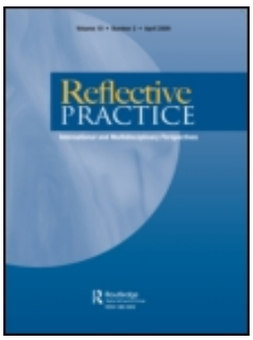

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Peer mentoring and collaboration in the clinical setting: a case study in dental hygiene

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Evaluation of professional conversational opportunities experienced by pre-profession majors in Dental Hygiene indicates significant reflective development through dialogue and participation in the experienced curriculum. A case study was conducted to evaluate the impact of a Peer Coaching strategy on pre-professional students' dispositional and technical preparation. Utilizing an elicitation methodology, researchers identified benefits to peer focused collaborative pedagogy. The purpose of this qualitative study was to uncover whether or not collaborative work in practicum would have value for the development of quality workplace habits. The study explored the impact of peer coaching on pre-professionals' self-efficacy and their professional dispositions following practicum experience.

Keywords: peer coaching; collaborative pedagogy; disposition; peer assessment; dialogic structure; field experience

Introduction

Within pre-professional higher education programs, students routinely complete practicum experiences in field-based settings. Students traditionally work independently under the supervision of a practitioner or clinical faculty. These experiences are meant to help the pre-professionals connect the theory learned within their higher education classrooms with the practice they will be required to perform as they enter the profession. The case study presented here investigates the impact of a reflective and collaborative peer coaching structure on dental hygiene pre-professionals as they complete clinical experiences. Finding effective pedagogical structures that facilitate reflective and collaborative interactions among and between dental hygiene students motivated the study of a peer mentoring strategy that had demonstrated effectiveness with teacher education candidates within the clinical setting (Parkison, 2008, 2009). The study attempted to assess the impact of an approach other than one student working alone and one faculty member assessing them. Would the peer coaching structure provide experiences and learning outcomes that facilitate long-term (career long) professional development strategies? In higher education there seems to be a paradigm shift in field-based and clinical pedagogy.

Research on alternative pedagogical approaches to field-based experiences indicates that significant advantage can be gained by structuring reflection and peer collaboration into the process (Allsopp, DeMarie, Alvarez-McHatton, & Doone, 2006; Baloche,

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Hynes, & Berger, 1996; Bowman & McCormick, 2000; Parkison, 2008). Issues of supervision, assessment and feedback create stress for students and instructors within the practicum setting that is reduced when peers serve as coaches for each other. This second-set-of-eyes (or peer coaching) approach provides opportunities for increased reflective self and peer assessment through dialogue and immediate formative feedback.

By structuring the field-based experiences around peer dialogue through a peer-coaching framework, the pre-professionals are able to develop habits of reflection, interaction and learning that support career long professional practice. Nicholas Burbules (1993) describes the impact that dialogic structure can have on the learning of pre-professionals:

> What does 'theory and practice' mean in the context of dialogue? I have laid out a basic picture of dialogue as pedagogical communicative relation and sketched in general terms how dialogue works educationally: as a way of expressing and creating new understandings; as a way of reflecting upon and adjudicating ethical or political norms; and as a way of drawing participants into a particular type of communicative relation with one another. Dialogue, I have suggested, underlies our practices of language, reasoning, ethics, and politics, not as a medium for the apprehension of Truth or Justice (as it was for Plato), but as the best available means we have for identifying among ourselves acceptable answers, workable solutions, and reasonable accommodations. (p. 16)

In order to test the practical implications of dialogue within a field-based experience, a case study of dental hygiene students participating in a reflective and collaborative clinical was conducted.

Consideration of pedagogy that moves beyond the superficiality of learning to deep dispositional change and dental hygiene skill proficiency development requires that the assumptions regarding learning be investigated. Within the literature concerning professional development, long-term impacts on pre-professionals' behavior are demonstrated to be facilitated through extended, scaffolded and practitioner-generated and focused dialogue about the innovation or practice under investigation (Ball & Cohen, 1999; Parkison, 2008, 2009; Sloan, 2009). As Sloan (2009) indicates, more immersion based learning experiences, with structured opportunities for dialogue and reflection on the curriculum-as-experienced, leads to a change in the practitioners' beliefs, which then impacts their long-term behavior.

Curriculum-as-experienced illustrates the complexity of designing learning experiences for students. Curriculum-as-experienced emerges through the implicit dialogue between the intended curriculum of the instructor, the anticipated curriculum of the student, and the context in which the learning experience takes place (Sloan, 2009). For many students education has become a matter of accumulating the required credit hours, within the required curricular domains, to earn certification in the desired discipline or profession. This desire may be vocationally appropriate, but challenges a view of education in which the curriculum is meant to develop the flexibility, reflective disposition and critical thinking required to be individuals with practical reason (Dewey, 1938; McKernan, 2008). By structuring dialogue and reflection around what the students have experienced within the clinical setting, opportunities for reflection that lead students to value the curriculum are made explicit parts of the students' learning experience (Dewey, 1938).

Facilitating the development of pre-professionals' competencies in constructing professional practice requires alternative pedagogical strategies oriented by a consideration of the curriculum-as-experienced (Fullan, 2005; Sloan, 2009). Hamilton and

McWilliam (2001) in their study of alternative approaches to teacher development, emphasize that the 'tell-it-like-it-is' approach is unproductive. Pre-professionals require the opportunity to connect the theory learned in the higher education classroom to the experience of seeing the theory in the faces of actual clients. Experiencing the curriculum in practical and authentic ways allows students to reflect upon and reconstruct their understanding of the theory that has been presented in a manner that will transform their professional practice.

Research within the field of teacher education has demonstrated the impact of self-study (Lunenberg & Willemse, 2006; Parkison, 2008, 2009) and reflective dialogue (Ball & Cohen, 1999; Fullan, 2005) on the dispositions and pedagogical skill of pre-service teachers. Lunenberg and Willemse (2006) recommend the use of self-study as an effective constructivist practice. They indicate that this form of reflective experience encourages (1) a systematic approach to understanding practice; (2) attention to questions of generalizations and using professional literature to support findings; and (3) the discipline of noticing (Lunenberg & Willemse, 2006). Self-study and reflective dialogic practices should be part of the development of professional dispositions in all pre-professional higher education students.

Similar findings regarding medical education pedagogy have been reported. Focused analysis of curriculum, adult learning, learner differentiation, and assessment are required to make pedagogy effective (McLeod, Steinert, Meagher, & McLeod, 2003). Stanley Aronowitz (2000) places emphasis on the individual in higher education being heard and learning from each other as well as from those in charge. Students working as cohorts, uncovering information together, and finding their own way is what Aronowitz believes will bring about new ways of looking at things. Sharing treatment experiences within a clinical setting allows students the option of sharing their proficiency concerns with a peer and gathering techniques or strategies that may have been successful for the peer. In his study on the efficacy of collaborative learning in groups, Michael Delucchi (2006) brings to light that collaboration may not always equal a better understanding in the traditional sense of letter grades. Though less easy to measure, it may very well make the curriculum-as-experienced more engaging, less anxiety ridden, and provide a more stimulating way to learn.

Gerzina, McLean, and Fairley (2005), in a study of the perceptions of pre-professionals and their instructors, indicate that there needs to be creativity with teaching styles in a clinical setting. The desire for more demonstrations, verbal interaction between instructors and students, including adequate feedback, and a clear idea of what is expected from the students, was brought to light in this study. Also of interest is the finding that continuous assessment throughout clinical treatment is more beneficial than just one assessment at the end of the session. By pairing students during their clinical experiences, the opportunity for informal assessment among the partners will alleviate apprehensions that occur from fewer formative assessments. These assessments, which help one clarify areas of instruction that may need to be revisited, as Mertler describes in his *Introduction to Classroom Assessment* (2003), can be a luxury faculty may not always have due to factors such as time and the unpredictability of scheduled cases. Demonstration, in a paired approach, is provided on a more frequent basis as one partner works while the other observes and provides feedback.

Practicum and clinical experience time should include time for discussion, assessment for learning and a focus on the curriculum-as-experienced (Allsopp, et al., 2006; Ball & Cohen, 1999; Fullan, 2005; Gonzalez, et al., 2005; McLeod, et al., 2003; Parkison, 2008; Tucker, et al., 2003). By structuring experiences that facilitate reflective

practice, practicum requires pedagogy that affects the pre-professionals attitudinal orientation and dispositional preparation. Determining how best to accomplish this preparation represents the objective of the case study presented in this article.

Research methods rationale

An elicitation methodology was utilized to allow pre-professionals in Dental Hygiene to develop and share their experiences of the practicum. Strong-Wilson (2008) explains this methodology as resting on the assumptions common to phenomenology, ethno methodology, and narrative forms of research that 'storied' descriptions of experiences provides the best evidence about the meaning people attribute to an experience (Burbules, 1993; Hoban, 2002; Wells, 1999; Wetherell, 1998). By intentionally asking the pre-professionals to reflect upon and write about their experiences working with a peer in a clinical setting, it is possible to draw out the taken-for-granted understanding and critically analyze these understandings for the underlying structures, habits, and deep affective connections that have been constructed (Gravani, 2006; Haggis, 2008; Vygotsky, 1978; Wells, 1999). Reflections provided an opportunity to direct student dialogue toward specific desired learning within the clinical experience. This implicit learning, the learning structured into the reflections and peer dialogues, is grounded in 'storied' dispositional formation, and this methodology is needed to elicit this formation and draw the pre-professionals' conscious attention to its possible influences on present practices informed by deliberative and reactive learning. These reflections provided a dataset of the pre-professionals' level of understanding with regard to their professional disposition and dental hygiene skill set.

Procedures

A case study was conducted to consider how a common 'Peer Coaching' approach (Parkison, 2008; Yetter, et al., 2006) would impact the experience of pre-professionals in dental hygiene. The authors obtained IRB approval for the use of student reflections within an action research protocol (Haggis, 2008; Hoban, 2002; Reis-Jorge, 2007) Peer Coaching begins from the premise that pre-professionals' competency in constructing collaborative, reflective, and conversation-rich practice – the type of professionalism that is sought in most contemporary professions (Ball & Cohen, 1999; Friedman, 2006; Fullan, 2005) – depends upon having experience and success within these contexts.

Dental hygiene: case study

A case study of junior level pre-professional dental hygienists explored, through reflection and peer assessment, the dental hygiene clinic's use and impact of a peer coaching and collaborative approach to the clinical experience. The American Dental Education Association's *Compendium of Curriculum Guidelines* encourages curriculum that emphasize self-assessment, critical thinking, professionalism, and interpersonal skills throughout the learning process (American Dental Education Association, 2005). This pilot project was designed to explore whether dental hygiene students found sharing treatment and peer mentoring a positive experience. Two areas were investigated: peer assessment; and reflection on the clinical experience.

Participants

Participants in the case study included 24 students in a junior level dental hygiene class. This highly competitive program accepts 24 students each year, thus limiting the sample size. Limitations to this study also include participants being of the same gender, ethnicity and geographic region. This limitation is not by design but an aspect of the student population from which the sample was constructed.

Procedures

The 24 dental hygiene students were allowed to choose three different partners for completion of dental hygiene treatments involving up to three different clients. Due to the nature of the clinic and personal schedules, specific pairs were not assigned. Clinical instructors assessed the pairs together in all areas traditionally assessed in the clinic. Consistency within the dental hygiene program and individual accountability were maintained by keeping the existing assessment criteria. At the end of the shared experiences, students were asked to complete a peer assessment (see Appendix 1) to be turned in anonymously. Assessment criteria are aligned with the American Dental Education Association's *Compendium of Curriculum Guidelines* (American Dental Education Association, 2005) and the dental hygiene program goals of the university. Having multiple partners in multiple settings helped to assure some degree of anonymity as peers submitted their assessments.

The purpose of the peer assessment aspect of the project was to investigate the possible benefit that feedback from a partner upon completion of a shared clinical experience provides to the pre-professional's disposition and skill development. Students were tutored about how to provide constructive feedback before the project began. Informative feedback entails a skill set of its own. The students were taught to (1) identify the skill or disposition being analyzed during the specific session; (2) begin the dialogue with positive observations and consideration; (3) communicate concerns or areas for improvement; and (4) recommend strategies for improvement in future clinical experiences. The sample of students struggled with developing constructive over critical feedback. The students began by emphasizing the negative. Specific examples and guidance was required to help the students recognize the need to begin with the positive, to be constructive. Training in providing informative feedback was essential to the effectiveness of this project. Communicating in a collegial and professional manner represents a significant implicit outcome of the peer coaching process.

The 24 participants were informed that the assessment would be confidential. Students completed the peer assessment for their partners using a five-point Lickert scale that focused on work relationships and interpersonal skills after each shared patient experience (see Appendix 1). The facilitator of the project provided a confidential summary of the peer assessments for each pre-professional participating in this study.

Towards the end of the semester the 24 students and eight clinical instructors that worked in depth with the shared experiences were provided a questionnaire (see Appendix 2) asking them to reflect on the experience of peer coaching in the completion of the dental hygiene clinical. Reflection prompts were developed by the instructor to elicit student responses aligned to the significant stages of the clinical experience. The second elicitation strategy utilized within this study involved gathering reflections through a clinical debriefing guide (see Appendix 2). The purpose of this aspect of the project was to:

- Investigate the connections from classroom to clinic in a shared clinical experience;
- Provide opportunity for those involved to relay their personal opinion about the project and peer review;
- Explore the negative and positive aspects of a shared dental hygiene experience; and
- Uncover themes that emerge from the reflections.

Strengths

The implementation of the peer coaching strategy was guided by anticipated benefits from a collaborative approach to clinical experiences. First, peer feedback provides an opportunity for pre-professionals to reflect and receive the benefit of having a classmate evaluate interpersonal, hygienist-patient, relationships and the work habits that are sometimes a challenge for faculty to find time to assess (Davies, 2006; Gonzalez, Huntley, & Anderson, 2005). Second, reflection and peer collaboration provides the opportunity to pay close attention in assuring the effectiveness and quality of treatment when sharing patients (Frey, Edwards, Altman, Spahr, & Gorman, 2003; Tucker et al., 2003). Third, the clinical experience was relevant to what the pre-professionals had learned within the university course work prior to their clinical experience. Fourth, the project was interactive and based upon professional reflection and collaboration within the dental hygiene setting (Allsopp et al., 2006; Carnell, 2007; Parkison, 2009). Shared dental hygiene clinical experiences benefit students, especially with regard to working together. The peer coaching experience provides reassurance, multiplied experiences through observation and practice, and connections from classroom theory to practical clinic experience. When working with dental hygiene pre-professionals in the clinic, the development of reflective, critical and collaborative dispositions is fundamental to their becoming competent dental health care professionals that value the individual needs that each patient presents.

By basing the case study upon the four strengths listed above, the desire was to build a clinical experience pedagogy that would bridge the theory of the university classroom with the practical understanding that comes with clinical experience. Consideration of the research on curriculum and program development and encouraging student engagement guided the implementation of the peer coaching strategy (Carnell, 2007; Riggs & Gholar, 2009).

Challenges

Having a peer coach does create several challenges within the clinical experience. For example, working in pairs can cause time constraints and add additional time to an already stressful atmosphere (Yetter et al., 2006). Designing clinical experiences that intentionally led students to the desired learning and facilitated reflection to bridge the theory to practice divide was necessary. In the case study clinic, department policy required pre-professionals to meet timed assessment intervals, and grade deductions occurred if treatment was not completed in the allotted time. Complying with department requirements as the peer coaching treatment was implemented meant that accommodations for students faced with these challenges had to be developed. Pairing students that complement the time management and skill proficiency of each other helps to minimize this challenge. Working with the volunteer patient to expand the

available clinical time also helps to limit the impact of time on the students' experience. When the collaborative approach took more time than working alone, this could have added stress to the clinical experience for some students. Appropriate attention to the impact on the clinical setting and the volunteer patients was a part of the pedagogical assessment the researchers had to consider. Assessment, organization and grading reassurances for students needed to be present as well.

Results and discussion

A total of 23 reflections were returned by the end of the term, giving a 71.8 % return rate. Not every participant answered every question. The framing provided by the Clinical Debriefing Guide (see Appendix 2) and the interpretation of the responses represent choices that impact the analysis of the student reflections. Content analysis uncovered three distinct themes emerging from the reflections: (1) Advantage of Good Communication; (2) Confidence in Providing Treatment; and (3) Materialization of a Team Effort. Data collected demonstrated several pedagogical advantages and limitations of peer assessment. Words used by the study subjects such as 'listen', 'support' and 'compare' reveal an affective component worth acknowledging.

Communication

A primary theme that emerged involved communication. This theme appeared 30 times throughout the data. Interestingly, four students reported that the patient benefited from two different perspectives during treatment. The rest of the reflections appeared to be more self-reflective in their content focus. Notice from the following reflection that communication throughout treatment may have helped with reassurance and confidence:

- 'If one feels for … at a loss of words the other can jump in.'

Students were very receptive to peer assessment during the collaborative experience as well as feedback from their peer post-treatment. The following provide a sense of the value students placed on the communication provided by the partner:

- 'I like knowing what they like or dislike about me.'
- 'We will be able to see what our peers think about our strengths and weaknesses rather than just faculty.'
- 'It makes you improve how you go about treatment.'
- 'It makes you reflect and think about the experience instead of going through it like a machine.'
- 'Hearing something from a classmate is sometimes easier than hearing it from faculty.'

Communication from a peer during and after the collaborative experience suggests that connections were being made before receiving assessment by clinical instructors. Hearing suggestions throughout the shared client experience may be beneficial in student outcomes in regard to evaluation. Further investigation would be needed to see if the collaborative experience provides stronger evaluations over working alone.

Confidence

There were 19 references to confidence being boosted when working with a partner. Several examples from the collected reflections came from the subjects being asked to reflect on how the experience evoked a different feeling from working alone (see Appendix 2, question 1):

- 'I am more prone to second guess myself than not, but working with someone else allowed me to feel more confident.'
- 'We're in this together!'
- 'I knew I had to step up my game when I would look over my partner's work.'
- 'It's not as scary because you have someone to talk over your feelings with.'
- 'At first I felt like the person I was sharing with knew everything and I had no idea, but at the end I felt more confident and equal.'

Although it is possible to discern that students have the fundamental knowledge to proceed to the level of treating patients, there is still the desire on the part of the pre-professional for reassurance. When there is someone counting on you for feedback, these reflections suggest that students begin to become more engaged in their clinical observations. There is also a competitive tone to several of the responses. It is evident that the pre-professionals did not want to be shown up by their partner. These comments suggest that the collaborative experience could prove beneficial at all stages of their clinical education, not just during their junior year.

Materialization of a team approach

Comments including key phrases such as 'shared ideas', 'received specific help from the partner', and 'building on each other's strengths' brought the team effort to light. 14 reflections indicated that the partner provided information that the student would not have thought of on their own. Several examples include:

- 'There were certain intra-oral photos that were taken that I would not have thought of like with the probe to show the client's periodontitis.'
- 'My partner suggested using different instruments in different areas.'
- 'Shared treatment options and oral health education ideas.'

Students were willing to incorporate their past experiences and knowledge base from the classroom into the collaborative experience. Students were learning from each other as well as reinforcing their own knowledge as it was shared.

Emergence of a teamwork component is not surprising. Students learn from demonstration and observation (Tucker et al., 2003; Vygotsky, 1978; Wells, 1999). If a student can demonstrate their prior knowledge to a partner, the pair begins to build on each other's strengths and retained knowledge. The team approach in the dental hygiene practicum setting may be the type of creative force needed to enhance the learning process.

Conclusion

Pre-professionals' experiences within the practicum setting, when guided by peer coaching and collaborative pedagogy, demonstrate a clear impact on self-efficacy and

professional dispositions. The peer coaching strategy was implemented to facilitate the enhancement of: (1) feedback regarding interpersonal, hygienist-patient, relationships and hygienist work habits; (2) the effectiveness and quality of treatment in the clinical setting; (3) reflection on previous clinical experiences; and (4) proficiency within a conversation rich professional setting. Anecdotal observations and data analysis demonstrate a positive impact on student learning and dispositional development that occur within the clinical setting when peer coaching is used to structure the students' experiences. From the perspectives of dental hygiene, pre-professionals exhibited deeper understanding and development of reflective and collaborative professional practice and mission, and enhanced confidence to perform the tasks of their profession.

Within the practicum setting, creating collaborative experiences with scaffolded peer-assessment and communicative interactions allows pre-professionals to develop confidence when interacting with peers as colleagues. Although the peer assessment was mediated through an instructor due to issues of student and patient confidentiality and departmental policy, the feedback was immediate and framed within a language and perspective relevant to the pre-professionals (Davies, 2006; Gonzalez et al., 2005). Peer critique and feedback permit the pre-professional to benefit from a 'second-set-of-eyes' perspective. They learn to be both observed and observer as they work in peer coaching teams to complete a practicum experience in which patients are receiving treatment. This disposition leads to long-term professional growth and development as professionals continue to interact as critical and supportive colleagues. Beginning collaboration within the practicum setting helps make these interactions a natural part of the profession.

Learning to observe, assess, and communicate facilitates productive interaction between peers. Having a structure for conducting peer observations, whether in the form of a Peer Assessment Rubric (see Appendix 1) or a Clinical Debriefing Guide (see Appendix 2), allows pre-professionals to focus their interaction and collaboration on the development of specific treatments or clinical strategies. The team approach makes the learning that occurs within the practicum experience reflective and draws the pre-professional into meaningful dialogue about their practice in their chosen field.

Elicitation of pre-professional reflections and stories developed during their practicum experiences, indicate the emergence of habits of reflection and collaboration that demonstrate professional dispositions, facilitate new understandings, and enhance self-efficacy that are sought in pre-professional programs. Helping these future professionals make connections between the theory taught within the higher education classroom and the experiences they have with in-service practitioners is enhanced through peer interactions. Self-confident, motivated professionals need the support of their colleagues as a valuable resource to their continued development. Peer collaboration within the practicum experience helps to instill the dispositions and skills necessary for this type of on-going professionalism.

Notes on contributors

Paul Parkison is the director of Undergraduate Programs in Teacher Education at the University of Southern Indiana. He has investigated the impact of Peer Coaching strategies in the preparation of teacher candidates.

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Appendix 1

Peer assessment rubric

Peer assessment

Instructions: Rate the clinician based on your knowledge from working with them in a shared dental hygiene treatment experience. If you feel that you cannot adequately answer, check undecided.

Your participation is completely voluntary. Only answer questions you choose. You should not put your name on this from. Your personal information will not be made public. By returning the form, you agree to be in this research project.

Partner Name:	1 Strongly disagree	2 Disagree	3 Undecided	4 Agree	5 Strongly agree
Consistently prepared for clinic					
Connects collected data to meet the individual needs of the patient					
Explains care plan rationale well to partner					
Willingness to discuss treatment with partner is evident throughout the session					
Shows respect and compassion as a team member					
Demonstrates leadership and initiative					
Strives to share knowledge and assists in perfecting skills					
Exhibits professional demeanor throughout including attire					
I would trust this clinician to provide treatment for my family					

Additional comments:

_____
_____
_____
_____
_____

List two strengths that you feel the individual presents with as a dental health professional:

1.
_____
_____

2.
_____
_____

Appendix 2

Clinical debriefing guidelines

Collaboration among dental hygiene student clinicians

The shared clinical experience

In a quiet setting, reflect on at least one of the shared patient experiences that you were involved in and try to complete the following questions. The back of the form can be used if more room is needed to answer.

Your participation is completely voluntary. Only answer questions you choose. You should not put your name on this from. Your personal information will not be made public. By returning the form, you agree to be in this research project.

_____

_____

1. Did the shared experience make you think about patient care in a different way? How?
2. What would you do differently next time the opportunity arises?
3. Can you provide an example of how the shared experience evoked a different feeling from working alone? (Instructors: if the students were working alone) The feeling can be positive or negative.
4. Did your idea of a shared approach change from the beginning to the end of the treatment? How?
5. What specific parts went well in sharing a client and what would you consider the disadvantages?
6. Would you say that working with a peer in providing dental hygiene treatment significantly altered the time in completing treatment? Why or why not?
7. Would you consider peer assessment to be a valuable addition to the clinical experience? Why or why not.

Students Only:

Did your partner provide information that you may not have thought of on your own? Provide example(s).