

Online Group Work Design: Processes, Complexities, and Intricacies

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Abstract This paper describes the challenges of designing and implementing online group work. We are responsible for a seven-and-a-half week's online literacy and bi-literacy graduate course in a Bilingual/English as a Second Language (BLE/ESL) Master of Arts program. One of the tasks includes online literacy circle exchanges where students are encouraged to create discourse as joint dialogues and make substantive and meaningful contributions to topics. We offer three figures that visualize types of interactions and exchanges representing potential behavioristic, social interdependence, and constructivism tendencies. We discuss both practical and theoretical concerns to elicit students' engagement in a learning process, not just students' interactions in completing a task. Online collaborative group work is discussed and developed through critical aspects of salient literature providing potential for innovative implementation and further contemplation within the profession and online communities of learners.

Keywords Behaviorism · Collaborative learning · Group work · Instructional design · Online learning · Social constructivism · Social interdependence theory

Collaborative group work continues to receive attention within online literature. Yet, design and implementation of online

group work need further attention. Too many times, the “devil in the details” is overlooked and ignored to the disadvantage of students and teachers. Online group work development and implementation demands expanded understanding to enhance perspectives and experiences of instructional designers, teachers, and students.

Challenges

A typical expectation for students and teachers engaging in online interactions appears to remain an initiate, respond, and evaluate (IRE) model that routinizes interactions (e.g., Cazden 2001; Mehan 1979). For instance, more than a few discussion board elements require students to respond to a prompt initiated by a teacher, where students respond, possibly respond to another student or some students' posts, and usually expect a teacher to grade or give points to posts. Too often students' engagement in online group work activities centrally revolves around what tasks to accomplish, what steps to follow, and what date tasks are due. As Dirks and Smith (2004) noted, “learners hold tightly to individualistic, subjective conceptions to inform their expectations for educational experiences online” (p.150). Learners also seem to eschew group work because it may not allow for individual pacing. Moreover, students' feelings of unfair workloads among group members may further hinder online interactions (e.g., An et al. 2008).

Previous research reported that collaborative learning aids students' learning in many ways (e.g., Bennis and Shepard 1956; Johnson and Johnson 2008; Kuhn 2015; Slavin 1994; Tseng et al. 2009). Yet, more often than not it is unrealistic to assume students automatically interact in meaningful engagement with peers without any support. Fung (2004) admonished instructional teams (i.e., designers and teachers)

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to design instruction that triggers students' interest in participation. Yet, even so, scaffolding may elicit students' interaction in a task, but not necessarily elicit students' engagement in a learning process. As Means et al. (2014) argued, "learning experiences get implemented with different levels of *student-content*, *student-teacher*, and *student-student interaction*" (p. 13, italics original). When students interpret online tasks, they seemingly overlook (or fail to grasp) numerous potential interactions that can lead to varying engagements concerning their (social) learning potential. Students additionally too often fail to discover they actually have opportunities and capabilities to generate information and construct knowledge as they interact within an online, asynchronous, learning milieu (e.g., Boud and Walker 1990; Bryant and Bates 2015). What then entails the development of successful online interactions and learning where students participate and share ideas, questions, concerns, understandings, and promote constructivist learning?

Theoretical Understandings

We have found the design of our online asynchronous group work interactions and learning informed by three theoretical underpinnings that buttress our research and design concerning collaborative online group work and developing enriched online learning environments: behaviorism (e.g., Skinner 1968), social interdependence theory (e.g., Johnson and Johnson 2008; Slavin 1994), and social constructivism (e.g., Bryant and Bates 2015; Vygotsky 1978). The behavioristic perspective, in short, generally informs a rewards and punishment system that reinforces desired student behavior; primarily holding individual students accountable by requiring attention to due dates, following IRE patterns, or making certain a number of peer exchanges and/or amount of words completes their tasks. The social interdependence theory promotes a common shared goal, shared space for group interaction, and elements to set boundaries that help students form individual and group identities. These elements form positive interdependence for group work and lay an essential groundwork where students encourage and facilitate each other's effort to complete tasks online by offering mutual assistance and creating mutual influence. The social constructivist theory may build upon social interdependence but further seeks to bolster learners' cognitive development through online interactions between community members where individuals encounter cognitive dissonance that is capable of increasing students' capabilities to make sense of their world. Learners benefit from each other's interpretations of the content and context given their diverse backgrounds, co-construct knowledge, and negotiate meaning as they explore and create new knowledge in online space.

Online Group Work Context

Our online asynchronous group work is designed for and implemented in a three-credit (bi-) literacy graduate course in a fully online Master of Arts program for Bilingual Education and English as a Second Language. The course is delivered in seven and a half weeks and we involve students in numerous individual, class, and group work online activities (e.g., literacy similes, inventories, annotated bibliography, course readings, reflection journals, and literacy circles including an individual literacy circle essay). What we focus on here are literacy circles that consist of groups of three over six weeks of this very short spate of time as a part of the course. We divide literacy circles into groups of three so students can get to know each other more collegially and develop a camaraderie among a small group of people instead of among all class members for this specific group work (we have found more than three in a group can alienate a fourth or fifth member to a greater extent). We develop opportunities that transfer ideas from face-to-face literacy circles (e.g., Curtis n.d.; Noe 2013) to innovative online literacy circles (which include interactions and development of a collective team "Letter to the Editor"). Our goal involves and encourages students in active learning processes; attempting to shift students' interpretations of group work as a series of tasks (e.g., Francom and Gardner 2014) to truly engaging in and developing joint, collaborative dialogues that construct knowledge. Chi and Wiley (2014) define joint dialogues as mutual exchanges of ideas generated by involved participants where they make substantive and meaningful contributions to a topic as they carry on conversations (e.g., defending, arguing, justifying, elaborating their positions). We intend for students to construct knowledge through exchanges with peers from different backgrounds, cultures, language uses, and/or social contexts (e.g., Bryant and Bates 2015; Vygotsky 1978). This creates for an evolving, fluid linguistic environment where students, along *with* a teacher seek to learn about and further understand literacy in its various guises. We seek parameters and requirements within our instructional design to promote joint dialogues that display students' evolving understandings and discourses through asynchronous group work posts and tasks (e.g., Bryant and Bates 2015; Francom and Gardner 2014).

The preparation, development, and implementation of online group work are initially labor intensive. Additionally, instructional design of online group work is seemingly limited to a learning management system (LMS). When we first initiated group work we were struck by the inherent limitations of the learning management system (e.g., Blackboard). To be sure, there were mechanisms for group work and provisions for supporting interactions (discussion boards, wiki, journals, email, etc.). Nonetheless, a basic structure of a discussion forum consists of an initial post, a response, a response to a post, a response with a further post, and possibly more

responses. Yet, we wanted to implement interactions where graduate students would engage, make meaning, and develop ideas from their reading materials with their peers and the instructor (Means et al. 2014).

Design of Online Group Work

Design of Learning Task

Literacy circles consist of small groups of students who gather together and respond to what they have read, engage in rich conversations about shared readings, and express opinions, predictions, and questions (Curtis n.d.; Noe 2013). Our intention for online literacy circles fostered communities of learners where “organization changes from dyadic relationships between teacher responsible for filling students up with knowledge and students who are supposed to be willing receptacles to complex group relations among class members who learn to take responsibility for their contributions to their own learning and to the group’s functioning” (Rogoff 1994, p. 214). We anticipated online communities (groups of three students) to work together serving as resources to others as well as working out their varying roles and differing responsibilities according to their understandings (Rogoff 1994). Such group work engagement assists and provides learning tasks that engender higher-order thinking skills (Francom and Gardner 2014).

The literacy circle activity required students to participate in three sessions of literacy circles. During each session (every two weeks) students were to read three chapters in their course text (Hawkins 2013) about literacy and language theories. All students read all chapters; for one chapter they would take a leadership role, the other two chapters a participant’s role. They also read and interacted with each other’s texts as the posts developed as part of course content for the literacy circle.

Students were asked to begin discussing with their group members the logistics of how they might go about their online literacy circle tasks a week before the first literacy circle session. Moreover, students were further encouraged to utilize their experiences, creativity, and interactions (advocating diverse talents and ways of learning) with various media to promote discussion and knowledge construction during their literacy circle sessions. We even suggested they try developing podcasts or using various technology and media when expanding their literacy circle posts (e.g., Bryant and Bates 2015). We fully acknowledge that students’ perceptions could be distinct from our conceptions toward collaborative, constructive learning and accept that among group members, students may share even further contrasting and comparative conceptions toward learning. Such challenges further influence learning task design and interactions and will not be perfect after initial instructional design. Alas, until students

begin interacting, many types of challenges can neither be entirely anticipated nor eradicated.

Design of Learning Interactions and Exchanges

The instructional design promoted (and required) students to make a minimum of 12 posts across five rounds during each of three literacy circle sessions. The interaction requirements for each session shown in Table 1 was given to students as a general heuristic to consider as they collaborated with their group members to co-construct the knowledge using the course text. Students were reminded that they would not be able to accomplish everything in one post and to consider how to separate issues that promote an online dialogue where they are able to *interpret, relate, and discover* elements from chapters during the first week of each literacy circle session (six total posts) and *argue, assess, and consider* elements for each chapter during the second week of each literacy circle session (six total posts). The students were cautioned to be aware of ambiguity, questions, and need for clarifications to use such literary devices to enhance their developing online literacy circle discourse. They were also advised to discuss logistics within their posts; to possibly sketch how communications might happen for each session, and recognize types of discourses to engender communication.

Students were assigned individual points for their posts after completion of Rounds A, B, and C (six posts, 20 points) and then after Rounds D and E (six posts, 20 points). Therefore, they were awarded points over a period of time and six posts, instead of awarding points after each post. Students’ cumulative contributions were assessed according to a rubric focusing on categories of five points each including: critical thinking, connections, uniqueness, stylistics and timeliness (see Appendix). The professor assigned marks for the rubric and additionally encouraged interactions by comments to individuals about how they were connecting with each other, as well as the course literature. During the first session, particularly, the professor avoided

Table 1 Interaction requirements and recommendations for each session

Week 1, 3, 5 (focusing on <i>interpret, relate, and discover</i> elements from chapters):
<ul style="list-style-type: none"> • Round A (minimum 1 post): Make initial post of the chapter you are leading. • Round B (minimum 2 posts): Respond to each of your team members’ initial posts to the chapters they lead. • Round C (minimum 3 posts): Continue dialogues with team members and specifically extend dialogue with your specific chapter and your team members’ chapters
Week 2, 4, 6 (focusing on <i>argue, assess, and consider</i> elements from chapters):
<ul style="list-style-type: none"> • Round D (minimum 3 posts): Continue dialogues with team members • Round E (minimum 3 posts): Continue dialogues with team members

evaluative terms and reassured students they were developing discourses that promoted a learning-enriched environment, contributing to the development of their understandings of literacy and biliteracy.

Students were reminded that people were in different time zones, but the asynchronous, online environment forced them to more carefully consider how best to develop each of their thoughtful, thought-probing, and thought-promoting posts. Students knew due dates for each post and that each post was to promote exchanges that created additional discourse among the three members. They were instructed to consider that their posts would serve as *additional* course content to highlight not only the importance of posting on time, but to consider their post as salient instructional materials. This further encouraged their higher order thinking skills (e.g., interpret, discover, assist), as well as made clear their posts were not typical IRE discussion board postings. Students were put in charge of creating exchanges promoting written discourse among the group members instead of using the LMS’ interaction structure to define (determine) the character and substance of interactions. As Thorne (2013) reminded, “It is important to underscore, however, that while Internet communication tools carry the historical residue of their use across time, patterns of past use inform, but do not determine, present and future activity” (p. 200). The literacy circle tasks sought to inspire present and future activity.

As the first session proceeded some students needed reassurance they were on an appropriate track. The instructional designer and the teacher worked together to consider

configurations that might assist with how anticipated exchanges might be understood on the Blackboard LMS. The initial figure we developed displayed a more behavioristic tendency, alerting us that such interactions were much more linear in orientation than we anticipated in our initial instructional design (see Fig. 1). The initial pattern supported a behavioristic tendency for students to just complete the posts (twelve posts required for each session, six for week one and six for week two) as they were due (solid lines signifying posts requiring a definite interaction while dotted lines signifying possible or potential interactions). This pattern alerted us to consider that despite our intentions, some students might still consider the LMS’ structure to present their posts and just respond with the required number of posts (and not promote further interactions) because past experiences did not require the type of exchanges we proffered. However, we did not want the posts to become behavioristic in orientation. Therefore, we started toying with possible interactions that might elicit negotiations more interactive in nature where students would communicate with each other, where exchanges with group members discussed issues instead of reporting elements from the chapter readings (see Fig. 2). As we puzzled and worked with Fig. 2 and the potential type(s) of required number of posts and possible student exchanges, we realized that students had more possibilities to make more than required posts. We quickly further detected by asking students to take charge of a particular chapter. The interactions could still return to a type of IRE model because participants sought refuge in responding to leaders in a similar manner they might respond

Fig. 1 Interactional Pattern Suggestion 1. This figure illustrates the behavioristic tendency of group interactions

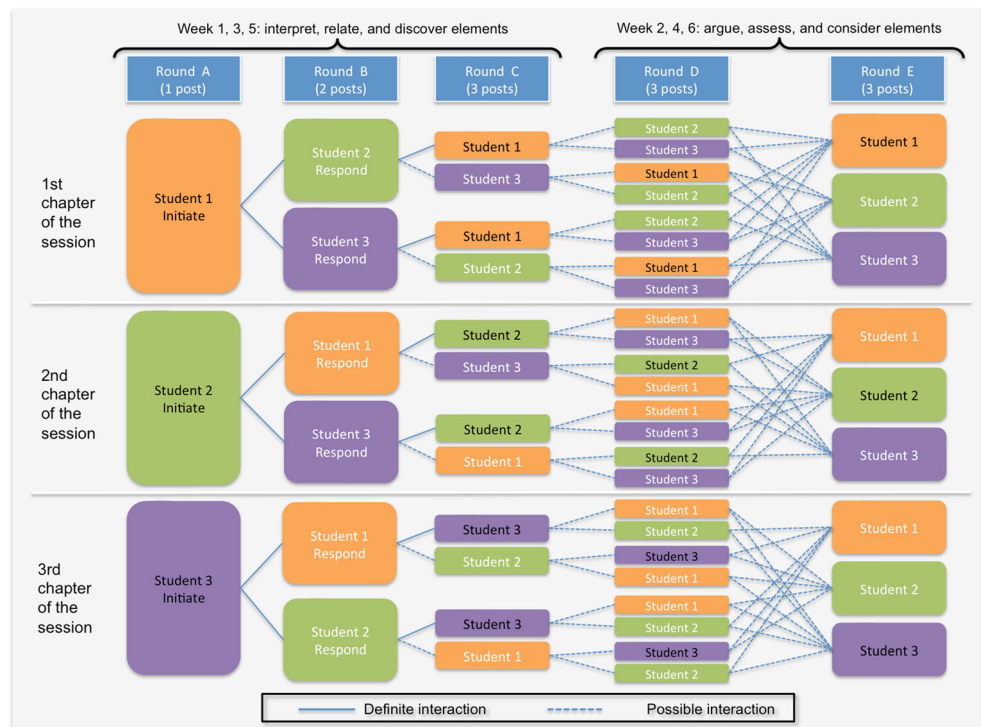
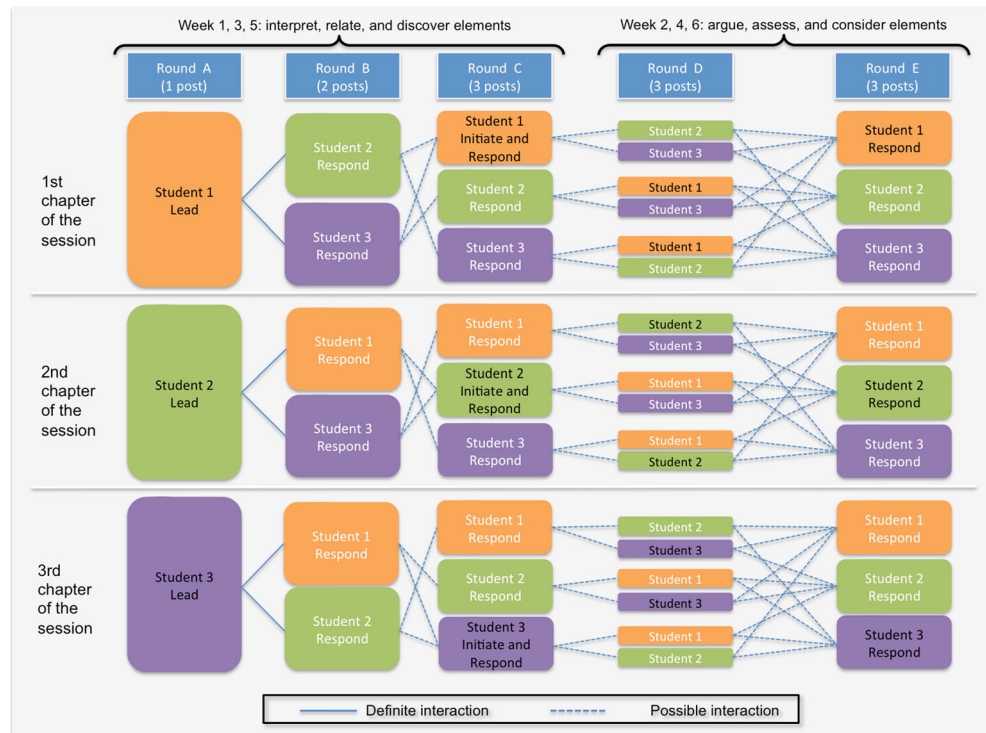


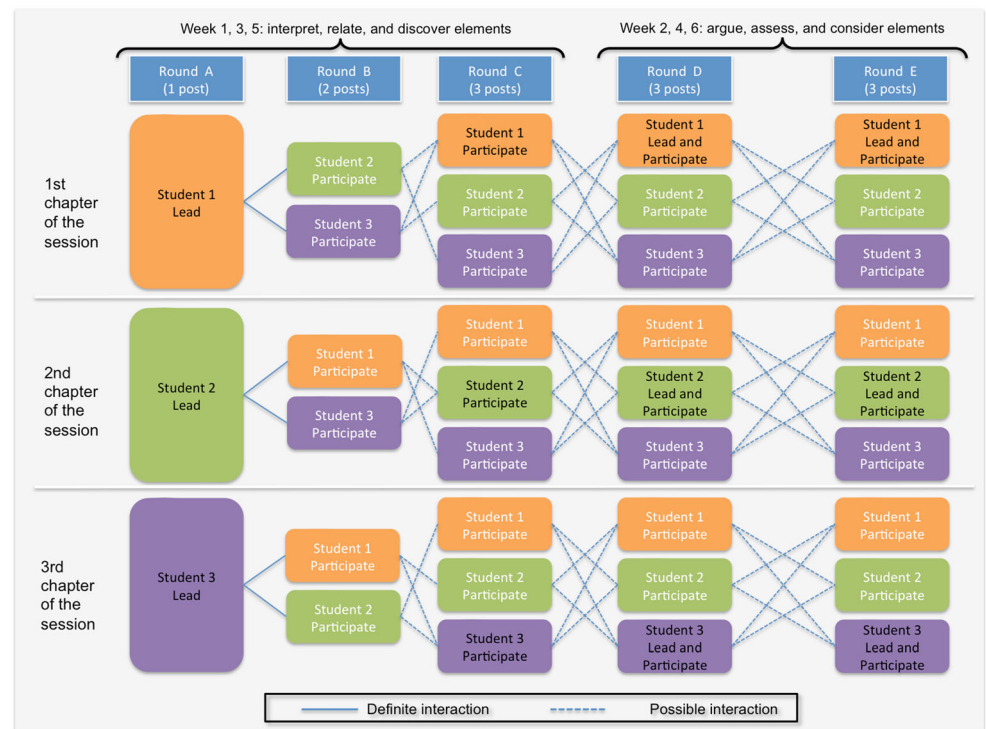
Fig. 2 Interactional Pattern Suggestion 2. This figure illustrates some dynamic group interactions led by group members



to the teacher. The typical tendencies of IRE could easily creep back even into the interactions of Fig. 2. We needed to further consider how to visualize and promote constructivism so that students exchanged ideas about the subject matter rather than focused primarily on completing twelve specific required responses. We encouraged students to consider the potential

places where they could respond and consider responding to posts that promoted interactions as well as build further discussions. We continued developing our ideas through Fig. 3 to provide visualization that more exchange possibilities did not require initiate, respond, and evaluate tendencies. When students decided to post they were making selections about

Fig. 3 Interaction Pattern Suggestion 3. This figure illustrates the possible group exchanges that engage students in conversations in online collaborative learning environments



which post to respond to and consider how they would initiate, respond, further respond, question, query tendencies and develop ideas more thoroughly by the responses they chose to make (bringing together from the instructions the ideas of interpret, relate, discover, argue, assess, and consider; involving themselves in constructivism).

Figure 3 assisted in promoting students in groups to participate in online discourse development so that they began to see that online discourse requirements were different and similar to face-to-face discourse; but discourses that differ substantially from traditional discussion board posts. We found our graduate students could be encouraged to develop discourses that promotes conversations; parsing the discussion (i.e., number of posts) in asynchronous online classes where students experienced and practiced various online discourses that promoted exchanges, discussion, and conversation versus discussion board posts that delivered IRE functions. In many cases students offered more than their required twelve posts while also synthesizing information and considering issues from other posts that promoted further analysis and synthesis of the topics and information because they could see that there was not one way to interact but numerous ways to interact and they had to each consider how to develop the discourse exchanges among their three team members. Such discourse moves advocated, among others, introducing new topics or suggesting a different organization theme, sharing opinions, beliefs, and “grand” ideas, giving information or examples, connecting to other readings, students’ own experiences and classrooms, course content, and/or previous thoughts, and building rapport by revealing students’ own struggles, questioning or wondering, and using humor; various maneuvers suggested in the literature by Wegmann and McCauley (2014, pp. 101–102). It was the implementation of the exchanges and their potential that created opportunities for constructivist learning not the structure of LMS elements that might direct behavioristic, IRE, and some social interdependence tendencies. Students reported in their final (anonymous) course evaluations that the professor “encourages cooperation among students” (3.9 out of 4), with other elements receiving 3.8 out of 4 including: “gives prompt feedback,” “gives useful feedback,” “communicates high expectations,” and “respects diverse talents and ways of learning.” Students variously shared that the literacy circles were intellectually demanding, provoked critical examination of views through classmates’ discussions, and probed higher order thinking skills to think about differentiated practices within educational settings. These final evaluation comments were drastically different than the ones the professor received the year before when literacy circles were not part of this particular online course.

Teacher and Student Presence: Continuing Conundrums

Our examination of teaching and learning interactions, along with a learning task seek to extend (continuing) conundrums about online collaborative group work. We feature challenges not often articulated by designers, teachers, and students to advance further deliberation. We understand teachers’ online roles are multi-faceted and include at least pedagogical, managerial, technical, and social aspects/actions (Berge 1995); yet, we would add that students’ online roles are no less multi-faceted. Regardless, Fontaine and Chun (2010) reminded that optimizing interactions between teacher, students, and course content is a balancing act: “Too little input or responsivity and most participants will face—or be drawn—into other worlds; too much input inhibits student interaction, and a real but strange world is transformed into a series of Internet lectures or teacher-student dialogues” (p. 49).

Even when required to interact with group members, some students’ interactions continue to be constrained by what they perceive as teacher dominated instructional requirements and performance evaluations (Bennis and Shepard 1956; Wagner 1995) and more often than not construe learning as prescription (e.g., Skinner 1968). We showed in Fig. 1 how the LMS’ structure can further assist students to remain in a behavioristic orientation to learning. Yet, we also showed potential for students to shift their reliance from a teacher’s (and instructional design team’s) authority and develop themselves as constructors of their group interactions (Bennis and Shepard 1956); demonstrating interactions that promote social interdependence (Fig. 2) and constructivism (Fig. 3), despite LMS’ constraints. Different learners probably undergo varying inner turbulence as they shift their understandings toward roles of themselves, teachers, and group members with constructivism type online tasks. Online interactions do not provide as many natural opportunities for learners to interact with content, teachers, and peers as in face-to-face settings. Thus, it requires everyone to be mindful of fluidity regarding teacher and student presence in online collaborative learning environments.

Gaillet (1994) argued that “the teacher should move to the perimeter of the action of collaborative learning and allow the students freedom to exert their own opinions and to learn from one another” (p.106). It might be wise to include students in negotiating and further developing meaning with each other about online instructions, as a means to take a step and begin shifting students’ perceptions of collaborative group work. Instructional designers and teachers seek clarity in

providing detailed explanation and examples with on-line instructions (e.g., Fung 2004, Garrison 2011). Perhaps the process of negotiating a task and developing a task, especially at the graduate level, may encourage online students to be part of clearing up online task instructions. As negotiations begin to emerge, understandings that develop collective perspectives of online instructions can promote discourses and practices that enhance online constructivism. Students should interact with content, peers, and teachers to reach project goals (Roberts 2004) that also facilitate shifting ideas of teachers' and students' online presence.

Group work designed to include constructivism theory argues that students are at the center of meaning making processes and assume active roles in determining how they make sense of the world. Online group work, then, requires learners to possess qualities of autonomy as they collaborate and learn with their peers to achieve shared goals. It is imperative that individual students take responsibility to move forward in group

work and take charge of what and how they will learn, individually and collectively. Some ways are suggested to assist in (re)shaping students' autonomy, including giving them choices, sharing and asking them to participate in clarifying rationales, and providing opportunities to personalize their learning (Lee et al. 2015). Autonomous learners take varying roles in learning processes where they do not simply react to teachers' stimuli but generate ideas and avail themselves of learning opportunities (Thanasoulas 2000, para. 2). Confined by traditional perceptions toward authority and autonomy in too many online courses, it is not surprising to observe that students rarely see constructive potential. Thus, it is crucial for design teams to facilitate students' evolving understandings to reshape interactions that include innovative conceptions of authority and autonomy. The three patterns offered above serve as examples for instructional design teams and students to consider how interactions move to exchanges that enrich collaborative learning experiences.

Appendix

Rubric: literacy circle dialogue posts (20 points each week and 40 points each session)

Criteria	Proficient Plus 5 points	Proficient 4 points	Basic 3 points	Below Expectations 1 point
Critical Thinking	<ul style="list-style-type: none"> Rich in content Full of thought, insight, and analysis; evidence the entry is thoughtful, thought-probing, and thought-promoting 	<ul style="list-style-type: none"> Substantial information Thought, insight, and analysis has taken place 	<ul style="list-style-type: none"> General information; yet information is thin and commonplace 	<ul style="list-style-type: none"> Rudimentary and superficial No analysis or insight is displayed
Connections	<ul style="list-style-type: none"> Clear connections To previous or current class readings/discussions To real-life situations 	<ul style="list-style-type: none"> Synthesized ideas or connections Lack depth and/or detail 	<ul style="list-style-type: none"> Limited, if any connections Vague generalities 	<ul style="list-style-type: none"> No connections are made Off topic
Uniqueness	<ul style="list-style-type: none"> Synthesized ideas and connections with/from real life experiences as a teacher and/or student Examples or instances explained with depth and detail 	<ul style="list-style-type: none"> Synthesized ideas or connections Lack depth and/or detail 	<ul style="list-style-type: none"> Few, if any synthesized ideas or connections Rehash or summarize other postings 	<ul style="list-style-type: none"> No synthesized ideas "I agree with...." statement
Timeliness and Stylistics	<ul style="list-style-type: none"> All minimum required postings Early in discussion Throughout discussion Few grammatical or stylistic errors 	<ul style="list-style-type: none"> All required postings Some not in time for others to read and respond More than a few grammatical or stylistic errors 	<ul style="list-style-type: none"> All required postings Most last minute and/or late without allowing for response time Obvious grammatical or stylistic errors Errors interfere with content 	<ul style="list-style-type: none"> Few, some, or all required postings missing Obvious grammatical or stylistic errors Difficult or impossible to understand

Retrieved March 24, 2011 and adapted from a website (http://frank.mtsu.edu/~webctsup/faculty/manual/WebCT_DiscussionBoard_Tips-Pedagogy.pdf) from Middle Tennessee State University, since disconnected

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