

Adaptation and Flexibility when Conducting and Planning Peer Study Group Review Sessions

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Adaptability and Flexibility Displayed by Student Leaders of Peer Study Group Sessions

Based on an evaluation of the professional literature of postsecondary learning assistance, little is known about decisions made by student leaders during their peer study group review sessions. Our research question for this study is “How did study group leaders adapt their role to better meet the needs of the students who participated in their academic review sessions?” Most research publications instead focus on final course grades or student satisfaction ratings by participants in study groups (Arendale, 2016a). Few of these studies offer insights into decisions made by student group leaders in preparation for or during review sessions (Arendale, 2016b). Our research is a replication of these earlier studies of the study group session process and seeks to build on their discoveries.

We reviewed national standards and common training curriculum of tutors and study group leaders to see if they provided insight into decisions made by students trained for their roles. Many training programs concentrate on mastery of learning strategies by participants and group management (Coleman, Collins, & Sanders, 2009; LSCH, 2015). National standards established by the National Association for Developmental Education (Clark-Thayer & Cole, 2009; NADE, 2016), College Reading and Learning Association (Agee & Hodges, 2012; CRLA, 2016), and the Association of the Tutoring Profession (ATP, 2016) provide guidance on training student leaders and tutors. The standards also identify essential structures for program evaluation and management. However,

little was provided to train study group leaders to be flexible when planning sessions and making adaptations during their student academic review sessions.

Our research concerning study group leader behaviors was conducted at the University of Minnesota (UMN) which is a public research-intensive institution with more than 50,000 students enrolled in undergraduate, graduate, and professional school degrees. Although UMN has a highly selective admissions process, UMN administrators were concerned with unacceptable rates of students who dropped out. To partially address this concern, the Peer Assisted Learning (PAL) program was created and began during fall 2006. PAL was part of a new comprehensive approach through an umbrella service unit named the SMART Learning Commons. Historically difficult math and science courses for first- and second-year students were targeted for more academic support (Arendale, 2014a). These academically rigorous courses were often gatekeepers to highly competitive academic programs in science, technology, engineering, and mathematics (STEM). Later, PAL was extended to support similarly challenging courses in the humanities and social sciences. Research studies on efficacy of PAL for personal, professional, and academic development of participants and study group leaders are available elsewhere (Arendale, 2016a).

The PAL model was influenced by a fusion of design elements from Supplemental Instruction (SI, Arendale, 1994); Peer-led Team Learning (PLTL, Tien, Roth, & Kampmeier, 2002); and the Emerging Scholars Program (ESP, Treisman, 1986). Participation in weekly PAL sessions was mandatory; attendance records were provided to the instructor teaching the targeted course, and the campus PAL administrator tracked students' compliance. The participation rate was uniformly high and consistent throughout the academic term.

PAL groups were led by upper-division, undergraduate students selected for their interest, academic competency, prior success in the targeted course, high grade point average, good interpersonal communication skills, and the completion of a successful personal interview by the PAL administrator. Most of the selected facilitators planned to complete doctoral degrees in UMN graduate or professional schools. Student facilitators sought the PAL position

for one or more of the following reasons: (a) desire to support an introductory course in their subject major, (b) salary, and (c) belief the job experience would be helpful during the highly competitive process for admission to graduate and professional school. Less than twenty percent of new PAL leaders were enrolled in education majors or planned to do so. These students expressed similar reasons for accepting PAL positions with belief the experience would be helpful for their future teaching careers.

The PAL study group leaders were called “facilitators” to help them understand their role was to foster dialogue during PAL sessions and model successful academic behaviors without broaching the boundary of direct instruction. Leadership for the review session was to be transferred to the study group participants over the academic term. PAL facilitators followed procedures outlined through an extensive training program before and during the academic term (Arendale, 2014b). Most of the initial two-day training workshop of fourteen clock hours focused on group management, lesson planning, modeling learning strategies, and other administrative tasks. Developing facilitator adaptability and flexibility within PAL sessions received little attention during initial or subsequent training (Arendale, 2014b; Arendale & Lilly, 2014). We followed traditional training curriculum as identified earlier in this article.

This qualitative research study investigated the adaptability and flexibility of PAL facilitators as they prepared for and conducted their peer study group review sessions. It was a replication of earlier studies that investigated the process of conducting study group sessions by other major postsecondary peer cooperative learning programs (Arendale, 2016b). Some of those findings were confirmed and new ones emerged from our research study.

Review of the Professional Literature

Examination of the professional literature for adaptability and flexibility of instructors, study group leaders, or tutors as they performed their tasks yielded limited results. The field of postsecondary learning assistance and developmental education was examined first. Roughly 700 of the 1,100+ publications about

national postsecondary peer study models focused on evaluation of improved final course grade or persistence rates of participating students towards graduation (Arendale, 2016a). Of these 1,100+ publications, 19 reported choices made by study group facilitators to adapt during or before upcoming sessions (Arendale, 2014b). Maloney (1992) compared the experience of serving as an SI leader with secondary school education candidates. In her qualitative study, she found SI leaders had more power to select, revise, and experiment with learning activities than teacher candidates who were limited by the cooperating high school teacher. Speed (2004) studied behaviors of SI leaders at Texas A & M University during their study review sessions. SI leaders reported that they engaging in short bursts of teaching when they perceived students were unable to solve problems. Thompkins (2001) came to a similar conclusion from research of SI leaders at North Carolina State University. SI leaders adapted their choice of facilitation methods during study review sessions based on their assessment of student needs.

Several professional associations representing the field established standards for what should occur during tutorial and small group study sessions (ATP, 2016; CRLA, 2016; NADE, 2016). Through the California Tutoring Project, MacDonald (1994) and his team of researchers identified verbal interaction patterns for use by tutors during one-on-one tutoring. Rather than only a question and answer format, the research suggested specific verbal cues by tutors could elicit more engagement by the tutee and result in more useful tutoring experiences for tutees.

Since there was limited discussion of adaptability and flexibility for tutors and study group leaders, we turned to a review of secondary school teachers for their adaptability and flexibility before and during their class sessions. The literature on secondary school teachers identified several effective strategies to increase their adaptable and flexibility, including (a) reflection-in-action, (b) response to multiple contexts within class sessions, and (c) constructivist approach to learning. The first we will review is reflection-in-action.

Reflection-in-Action

Leikin and Dinur (2007) studied math instructors and behavior patterns that inhibited or encouraged their flexibility. The researchers identified tension experienced by many of them as they balanced lesson planning and making changes during class based on student actions. They found that teachers were most adaptable and flexible when they adhered to the following beliefs and practices: (a) confidence students can be flexible; (b) confidence to guide class discussion to elicit appropriate student responses; (c) student-driven discussion in place of a prior plan; (d) ability to listen to student discussions and alternate choices made by them to solve problems; (e) openness to other means to solve problems by students; and (f) use questions to verify understanding of student responses during which the rest of the class was encouraged to have a "...shared opinion about the answer" (Leikin & Dinur, 2007, p. 335).

According to Leikin and Dinur (2007), teachers benefited from discussion-oriented class sessions since they had time to reflect and make frequent changes while the students spoke. Teachers used this time to multitask by listening and responding to class discussion while thinking about their own behavior changes simultaneously. "In this sense teacher reflection-in-action is a basic component of teachers' flexibility in unpredicted situations" (p. 341). Factors contributing to inflexibility included the instructor implementing an earlier designed lesson plan without making modifications during class and failing to assess student comprehension of new academic content. Leikin and Dinur (2007) recognized an effective instructor achieved balance of flexibility and inflexibility. The second strategy effective secondary teachers used to increase their adaptability and flexibility was recognizing multiple contexts operating within their class and making changes in response to them.

Impact of Classroom Context on Effective Learning

While reflection-in-action describes the time frame teachers create within their class session to strategically think about and revise their lesson plan, other researchers identified what the teacher should be considering during this time as they make choices and changes. Joyce and Hodges (1966) identified three frames of reference for classroom context: (a) social climate, (b) academic content, and (c)

learning strategies. Rather than only focusing on curricular issues, researchers identified social climate among students and teacher as important for the teacher to consider. In the succeeding decades, these frames of references were expanded. Turner and Meyer (2000) reviewed 40 published studies on the effect of context within the classroom and its impact on learning. Based on their analysis, effective instruction adapted to classroom learning context when implementing lesson plans and adjusting them during a class session: The researchers described the complexity of the classroom environment and areas that the teacher needed to be observant as they made decisions during class sessions:

Classroom context has been variously studied as the beliefs, goals, values, perceptions, behaviors, classroom management, social relations, physical space, and social-emotional and evaluative climates that contribute to the participants understanding of the classroom. The variety of lenses that have been used to examine the classroom reflect the multiple and interconnected contexts within each classroom. (Turner and Meyer, 2000, p. 70)

The complexity of class environment is a challenge for well-trained and experienced teachers. It would be more so for paraprofessional tutors and small group leaders.

Constructivist Approach to Learning

A constructivist learning approach required students, not the teacher, be responsible for their learning. Therefore, the classroom must provide space and time for students to master academic content. An influential pedagogical theory guiding some teachers is the Cognitive Flexibility Theory (Boger-Mehall, 1997). This theoretical approach recognizes learning tasks may require “well-structured” or nonlinear “ill-structuredness” based upon student learning needs. Through co-creation of knowledge by everyone in the classroom, teachers are flexible, and students, not the instructor, drive the process of discovery (Spiro, Coulson, Feltovich, & Anderson, 1988). Since students must construct their knowledge, learning only proceeds as they gain mastery of new knowledge and skills. Students regulate pace and direction of learning.

Peterson, Marx, and Clark (1978) conducted a qualitative study of behaviors by 12 experienced secondary school teachers in social studies courses. Their study focused on teacher planning decisions before the lesson was implemented in the classroom occurred. Novice teachers used their positional power to move the class forward while experienced teachers influenced students toward the learning objective. These experienced teachers used prior knowledge of their students and engaged them in collaborative learning at higher rates than novice teachers, who displayed more instructor-centric behaviors.

Westerman (1991) studied the decision-making of experienced and novice secondary teachers before, during, and after classroom teaching. Experienced teachers considered students' learning and needs as they made lesson plans flexible to adapt during class sessions based on student response. Rather than employing a sequential path of predetermined learning activities, these teachers scaffolded out beyond the original lesson plan based on student response. Student feedback during class was more important to experienced teachers than prior lesson plans created to meet national or state education boards. Upcoming lesson plans were influenced more heavily by previous class sessions. The experienced teachers frequently assessed students at the beginning and during the class sessions to adapt class sessions based on this information and level of student engagement with the learning tasks.

In contrast to experienced teachers, Westerman (1991) found that novice teachers focused on developing structured lesson plans with specific learning objectives and did not anticipate how students might respond to the lesson plan. Novice teachers did not often adapt to student response during the class sessions. Instead, each class lesson was conducted as a discrete learning unit devoid of integration with past class sessions. They used a limited range of learning activities that did not vary regardless of student reaction. Often, novice teachers began class sessions without connecting previous lessons or assessing student understanding of the prior or current topic. Novice teachers did not deal with individual or group off-task student behaviors or lack of engagement until they became disruptive.

Experienced teachers employ a complex approach to the classroom learning environment. Reflection-in-action provided time during class for them to consider changes in the lesson plan based on student feedback. These teachers saw the context of the classroom in three dimensions: social climate, academic content, and learning strategies to engage the students. A constructivist approach to learning changed the role of the experienced teachers from following a plan with them as primary information provider to a rich classroom learning environment where students were creators of their knowledge and skills.

Methods

Sample

Participants in this study were 43 Peer Assisted Learning (PAL) facilitators. These college students served as peer study group leaders in historically difficult courses at UMN with high rates of low final course grades and academic withdrawals. All facilitators participated in a two-day (14 clock hours) initial training workshop focused on their job duties (Arendale & Lilly, 2014). These PAL facilitators (23 males and 20 females) enrolled in and completed the PAL professional development course, PsTL 3050/5050 Exploring Facilitated Peer Learning Groups (Arendale, 2014b). These PAL facilitators earned a grade point average above 3.5 on a 4.0 scale before they were hired. At a minimum, these students were sophomores or higher in their undergraduate studies. They were enrolled in academic units across the UMN curriculum. Data were collected from all 43 individuals.

Facilitators maintained a weekly journal of experiences in their role and observations of behaviors and attitudes of students who participated in their study groups. Facilitators noted changes in their students over the academic term and recorded examples in their weekly PAL journal entries. They were encouraged to refer to this information as they completed the online survey for this study.

Procedure

Data collection. In his role as course instructor for PsTL 3050/5050, David Arendale also was Primary Investigator (PI) for this study approved through the UMN Institutional Review Board (IRB). Arendale was responsible for data collection. The data were

obtained through the previously described required course (PsTL 3050/5050) for the PAL facilitators taught by Arendale (2014b). He created an online survey for them to complete. Arendale selected survey questions based on his review of previous data collection efforts by other peer assistance learning programs (Arendale 2016a) and an assessment of the professional literature of the processes used by students leading study group review sessions (Arendale, 2016b).

The online survey was completed at the end of the academic term. David Arendale informed enrolled students he would not know which responses were attached to which facilitator. He would only be able to tell whether the facilitator had completed the survey as part of the requirements to pass the course. The survey consisted of 10 open-ended and two forced-choice items that prompted the students to reflect upon their experience as a PAL facilitator, their impact with their students, and their own personal and professional development. Of the 12 survey items, only one was relevant for the study reported in this journal article. All 43 students responded to the following question, “How did you adapt your role as a PAL Facilitator to better meet the needs of the students who participated in your PAL sessions?” The survey was designed to be completed in 30 to 45 minutes. All 43 facilitators employed between 2008 and 2010 completed each question with the online survey.

Three additional data sources were consulted concerning these 43 students to triangulate data obtained by this online survey to validate consistency among these multiple data sources. First, David Arendale wrote observation notes of facilitators as they talked with each other during the PAL facilitator course and during individual office visits meetings with them. Second, Arendale read weekly private reflections required as part of the PAL course concerning their experiences in the PAL position. Third, audio recordings were made of 15 PAL facilitators interviewed by Arendale during which they responded to questions similar to the online survey.

Arendale found facilitator statements of their process to prepare for and conduct the PAL sessions were consistent among all four data sources. Due to the sheer volume of available information from the additional three data sources, Arendale decided to focus on the extensive survey data for this research study. Separate manuscripts

are under development using the other three data sources and a book to bring together all the data and its findings.

Data analysis. This study employed a mixture of deductive and inductive analysis. It was deductive in that it was a replication of earlier studies that investigated the process employed by study group leaders for conducting their study review sessions. This study was also inductive since it analyzed results for the survey question “How did you adapt your role as a PAL Facilitator to better meet the needs of the students who participated in your PAL sessions?”

Based on a modified version of steps outlined by Boyatzis (1998), inductive data analysis was employed with responses to the open-ended survey item. Data analysis was conducted by David Arendale (PI and faculty member) and Amanda Hane (GRA, Graduate Research Assistant). Both previously received training in qualitative and quantitative research methodologies as part of their graduate programs. Both were equal partners in the research analysis process and resolved differences of interpretation through professional discussions. The total time spent on data analysis was approximately one month. In the first step, responses were collected through the survey question. In the second step, Arendale and Hane separately identified themes across the survey responses. A preliminary list of codes was then developed. Codes were based on themes that emerged from the data but were also informed by the survey item, since it was a specific prompt about choices made in preparation for and during study review sessions. In the fourth step, Arendale and Hane independently applied the codes to the data and then met to discuss their appraisals to establish reliability (Boyatzis, 1998). After the collaborative process was completed, several initial minor themes were discarded due to having an insufficient number of responses associated with them. A final version of the themes was established, and final data analysis was conducted.

Results

All 43 PAL facilitators expressed ways they adapted the PAL model to their experience in study review sessions, demonstrated adaptability and flexibility, and thought on their feet. Five themes emerged: (a) the facilitator’s role, (b) adapting to student needs, (c)

classroom content and tone, (d) adaptability over time, and (e) trial and error. Facilitators shared much of their own learning on how to manage PAL sessions occurred not during formal training provided to them before beginning of the academic term but through their experiences during the academic term in PAL sessions and interaction with other facilitators during PAL staff meetings.

The Facilitator's Role

Nearly all PAL facilitators explained how they adapted their role, experimented with different levels of directiveness, and chose various methods to foster student empowerment. The official PAL model emphasized only facilitation instead of direct instruction during sessions, regardless of the need (Arendale & Lilly, 2014). Eleven facilitators adapted the PAL model to be more directive for short periods even though they were expressly forbidden to do so during the training workshop before the start of the academic term. The catalyst for this behavior occurred when facilitators perceived a significant lack of knowledge or skill needed for participants to comprehend new course material individually or working in small groups. Rather than let participants struggle hopelessly, the facilitator took a minute or two and taught them:

Although the PAL concept tends to look down upon “teaching” the students, I did come across times when the PAL concept just would not work, since simply none of the students had any idea what they were doing and had not been well informed of the material by their professors in order complete their assigned tasks. At this point, I would step in and use my knowledge of the course material in order to walk them through the problems, without giving them the answers, but safely guiding them on the right path.

These facilitators struck a balance between brief bursts of direct instruction and being hands-off based upon student need. Facilitators noted this behavior occurred more often at the beginning of the academic term and decreased as the term progressed when the group assumed more responsibility for solving academic challenges. The following facilitator used their knowledge of individual student capabilities to guide them when to speak and when to call upon a particular student to help the others:

I adapted my role throughout the semester to give them extra guidance when they needed it and to hold off when one of their classmates could explain the material better. As they became more comfortable in the class, I was able to do less as I could ask other students to approach the board to explain a subject. However, when I saw there was a mutual lack of knowledge in a section, I was then able to step-up and go over the material for the whole class (give and take situation).

Another PAL facilitator possessed a natural inclination to be more directive. This facilitator learned to use more facilitative methods after observing that participants comprehended more under this approach:

Initially, I found it rather difficult to not “teach” at all. Let’s face it, the vast majority of the questions that I handed out, I could do within a few minutes. Although, I quickly realized how much the students actually remember and understand the material more when not just told the answers. Of course you get the typical “Why don’t you just tell me the answer?” or “Come on, you know the answer, so I can just hear it now, and be able to do it on my homework.” But after facilitating, for example, molding the question into an easier example and follow with, “How did you figure that question out” such that they could apply the same concept with the new question, you can just tell how much the material starts to “click” to them.

Through experience with their groups, many PAL facilitators over time trusted collaborative learning and did not preempt it with delivering a short mini-lecture.

The PAL facilitators expressed respect for the official PAL model and adhered to it as much as possible but recognized when it did not meet the needs of the students in their classrooms and adapted their behaviors as a result. This also resulted in tension for some facilitators since they were doing something expressly forbidden during the initial training workshop. They made this difficult decision by themselves and perceived some risk if the PAL program administrator or classroom instructor discovered their

choice of action. But, they put the immediate needs of their students first based on their assessment of the learning environment.

Adaptation to Student Needs and Input

Twenty-two PAL facilitators acknowledged need to adapt their facilitation style based on student needs or input. Many incorporated student feedback into their sessions in various ways. Some facilitators adapted based on observation of student responses. The following facilitator learned which learning activities worked and others that did not:

When I saw that something wasn't effective or a certain game (like jeopardy) didn't necessarily work or make the students feel like their time in PAL was worthwhile that day, I would not do that activity again. Once I realized that they dislike Jeopardy because they feel disconnected from their peers and from me (they told me this), I did not do jeopardy with them again. Instead, I found a way to play a different game (BINGO) and still make it fun, much more interactive, and much more productive than [sic] Jeopardy.

Other facilitators embedded student feedback into their sessions since they realized they needed to be more systematic in collection of feedback from students. The following facilitator not only asked the students what they wanted to study, but also how to study it:

I did realize half way [sic] through the semester that I needed to adapt my ways of dealing with the students in order to increase their input and to better enable them to study on their own. I began to ask them what they wanted to go over for the next week, and even asked how they wanted to review for the final. As for studying, when I gave them copies of review questions, I did not give them answers so that they would have to look through their notes when they wanted to review again. Also, I asked them how they could extend the activities we did in the sessions to improve when they study on their own.

Several facilitators solicited student feedback during the PAL sessions. One facilitator noted how it was needed to provide more

time for students to speak during the sessions, “I also made sure to leave lots of room in my session plans for input from the students on what they needed to study more fully.” Another facilitator formalized the feedback through student surveys: “I took frequent surveys and asked the students what they preferred doing during sessions. With these surveys tallied, I incorporated their feedback into the next session.” These facilitators learned they needed to employ intentional student feedback which required prior work in creating assessments and planning specific times during the session to collect.

Many facilitators adapted their approach based on different learning styles, academic abilities, or cultures of students. A number of facilitators incorporated a variety of different activities and approaches in their PAL sessions to meet different learning styles. One facilitator described how stimuli for visual learners was incorporated into the review sessions:

I would sometimes outline the main points on the overhead or document projector to allow students to more easily take notes and learn the material. For topics that could have diagrams, I would give the students worksheets with pictures or draw pictures on the board to illustrate the concepts in another way and allow visual learners to learn in a style that is easy for them.

Another facilitator incorporated spatial, kinesthetic, and interactive styles into sessions to meet student needs:

I was constantly trying to find ways to present or exercise the material in a way that would make it meaningful for the group. I found that more people got involved if they were asked to draw, move around or write on wall displays. Discussions were best conducted in a circle, and they responded to have a clear objective for the session.

Many facilitators cited interpersonal skill development of participants as important in their sessions. This focus helped students who struggled with social interaction. The following facilitators noted how they were intentional with creating small groups: “I changed the structure of my sessions to be more friendly to small group discussion and group work, because I noticed that some individuals seemed to be reluctant to join in large group discussion.” Another

respondent described “assigning them groups, so there were not students left out because they were afraid to ask somebody on their own.” Other facilitators prompted social interaction because of perceived learning benefits. A facilitator made an astute observation about learning dynamics of worksheets and board work:

I also adapted my sessions within the first month from worksheets to working through problems on the board. This change was due to my observation that giving students worksheets was promoting independent work, which was not what we wanted. Not only did the switch make the session more true to the PAL principles, I think the students learned an incredible amount more, not from me but from each other.

These facilitators often grappled with how to work with students of different academic abilities, simultaneously meeting needs of students who struggled with the class content and others who mastered it quickly. One facilitator was intentional about sitting next to a student rather than peering over their shoulder:

For the students who had a harder time with the material, I made sure to sit in the chair next to them, as a peer, and discuss the problems a bit more than the regular students who I simply walked around and checked their progress, and making suggestions or pointing out mistakes.

One facilitator mentioned adapting facilitation style based on cultural dynamics during the PAL session: “I also became more sensitive to cultural differences, and I was more aware of the vast array of students in my sessions.” Another facilitator explained the importance of flexibility to meet the needs of students in the classroom, illustrating different facilitation roles:

I had to adapt my role with each individual student. Some students know how to do the math, but just need somebody to be there to encourage them and say “yes, you are right.” “. [sic] Other students need somebody to help them with the social interaction and put them in a group so they can avoid having to make direct contact on their own. My role helped this by assigning them groups, so there were not students left out because they were

afraid to ask somebody on their own. Also, there are students who are not willing to rely on their partners and constantly were asking me for the right answer, rather than their group members, and with these students, I did not say whether they were right or wrong, but encouraged them to wait until their partners had finished and then compare answers.

Although most PAL facilitators incorporated student feedback into their work and adapted their facilitation style accordingly, one facilitator cautioned with relying on such input:

I felt that my students [sic] were expanding their knowledge of the topic from the first day, but they expressed midway that they would rather play games more often, as we seldom did before. I adjusted based on their preferences, but they seemed less engaged, and seemed to learn less in session [sic] when we played games. Additionally, they stopped reading when I began doing this. As a result, I switched back to the types of lessons I did before. But when they continued not to read, I would split up chapters that they should have covered so that each could report individually on that chapter, for the benefit of the whole group.

This response highlighted the iterative nature of reflection and adaptation for many PAL facilitators. They became more sensitive of their own learning preferences as well as those of the participants. Facilitators noted impact of student differences regarding learning styles, academic abilities, cultural preferences, social interaction preferences upon their learning during review sessions and made adaptations as a result. All of this was done with little attention to these issues during formal training to be a PAL facilitator.

Study Session Content and Tone

A third of the PAL facilitators reported they experimented with the “what” of PAL sessions and “how” it was introduced into the sessions. These facilitators identified when they adapted their sessions to include academic content more relevant to course objectives. Several facilitators described adapting content of their sessions for course exams. One facilitator was more intentional about

tying session activities to exam preparation: “I started with more fun activities and discussion then adapted to more exam prep and review. I realized my students found activities most valuable when it directly correlated with grades.” Another facilitator described straying from content of the professor to better prepare students for the exams:

At the start of the semester, my PAL sessions were very similar week in and week out, and I did the exact problems the professor assigned me to do with no questioning of them on my part. As the semester went on, I found students felt assigned problems were too easy compared with the difficulty level of the exams, so I started picking a few of my own problems from the book that I thought were more challenging. This seemed to go over well with the students and they were more engaged during class time trying to figure out the harder problems.

These changes appeared to make session content more relevant and useful for students in the course. Some facilitators aligned their sessions with course objectives, while others explored how to make PAL sessions a more powerful learning experience. A facilitator explained how the addition of humor to the PAL sessions made them more enjoyable:

I think at the end of the day the best thing i [sic] did to facilitate and to adapt to students is to use a technique that they weren't going to get anywhere else. This helped because it was fun and gave them more incentive to come and also, it was a way for them to learn that wasn't boring. It wasn't sitting at a desk (sometimes it was, but not often), it wasn't filling out another boring worksheet, it wasn't me lecturing. It was me joking, it was me laughing, it was me giving them fun things to do, it was me being me and helping them learn in a manner I know I would've loved to learn in when I took the class.

Many facilitators emphasized the importance of setting a responsive and relaxed tone in their sessions. They believed it evoked an atmosphere that fostered higher student engagement. “I tried to make the sessions less stressful and to make it more of a study group

where you knew who your team partners were. Making them feel comfortable asking questions and working was my biggest goal.”

The perception of the PAL facilitator as approachable and open-minded by students projected a positive tone for the session. Facilitators perceived it as important for fostering a higher level of student interaction and engagement. One facilitator believed making students more comfortable was the first step in creating a positive learning environment: “I made sure to make myself accessible as a person so that they might feel more comfortable in the class and outside of it in terms of approaching me, or asking me for help.” Another facilitator placed him/herself in the same position as the students in the group:

I always had an outline of a session planned, and never made an answer key. It allowed so much flexibility, in that we usually did not get to cover all the material I had in mind, and I got input from the student [sic] on what they wanted me to focus on more. It also allowed me to solve the problems right there in front of the students, which may be disarming for some people, but it is much better for the students, because they see that you really know what you are doing, and they can also tell you different problem solving methods from what you are used to.

These facilitators understood importance of linking PAL sessions to exam preparation which increased student motivation since they saw its relevance to increasing their exam grades. Facilitators chose a variety of methods to make the tone of sessions more inviting for student learning: (a) using humor, (b) relaxing atmosphere, and (c) placing the facilitator as a fellow learner rather than an authority figure. None of these received attention during the initial PAL facilitator training.

Adaptation Over Time

Twenty-nine facilitators described how their approach to PAL sessions modified over time. Facilitators reported adapting their sessions over the course of an academic term and some changed plans within the same day. Some facilitators described how, as they became more comfortable, experimented and strayed from the official PAL facilitator approach. One facilitator employed a modified

role because of students' growing comfort with one another:

I also observed that at the beginning of the semester, I felt the need to ask more questions to draw discussion out of the group, but by the end they were more willing to take over discussion for themselves, and needed less prompting.

Facilitators also described changing their approaches to sessions over the course of a day depending on the dynamics of the groups with whom they worked. One facilitator observed the difference in group dynamics between review sessions of different students: "One of my sessions was more individual oriented and the other was more group oriented, so I developed one overall plan for each session, but expanded it to contain opportunities to work alone or in groups at particular points." Another facilitator noted not only the difference between the students in different sessions, but also how the dynamics changed during the academic term:

One section was definitely far [sic] more difficult to facilitate than the other, so I needed to adapt appropriately to cater to the needs of both classes independently. Depending on the class and the time in the semester -- I needed to implement more or less structure. It was definitely interesting realizing how different my role changed from week to week and class to class.

These statements indicated how facilitators were able to think on their feet and adapt their sessions over a short period of time. These decisions to make changes were predicated upon their assessment of individual and group needs and how participants interacted with one another.

Trial and Error

Over half of facilitators summed up their approach to flexibility by citing importance of trial and error within the study session context. One facilitator observed it would be impossible to have been initially trained for all contingencies that could occur during PAL sessions:

I think the best way to learn how to be an effective PAL instructor is to get a basic training and then figure the

rest out on your own. I don't think there is a way to teach a facilitator about all the conflicts that could and do arise in the session, but you can teach them general skills for conflict solving and I think the training did that very well.

Another facilitator stated the best training for their job would be the trial and error in the field and not during the initial training workshop:

Although we were given a plethora of information [in the training sessions], I feel that this job is such that you can really learn when you go and experience it for yourself. The important thing is to keep improving through methods of trial and error and never to let mistakes get you down, but rather to learn and further improve from them.

Other facilitators tried an approach with earlier PAL sessions and then adjusted that approach for later sessions based on what worked well and what did not. One facilitator noted that adjustments made for one PAL session would not necessarily work with one dealing with the same content but with a different group of participants:

I read what the surveys said and implemented some things. I would often even adjust my exact session plan between my first and second sessions, noting what went well and what didn't go well and improving on it for my second session.

These comments highlight the importance of in-class experience in the facilitators' professional development and provide support through trial and error, since the facilitators could not receive what they needed through the official training offered by the PAL program.

Discussion

While the professional literature had already reported that study group leaders could be adaptable before and during their study review sessions, we were surprised at the level of nuanced sophistication the PAL facilitators displayed of this behavior. A majority of the facilitators found the official PAL guidelines that

prohibited direct instruction too restrictive. Facilitators reported this guideline frustrating for participants and unproductive for student learning. Therefore, facilitators adapted their role to provide very limited direct instruction when needed. They employed occasional mini-lectures for a few minutes on a specific topic if participants were unable to resolve questions as a group, regardless of support by the PAL facilitator. These occasions often occurred early in the academic term when students behaved in a more reserved and passive manner. At these times, the facilitator briefly retaught a particular topic to the extent necessary for participants to be empowered to assume responsibility for solving the problem and understanding the new course material. This confirms Speed's (2004) finding that study group leaders sometimes engaged in teaching rather than facilitating.

Facilitators listened to student responses or sought additional feedback and, as a result, modified their approaches. They responded to different learning styles, academic abilities, and cultures of their students in order to best meet their needs. This confirms what Thompkins (2001) found that study group leaders observed needs of the students and adapted their study sessions as a result. This is also consistent with previous research that effective teachers carefully consider the learning context and made modifications in the lesson plans (Joyce & Hodges, 1966; Turner & Meyer, 2000). The UMN PAL facilitators modified content and tone of the sessions, making content align with course objectives or fostering a more relaxed tone to encourage greater student engagement. Adaptation over time emerged as a strong theme, with facilitators making modifications sometimes within sessions, between sessions within the same day, and over the course of the semester. Many PAL facilitators described willingness to engage in trial-and-error within their sessions, and the importance of taking such risks for their own professional development.

Numerous PAL facilitator behaviors coincided with what Peterson, Marx, and Clark (1978) and Westerman (1991) found in planning behaviors of experienced elementary and secondary school teachers. These two studies found novice teachers often focused on content mastery and direct instruction when planning sessions, whereas experienced teachers balanced content mastery attainment

with the complex needs of the students in both the affective and cognitive domains. Consistent with Cognitive Flexibility theory (Boger-Mehall, 1997), PAL facilitators guided sessions so that participants co-created new knowledge and skills.

Peterson, Marx and Clark (1978) and Westerman (1991) also found novice teachers followed learning objectives written by others while experienced teachers often used learning objectives as guides rather than directives. Many PAL facilitators were not hesitant to stray from PAL program guidelines that emphasized facilitation to meet needs of students through short bursts of direct instruction when necessary. Considering student needs when planning and conducting class sessions was another common behavior of experienced teachers (Peterson, Marx & Clark, 1978; Westerman, 1991). The researchers found novice teachers did not often anticipate how student needs might affect implementation of their lesson and seldom engaged in systematic data gathering from the students. PAL facilitators reported diverse methods of gaining information about their participating students and commonly adapted their behaviors to meet different learning styles, academic abilities, cultures, and general needs of the students. Similarly, novice teachers were more likely to use a narrow range of instructional strategies and frequently direct instruction, whereas experienced teachers selected from a variety of strategies. Most PAL facilitators employed a variety of techniques including creative activities and group work. The researchers noted novice teachers employed linear and structured lesson plans, while experienced teachers used more flexible lesson plans that allowed for adaptation based on student reactions. Many PAL facilitators described adjusting their lessons even within the course of a session, suggesting adaptability. A common element of PAL sessions is time for students to engage in small group activities and large group discussions. These provided thinking time for facilitators to engage in reflection-in-action (Leikin & Dinur, 2007) and make adaptations then.

Why did PAL facilitators often behave as experienced teachers? Perhaps it was their knowledge of what was required to earn high class grades that prompted their bending PAL facilitator rules to engage in direct instruction when needed to prepare students for

upcoming exams. Maybe PAL facilitators reflected what they wanted for learning in other courses and replicated it within PAL study sessions. Possibly it was similarity of age of facilitators and PAL participants; PAL facilitators might not define themselves as much different from their students. Another contributing factor might be PAL facilitators were not accountable for high stakes testing that high school teachers experienced that influenced pedagogical choices within class sessions. Finally, it could be lack of formal training as a teacher that allowed PAL facilitators to employ a more flexible approach used by experienced teachers. Exploring this “why” question is fruitful for future research.

Implications

Results from this study can guide experimentation with initial and ongoing training of study group leaders. PAL facilitators often talked how they used feedback from participants to guide revision of future sessions. Providing facilitators a library of feedback gathering strategies could be helpful. Vanmali (2012) concluded from a research study of SI leaders that assessment tools could be invaluable for helping them move participants towards desired learning outcomes. The UMN PAL facilitators have created their own story books of successful session practices (Paz & Lilly, 2014; Walker, 2010). Using these as a model, other colleges could create their own story books based on experiences of their study group leaders. Additional training might be needed for the PAL facilitators to structure sessions that address diverse learning needs and preferences. Understanding how to reflect-in-action during PAL sessions could be useful.

A pedagogically and politically sensitive issue for study group leaders is choosing whether to engage in short bursts of direct instruction in order to meet students’ perceived need for information and skill development. This is a nuanced pedagogy and requires practice in simulations during facilitator training sessions. It also requires commitment by the study group program administrator to officially endorse and shape its expression during the group sessions. Taking direct instruction out of the shadows and engaging in open reflection among facilitators and the program administrators provides an environment for development of effective practices. Selecting

a different phrase other than “direct instruction” is needed to clearly communicate this activity to the study group leaders, course instructors, and other administrators who might become aware of its use. Requiring UMN PAL facilitators to observe their peers in action has been important for them to learn alternative models to plan and conduct their sessions. A short debrief session follows each observation to allow both to share what was observed and ways to implement new ideas in future review sessions. We learned this practice from SI programs and recommend its use with other study review programs.

Limitations

There were several limitations to this study. The first is that this study focused on how PAL facilitators perceived themselves, other PAL facilitators, and participating students. It is possible they made errors in interpreting their PAL experience. The responses by facilitators could have been impacted by intrinsic errors associated with perceptual recall, bias, interpretations, and judgment. By its nature, this research was subject to the limitations of self-reported data. We did not conduct additional follow-up interviews, video record PAL sessions for further analysis, or analyze deeply their weekly reflective journal entries. Second, the majority of college courses served by the PAL program were in science and mathematics. It is possible a wider range of academic subjects served can foster different results. Third, PAL facilitators, participants, and the courses served were at the undergraduate level. It is possible a different experience would have resulted from having graduate students serve as facilitators or classes served at the upper-division undergraduates or graduate level. PAL sessions at an open admission institution might have derived different interactions than those in this study. As discussed in the final section on suggested future research, these limitations present opportunities for others to conduct similar studies at different institutions with different student populations.

Further Research in This Area

Understanding why PAL facilitators behave more as experienced teachers than novices is an avenue of future research. In the discussion section of this article, several theories were postulated

to explain this behavior. Developing a better understanding of this behavior can be helpful for training other student paraprofessionals. Another area for exploration is the PAL facilitators' attitudes and behaviors as they make changes during PAL sessions. What training protocols might enable them to increase their flexibility during PAL sessions, as well as in their preparation for future ones? How can reflection-in-action be used by students serving as paraprofessionals in other areas than academic support? Answers to these questions could possibly would potentially help improve learning outcomes for participating students and contribute to the personal and professional development of the PAL facilitators.

Conclusion

UMN PAL study group facilitators displayed attitudes and behaviors more congruent with experienced rather than novice teachers. This was an unanticipated finding considering they were college undergraduates, with limited training for roles in the PAL program, and were from diverse academic majors. These facilitators informally assumed roles beyond those taught in their initial PAL program training. They were adventurous and inventive with adapting approaches and activities to better meet needs of students, even if it meant crossing boundaries of the PAL program and their officially defined roles. These findings encourage a deeper understanding of beliefs, choices, and professional identity formation of peer study group review leaders. Understanding more deeply the complex process that facilitators employ to prepare for and adapt during study review sessions can guide training practices to increase their effectiveness with improving student grades in historically difficult courses.

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