

PEER-LED TEAM LEARNING LEADER TRAINING

RUNNING A GOOD WORKSHOP TAKES MORE THAN TRAINING THE PEER LEADER

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Introduction

The research project that I presented at the Student Research Conference at the New York City College of Technology in May 2009 was based on my observations while leading a Mathematics Workshop over a 15-week period during the Spring 2009 semester, as well as readings based on materials presented in an independent study course required for first-time Peer Leaders. The objective of the independent study course is to equip workshop leaders with the necessary skills and competence to facilitate peer-assisted learning apart from the classroom settings. The workshop leader is provided with the flexibility to implement techniques and ideas about learning. This helps to discover the hidden ability in the students and to allow them to discover different ways of learning the course material.

I was selected by the Director of the College Learning Center, Miss Judith Rockway, to conduct the Math 1175 workshop (Fundamental of Mathematics), which started on the 4th of February 2009 with nine students and continued every Wednesday from 11:00am to 12:15 pm at the Voorhees Learning Center (the Voorhees Building is where a majority of departments in the School of Technology and Design are located). At the request of the students and after discussion with Miss Rockway, an additional day was included, so the workshop met on Mondays and Wednesdays. The material used in the Math workshop was provided by Professor Arnavaz Taraporevala of the Mathematics Department. The training for the workshop leaders was held once per week, on Thursdays from 12:30pm to 1:30 pm, conducted by Professor A.E. Dreyfuss.

The students in my workshop were not all from the same math class, so they brought diversity to the workshop in terms of what was being taught to them. This brought about challenges for me, the workshop leader. I used this level of diversity to group the students, and this facilitated exchanges of knowledge within the groups. I observed how they interacted with their peers, how they presented information in the workshop, and how readily they were able to transfer prior knowledge into learning new information. The material covered in the Peer Leader training course was continually utilized with the students in the workshop to promote their learning.

Review of Literature

The training course had its emphasis on learning theories, learning styles, the Workshop philosophy, the role of the workshop leader, and group work techniques, and how these ideas influenced the learning process in the workshop setting. The learning theories that I focused on were the Self-Determination Theory by Edward Deci and Richard Ryan (1985), the Experiential Learning Theory by David Kolb (1984), and the Reflective Practitioner by Donald Schon (1987).

Deci and Ryan's "self-determination theory" is based on the external expression of an individual's intrinsic motivation and is hinged on three main intrinsic needs. The first is the need for *competence* and in the workshop setting this ability is demonstrated by the student who displays a sense of independent thinking and is confident that he or she can complete a given task. Students who show no apprehension when new information is presented are manifestations of self-determination. As students willingly share the knowledge that they have acquired with their peers, they confirm their competence.

The second need, *autonomy*, translates to the student who acts as a result of autonomous choice without external interference. Students who act on their own accord without concern for what other people may think of their actions demonstrates autonomy. The student who is always a self starter and is prepared to express his or her understanding of the subject matter even if it is different from what is being expressed by other students is evidence of autonomous behavior.

The third need, *relatedness*, is important to the student in order to establish a sense of how what is being taught is somehow connected to life and what happens around them. The applicability of the information and what the student expects to do in the future will have some influence on how the student grasps that information. The real life experiences of students will impact on the information presented to them and will influence how regular tasks are performed by them.

David Kolb's "experiential learning theory" allows the workshop leader to make informed evaluation of students by assessing the type of learners the students are. How students experience perception, whether through *concrete experience* which relates to how they feel, or *abstract conceptualization* which relates to how they think, will categorize their learning. How the students then process that information will also influence their learning, whether through *active experimentation*, which means that they learn by actually doing the task, or through *reflective observation* where they engage in watching and learning at the same time. The *accommodating* learner who is a combination between concrete experience and active experimentation is one who feels and do in order to learn. The *diverging* learner combines the concrete experience with the reflective observation and is the learner who feels and watches. The *converging* learner, a combination between abstract conceptualization and active experimentation, thinks and does. And the *assimilating* learner who combines abstract conceptualization with reflective observation thinks and watches.

Schon's "reflective practitioner" states that learning takes place from "Reflection-in-Action." If we are conscious of what we are about to do and think strongly about it and about our prior experiences, there is less chance of repeating the same errors and a greater probability of doing better if sufficient reflection in action takes place. Schon also feels that learning should be connected to relevance to prior experience of what is being taught. In many cases we learn by mirroring what we see and being coached as to what to do. In the workshop setting this is how the students get their cue in approaching new information. Schon also states that communication is carried out by both verbal and non-verbal means. In professional disciplines such as engineering and architecture, the task of designing a machine or building, requires a great deal of reflection-in-action: it is not just a matter of designing, but quite a bit of practical application from prior experience that is used to come up with a good design.

Experiences in the Workshop

In the Math 1175 Workshop, modules were handed out to the students and within two minutes there were questions coming from all directions of the room. I observed that the very questions that were being asked were answered at the top of the page, but all the students saw were the math problems. Very few students took the time to read the instructions on the page before attempting the problems.

Students wanted an example problem to be solved before they started to work on the problem; they wanted something that they could follow, and they were not prepared to be self-starters. There was not much “reflection-in-action” and repeatedly the students did not make use of their prior learning. Most students opened their textbooks to do the homework problems but did not take the time to review the information on the topic on which the assignments were based. They were totally dependent on what was presented in their Math class and in the workshop.

There was a constant fear expressed by students of not being “right” and in most cases the students would rather not try to solve the problem than to give an incorrect answer. There was a lack of intrinsic motivation to understand the math, only a desire to pass the course and overcome another “hurdle” to proceed in their studies. Students rarely made associations with prior learning. In some instances methods already learned might have been used but no conscious association was made to that information.

The workshop setting was new for the students: there was the expectation that the Peer Leader should act as a tutor, do problems and provide solutions to the group. Students rarely showed initiative. As Schon (1987) notes, people learn by imitating and not necessarily by verbal communication. From babyhood, children respond to what the adult is doing, even without verbal communication that is understood. Students in the workshop who expected to imitate an example before they attempted the problem demonstrated their unwillingness to commit to acting autonomously.

During the course of the workshop students rarely attempted to recall past knowledge in approaching new material. This situation resulted in students having difficulties in building their knowledge from problems and rules of past modules. According to Deci and Ryan (1985), a lack of competence results in the unwillingness to share knowledge. That was very evident in the workshop setting when students in groups were very quiet during group work since they lacked the competence necessary to share their knowledge with their peers. In such situations the Peer Leader would prompt the students to refer to their notes and their textbooks to remind them of the previous concepts. Some students made the necessary connections to the material presented in the module.

Another observation made during the workshop was the absence of engagement of some students. Those students may learn primarily through concrete experience and would not be able to solve a problem until they did the actual problem on the board. Kolb (1984) suggests that the concrete learner needs to actually do the problem themselves to get a full understanding and appreciation of the material that is presented. The classroom setting does not permit those individuals that time luxury, but the workshop setting with group work provides them an ideal environment. To get students engaged and productive requires that their learning strength be identified and nurtured.

The instructor in the classroom may be intimidating, an authoritative figure: students do not ask questions in the class since that might be misinterpreted as their inability to manage and absorb the material presented. In the workshop, engaging the student through group work improve their competence by facilitating exchanges of new and prior knowledge, which in turn assists students to perform above their normal level of engagement. The social skills of the students are improved through the establishment of various-sized groups. These groupings were rotated during the course of the semester, which resulted in the workshop participants learning to work and discuss with every other students. When social interaction is enhanced and the level of competency is improved through the various interventions that are carried out in the workshop, the students express a level of independence and autonomy which ultimately creates an avenue for in-depth discussion on the subject matter.

Issues in the Workshop

The topics covered in the independent study course provided the necessary tools to me as the Workshop Leader to get the best out of the students in the workshop. The acquisition of these skills made conducting a successful workshop possible. However, with the best of intentions and the requisite skill to run a successful workshop, there is no guarantee that the number of students that have signed a contract to attend workshop will remain stable or improve if the students are not motivated to learn on their own. It was quite evident from the students in my workshop that their main concern was to “pass” the math course, rather than actually learning the material that was presented in the modules. In addition, there was an absence of direct reward from the Workshop Leader – the connection to learning - so the motivation for continuous participation was absent.

The Math 1175 Workshop had 18 students registered at the start of the semester but there was a gradual decline in the number of participants as the semester approached the midway mark, and an even further decline in the numbers towards the end of the semester. By the final four weeks of the semester, the number of students averaged 4 and there were days when only 2 students attended the workshop.

There was an absence of internal motivation to succeed in the Math 1175 course. There was the unwillingness by the students to reflect on what was learned in the past. Work that was covered in the modules and resurfaced in new math problems would generate the response that they had not done this before. This was an indication that the students hardly reviewed their work and that the learning was not internalized. In many instances when a question was asked and students had difficulty in responding, a quick search in their notebooks revealed the solutions to the questions that were posed in the workshop.

One possible solution to improving the success of workshop might be its incorporation as a course component. Making the workshop compulsory would enhance its attendance and thus may be seen as a tangible benefit to serve as a motivator for the students. With proper coordination between the faculty, staff and workshop leaders the outcome of the workshop could be a lot more favorable, and the benefit to the students would be greatly enhanced. Some level of sensitizing the faculty is required to bring them up to speed on peer-led workshop training.

The Learning of the Peer Leader

This article would not be complete if I did not mention what the exposure to conducting the workshop, and the independent study brought out in me. The effect of the learning theories that I mentioned before had a profound impact on me. Take, for instance, the Self Determination theory by Deci & Ryan (1985) which focuses on the external expression of an individual’s intrinsic motivation and the three broad areas that it comprises. Firstly the need for competence changed how I studied after becoming aware of these special qualities. While I always had a thirst for knowledge I was not aware of how it influenced my learning pattern in the past and the true value of the quality of education that I could have by placing emphasis on my competences.

With that awareness from the learning theory I saw a difference in how I approached my studies. The idea of studying for the sake of passing an exam was not my focus; rather the need to be thorough and knowledgeable about the subject and to be in a position to share that knowledge with other students with a certain degree of confidence establishes my competence in the subject matter. Indeed there was a shift in the level of my grades but I was not very concerned as the understanding of the subject matter meant more to me than merely achieving the highest possible grade.

The depth with which I studied now meant that I was able to make more meaningful connection with what I learned and how it relates to everyday life. These learning attributes were not as clear to me before I had the opportunity to study learning theories. Although I saw my interest and manner of learning had a certain bias, the full realization was made through the independent study course which was part of becoming a peer leader for the Math 1175 Workshop. The idea of being able to relate the subject matter to everyday living helped significantly in recalling prior learning that could be used to learn new concepts. That aspect of Deci & Ryan's Self-Determination Theory confirmed the type of learning style that was most appropriate for me based on my own reflection of how I learned in the past.

My conviction and belief in independent thinking and expression of ideas was another area of my personality that was highlighted and confirmed through the study of Deci & Ryan. One's autonomy as it relates to the expression of thought without the consideration for what others may think, and the belief that you are responsible for the outcome of about every undertaking of your choosing was confirmed for me from my own reflective experiences. Sometimes this quality may be interpreted as being stubborn or headstrong or even selfish; however, to be an independent thinker and a generator of new ideas, being "stubborn" is a characteristic that is necessary. For me this has helped in shaping my character and defining who I am as a person.

I was always motivated to do well for my own sake and not necessarily to please someone else or for any particular reward. It was the gratifying feeling that I enjoyed when I accomplished a task or grasped a concept that made me carry on in every aspect of my studies. I came to the realization that in some cases the success of how well I performed did not depend on the grade that I received in an exam but more on the mastery of the subject matter for future use and recall, as well as application to whatever I did. These characteristics were reinforced from my studies of learning theories and further convinced me that I was normal and that learning was more a process than an act.

My exposure to Kolb's Experiential Learning theory consolidated the threads with which I reviewed my everyday experiences and how they were brought to bear on the new ideas that I had to learn throughout my studies. The way that my living experiences established a foundation on which new knowledge was built and utilized made learning more relevant and concrete throughout my studies. The assessment of the student in the workshop setting based on this learning theory equipped me with the necessary evaluation tools to provide effective facilitation throughout the workshop. At the same time I came to the realization of my own limitations and strengths that allowed me to make the necessary adjustments for my learning preferences and styles. Truth be told, I made a number of discoveries about myself during the study of the learning theories that has changed me fundamentally for the better and has helped me mature as an individual.

The ultimate goal is the realization of the transfer of that knowledge in the workshop environment in an effort to better serve the workshop participants. The emphasis on how reflection of prior learning is essential for building new knowledge is critical and must be established from the start of the workshop. The workshop can be viewed as a practicum whereby the peer leader is very thorough and knowledgeable on the subject and provides very good leadership to the workshop attendees. Utilizing the students in the workshop as resource persons helps to give them a stake in the final outcome of the workshop.

To come to the realization of what your learning styles are is a major step in how you as a student can influence your overall performance. The motivation that comes from within must be a strong source of inspiration for success in a workshop, and must be encouraged.

Now that I have left the classroom setting and the workshop environment the workplace has become the new area that these learning skills have been put into use. The consequences of not applying *prior knowledge*

and *reflection-in-action* have far reaching implications. For instance, performing routine inspection on an engine and not remembering to tighten a bolt to the correct specification can be catastrophic, hence the need to emphasize constant *reflection-in-action* while doing your job. The need to recall one's *prior knowledge*, when trouble-shooting a problem that you have encountered in the recent past, emphasizes the need to be a reflective practitioner. These skills have served me well in my present job and will shape the contribution I will make in my working life.

I therefore encourage students reading this article who are interested in becoming Peer Leaders to be willing to examine their learning and in so doing find that they will be in a better position to contribute to the fullest to the Peer-led workshop as facilitators as well as participants.

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