

A case study of peer tutoring program in higher education

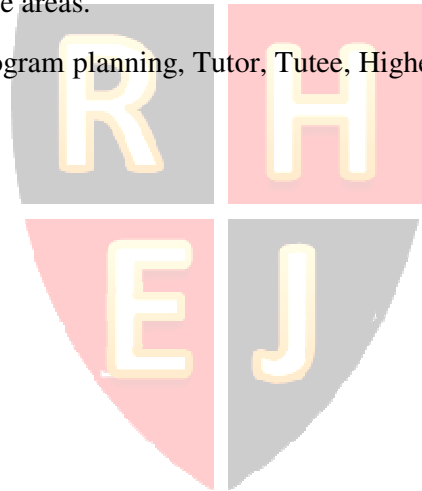
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ABSTRACT

The purpose of this article was to present a plan for a peer tutoring program that was successfully implemented for university students at National Formosa University in Taiwan during academic years 2007 to 2009. There were 12 tutors providing peer tutoring service, through a Teaching Excellence Project, at the dormitory learning resources center (LRC). For the past 3 years, the project has proven to be a true success; tutors now not only work closely with tutees, but they also assist the LRC instructor during training and activity integrated instruction sessions. Peer tutoring with skilled and experienced instructors is one way to promote extracurricular education services for university students. It is also a method for improving educational effectiveness whereby tutors work together to implement strategies through a systematic process. The results clearly demonstrate that the reciprocal peer tutoring program has been successful in regard to tutors and tutees' achievements, motivation and attitudes. Future plans include the LRC providing campus electronic equipment and resource assistance service in reference areas.

Keywords: Peer tutoring, Program planning, Tutor, Tutee, Higher education



1. INTRODUCTION

The use of a peer tutoring program in the extracurricular education of university students has become widespread globally, as universities continue to seek ways to enhance the quality of their services and improve the results for tutees. In studies on universities providing a variety of learning experiences for students, in particular where a peer tutoring program has been adopted, it has proven to be a valuable experience and resource for both tutors and tutees. Lassegard (2008) also found that at a number of universities, there were programs involving academic tutoring in a particular subject taking place between students, usually at autonomous learning centers within universities.

The literature on the peer tutoring program as an effective, best-practice methodology continues to grow, and the proof to become stronger. Peer tutoring and assessment schemes have been successfully implemented in many universities worldwide to promote student learning (Magin & Churches, 1995). In 1982, Cohen, Kulik and Kulik conducted a meta-analysis in which they reported on peer and cross-age tutoring research prior to the past decade. Their results showed a moderately beneficial effect on tutees achievement, and a smaller but significant effect on their attitudes toward the subject matter concerned. In general, tutors help tutees either on a small group or one-to-one basis, encouraging independent learning, developing study skills, resolving specific problems and so on. Peer tutoring involves persons of the same social group or social standing educating one another when one peer has more expertise or knowledge than the others (Colvin, 2007; Hall & Stegila, 2003).

2. PEER TUTORING

Bruffee (1995) asserted that institutionalized peer tutoring, which began as an educational experiment during the 1970s can also be recognized as one method of encouraging more student-centred activity, including: self-corrected learning or informal group discussions, to ensure that they are appropriate, efficient and effective. Peer tutoring is an economically and educationally effective intervention for persons with disabilities that can benefit both the tutor and tutee, socially and educationally by motivating them to learn (Miller, Miller, Armentrout & Flannagan, 1995).

Peer tutoring is a kind of peer-mediated, peer-assisted learning, employing problem solving and systematic teaching strategies to help the disabled student. Further, Dineen, Clark and Risley (1977) emphasized that the opportunities for skill practice and social interaction are particularly meaningful for at-risk students and students with disabilities. The other kind of peer tutoring program: Cross-Age Tutoring is a peer tutoring approach that brings together students of different ages, with older students assuming the role of tutor and younger students assuming the role of tutee. Cross-Age Tutoring has been successfully applied to students with varying disabilities (Hall & Stegila, 2003; Utley, Mortweet & Greenwood, 1997).

Peer tutoring if literally interpreted implies equality of status and merit, which is untrue for many peer tutoring initiatives which refer to encounters between advanced and less advanced students (Saunders, 1992). The tutors are generally left to their own devices in regard to assisting the tutee. Each principle of peer tutoring must be described and taught directly to the tutors and tutees, when peer tutoring is viewed as a system. Looking at the effects on tutors, researchers found a small but significant effect for academic outcomes and for self-concept, and a slightly larger effect for attitudes toward subject matter (Hall & Stegila, 2003). Interaction between tutee and tutor were based on discussions; tutees tended to focus on progressive results, while tutors were more concerned about their tutoring ability, communication ability and interpersonal relationships.

3. PROGRAM PLANNING OF PEER TUTORING

During the past few decades, there has been a growing interest in this variety of student-centered education, along with the view that such education is beneficial not only to those being tutored but also for the tutors themselves (Lassegard, 2008). Program support and commitment are crucial factors for determining whether peer tutoring will get off the

ground and be successful. Most peer programs primarily focus on content, but other programs aim to reduce dropout rates and target high-risk courses rather than high-risk students. In this way, peers are trained in terms of modeling, advising and facilitating, rather than directly addressing curriculum content (Colvin, 2007; Kochenour et al., 1996). The authors used a comprehensive manual to implement the program. Tutoring interchanges ranged from formal teaching in the dormitory LRC to sharing information in social settings, thereby suggesting that concepts be emphasized, in addition to skills related to specific learning strategies and resources.

Best practice involves the use of instructional and management procedures that a researcher has documented to be effective. The most important part of the peer tutoring program planning process is developing a peer tutoring procedure that builds on effective teaching practice and facilitates the tutor-tutee interactions. One promising strategy for promoting academic success is peer tutoring (Delquadri et al., 1986). A Peer Tutor Training Manual developed by Wright (2004) provided guidelines for recruiting and training tutors, managing a cross-age peer-tutoring program, and monitoring treatment integrity. The majority of interviewees stated that having a tutor was valuable, and that they benefited from the tutor's assistance. As far as the tutor-tutee relationship is concerned, a tutor must build a good relationship with the tutee as a friend.

3.1 The role of instructor in a peer tutoring program

The role of instructor must include: providing tutors with resource materials and information to help them improve their tutoring skills, facilitating training and offering follow-up support for tutors. On the other hand, the instructor should also formally address several factors that pertain to implementation: (a) setting short- and long-term goals, (b) structure of the tutor-tutee interactions necessary to teach the knowledge and skill, (c) selection of graduate student as tutor, (d) selection of the tutoring schedule, and (e) selection of the materials for training in teaching skills. In addition to finding qualified tutors, programs also need to organize and coordinate peer tutoring program activities. Therefore, as the instructor's task in the peer tutoring program involves planning, scheduling and implementing tutor training and tutoring sessions, it is important to have instructors possessing good organizational and supervisory skills to ensure the success of the peer tutoring program.

3.2 The peer tutoring program for the tutee

The tutees at the beginning of their course may well need more help and more peer tutoring program intervention. The program has enabled students who live in the dormitory to take more responsibility for their own after school learning, promoted creative kinds of problem solving, as well as developing a more responsible attitude and intense motivation toward learning and self-confidence. Tutees joining the peer-tutoring program may reasonably be expected to learn more on their own, exercising greater choice and pacing themselves.

3.3 The peer tutoring program for tutor

Peer tutoring program practice should be conducted until the tutor can implement the tutoring service independently and accurately; the peer teaching skills and strategies acquired from a tutor should be applicable to a variety of self-oriented learning problems and to resources available on the campuses of universities focusing on lifelong learning for every student.

Tutors' perspectives were grouped into five major categories: communication and relationship issues; tutors' ability and confidence, tutor system administration; purpose and value of the system; and problems as well as suggestions for improvement (Lassegard 2008). There have also been significant benefits for the tutors in developing key skills related to: communication, leadership and team work. Cooperative problem solving approaches will vary according to the needs of the different students, along with the development and use of a variety of delivery methods.

Positive feelings and actions have been observed in tutoring situations in which structured, well-managed procedures are conducted and the tutor successfully facilitates high levels of correct responses on the part of the tutee (Kohler et al., 1985). Relying on trained graduate students to organize and implement the peer tutoring program provided a safe and supportive learning environment for the tutees; some form of compensation or other reward is necessary.

4. THE PRACTICE OF A PEER TUTORING PROGRAM IN A UNIVERSITY DORMITORY

The author was established as an instructor at a local national university undertaking the planning of a peer tutoring program for the students living in the dormitory. The task for the instructor was determining how to deliver effective instruction to these tutors, and the greatest challenge was the creation of the training curriculum for the tutors and integrated it into the dormitory LRC's monthly tutor training program.

One of the aims of the peer tutoring program was to disseminate the tutors' ideas and skills in a friendly and supportive atmosphere. Another was to develop tutors' communicative skills and team work ability in the university. These peer tutoring programs have been used effectively to teach and improve study skills. In each of these areas important information is provided concerning the general success of the peer tutoring program as well as the specific procedures that may need revision in certain situations. The actual operation is described as follows:

4.1 The target of peer tutoring programs

The peer tutoring program accommodated the reinforcement learning mechanism policy of the Ministry of Education of Taiwan; the university had established a multi-functional LRC in the dormitory. This LRC was established in order to extend the learning and peer tutoring spaces for students living in the university dormitory. Peer tutoring program services were offered every day by twelve tutors through the LRC located in the dormitory area. The instructor was there to help guide the lives and careers of dormitory students, and to develop a tailor-made learning strategy based on their background. In addition, the peer tutoring mechanism also aimed to provide consultation for the students concerning their learning courses, and relevant information. The tutors offered their services during regular hours after classes as there is a stipulation regarding extracurricular instruction, they were required to develop the learning environment for promoting learning motivation and enhancing the learning effect.

4.2 The program planning for peer tutoring

Peer tutoring program services were offered every day by twelve tutors at the LRC located in the dormitory area. For the past three years, ongoing support for the tutors has been particularly important because the tutoring process and tutoring relationships evolve over time. The practice of ongoing support for tutors can occur through regularly scheduled meetings which provide opportunities to discuss such matters as: tutoring resources, strategies for tutoring, difficulties encountered in the tutoring process, progress of individual tutees, or other issues identified by the tutors. An electronic newspaper is another great way for sharing ideas and identifying new resources.

4.2.1 Established the learning spaces and financing tutoring

Multi-functional LRCs were established in male and female dormitories, respectively. They provide an English language learning area, discussion area and self-guided learning area, and equipped with the required hardware. Peer tutoring programs require financial resources to cover the costs of salaries for instructor and tutors, tutor training, and tutor follow-up activities. All of the financing support is supplied by Technological and Vocational Education in Taiwan.

4.2.2 The duty of the instructors

The dormitory instructor also takes on the role of administrator, to further the practices of the peer tutoring program. Instructors have the opportunity to emphasize the importance of correct social practice and to integrate this training into the monthly schedule. These practices include: administration of the LRC, planning and animating the topical tutoring activities, tutor interviewing and cultivation, as well as inspections and reporting on the execution results of the programs monthly.

4.2.3 Practice planning of the peer tutoring mechanism

(1) Tutor interviews

Tutors are to be chosen from among graduate students, recommended by teachers or self-recommended. The candidates shall first pass document inspection, and then attend an interview to confirm their understanding of the peer tutoring program, their experiences with course tutoring, as well as their competence and enthusiasm. Interview questions posed to tutors, include: inquiries into tutoring activities; perceived benefits of tutoring; attitudes toward the tutoring relationship and participants' ideas for improving the peer tutor service. This way, the human resource data base on tutors was also built up.

(2) The Reinforcement of tutor's administration and tutoring abilities

Every semester workshops are held periodically and experts are invited to train tutors in regard to improving their interpersonal relationships, as well as their communication, problem solving and administration abilities, while providing an opportunity for tutors to network and learn new skills. The working results of the tutors are assessed monthly for evaluation purposes.

(3) The course tutoring and advisory service of tutors

The dormitory LRC is equipped with course tutoring and advisory services. Tutors of course-specific subjects include specialized and regular subjects (e.g., Calculus, Physics, Thermodynamics, Statistics, etc). The mid-term alert mechanism was initiated, whereby the willing students with poor learning results were offered assistance in facing and overcoming their inabilities, namely tutors providing remedial services to assist these students.

(4) Compensation for tutors

Graduate students undertaking tutorial duty can develop tutoring abilities, results and interpersonal relationships; for tutors, this program is a great opportunity to work in tutor groups, knowledge sharing with each other and receiving different kinds of feedback from tutee group members. In addition, the monthly compensation for graduate students supports the execution of this tutoring program and provides living expenses for the tutors.

4.3 The performance of the peer tutoring program

The implementation of peer tutoring programs can lead to the creation of a new curriculum by providing opportunities for tutors and tutees to discuss how it is working, and to resolve issues related to its implementation. This help tutors and tutees establish goals and select appropriate tutoring strategies to achieve those goals. The first working target of this program is to help the students become motivated independent learners. The key point is to get the students to think more analytically, to consider the inner significance within a question and to employ context clues to upgrade on their understanding and their learning results. The tutees are asked to take on more responsibility and to develop a learning passion for their curriculum, to evaluate their own strengths and weaknesses during the peer tutoring program, and to become aware of their personal as well as academic development at university. This process emphasizes students working out the results, with tutors only providing learning assistance.

The periodic workshops for tutor training include: tutoring skills and practices (listening, lesson planning and demonstration), service attitude of mind, and administration management. Practice demonstrations are also arranged to foster a closer working relationship and friendship between tutors, and links to educational training resources inside and outside the university. The main purpose of the workshops was to establish the self-confidence and competence on the part of tutors to develop the programs.

Tutors provided 2 hours at the center everyday to execute tutoring service and three shifts were arranged. Bulletins were posted on the bulletin boards in every dormitory throughout the entire session, including tutoring times of tutor, personal information, tutoring hours, location, and specialty. The program provided topical tutoring activities, including: rap sessions for continuous learning, employment, exams for professional certificates, interpersonal relationships and career planning. Demand for tutoring came from the students themselves. Students can make tutoring reservations by phone, e-mail, or even directly at the tutoring location.

4.4 Methodology on the Evaluation of Peer tutoring Program

There are several strategies that can be used for assessing the reactions of the tutors and tutees to the peer tutoring experience, as well as to the skills and knowledge gained. Many methods, for example the self-corrected learning and informal group discussions, were increasingly used and evaluated within the center to ensure that they were appropriate, efficient and effective, such as the use of questionnaires and interviews. Effective evaluation provides data necessary for promoting continual program improvement and program accountability. This is a qualitative study supported with quantitative investigation that primarily focused on the examples from peer tutoring program in the dormitory. The LRC served as a platform for increasing interactions between TA and boarding students. In this study, the practice of evaluation of the peer tutoring program included: participant observation, semi-structured interview, as well as actual tutoring data and tutoring reports collected and analyzed during assessment.

The study used the methodology of participant observation, whereby authors: 1. collected the frequency of accessing the resource center, the frequency of tutorial services, frequency of attendance at topical activities, 2. established relationship, 3. recorded notes, 4. analyzed data and developed hypotheses, 5. made a final analysis.

The semi-structured interview was conducted with a fairly open framework that started with a general, open-ended question. Here authors developed the interview plan and decided most appreciate questions for the respondent. Questions included the motivation of student to access the LRC, satisfaction with service offered, ways of facing problems and personal gains from both student and TA. The authors then established relationship, analyzed data and developed hypotheses and made a final analysis along with the information of participant observation.

Self-reports of tutors regarding their tutoring services and the instructor/tutor interview report were also involved in the assessment. The instructor took a random sampling among the students to reevaluate the tutoring results by interview investigation. Gathering additional information from other instructors and students who live in dormitory helped to provide a more comprehensive picture. At the end of each session, a questionnaire investigation was taken to determine the degree of satisfaction for the tutoring services. The recommended items which arose in the questionnaire investigation were followed-up and amended.

5. RESULTS

The program was commenced from 2007. During the first year, 4 studying rooms of LRC were located. These studying rooms are located both in male and female dormitories to reach the students after class. From 2008 to 2009, 2 and 3 additional rooms were sequentially located. These 9 studying rooms of LRC totally were installed 330 learning seats include 175 seats in self-guided area, 95 seats in computer learning area and 60 seats in discussion area. The distribution of the seats is list in table 1. The location and the equipment of learning accessories are designated to provide a reachable and effective learning environment for students after a normal class.

Table 1 List of the total seats of LRC

item	self-guided area	computer learning area	discussion area	total seats
Dorm A (female)	18	20	12	50
Dorm B (male)	70	22	20	112
Dorm C1(male)	38	26	15	79
Dorm C2(male)	49	27	13	89
Total	175	95	60	330

5.1 The utilization of services of LRC

Figure 1 shows the total utilization times of LRC’s services, language learning area’s service and tutor’s service in the dormitories from 2007 to 2009. Look at the LRC’s service, the utilization times of LRC’s service increased 20.7% and 36.1% in 2008 and 2009 respectively, and it can be seen that average times per number of living is increased from 3.81 to 5.18 (total numbers of boarding student was 1,876 during the comparison years). This phenomenon has also happened in the service of language area’s service and tutor’s service. The periodic workshop for tutor training was held every month, and seats and hardware had been expanded annually. It is believed that with the increasing function of services both in hardware and software, the students are more willing to enjoy these services.

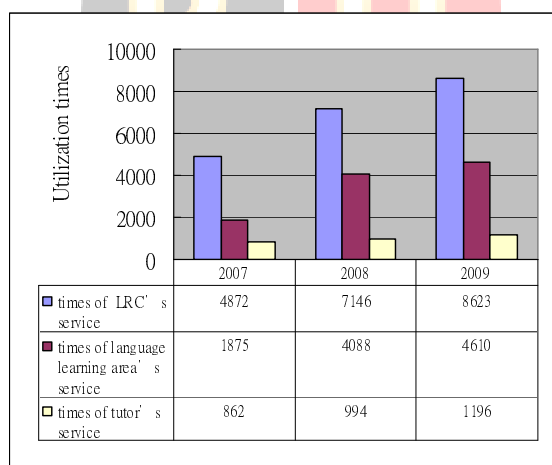


Figure 1. Time of utilization for the LRC services in the evaluation years

The total utilization times of the services in each dormitory are listed in table 2. It shows that language area’s service is much required and tutor’s face to face consulting service was less to be taken by students. This result reveals that being college student foreign language ability is essential during their studying. By the way, times of services utilized by female student are higher than male student. The utilization times of language learning area’s service, LRC’s service and tutor’s service in dormitory A (female) occupied higher rates then the other dormitories (male) even it has only 50 total seats. There is also an interesting finding that students from engineering schools have a high frequency to visit the LRC. Analyzing the living numbers of student, 64% in average is engineering school background (40% engineering school and 24% electrical & computer science school), and these numbers have increased to 75% (58% engineering school and 17% electrical & computer school) in dormitory B. Besides, the times of language learning area’s service is 12.5% and the times of LRC’s service is 33.2% compared to total utilization times of each service in dormitory B. These students are believed to have itch for self-guided learning on

school courses in LRC. Counseling service directly from the instructor is much less comparing with the other services showed in table 2. It reveals that student counting more on peer tutoring, compared to their instructor, and it also potentially means that instructor counseling is required for the communication relationship, confidence and timing management.

Table 2 The statistical results of utilization of the LRC services in each dormitory (January of 2007 ~ December of 2009)

Dorm	No. of Living	total seat of LRC	times of language learning area's service	times of LRC's service	Counseling	No. of tutor	times of tutor's service
Dorm A	578	50	4,613	7,551		3	1,987
Dorm B	598	112	1,681	8,464	303	3	1,599
Dorm C1	325	79	3,743	5,611		3	1,678
Dorm C2	375	89	3,465	3,867		3	1,469
total	1,876	330	13,502	25,493	303	12	6,733

Note: Dorm A is female dormitory, Dorm B, C1, C2 are male dormitories.

5.2 Degree of satisfaction for the LRC services

Questionnaire survey had been taken at the end of each session. 300 samples were surveyed each session and the returns-rates were 83%, 87.3% and 84.7% in 2007, 2008 and 2009 respectively. Figure 2 shows the degree of satisfaction on the function of LRC services students directly showed in the surveys. The survey indicates the overall satisfaction is 81% in average. It reveals that students will be motivated by certain learning environment and facilities when their entering the LRC. The counseling environment results in a relative low degree of satisfaction (65% in average) compares with the others in Figure 2. This can be explained that students are more willing to have a counseling service under an undistributed place. Recommending item also included that an independent room be equipped while students have to be counseled in the questionnaire and interview investigations, and the instructor had reseated the seat of student to back the door in the counseling room. For the tutee's point of view, 68% of tutee believed that their knowledge had obtained and 43% of tutee agreed their self-confidence had enhanced after getting services indicated in questionnaire survey.

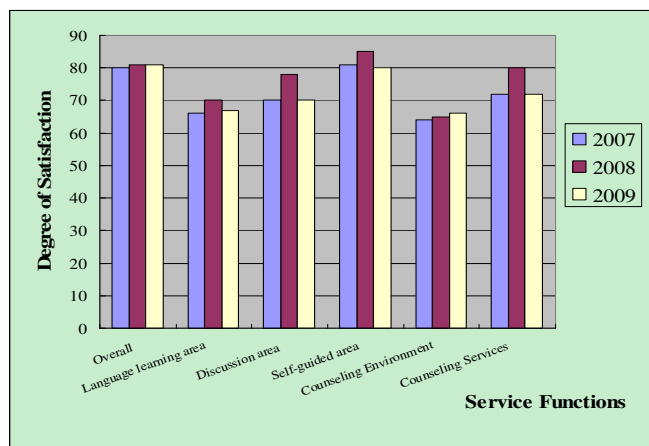


Figure 2 Degree of satisfaction for the functions of LRC services

5.3 Self-reports of tutors and interview report for the LRC services

Tutoring reports were produced by the instructor and every individual TA in the end of each semester. Reports recorded the planning of tutoring services, times of tutoring, types of the questions from tutees, difficulties and solutions, personal gain in workshops and the personal planning for improvement from TA's tutoring services, and recorded the satisfaction of the services of living guidance, career planning, course counseling and the results of workshop training and the LRC's activities from instructor's interviews.

Figure 3, an analyzed result of semi-structured interview, shows the gain of the TA and student from the peer tutoring program. Figure 3a indicates that TAs agreed that they had enhanced confidence, interpersonal relations, communication abilities, team cooperation and knowledge obtained after undertaking tutorial duty. Figure 3b shows that knowledge obtained is the first gain compare to the others after tutee's accessing the LRC services. This result also corresponds to questionnaire survey. The interview result also indicates that students are willing to access LRC, asking questions, promoting the services to classmates. Even more, student is ready to share their story with TA and instructor as a student mentioned "I would like to share my story with him because we had a good talking" during an interview.

There is also a gain from the tutoring program for the knowledge issue of tutor as a TA said "I had to research and digest the questions that students raised during services, sometime it's hard, time consuming, but it's worthwhile". TA's reports also mentioned they had improved their tutorial skills after participating each workshop, and they intended to cooperate with instructor or other TA or tutees to finish their tutorial duties and tutee's questions. As instructor and TA's attending the lodgment meeting for dormitory's boarding student increased, so did they understanding boarding students' learning requirement for LRC. The LRC is then planning to reinforce its facilities such as an extension of opening time of LRC, increasing the seat in each service area, making up the function of utility facilities.

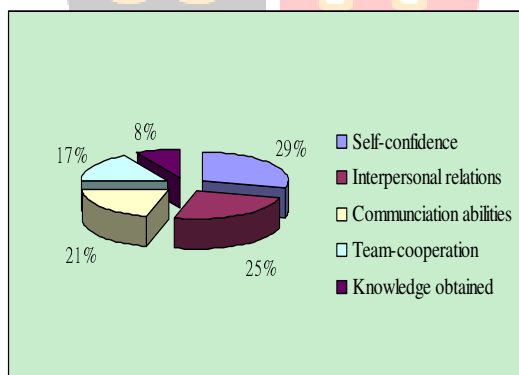


Figure 3a. TA's gains from the providing of tutoring program

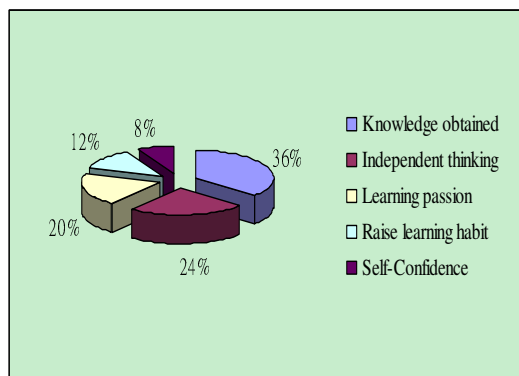


Figure 3b. Student's gains after utilizing LRC's services

6. CONCLUSIONS

The tutor and tutee's relationship is ongoing, developmental and reciprocal; it also motivates individuals to want to learn and grow cognitively. To realize the program benefits of peer tutoring, tutors require strong interpersonal skills, including: relationship building, communication and team-building; tutees can practice their skill in giving corrective feedback to tutors. The authors believe that structured planning, training, evaluation, and problem solving are all necessary components of the program planning process. Most important, it offers instructors an effective way to maximize their instructional influence in the dormitory LRC. When tutors and tutees are organized to help each other in structured ways, the probability increases that both groups will improve their skills and knowledge. Ultimately, it will be through this peer tutoring process that the tutors and tutees increase their self-confidence, skills, and the satisfaction of knowledge obtained. A wide variety of peer tutoring practices can be used and enjoyed in the dormitory LRC.

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