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# BENEFITS OF PEER LEARNING: A STUDY AMONG THE POST-GRADUATE MANAGEMENT STUDENTS IN KARNATAKA

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**Abstract** *Peer learning is a teaching pedagogy wherein students learn from each other by engaging and participating in activities together, without the presence of any implied authority body. This provides an excellent opportunity to the students to self-learn and transmit the available information among peer level. Therefore, it is only natural to welcome a shift in paradigm from the highly teacher-centred to learner-centred education (e.g. peer learning), especially in the field of management education wherein students are expected to take a greater initiative and responsibility to manage their own learning process at a workplace. For the purpose of the present study, the opinion of the post-graduate management students on the peer-learning pedagogy was collected, by administering a questionnaire. Data revealed that the opinion of the students on the benefits of peer learning could be explained by total four factors, such as, Learning in groups, Co-operative Learning, Learning responsiveness, and Enhanced performance. Students felt that peer learning was most beneficial for promoting the understanding of the subjects. Also, students felt that they were least benefitted by peer learning, in terms of the benefits they got from peers' strength.*

**Keywords:** *Peer Learning, Learning in Groups, Co-Operative Learning, Learning Responsiveness, Enhanced Performance*

## Introduction

The concept of peer learning is mainly derived from cognitive psychology, which stresses upon the study of mental processes, such as, attention, perception, creativity, and thinking, in order to explain the process of learning (American Psychological Association, 2013). In peer learning, there is no involvement of any implied authority structures and the whole process is based on democratic environment. Students learn from each other by engaging and participating in activities together without the existence of any sort of hierarchy (Boud, 2001). It is a mode of learning by everyone, about almost anything, and for everyone (Brazil, 2011).

Peer learning includes a wide variety of learning techniques involving learning inside, as well as outside, the classroom. Some of the key peer-learning techniques include, peer or student tutoring, group-based discussions, group projects, student-driven sessions, and online discussions. The major advantage in this type of learning is that it helps in acquiring the practical skills related to application of concepts and giving critical feedback. This is more of a dialogue-based learning, rather than being teacher-led and the major emphasis is on the interactional element in learning with others. This helps in developing the social skills of the learners; particularly, in the team or group-based environment, with a specific goal to achieve within a given time-line. Today, information technology (e.g. computer programs/databases, Internet facilities) has provided excellent opportunities to the students to self-learn and transmit the available information among peer levels (Bohuijs, 1998). Therefore, it is only natural to welcome a shift in paradigm from the highly teacher-centred to learner-centred education (e.g. peer learning), in which students are expected to take greater initiative and responsibility to manage their own learning process.

The objective of the present paper was to investigate the opinion of the post-graduate management students, studying in the private management institutes in the state of Karnataka, on the peer-learning pedagogy.

## Review of Literature

### Why Peer Learning

The dependence, traditionally on lecturing as a pedagogical tool for student learning, has come under criticism due to several reasons. Students in this method become passive receivers of information and teacher dependent for their learning needs. Lecture method mainly stresses on memorization, recall processes with little emphasis on original thinking. Researchers argued that peer learning served as a better tool for adult-learning pedagogy, where the learners learn better in a creative learning environment (for example, Benkler and Nissenbaum, 2006; Corneli and Danoff, 2012).

Following issues need to be kept in mind while implementing peer learning, for the optimal result:

- Creating a favourable environment, based on mutual respect, trust and confidence on each other, is needed. The members must feel free to express opinions, debate, collaborate and help each other (Smith, 1983). The students must learn to become collectively and individually accountable for maximizing their own learning and achievements.
- Learning in small groups is the best possible learning that takes place in such groups and the learners perform better academically, remember longer, feel satisfied with their learning experience, and have better and robust self-esteem (Landis, 2000). The peer support acts as a psychological stabilizer (Brookfield, 1987).

In the context mentioned previoulsy, it may be said that learning should help students to do with what they know (Meyers & Jones, 1993). The ability to create own interpretation and cognizance of the matter of 'learning' is the basis of peer learning. To complete an assignment or learning tasks, students are typically encouraged to collect, analyze, evaluate, integrate and apply information through the peer-learning method, with the major goal on solving a problem. Through a process of 'constructive conversation', students engage in intellectually, emotionally and socially aligning themselves and learning to question one another in peer groups in order to arrive at consensus or disagreement, without being told what to do and how to do it (Boud, 2001). Therefore, peer learning helps in gaining better understanding of people and fostering a multi-dimensional perspective towards human behavioural styles, which would eventually help leaners to adjust better in groups in unfamiliar cultural and social settings, outside their comfort zone. This is especially helpful in the context of adult learning or workplace learning situations.

Researchers have advocated that peer learning helps in enduring positivity and willingness to learn more among adult learners (Guilmette, 2009; Young, 2008). This helps in developing the ability to form effective counter arguments and in questioning of peers with regard to their views. A study confirmed the results of the previous studies emphasizing numerous positive effects of the peer-learning methods in the academic community and suggested that peer learning effectively enhances the students' confidence and learning. Peer learning also helps to develop their future responsibilities (Dehghani et al., 2014).

### Behavioral Outcomes of Peer Learning

Along with knowledge acquisition, peer learning also provides the following benefits to learners:

- Self-directed learning skills inculcate the basis for life-long learning self-induced learning on an on-going basis.
- Inculcates problem-solving capabilities and ability to think critically.
- Enhances the effectiveness of interpersonal communication skills, especially in the context of team situations.
- Helps in developing the power of learning based on peer assessment and critical self-reflection.

However, the effectiveness of peer learning largely depends on the design of the strategy, outcomes, course objectives and the facilitating ability of the faculty member and finally the commitment of the faculty member and students engaged in the process of peer learning.

### Issues in Designing and Implementing Peer Learning

For the success of peer learning, certain issues will have to be kept in mind in terms of design and implementation and only then can such programmes become success for the participants who are the collaborators and stakeholders involved in such a learning process. They are as follows (http://www.clomedia.com/2017/04/13/9-strategies-make-peer-learning-program-thrive/):

- Leveraging common threads among participants: The identification of the common threads, in terms of the roles, functions or issues, help in the process of learning from each other.
- Align around the peer-learning community's purpose: Aligning the learning process of the community to the learners' current context is important for relevant learning to take place without which the purpose of such learning will become redundant and non-reality oriented.

- Focus on what matters most: It helps in clarifying from the peer-learning participants beforehand what is prime on their minds, so that the learning can be made more focused and contextual, and will help in engaging the learners, better.
- Build trust and camaraderie: This is crucial. Informal group meetings and discussions may be necessary in case the learners are in the same groups with some way up in the hierarchy than others. Also, the faculty member must keep records of the proceedings and get the concurrence of all learners for the views being expressed in the learning group. This will help develop a climate of trust and fellowship among the learners.
- Enhance social learning: Through informal set-ups, informal bond is developed, and, helps in developing the bond among learners not only socially, but also, professionally; though, the former may act as a positive element in enhancing the fellowship among learners during the actual learning process.
- Difference is a point of value: When participants differ in their views while discussing, they may be reminded by a skilful facilitator about the common goals that were need to be achieved. The participants may be helped in integrating other' differing opinions/ experiences with that of their own by connecting different parts that may be interconnected as part of their original objective of arriving at consensual views on a given set of objectives common to the learners.
- Capturing insights: Irrespective of attendance by all participants during actual peer learning, keeping a record of ideas, strategies, tools and resources shared by members and preparing summaries of the discussion may be very helpful.
- Make data-driven improvements: Keeping track of data regarding attendance of participants, and the various discussion points, helps the facilitators to improve the programme and make it more learner-oriented.

## Objective of the Study

Based on the previous discussions, the present study made an attempt to investigate the opinion of the post-graduate management students, studying in the private management institutes in Karnataka, on the benefit of peer learning. Based on the existing literature, the following 12 variables were proposed for investigation:

- Understanding of the subjects
- Empathy
- Responsibility for learning
- Learning environment
- Healthy competition
- Benefit from peers' strength
- Accountability
- Better performance of bright students
- Easiness of evaluation
- Adjustment with others
- Improvement in overall academic performance
- Deviation from tasks

The present study had the following objectives:

- To investigate whether the set of variables together was expected to measure the students' opinion on benefit of peer learning.
- To investigate whether the students considered all the proposed variables to opine on the benefit of peer learning.
- To investigate whether the variables can be further grouped into certain factors, which measured the students' opinion about the benefit of peer learning.
- To investigate whether 'better understanding of the subjects' was perceived as the most important benefit of peer learning by the students.

Based on the previously mentioned objectives, following hypotheses have been framed:

Hypothesis 1:

- Hypothesis $1_0$: There is no significant association between the variables in explaining the students' perception towards the benefit of peer learning.
- Hypothesis $1_a$: There is a significant association between the variables in explaining the students' perception towards the benefit of peer learning.

Hypothesis 2:

- Hypothesis $2_0$: The proposed variables cannot be grouped into factors for explaining students' opinion about the benefit of peer learning.
- Hypothesis $2_a$: The proposed variables can be grouped into factors for explaining students' opinion about the benefit of peer learning.

Hypothesis 3:

- Hypothesis $3_0$: 'Understanding of the subjects' is not perceived as the most important benefit of peer learning.
- Hypothesis $3_a$: 'Understanding of the subjects' is perceived as the most important benefit of peer learning.

Hypothesis 4:

- Hypothesis $4_0$: There was no significant difference between the average importance levels given to the variables by the students, under each factor, explaining the benefits of peer learning.

- Hypothesis $4_a$: There was significant difference between the average importance levels given to the variables by the students, under each factor, explaining the benefits of peer learning.

## Methodology and Data Colleciton

The population for the study was the post-graduate students, studying in the private management institutes in the state of Karnataka, India. For the current study, non-probability sampling technique was used. A questionnaire was constructed with 12 items; each item representing a variable that explained the benefit of peer learning. The questionnaire used a 5-point Likert scale (Strongly agree = 5, Agree = 4, Undecided = 3, Disagree = 2, Strongly disagree =1). The questionnaire was administered among 262 post-graduate management students. The respondents were assured of confidentially of data. A total of 208 filled-up questionnaires were received, which in turn, were used for quantitative data analysis. Out of 208, 97 were female respondents and 111 were male respondents, and, 67 respondents had the prior work experience.

Personal interactions were also held with 82 respondents to get more qualitative insight about the data. The data were collected during period from November 2017 to February 2018, from the places, such as, Bangalore, Mysore, Mangalore, Tumkur and so on.

## Data Analysis

The questionnaire was proved to have the required consistency level, in measuring the same (Cronbach's Alpha = .709). In case of all the variables, communalities value was more than .5 (except for the variable 2, where the value is marginally less). Therefore, the percentage of variance in each of the variables met the required levels. The sample supported the association between the total 11 variables in explaining 11 variables (value of KMO is .5 or more). However, for variable 9, the KMO value was less (Table 1).

**Table 1: KMO Values, Communalities, Cronbach's Alpha for the Initially Proposed 12 Variables**

| Variables | KMO value | Communalities | Cronbach's Alpha |
|---|---|---|---|
| 1. Understanding of the subjects | 0.68 | 0.7208502 | .709 |
| 2. Empathy | 0.87 | 0.4820684 | |
| 3. Responsibility for learning | 0.67 | 0.7769668 | |
| 4. Learning environment | 0.69 | 0.7906739 | |
| 5. Healthy competition | 0.75 | 0.6784055 | |
| 6. Benefit from peers' strength | 0.5 | 0.8660171 | |
| 7. Accountability | 0.51 | 0.886776 | |
| 8. Better performance of bright students | 0.58 | 0.8393398 | |
| 9. Easiness of evaluation | 0.36 | 0.8867176 | |
| 10. Adjustment with others | 0.55 | 0.7762157 | |
| 11. Improvement in overall academic performance | 0.56 | 0.7325916 | |
| 12. Deviation from tasks | 0.66 | 0.7823926 | |

In the light of Table 1, variable 9 (variable: easiness of evaluation) was eliminated, for the purpose of further data analysis, and, hypothesis testing.

The questionnaire with the retained variables was proved to have the required consistency level, in measuring the same (Cronbach's Alpha = .699). In case of all the variables, communalities value was more than .5. Therefore, the percentage of variance in each of the variables met the required levels. The sample supported the association between the variables in explaining 11 variables (value of KMO is .5 or more). There was a significant association between 11 variables in explaining the students' perception towards the benefit of peer learning (Table 2). This proved Hypothesis $1_a$.

Further, in order to investigate whether the 11 variables could be grouped into certain factors, a further analysis was conducted. Table 3 lists the eigenvalues in decreasing order and shows the percentage of the total variance accounted for, by that eigenvalue. The first four eigenvalues (all value are more than 1) accounted for 71.11% of the variance.

Based on the eigenvalues (mentioned in Table 3), exploratory factor analysis was used to find the latent factors, which were the resultants of observed variable-grouping. Factor matrix from rotated Varimax (Table 4) revealed that certain observed variables could be listed under a specific factor. The set of variables together was expected to measure the total four latent factors (as per eigenvalues) and the factors were expected to contain the essence of the set of variables. Such variables, with high correlations, had been shown in Bold Font in Table 4.

The nomenclature for the factors, as conceived by the authors, based on the literature, and, the respective variables, were proposed below (Fig. 1).

**Table 2. KMO Values, Communalities, and Cronbach's Alpha for Final 11 Variables**

| variables | KMO value | Communalities | Cronbach's Alpha |
|---|---|---|---|
| 1. Understanding of the subjects | 0.72 | 0.684352 | .699 |
| 2. Empathy | 0.84 | 0.44678 | |
| 3. Responsibility for learning | 0.65 | 0.625588 | |
| 4. Learning environment | 0.67 | 0.79112 | |
| 5. Healthy competition | 0.74 | 0.65906 | |
| 6. Benefit from peers' strength | 0.56 | 0.677761 | |
| 7. Accountability | 0.59 | 0.849616 | |
| 8. Better performance of bright students | 0.54 | 0.818153 | |
| 9. Adjustment with others | 0.51 | 0.778042 | |
| 10. Improvement in overall academic performance | 0.58 | 0.727734 | |
| 11. Deviation from tasks | 0.65 | 0.764175 | |

**Table 3: Eigenvalue and Percentage of Variance**

| Eigenvalue | % | Cum % |
|---|---|---|
| 2.991071704 | 27.19% | 27.19% |
| 2.091555846 | 19.01% | 46.21% |
| 1.443839749 | 13.13% | 59.33% |
| 1.295914713 | 11.78% | 71.11% |
| 0.773510642 | 7.03% | 78.14% |
| 0.601567088 | 5.47% | 83.61% |
| 0.529034899 | 4.81% | 88.42% |
| 0.449925781 | 4.09% | 92.51% |
| 0.358128157 | 3.26% | 95.77% |
| 0.263778025 | 2.40% | 98.17% |
| 0.201673396 | 1.83% | 100.00% |

**Table 4: Factor Matrix (Rotated Varimax)**

| Variables | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 1. Understanding of the subjects | 0.621953 | 0.086393 | 0.5379 | -0.02694 |
| 2. Empathy | 0.256171 | 0.278928 | 0.547859 | 0.05663 |
| 3. Responsibility for learning | 0.211971 | -0.06908 | 0.72405 | 0.227233 |
| 4. Learning environment | 0.85748 | -0.01125 | 0.197516 | 0.129264 |
| 5. Healthy competition | 0.795901 | 0.139148 | -0.01535 | 0.07749 |
| 6. Benefit from peers' strength | -0.52684 | 0.499024 | 0.34867 | 0.172051 |
| 7. Accountability | 0.011147 | 0.904099 | 0.166601 | 0.065889 |
| 8. Better performance of bright students | 0.144998 | 0.891118 | -0.05334 | 0.01388 |
| 9. Adjustment with others | -0.0542 | 0.21271 | 0.135976 | 0.843427 |
| 10. Improvement in overall academic performance | 0.169828 | -0.07945 | 0.035803 | 0.831443 |
| 11. Deviation from tasks | -0.17118 | 0.065125 | 0.854652 | -0.01421 |

| | |
|---|---|
| Factor I: Learning in group | 1. Understanding of the subjects |
| | 4. Learning environment |
| | 5. Healthy competition |
| Factor II: Co-operative Learning | 6. Benefit from peers' strength |
| | 7. Accountability |
| | 8. Better performance of bright students |
| Factor III: Learning responsiveness | 2. Empathy |
| | 3. Responsibility for learning |
| | 11. Deviation from tasks |
| Factor IV: Enhanced performance | 9. Adjustment with others |
| | 10. Improvement in overall academic performance |

**Fig. 1: Nomenclature and the Respective Variables for the Factors**

For each of the previously mentioned four factors, Cronbach's Alpha was more than .6, which proved that correlation is high for all the variables for the respective factors (Table 5). This proved Hypothesis $2_a$.

**Table 5: Crobach's Alpha for Four Factors**

| | |
|---|---|
| Factor I: Learning in group | 0.763 |
| Factor II: Co-operative Learning | 0.723 |
| Factor III: Learning responsiveness | 0.626 |
| Factor IV: Enhanced performance | 0.622 |

When the mean, standard deviation, and coefficient of variation were investigated, it was found that students perceived 'Understanding of the subjects', as the most important benefits of peer learning, followed by the variable, such as, 'Empathy', 'Learning environment', and 'Healthy competition' (each with mean value of more than 4.5, on a scale of 5). *This proved Hypothesis* $3_a$. However, negative skewness was identified in the case of all the four variables. Based on the earlier discussion, one might assume that though the students, in general, opined (common average opinion) that the previously mentioned variables explained the most important benefits of peer learning, some students' opined otherwise. Kurtosis value for 'understanding of the subjects' was much higher than the one expected from normal distribution. For 'learning environment' and 'healthy competition', the Kurtosis value was much lower than normal distribution. Students felt that they were least benefitted by peer learning, in terms of the benefits they got from peers' strength (Table 6).

Further, Hypothesis 4 was tested by using Kruskal-Wallis Test. From the Table 7, it was noted that, the *p* values were significantly less than the level of significance ($\alpha = 0.05$) for all the four factors. Hence, it was concluded that there existed significant differences between average importance levels given to the variables, by the students, under each of the four factors. This proved Hypothesis $4_a$.

The insights gathered from the personal interaction with the students provided support to all the earlier findings. In the 'Discussion and conclusion' section, details of the same have been mentioned.

**Table 6: Descriptive Statistics**

| | Mean | Std dev | Skewness | Kurtosis |
|---|---|---|---|---|
| 1. Understanding of the subjects | 4.788462 | 0.514018 | -2.41798 | 4.929877 |
| 2. Empathy | 4.586538 | 0.762789 | -1.44967 | 0.308641 |
| 3. Responsibility for learning | 3.913462 | 0.407907 | -0.64132 | 2.587699 |
| 4. Learning environment | 4.591346 | 0.68899 | -1.40691 | 0.542879 |
| 5. Healthy competition | 4.649038 | 0.544537 | -1.25014 | 0.597759 |
| 6. Benefit from peers' strength | 3.5 | 0.547281 | 0.44636 | -0.93748 |
| 7. Accountability | 3.706731 | 0.456359 | -0.9148 | -1.17453 |
| 8. Better performance of bright students | 3.644231 | 0.518606 | -0.60198 | -0.57643 |
| 9. Adjustment with others | 3.990385 | 0.651942 | 0.009472 | -0.62223 |
| 10. Improvement in overall academic performance | 3.754808 | 0.484021 | -0.52746 | -0.25971 |
| 11. Deviation from task | 4.076923 | 0.5049 | 0.141275 | 0.856623 |

**Table 7: Kruskal-Wallis Test**

| Factors | *p*-value | Alpha | Sig |
|---|---|---|---|
| Factor I: Learning in group | 0.001005 | 0.05 | Yes |
| Factor II: Co-operative Learning | 3.31E-05 | 0.05 | Yes |
| Factor III: Learning responsiveness | 1.99E-33 | 0.05 | Yes |
| Factor IV: Enhanced performance | 0.000118 | 0.05 | Yes |

## Discussion and Conclusion

Data revealed that the post-graduate students felt that peer learning was most beneficial for promoting the 'understanding of the subjects', followed by 'healthy competition', 'empathy', and 'learning environment' (in terms of average scores assigned to the respective items). Additionally, personal interaction with the respondents revealed that in peer learning pedagogy, students needed to interact with each other, clarify each other's viewpoints, justify and defend own viewpoints, learn from each other, compete with the peer group to prove the worth of his/her points, and were sometimes, required to compromise for reaching on a consensus. This, in turn, led to better understanding of the subjects, developing more conducing learning environment, more healthy competition, and enhanced empathy towards others. Further, it was revealed that the students with work experience tended to be more supportive and empathetic towards their non-experienced peers within the group and informally provided leadership within the group, thus benefiting the later, in terms of 'understanding of the subjects', 'empathy', and 'learning environment'. It was also revealed that probably due to the groups' composition being heterogeneous in nature, (for example, gender, age, and so on), the students had a tendency to impress each other, resulting in 'healthy competition' being fostered in the groups.

Interestingly, students felt that they were least benefitted by peer learning in terms of the benefits they got from peers' strength. On further probing, the respondents revealed that the brighter students in the peer groups were not always forthcoming in helping group members, as they felt that the brighter students wanted to keep the differential going, in terms of academic excellence, which might benefit them, not only in obtaining better grades, but also increased their chances of getting better jobs, during the campus placement.

Factor analysis further revealed that the 11 variables could be grouped into four factors, such as, learning in groups, cooperative learning, learning responsiveness, and enhanced performance. All the four factors explained the students' opinion about the benefit of peer learning. The sample led to the significant consistency levels in measuring the four factors. Significant difference between average importance levels given to the variables by the students under each of the four factors, explaining the benefit of peer learning. One might assume that this was due to certain factors, such as, the varying nature and scopes of subjects, taught in the private management institutes, varying personalities of the individual students, involved in the learning process, the varying styles of individual faculty members in class management, varying weighatage, assigned to peer learning, as an evaluation parameter, and varying communication styles of the individual students.

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