Group Investigations - a Viable Alternative in Adult Education

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Abstract

In a radical departure from the traditional lecture - tutorial mode, a group of 69 registered nurses, enrolled in a two-week intensive summer semester course on research methodology, used group investigations as their major learning mode.

The objectives of employing this approach were to (1) make use of the wealth of practical experience these nurses brought with them to the learning situation, (2) give students control and ownership of their own learning, (3) provide opportunities for genuine cooperative peer group interaction, (4) develop students' organisational and presentation skills, and (5) provide experiences in learning how to learn.

The results showed that, while grades for this group were not significantly different from registered nurses who undertook a normal full semester course, these students reported a preference for the small-group investigative approach to learning.

Introduction

In the last fifteen years there has been an upsurge in research studies investigating the advantages of cooperative small group teaching and learning. The main feature of cooperative learning which distinguishes it from other forms of learning is its emphasis on students working together toward the achievement of a common goal. Such goals may include the preparation and presentation of a research proposal, an engineering working model, video report, historical overview, drama etc. All involve students investigating actively the content of a task, interacting with each other to plan their work, interpreting the sources of material, and making decisions on the final format of the report and its presentation.

There is a wealth of evidence on the advantages of cooperative learning compared with competitive or individualised learning. In particular, cooperative learning experiences:

promote greater achievement;
are particularly suited to higher order thinking, problem solving and cognitive reasoning skills;
produce more positive attitudes;
encourage greater positive attitudes toward peers;
result in greater intrinsic motivation; and promote more cooperative working relationships with other students. (Jongeling, 1988, p. 8-9)

The procedures and criteria involved in implementing different forms of cooperative learning into a wide range of classrooms, subject areas and age levels have been well described by Johnson (1990), Johnson & Johnson (1987, 1991), Sharan (1994), Sharan and Sharan (1992), and Slavin (1990). Unfortunately, all too often tertiary courses follow the traditional lecture-tutorial format to "cover the content of the course", and "there is no time for group investigations".

This paper resulted from the experiences gained through using cooperative small group methods with a group of mature aged, registered nurses enrolled in a summer semester course on research methodology and statistics.

Background

In structuring the summer semester programme, it was decided to adapt the content of the course to small group learning to make greater use of the practical experiences mature age students bring with them to the learning situation. 'Group Investigation' (Sharan, 1994; Sharan & Sharan, 1992) was judged to be the most appropriate cooperative learning method for this course. Group Investigation gives students control and ownership of their own learning and provides opportunities for genuine cooperative peer group interaction. Students collaborate in their investigation, analyse data, resolve conflicts and have opportunities to develop their organisational and presentation skills.

The Participants

Sixty nine registered nurses participated in a two-week, summer semester intensive programme of a compulsory course on research methods in nursing. Their ages ranged from 21 to 55 years, with an average age range of 36-40 years and a modal range of 31-35 years. The majority of students were female (84%) and all were extensively experienced in nursing, the range being 5-29 years, with an average length of 15.6 years and a modal length of 14 years of service. Approximately half of the respondents (56%) were in full-time employment, while the remainder were part-time (41%) or casual (3%).

The Course Content

On completion of the unit students were expected to perform basic
statistical calculations such as simple probabilities, measures of central tendency, dispersion, correlation and hypothesis testing (t-tests, Chi-square and ANOVA); demonstrate an understanding of the principles of research methodology applied to nursing; read and interpret nursing reports that utilise empirical reasoning; critically analyse research studies; write a research proposal; generate research questions, state hypotheses, collect and analyse data; interpret findings; and write a research report incorporating appropriate graphical methods and statistical techniques.

Daily Timetable

On the first morning students were given an overview of course content, assessment requirements, the components of Group Investigation and the roles they were expected to play in successful cooperative small-group learning. Students were asked to select their own groups of 5 to 7 members with whom they would work during the remainder of the two-week course. Since the basic mathematics involved in research statistics posed a perceived threat to most students, it was agreed that the most difficult concepts and calculations be introduced in a lecture situation and students be provided with numerical examples to practise during their computing workshop.

Each morning from 9am to 10am all students would meet together for a lecture on research statistics. From 10.00am to 1.00pm they split into groups, with half the students working on their group projects and the other half developing their computing skills in the computer laboratories. In the 2.00pm to 5.00pm daily session, groups reversed their tasks with those who used the computers in the morning focussing on project work in the afternoon and vice versa.

Group Investigation

According to Sharan and Sharan (1994), Group Investigation comprises four basic features: investigation, interaction, interpretation and intrinsic motivation. All these features are incorporated in the six stages of the Group Investigation model:

Stage 1: Class determines subtopics and organises into research groups.
Stage 2: Groups plan their investigations.
Stage 3: Groups carry out their investigations.
Stage 4: Groups plan their presentations.
Stage 5: Groups make their presentations.
Stage 6: Teacher and students evaluate their projects (Sharan & Sharan, 1994, p. 101).
Each of these stages will be discussed briefly as they relate to the summer semester course on research methods in nursing.

Stage 1: Class Determines Subtopics and Organises into Research Groups

In introducing the course outline it was stated that research methods in nursing for this course would focus on experimental, survey, correlational and historical research. Data collection techniques would include the use of standardised and non-standardised tests, development and administration of questionnaires and interview schedules and observations. An overview of each method was provided and students were encouraged to form groups of 5 to 7 members, selecting a research approach of interest to them and focussing on an area of nursing research of relevance to their daily work.

Examples of research reports in each of the four areas were provided and discussed. Students were encouraged, in their own groups, to generate research problems in their common area of expertise and to focus on one specific research question for their small group work.

Stage 2: Groups Plan Their Investigations

Groups met during the afternoon of the first day to discuss their ideas and views about the selected research area and the particular focus it would take. A preliminary 'research proposal' was generated, the research question was analysed into specific objectives and the procedures best suited to achieve the objectives were identified. Groups distributed selected tasks among their members, decided on the resources to consult, drew up a meeting and reporting time table and arranged for visits to specified agencies, institutions and libraries.

Stage 3: Groups Carry Out Their Investigations

For the remainder of the first week, and for most of the second week, groups worked on their own, using a variety of resources. These included the Battey Library for historical research, the Nursing Museum at King Edward Memorial Hospital, expert personnel in selected areas, conducting interviews and surveys in shopping centres and other public places. The information obtained from these sources was complemented by information obtained from textbooks and University library resources.
Groups met daily to discuss progress, clarify differences, identify new avenues for further information, analyse results of data gathering and plan their proposed report. The lecturer's role was, where necessary, to assist, inform, direct, guide and suggest different approaches. Infrequently, a request was made to resolve an apparent conflict within a group. All groups seemed to have developed mechanisms for dealing with differences of opinion.

Stage 4: Groups Plan Their Presentations

From the initial overview, groups were aware that both a final report, in poster format, and a group presentation to all participants were required for formal assessment. These tasks were necessary so that groups could present the outcomes of their research to the whole class, explain the research methodology used, discuss problems encountered and solutions found. Each group was also requested to prepare a handout for all students which summarised the selected research approach, illustrating it with examples from their research.

Stage 5: Groups Make Their Presentations

During the second week, groups were invited to make comments on the method of assessment. It was decided that the poster and the presentation be assessed by the lecturer in charge, as well as by all members of the 'audience'. An evaluation sheet was prepared and given to all students. This sheet was to be used during the presentations, which were set for the morning of the final day.

Each group was given a maximum of 30 minutes for their presentation and discussions of questions from the 'audience'.

Stage 6: Lecturer and Students Evaluate the Projects

At the end of each presentation the group report was evaluated (a) by all students and (b) by the lecturer in charge in terms of the following scale:

Max. Marks
1. Visual Impact. (Bold or mousey. Does it grab you?) 3
2. Logical layout. (Does it flow?) 2
3. Ease of reading. (Message received and understood?) 4
4. All components of research steps included? 5
5. Participation in presentation. (One presenter or group?) 2
6. Knowledge of subject matter. (Has the group shown a knowledge of the specific topic?) 4
7. Clarity of presentation. (Is the verbal message clear?) 4
8. Reference to poster in verbal presentation. 1
The marks from the lecturer were added to the average mark awarded by the students to obtain a final result for the Group Investigation report. The final grade for the summer semester course was based on a combination of three components: (a) the Group Investigation report score, (b) a final examination covering statistical interpretation of data and research methodology, and (c) scores obtained on analysis of data using statistical packages on the computer.

Evaluation of Group Investigation Model in Nursing Education

Final grades awarded to summer semester students participating in the Group Investigation model were not significantly different from those awarded to mature age, registered nurses undertaking the normal full semester course. However, students reported that the ability to relate their studies to their own work experience assisted them in gaining a better understanding of the role of research in their sphere of nursing. Taking on responsibility for their own learning was initially difficult, but as groups consolidated and after discussion with and encouragement from the lecturer, all groups established their own tasks, set deadlines and benefited from the experience in learning how to learn.

Using the Learning Preference Scale - Students (Owens & Straton, 1980) participants indicated that they preferred cooperative small group learning over competitive and individualised learning. This finding is supported by several studies which indicate an increasing preference for cooperative learning as students progress from primary through secondary and into tertiary and adult education, with a decreasing preference for competitive and individualised learning (Jongeling, 1988; 1995).

Conclusions

The results of this study indicated that cooperative small group learning can be a viable alternative to the traditional lecture-tutorial model used commonly in tertiary and adult education. The registered nurses who participated in this investigation showed a preference for the small-group cooperative approach to learning.

Such a preference has also been recorded in research conducted with second year teacher education students, TAFE lecturers in Graduate Diploma courses and fourth year engineering students (Jongeling, 1988, 1995). In addition to revealing a preference for cooperative
small-group learning, students in the present investigation, together with those in the studies outlined previously, became more responsible for their own learning, encouraged all members of the group to participate fully and formed active working groups.

Successful implementation of group investigation techniques depends on (a) careful and extensive pre-course planning, (b) selection of appropriate 'research' topics, (c) clear statement of objectives, (d) availability and location of resources, (e) development of group investigation skills and group dynamics, and (f) a clear understanding of course assessment and the fairness of the procedures for assessment.

Pre-course planning includes the selection of a number of alternative topic areas which can be incorporated within the unit of study and, where possible, an evaluation of the ability of the group to work and study together. In addition for each of the selected topics it is necessary to identify a range of resource materials and place them on 'closed reserve' for students to use.

Where students do not have adequate group dynamics skills, there are a number of resources available to help students acquire effective group interaction and conflict resolution skills (Johnson, 1990; Johnson and Johnson, 1991). Some of these techniques were used with second year teacher education students during the first two weeks of a semester in which the entire course was presented in a cooperative small group learning mode (Jongeling, 1988).

There can be an apparent unfairness in awarding the same score to all members of a group when individual members of the group know that some do more work than others. This became a major concern with a group of Engineering students who suggested an alternative solution. They decided (i) that each individual group member would provide an estimate of the effort put into the task by himself/herself, and (ii) that each member would provide a confidential estimate of the effort put into the project by each of the other group members. Since in this case each group had a membership of 4 persons, they decided that each member would divide 20 points among all group members on the basis of their perception of the amount of work done. Each group member submitted the results in a separate envelope marked 'confidential'.

References