



Making Group-work Work: Ideas for Teaching Business Studies Derived from Kagan's Cooperative Learning Structures

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ABSTRACT The purpose of this paper is to extend the dialogue about teaching collaboratively in the area of secondary school Business Studies. The paper suggests and describes opportunities for designing and using collaborative learning structures that incorporate Kagan's PIES principles. Examples of classroom group tasks that incorporate positive interdependence and individual accountability, equal participation and simultaneous interaction are given for teachers to adopt or adapt into their practices. The paper concludes by recommending that teachers should strive to design group tasks and group structures that incorporate positive interdependence and individual accountability since doing so will minimise social loafing and free riding, thereby increasing the probability of all students supporting each other in group-work, becoming fully engaged and learning effectively.

INTRODUCTION

Cooperative learning is an instructional approach to teaching and learning that involves groups of learners working together to solve a problem, complete a task, or create a product. The underlying presumption of cooperative learning is based upon the building of consensus, sharing of and acceptance of responsibility by members of the group (Laal and Ghodsi 2012). Although cooperative learning and collaborative learning may be technically different, the terms will be used interchangeably in this paper. This is reasonable, as both favour small-group active student participation over passive, lecture-based teaching and each require a specific task to be completed. There are several academic, social and psychological benefits that are associated with students learning collaboratively over students who learn competitively. According to Johnson and Johnson (2009) such benefits include higher achievement and greater productivity, more caring, supportive and committed relationships and greater psychological health, social competence and self-esteem.

In business education, learning in groups was found to be related to positive attitudes toward learning and group project performance in marketing, accounting, and management courses

(Bacon et al. 1999). Team learning has invaluable benefits that students can reap in their after-school lives in the workplace. Business education students develop the ability to relate to other people, which is an essential ability when doing business. Teamwork has also become an important part of the working culture and many businesses now look at teamwork skills when evaluating a person for employment.

Teamwork skills are not only beneficial academically to students during their time in school, but will serve them well in their future careers. According to Mannison (1997), team skills are particularly important in the business education classroom because it has always been the case that employers universally value workers who can work with others (Green and Weaver 1994 cited in Mannison 1997). Many businesses are utilising techniques such as self-managed teams, staff support groups, production departments, and team outcome-based rewards in an attempt to make every employee a contributor (Elmuti 1997). According to Kokemuller (2018), teams have increasingly become prominent in the workplace as businesses move away from the use of individualised and competitive work settings to the use of work teams. Wulf (2012) had earlier on asserted that many organisations had become leaner, flatter, less hierarchical and

sought to push authority and responsibility down to those who do the work, typically in self-contained teams. The foregoing discussion makes it clear that teamwork skills are a vital element in today's workforce. Thus, students need to realize that in the real world, they will have to work with and for others no matter what. Learning to work in teams while in school and dealing with different personalities and people with different abilities helps students to do the same after school in the workplace (Flavin 2018). Schools in general and business education teachers in particular need to ready students for the job market through modelling workplace environments by utilising collaborative teaching and learning strategies.

Successful collaboration does not always occur. Students working in groups may produce unsatisfactory group work experiences, mainly due to free riding, or social loafing. According to Dommeyer (2007) and Cherry (2018) social loafers or free riders are group members who put forth less effort when they are part of a group in the hope of benefiting from the work of others. Free riding, if not addressed proactively, leads to the lowering of group productivity and the erosion of the motivation of hard-working students. Thus, group-work can be fantastically unproductive because it provides wonderful camouflage for social loafers and free-riders, who, under cover of group-work will slack off, happy in the knowledge others are probably doing the same.

METHODOLOGY

This paper is based on the writer's first hand experiences as a Business Education pedagogics lecturer and observations made of how student teachers on teaching practice attempt to use group work as an interactive teaching method, and often with little success. The paper also draws heavily on Spencer Kagan's work on cooperative learning structures.

How to Make Group-work Work

The idea of group work is seen as the way to improve the results in classroom tasks due to the collective skills, talents and effort of the individual learners in the group. However, social loafing and free riding emanating from a reduced sense of accountability can be detrimental to group performance, productivity and efficiency.

It has been suggested that social loafing and free riding can be prevented if clear rules, guidelines, definition of task and responsibilities that guide group work are put in place. Mariama-Arthur (2014: para 3-5) suggested three essential strategies to increase accountability and discourage social loafing in group work:

1. Group size should be small because when group sizes grow beyond three to five members, the potential for social loafing is high.
2. Individuals in the group should be assigned particular tasks and held accountable for their actions as it directly impacts the overall accomplishment of the group.
3. Let individuals in the group know that the reward achieved isn't just for the group but also individual members.

Mariama-Arthur's suggestions on how to increase accountability and discourage social loafing in group work can be incorporated into group-work if teachers adopt Kagan's collaborative structures most of which are designed to increase student engagement and cooperation in the classroom (Kagan 2003). To achieve this, Kagan created a bank of simple step-by-step activities, or "structures", which if adopted, can give more purpose and engagement to group work.

Core to the Kagan approach to cooperative learning are four basic principles symbolized by the acronym PIES. According to Kagan (2011), positive interdependence and individual accountability are two of the four basic principles of cooperative learning. He used the acronym **PIES** to stand for the four principles: **P**ositive **I**nterdependence, **I**ndividual **A**ccountability, **E**qual **P**articipation and **S**imultaneous **I**nteraction. Kagan (2011) argued that an understanding of these principles by teachers and how to ensure they are in place, how they relate to each other, and how they are built into the Kagan structures can lead to the consistent provision of successful cooperative learning experiences for their students.

According to Kagan (2018) the four critical elements of the PIES principles are:

1. Positive Interdependence which requires that the completion of group tasks should depend on everyone doing their part;
2. Individual Accountability which requires that each student should do their part towards the achievement of a common goal;

3. Equal Participation which stipulates that there be an equitable apportionment of work to be done;
4. Simultaneous interaction which requires that hundred percent of the students should be engaged in the task at the same time.

According to Kagan, once the structures outlined in 1-4 above are in place, no student can hide, no student can fall between the cracks and every student is an active participant in the learning process.

Positive interdependence is one of the most important components of the PIES principles because positive interdependence drives cooperation (Kagan 2011). When students' outcomes are linked and they cannot do a task alone, they work cooperatively with others. Four ways of creating positive interdependence can be identified: Product Interdependence, Reward Interdependence, Role interdependence and Task Interdependence. Johnson and Johnson (2009) identified four effective mechanisms for ensuring a high degree of positive interdependence in group assignments:

1. Product Interdependence which is incorporated when students are required to turn in a group assignment at the end of the activity.
2. Reward Interdependence which is achieved by giving the same grade to each group member for the group's effort.
3. Role Interdependence which is incorporated by having distributed leadership roles within the group, for example, chairperson, recorder, reporter, checker.
4. Task Interdependence which can be achieved by assigning specific tasks to individual group members so that each individual's contribution leads to the complete product.

Positive interdependence and individual accountability are two fundamental principles of cooperative learning which when incorporated in group assignments will guarantee that students work together to achieve a common goal. The students will also depend on each other for support and guidance. Understanding and applying these principles allows teachers to design successful cooperative learning and positive learning outcomes (Kagan 2011).

Collaborative Learning Structures

There are plenty of free ready-to-use team-building activities that incorporate Kagan's PIES

principles which can be found online. Step-by-step structures and other teacher-friendly activities can be sourced from www.kaganonline.com.

Other free resources for teachers are also available online. Cuseo's (2002) "Taxonomy of Specific Cooperative-Learning Structures and Team-Learning Strategies" are available online for free. Cuseo's structures offer student-centred pedagogical practices of collaborative learning, for two or more learners who work interdependently toward a common goal, on a common task which culminates with a consensual decision or creation of a common product.

Iowa State University also has supplemental instruction materials on basic collaborative learning techniques which incorporate positive interdependence which are available online for free. Other collaborative structures abound on the internet.

Suggested Collaborative Learning Structures for the Business Studies Classroom

The writer is a business education teacher trainer and will now take this opportunity to share collaborative learning activities he designed. The activities are based on Kagan's cooperative structures and have been used as teaching aids in his business education methods courses.

Three-Step-Interview

The Three-Step-Interview strategy is a cooperative learning structure that can help develop students' active listening skills, as well as helping to develop their note-taking skills and the ability to share information with others (K-12 Teachers Alliance 2018). Essentially, it's a fun way to encourage students to ask questions, share their thinking, and take notes.

A typical Three-Step-Interview cooperative structure is outlined in Table 1.

Apart from enhancing pupils' communication and active listening skills, the activity in Table 1 also gives students the chance to voice their own opinions, generate answers and fostering accountability. An analysis of the extent to which this activity incorporates Kagan's PIES principles is made in Table 2.

From the analysis in Table 2, it is apparent that Three-Step-Interview activities fully incorporate all the elements of Kagan's PIES principles and by implication, they maximise learner engagement.

Table 1: Three-Step-interview

Lesson Topic: Methods of Primary Research – The Interview

Materials: Three interview schedules on the feasibility of opening an internet café in a school

Task: You have been asked to carry out some research into the feasibility of opening an internet café in your school.

Procedure:

1. Place students into groups of three.
 2. Assign each student a number and a role: Student 1 = Interviewer, Student 2 = Interviewee, Student 3 = Reporter.
 3. Give students three sets of interview questions and let them interview each other using each set in turn. Student 3 records the proceedings of the interview.
 4. Let students rotate roles after each interview.
 5. Let students share the key information they recorded when they were reporters.
 6. Students compile one composite report for submission to the teacher for grading.
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Adapted from: www.kaganonline.com

Table 2: Positive interdependence

Positive Interdependence

Overall each student's contribution is necessary for the successful compilation of the final report. Each will benefit from the grade they will obtain.

- Product interdependence – This is in the form of records of all interview transcripts and the composite report submitted for assessment
- Role interdependence – Each student played roles of interviewer, interviewee, reporter
- Task interdependence – Tasks were apportioned to each student at every stage of the activity
- Reward interdependence – Students in each group will share the same grade after marking of the submitted report

Individual Accountability

- Individual performance was required in allotted tasks

Equal Participation

- Each student did a fair share of work as interviewer, interviewee and reporter

Simultaneous Interaction

- There was hundred percent engagement at each stage of activity
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Simultaneous Round Robin

Round robin and its several variations is one of the simplest and most commonly used Kagan structures. In its basic form, teammates take turns talking or working on an assigned group task. An example of a variant of round robin called Simultaneous Round Robin is outlined in Table 3.

Round robin is a terrific structure for the teacher to infuse active engagement into just

about any part of the lesson. An analysis of the activity in Table 5 will reveal that it has all elements of positive interdependence and the PIES principles.

Pairs Think-Turn Teach

With this structure, even-numbered teams subdivide into several sets of pairs, and each pair learns a fraction of an activity or an instructional unit or textbook chapter. Then each pair

Table 3: Simultaneous round robin

Lesson Topic:

Services offered by commercial banks

Class Activity

1. Ask pupils to form groups of 4 and give each group member one sheet A4 paper.
 2. Assign the following task to the class: *List the services offered to customers by commercial banks*
 3. All 4 pupils respond simultaneously by writing on the paper provided.
 4. After 4 minutes the teacher signals time, and pupils place papers and pens down.
 5. Pupils pass their papers to the next group member, clockwise.
 6. Students continue writing, adding to what is already on the paper (Do not repeat answers).
 7. Continue passing on the papers clockwise until all members' papers go full circle.
 8. Group members refine their answers and compile one list of the main functions of commercial banks which they submit to the teacher for assessment.
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Adapted from: www.kaganonline.com

turn-teaches its fraction of the unit to the other pairs (Kagan 1992).

Pairs Think-Turn Teach as outlined in Table 4 is another Kagan structure that is designed to involve learners in cooperative interaction and to efficiently produce engagement, positive social interactions, and achievement because it incorporates the four basic elements of the PIES principles.

Fan-N-Pick

Fan-N-Pick is a simple Kagan cooperative learning structure that can be used in the classroom to foster collaboration and interaction between students. The focus of this strategy can be to review taught concepts, discuss an issue, demonstrate understanding of content, or share information about a topic. An example from a topic on insurance is given in Table 5.

Fan-N-Pick allows students to switch roles so that every group member takes a turn at each

role. This assures that one team member does not dominate the group, and that team members cannot “hide” and let the other team members take over the work load. This thus prevents both social loafing and free riding.

Team-Pair-Solo

With the Team-Pair-Solo structure, students first solve a problem in an even numbered team. Then the team splits into pairs and each pair works on a parallel or similar problem, with the option of consulting with the other pair if they run into difficulty. Finally, students work solo (individually) to solve a similar problem on their own.

The Team-Pair-Solo activity in Table 6 is an excellent cooperative structure which facilitates involvement of all the students in class activity – simultaneous interaction. By keeping them to learn in mediated learning (team and pair) the students are able to solve their problems which

Table 4: Pairs think-turn teach

<i>Lesson Topic: Communication Methods or Media</i>			
<i>Activity/Workshee</i>	<i>Verbal</i>	<i>Written</i>	<i>Visual</i>
Video conference			
Meeting			
Facsimile			
Television			
Memorandum			
Notice			
Poster			
Telephone			
Email			
Staff newspaper			
Face-to-face			
School newsletter			
Billboard			
Radio			
Skype			
Letter			
Telegram			
Cell phone			
SMS			

Procedure:

1. Ask pupils to form groups of 6 and give each group member 4 group activity worksheets.
2. Subdivide the group into 3 sets of pairs and give 1 activity worksheet to each pair.
3. Assign 1 column of the activity to a pair and ask each pair to place a tick in the box which they think best describes each of the communication methods or media.
4. On completion of pair-work, the group reconvenes Then each pair turn-teaches its 1/3 of the task to the other 2 pairs.
5. Ask the group to compile a final group answer on the fourth worksheet provided earlier.
6. Collect the group answers for grading.

Adapted from: www.kaganonline.com

Table 5: Fan-n-pick

Lesson Topic: Insurance

Teacher prepares 20 question cards on the topic Insurance (see examples below).

What is insurable interest?	What is a no-claim bonus?	What is an endowment policy?	What is meant by the term annuity?
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Procedure

1. Split students into five groups of 4 students per group.
2. Assign each student in each group a letter (A, B, C and D) that corresponds with a role: A - fan/shuffle the cards; B - pick a question from the fanned/shuffled cards; C - answer the question and D - write down the answer).
3. Student A fans/shuffles the cards and says "pick a card, any card".
4. Student B picks and reads the question on the card.
5. Student C answers the question.
6. Student D writes down the answer to the first question.
7. After the writing of the answer by Student D, let the students switch roles.
8. Students compile their answers and present to the whole class.

Adapted from: www.kaganonline.com

Table 6: Team-Pair-Solo

Lesson Topic: Costs of production

<i>Task 1</i>	<i>Task 2</i>	<i>Task 3</i>
A brick factory's average fixed cost is P2 and its average variable cost is P3. If its total cost amounts to P4000, what is its level of output?	A brick factory's average fixed cost is P3 and its average total cost is P6. If its total variable costs amount to P3000, what is its level of output?	A brick factory's average variable cost is P4 and its average total cost is P8. If its total fixed costs amount to P8000, what is its level of output?

Procedure

1. Ask pupils to form groups of 6 and work on Task 1 [Time allowed 6 minutes].
2. Ask the group to break into pairs and work on Task 2 [Time allowed 6 minutes].
3. Finally, the pairs break up and the students work individually to complete Task 3 [Time allowed 6 minutes].
4. Group and pair representatives are invited to come to present their answers to the class.
5. Teacher collects Task 3 for assessment.

Adapted from: www.kaganonline.com

are initially beyond their ability. This is termed social scaffolding, that is, assistance is initially provided, and then it is gradually cut back. The cooperative learning structure fosters teamwork since students depend on each other to learn academic material. Confidence-building in the first two stages of the activity gives students the confidence to tackle problems they might not otherwise have attempted.

DISCUSSION

Students learn a lot from working in groups, but the learning potential of collaboration is often underused in practice (Scager et al. 2016). To maximise the benefits of cooperative learning, teachers are urged to incorporate Kagan's PIES

principles in group activities that they develop. Kagan's cooperative learning structures are research-based teaching strategies which are designed to promote cooperation and student achievement in the classroom. There is conclusive research evidence of the power of the structures to boost achievement, increase achievement, foster the development of social skills and a many other benefits including improving language learning, thinking skills, communication skills and leadership skills (Kagan 2012).

However, Khosa and Volet (2013) argue that teachers must be aware of the fact that just forming and using highly engaging group-work, does not automatically result in better learning and motivation. In their study of students' preferences for collaborative learning, Raidal and Vo-

let (2009) found that students have an overwhelming preference for individual forms of learning rather than group work. Students are hesitant about group work because of the occurrence of free riders, social loafers, logistical issues, or interpersonal conflicts (Hall and Buzwell 2012). In a study on university teaching, Salomon and Globerson (1989) observed although it is widely accepted that positive interdependence has been shown to be crucial in enhancing social interaction, in practice, it has been shown that students often tend to merely go through the motions and choose the solution to group tasks that require the least effort, which explains why positive interdependence often does not emerge.

Nevertheless, despite the benefits attributed to Kagan's cooperative structures, some teachers do not adopt them on a regular basis and a few are reluctant or resistant to try them at all for reasons which Kagan (2012) categorised into four groups: (1) Fear of what might happen if they use the structures; (2) Some teachers' feeling that Kagan structures are not appropriate for their students; (3) The belief that they don't need to change the way they teach; and (4) The feeling that structures are too difficult for them to implement. Kagan (2012), however argues that the structures are easy to implement and that the only real way to put these concerns by teachers to rest is to try implementing those structures that teachers and their students are comfortable with; with repeated practice, he believes that teachers' fears will be found to be unwarranted and the use of the structures will reap the rewards of higher achievement among students as well a greater joy in teaching.

CONCLUSION

Working collaboratively in small groups is known to help to develop many of the key skills that will be required of students for both their academic and their future success in their chosen careers. Research has also shown that collaboration in class leads to greater retention, improved student achievement and increased self-esteem. Working in small groups also provides learners with opportunities to articulate ideas and understandings, to uncover misconceptions and to negotiate with others in order to jointly create products or reach consensus. The most effective use of group work is that which

maximises students' engagement and this can be achieved if teachers strive to design group tasks and group structures that incorporate positive interdependence and individual accountability. These are two fundamental principles of cooperative learning which when applied, will allow teachers to design successful cooperative learning and positive learning outcomes.

RECOMMENDATIONS

The potential benefits of incorporating Kagan's PIES principles have been discussed. In light of this, it is recommended that Business Studies teachers move away from the traditional group-work to using cooperative learning structures that maximise learner engagement as well as boosting student achievement. Instead of teaching students as a whole class throughout the entire lesson, teachers are urged to provide some direction during part of the lesson, and then let the students be in control of their own learning and work by using cooperative structures that incorporate *Positive Interdependence, Individual Accountability, Equal Participation and Simultaneous Interaction*. Over 200 such structures are freely available on the worldwide web, are content-free, and all the teachers need to do is incorporate and/or adapt them into their daily lesson plans.

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