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The Effectiveness of Jigsaw Method of Cooperative Learning in Economics Teachers' Learning

Micheal M. van Wy

Department of Curriculum and Instructional Studies, School of Teacher Education, College of Education, University of South Africa, Pretoria, South Africa

E-mail: vwykmm@unisa.ac.za

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Micheal M. van Wyk

*Department of Curriculum and Instructional Studies, School of Teacher Education,
College of Education, University of South Africa, Pretoria, South Africa*

E-mail: vwykmm@unisa.ac.za

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ABSTRACT Economic education focuses on the scholarship of teaching and learning economics as a subject. This study measures the effectiveness of the jigsaw pedagogy on teachers' learning in economics education through a Training of Teachers (ToT) project. A quasi-experimental design was employed. Two hundred economics education teachers were selected for the project. The Test of Economic Literacy (TEL), Economics Modular Test (EMT) and Attitude towards Economics Test (AET) were used to collect data. Results indicated that there were significant differences between the pretest-posttest scores (TEL, EMT & AET) of the treatment group as compared to the control group with all three data collection instruments. This suggests that teachers exposed to Jigsaw pedagogy as a teaching technique performed better in economics activities. Moreover, classroom observations showed that economics teachers in the treatment groups were more engaged, sharing ideas, receiving immediate feedback on their presentations and were highly motivated during the learning activities. Recommendations are formulated to empower economics subject teachers throughout the Free State province.

I INTRODUCTORY BACKGROUND

In 2010, all curricular outlines and guidelines covering subjects taught in South African schools were replaced by a single Curriculum and Assessment Policy Statement (CAPS) for

each subject. The CAPS policy emphasizes a learner centeredness approach, and requires teachers to make a praxis paradigm shift in employing active and participative teaching methods (Department of Basic Education (DBoE) 2010).. As an all-embracing policy framework, this applies also to the subject of economics.

The CAPS curriculum framework establishes that learners should be encouraged to gather relevant information and to transform such information into marketable knowledge. Again, this is also a specific requirement of the CAPS curriculum policy for economics. Traditionally, economics education has focused on the teaching and learning of economics as a subject. It encompassed the content to be taught, methods of teaching, evaluation of those methods, and information of general interest to teachers of economics at all levels, from elementary through to graduate school.

However, in recent years the teacher centred approach has shown itself to be an effective teaching paradigm which also yields good results in schools. According to Van Wyk (2007), learners must be enabled to identify problems and find creative and innovative solutions to them by relating them to real-life situations. Teachers of economics are therefore required to consider effective teaching approaches, strategies and methods in order to ensure that these objectives are achieved. By employing new approaches, strategies and methods, economics teachers can provide effective enabling teaching and learning environments in such a way as to ensure that knowledge, skills and positive attitudes are optimised among learners in their response to the socio-economic environment (van Wyk 2010).

A range of teaching strategies, methods and techniques is available for this purpose. However, this study will focus on so-called “jigsaw pedagogy” as a specific cooperative learning teaching technique (Borich 1996; Killen 1998).

Slavin (2011) argues that cooperative learning consists of instructional methods by which teachers organize students into small groups that require them to work together to achieve group goals, thereby allowing them to help each other to learn academic content. With Slavin’s approach in mind, Johnson and Johnson (1990) propose that cooperative learning as a teaching approach consists of five basic principles: positive interdependence; promotive interaction; individual accountability; the teaching of interpersonal and social skills; and quality of group processing. Using so-called “jigsaw pedagogy”, a cooperative learning teaching method developed by Aronson et al. (1978), they then argue that these principles are important for enhancing students’ learning abilities.

As part of their study, students were organized in small heterogeneous groups in such a way as to encourage them to break up learning materials into manageable learning components,

to assign individual members of the group to each component, to teach other the specific component which each has mastered, and then work together in combining the components into a coherent whole. Several research studies have concluded that jigsaw learning is effective when it requires each student to become “expert” in a small part of the group assignment by mastering a specific aspect of the learning material, and then to teach other students in the group the material which he or she has mastered.

According to Elliot Aronson (2005), the need for a jigsaw method of learning emerged from a specific social context. He goes on to say that the emergence of this idea shows simple ideas can have a significant effect on student learning. Aronson went on to develop and apply the Jigsaw technique in classroom environments as an approach to supporting the cooperative learning approach. His Jigsaw Classroom website (<http://www.jigsaw.org/>) proposes even more detailed techniques for implementing this approach. The website engages teachers by inviting them to participate in a collaborative process of learning that provides them with a new depth of understanding of the jigsaw teaching strategy.

In general, the jigsaw teaching strategy is a collaborative learning approach that allows individual members of a “home” group to become “experts” in one component of the lesson’s content and then to share it with their group, while at the same time learning the content of other components from the other home group members, each of whom has become experts in his or her own portion of the lesson (Aronson and Patnoe 1997). The technique requires members of each group to work on small problems associated with the assignment, and then to collaborate in producing a final product. The name for the approach derives from the fact that each person works on a piece of the puzzle, with the group as a whole cooperating to put the pieces together, and thereby achieve understanding of the relevant topic. That is, each individual member of the group contributes a solution to part of the puzzle, and the group as whole produces a solution to the entire puzzle.

Aronson’s Jigsaw Classroom also uses this approach. An assignment topic is given to the class as a whole, and the class is then split into groups of between three to six members each. Each teacher is assigned an aspect of the topic within each group. Each teacher then creates a specific report about his or her topic, which is to be presented to the group. As a refinement of this process, each teacher is then required to convene a group that covers their specific topic, which allows each individual to collaborate with others in finalizing his or her report topic. The original groups then reconvene to hear presentations by each group member about his or her respective component; in so doing, each individual learns about another aspect of the overall topic. After the final product presentations have been given, the participants write

a test that evaluates how much they have learned about the topic. The knowledge that participants will be required to write a test about each assigned topic is particularly helpful in creating collaborative and cooperative learning among the individual teachers, as well as among the groups.

This study investigates the impact of the jigsaw pedagogy on economics teachers' learning experiences through a *Training of Teachers* (ToT) programme initiated in the Free State Department of Education (FSDoE). The specific objective of the ToT was to empower economics teachers to plan and implement the jigsaw technique in the economics classroom in Free State secondary schools. The following assumption was formulated for the purpose of conducting this project: *"Teachers exposed to "jigsaw pedagogy" as a teaching technique performed better in economic content knowledge compared to teachers who were not."*

II RESEARCH METHODOLOGY

RESEARCH DESIGN: An exploratory, descriptive, contextual quantitative research approach was selected for the purpose of conducting this study. A quasi-experimental research programme incorporating pretest-posttest design was constructed, making use of matched experimental and control groups to reduce the usual threat of internal validity (Mouton 2001; Gray 2004). Classroom observation was also employed as a qualitative method.

Sampling: A sample of economics teachers in the FSDoE was selected to participate in the research study. The teachers were from the Motheo, Xhariep, Fezile Dabi, Lejweleputswa and Thabo Mofutsanyane education districts of FSDoE. One hundred and forty eight teachers participated in the research study. This represented 74% of the economics teacher population within the five districts of FSDoE.

Training of Teachers (ToT) project: The facilitation team incorporated concept maps into Jigsaw cooperative learning activities in order to assist the facilitators' classroom practice, as well as to help teachers share and organize their ideas (knowledge) with peers. Five phases of the Jigsaw method were adopted for the ToT project.

(1) Selection of participants: The workshops were hosted in the educational districts centres of Bloemfontein, Kroonstad, Welkom, Sasolburg and Harrismith. Each of the five centres administered a fourteen-day workshop for 200 subject teachers, which were conducted by faculty staff during June and September school holidays (2011). The office of the South African Foundation for Economic Education and Financial Education (SAFEFE) recruited 200 teachers following normal local procedures. Eligibility was limited to secondary-school-

level teachers who would be teaching an economics class during the academic years 2011–12. Contrary to normal practice, however, the centres oversubscribed eligible applicants in order to secure enough teachers to populate the workshops. The ToT workshops were organized by SAFEFE personnel at each of the five sites.

(2) Economics topics manual and assignments: Each workshop consisted of fourteen days [weekends excluded] of training and lesson demonstrations using an economics curriculum manual. Each local workshop followed a common agenda and timetable developed by the SAFEFE staff for implementation. The workshop topics included standard treatments of introductory market economics, microeconomics, macroeconomics, international trade (globalization) and contemporary economics issues (DoE 2009). During this phase, teachers studied their assigned topic individually and then drew a concept map to represent the main ideas of the topic. Teachers were expected to have participated in an in-depth study of the topic before joining the expert group discussion that followed. A debriefing session was held at the beginning and end of each day. A 30-minute economics quiz test was written at the end of each day session on each facilitated topic. The individual scores were pasted on the economics quiz table.

(3) Expert group meeting: Teachers working on the same topic formed expert groups consisting of four to five teachers per group. During this phase, teachers shared their concept maps and discussed the main ideas of the topic with other “experts”, and then refined their own concept maps. The purpose of this phase was to facilitate teachers’ development of “expert knowledge” before proceeding to the next phase of the experiment, the Jigsaw group meeting.

(4) Jigsaw group meeting: Each teacher presented her/his topic to their Jigsaw group, while other members of the group were encouraged to ask questions for clarification. At the end of this phase, each Jigsaw group was required to submit a concept map that included all the key ideas of the lesson unit. Groups could complete the concept map either by combining the four concept maps produced by the team members or by redrawing a completely new one.

(5) Class presentation and observations: In order to allow teachers to demonstrate their understanding of the unit, as well as to offer the class opportunities to classify/ clarify their ideas, some Jigsaw groups were randomly selected to report their economics concept maps to the class as a whole. Groups were encouraged to provide feedback on the presentation and provide additional questions for teachers to discuss their concept maps in their groups. Contrary to the ‘traditional’ Jigsaw method, the learning materials provided for teachers in this study were not limited to paper-based materials. During the third unit (contemporary

economics issues such unemployment), for example, we used an instructional video to present the concepts included in the second phase (individual study), and a role-playing video with a worksheet at the fourth phase (Jigsaw group meeting) to enhance group discussion. We also provided teachers with worksheets to guide their work and to record their results.

Data collection research instruments: Three research instruments were used. Firstly, the Test of Economic Literacy (TEL), a standardised test of economics content was employed. The TEL is nationally norm-referenced test used in the United States for first-year economics classes at university level (NCEE 2005). Secondly, the Economics Modular Test (EMT), which covered all six units of the seminars of the ToT project. The EMT content was macroeconomics, microeconomics, contemporary economic issues and globalization, based on the CAPS for grades 10. Thirdly, the Attitude towards Economics test (AET) was used to measure goal orientation, self-efficacy, intrinsic motivation toward economics, and cognitive processing. Lastly, classroom observations [an observation sheet with specific criteria] were used during group discussions and presentation to assess the treatment and control groups.

Ethical considerations: Consent was obtained from the FSDoE, secondary school principals and economics teachers before the study was begun. An official FSDoE letter explaining the purpose of the study was attached to the questionnaire. The letter also highlighted the confidentiality of any results deriving from each teacher's participation.

Data collection instrument: A four-point Likert scale questionnaire was designed on the basis of an extensive study of the relevant literature. It was completed by 200 economics teachers in Free State secondary schools. The items in the questionnaire were designed to collect (a) attitudes; (b) performances; and (c) classroom interactions during the Jigsaw pedagogy information, as well as to determine how each teacher's use of cooperative learning techniques in economics teaching during treatment and control groups. The reliability of an instrument indicates the accuracy with which a sample represents the broader universe of responses (Cohen et al. 2009; Gray 2004). According to Cohen et al. (2009), this depends on the accuracy and precision of the measuring instrument.

III RESULTS

A comparison of the results of the two groups on their attitudes, performances, and classroom interactions during the Jigsaw cooperative learning activities was conducted.

- **Teachers' attitudes towards learning activities using the jigsaw pedagogy**

Teachers in both the treatment and control groups were asked about their perceptions of the learning activities in the post-experiment questionnaire. They were asked to fill out a questionnaire by checking responses on a four point-Likert scale. A t-test was performed on the rating scores in order to compare teachers' attitudes between the two groups. The statistical results obtained are presented in Table 1.

Table 1 Teachers' attitude towards learning Jigsaw activities (n=200)

Q-no	Question statement	Group type	SA & A (%)	D & SD (%)	Mean	t-value
1	I like Jigsaw cooperative learning	Treatment	87	13	3.3	3.11**
		Control	51	49	3.0	
2	The Jigsaw expert group meeting is helpful	Treatment	51	49	3.4	2.73**
		Control	48	52	2.4	
3	I like to use economics concepts in Jigsaw learning	Treatment	58	42	3.8	2.97**
		Control	44	56	3.0	
4	Drawing economics concept maps is very easy	Treatment	59	41	3.7	2.2*
		Control	47	53	2.9	

*p<0.05; **p<0.01

Scale: SA=Strongly agree, A=Agree, D=Disagree, SD=Strongly disagree

Overall comparison of the data in Table 1 revealed that more teachers in the treatment group had positive perceptions about jigsaw cooperative learning activities than those who did not (87% vs. 13%). No teachers in the treatment group said that they disliked cooperative learning activities, while 49% of the control group indicated that they 'disliked' Jigsaw techniques. Furthermore, the t-test results revealed that there were significant differences in teachers' attitudes ($t=3.11$) between the two groups. More members of the treatment group liked Jigsaw cooperative learning activities (Question 1, $t(100)3.11$, $P<0.01$) than did not, and considered the expert group meeting in the Jigsaw method helpful (Question 2, $t(100)2.73$, $P<0.01$). More of them also found that drawing concept maps was easier when using the handheld device (Question 4, $t(100)2.2$, $P<0.05$).

A significant difference was found, however, between the two groups regarding whether they liked using concept maps when learning (Question 3, $t(100)2.97$, $P<0.01$). More teachers in the treatment group said that they liked to use concept maps (SA & A, 59% vs. 47%) while fewer teachers disliked it (D & SD, 41% vs. 53%). Classroom observations showed that economics teachers in the treatment group were more engaged and highly motivated in the learning activities than those in the control group. They were much more concerned about

completing each stage of the learning activities in time, especially at the final stage, when they were required to upload their project assignments to the class notebook.

The nature of the control group was much like that of a typical class session – some teachers actively participated in learning activities, while others were more reluctant to get involved. Other teachers were, simply, ‘recruited’ by their group members. All the instructional components – the facilitator, the learning time, Jigsaw method, and the learning economics contents – were the same in the two groups.

- **Test performance scores on teacher learning**

Test performance compared the learning performance outcomes of the two groups by analysing the scores achieved in the three tests (TEL, EMT, AET) completed by the teachers during the last lesson unit. In all the training units, facilitators first showed teachers an instructional digital video on the basic economic concepts of modular units [demonstration of economic lessons].

Table 2 Pretest-Posttest scores on three instruments

Data collection instrument	N	Cronbach alpha $\alpha=.7$	Pretest		Posttest		Outcome		
			Treatment	Control	Treatment	Control	% Change	t	Sig. (2-tailed)
TEL	200	.891	59.5	48.8	73.1	58.8	36.0	3.24**	0.000*
EMT	200	.794	57.1	50.9	66.3	63.9	22.3	2.09*	0.003**
AET	200	.811	67.5	50.8	74.1	55.8	23.0	1.656	0.000*

*Test= 100 scoring; *p<0.05; **p<0.01; $\alpha=0.7.0$

Table 2 shows a summary of the results of teachers’ performance in the three tests. All three instruments met the Cronbach alpha reliability test ($\alpha=0.7$). The treatment group (TEL=59.5; EMT=57.1 & AET=67.5) outperformed the control group in all three test instruments. Results indicated that there were significant differences between the pretest-posttest scores of the two groups. The treatment group achieved higher scores as shown in the Table 2. The results are as follows,: TEL, EMT & AET, $t(100)3.24$, $P<0.05$; 2.09 , $P<0.01$ & $P<0.05$.

- **Economics teachers’ interactions during group discussions**

Table 3 compares group interactions as regards behaviour amongst the participants and the facilitators. Several research studies conducted on the Jigsaw approach have shown that interactions may take place in a variety of ways, such as exchanging resources, providing or seeking information on the project, giving and receiving feedback and encouraging group members (van Wyk 2010; Maloof 2004; Aronson et al. 1978). To examine the interactions among teachers, the researcher has studied digital recordings of group discussions that took place during groups research projects. The results are analyzed below.

Table 3 Group interactions during discussion groups (n=200)

Question	Group behaviour	Group type	F	%	Mean	t-value
5	Exchanging information	Treatment	44	22	3.9	
		Control	33	16.5	3.2	
6	Receiving feedback /Support from facilitator	Treatment	16	8	2.1	
		Control	20	10	2.4	
7	Encouraging group members	Treatment	40	21	3.3	
		Control	20	10	2.4	

*p<0.05; **p<0.01

Scale: SA=Strongly agree, A=Agree, D=Disagree, SD=Strongly disagree

The percentage figures in Table 3 were calculated by dividing the frequency [of interaction?] by the total number of units of analysis in each group's behaviour and how it was observed per group. With both groups, these results showed that exchanging information was the most noticeable interactive behaviour, which is one of the Jigsaw cooperative learning characteristics. Data reflected that the treatment group exchanged more information during group discussions (treatment group =22.0% vs control group =16.5). As regards the data in Question 7, the treatment group demonstrated twice as much interaction per group activity (21.0% vs 10.5%) than the control group. The control group only showed a better score in Question 6, which reflected the degree to which they received feedback and support from facilitator (8.0% vs 10.0%).

- **Teachers perceived interactions in the group learning activities**

Table 4 summarises the results regarding treatment group and control group perceptions on the quality of interactions among participants during the learning activities.

Table 4 Teachers perceived interactions in the group learning activities (n=200)

	Question statement	Group type	SA & A (%)	D & SD (%)	Mean	t-value
8	I/We had good interactions with other members in our group	Treatment	97	3	3.9	3.67**
		Control	69	31	3.0	
9	I/We had good interactions with the facilitator in our group	Treatment	81	19	3.6	2.79**
		Control	68	32	2.4	
10	I/We like to work together with my/our group members using economics concepts	Treatment	88	12	3.6	2.77**
		Control	74	26	3.0	
11	I/We built good relationships and could depend on each other to succeed in our group activities	Treatment	90	10	3.7	2.1*
		Control	67	33	2.9	

*p<0.05; **p<0.01

Scale: SA=Strongly agree, A=Agree, D=Disagree, SD=Strongly disagree

Table 4 presents data regarding teachers' perceived interactions with each other while participating in economics activities. The treatment group perceived better group interactions with their peers during group learning (Question 8, $t(100)=3.67$, $P<0.01$; Question 9, $t(100)=2.79$, $P<0.01$ and Question 10, $t(100)=2.77$, $P<0.01$) as compared to the control group. Ninety-seven percent of the treatment group agreed that they had good interactions with other members in their groups, as well with facilitators (81%). They also said that they liked working with their group members (88%) using economics concepts (Question 8 and 9, SA & A).

Teachers in the treatment group exchanged ideas and engaged in interactions with their group members more consistently as compared to the control group. In Question 11, $t(100)=2.1$, $P=0.05$, the treatment group indicated that they had built good relationships and could depend on each other to succeed in their group activities (90%) in the group learning activities.

- **Classroom observations during ToT project activities**

It was observed that teachers in the Jigsaw treatment group always used mind maps to exchange concept ideas with fellow team members while participating in the selected expert group. Group dynamics clearly show that members shared ideas, agreed and work collaboratively to achieve specific objectives for the task; as a result, positive interdependences were created within expert groups.

It was also observed that the expert group exchanged excellent ideas regarding the structuring of different economics mind maps. During the overall group presentations, the treatment

groups were easily able to obtain and review other groups' mind maps. Members of the treatment groups gave more constructive feedback to and received more constructive feedback from other members of the group, resulting in more effective interactions during group discussions.

A photocopying machine, four laptops and internet usage were made available to each group for use while exchanging mind maps or information relating to their lesson presentation. An "ice-breaker" was used by session facilitators to trigger interest for group discussions for a specific topics for example-poverty in the community at the beginning of each unit of the workshops.

It was observed that teachers began conversations by exchanging ideas on their mind maps and other information. Groups presented their concept maps covering several contemporary economic topics that had been facilitated during the ToT sessions. Mind maps were pasted on the classroom boards and walls, allowing other groups to observe each group mind map structure. The ability to share their mind maps instantaneously with others was motivating, enabling teachers to receive almost immediate feedback on their mind maps. In addition, teachers became more involved in their own groups' task because they were able to compare other groups' concept mind maps with their own,. It was further observed that group competition occurred on several occasions.

IV DISCUSSION OF RESULTS

The results of this study indicate that there were significant differences between the treatment group as compared to the control group as regards the pretest-posttest scores (TEL, EMT & AET) of all three data collection instruments. This suggests that teachers exposed to the Jigsaw teaching technique performed better in economic literacy compared to teachers who were not.

We can therefore conclude that the Jigsaw pedagogy used in this study impacted significantly on teachers' learning in economics education. Moreover, classroom observations showed that economics teachers in the treatment groups were more engaged, sharing ideas, receiving immediate feedback on their presentations and were highly motivated during the learning activities.

The study showed that the Jigsaw method is an effective, powerful and applicable tool for the teaching of economics. In this it concurs with other studies in which concepts rather than skills were the learning goals (Slavin 1995; Aronson and Patnoe 1997). Moreover, Maloof

(2004) suggests that the Jigsaw technique may also reduce test-taking anxiety, improve student attendance, and promote active participation in learning.

The results of this study are consistent with student reactions to cooperative learning groups discussed by other researchers (Yamarik 2007; Vaughan 2002). In a previous study (Tran and Lewis, 2012), students in the cooperative learning group showed greater achievement and knowledge retention than those in the control group. In the present study, the teachers in the treatment group reported more effective learning in groups, more helpfulness and mutual teaching, more discussion of the learning material among participants and a greater level of information exchange than they had experienced in traditional teacher-centered classrooms.

In this study, classroom observations during the ToT project also encompassed the social benefits of cooperative learning identified by Johnson (2003) and Slavin (2011). Students in the treatment group recognized that there was more mutual concern among students when they worked together in a cooperative learning group. They believed that each member was responsible not only for his or her own learning but also for others' learning to achieve the shared goals of the group.

Research has shown that interactions during group work may occur in a variety of ways, such as exchanging resources/information, giving/receiving help/feedback, and challenging and encouraging other students (Yamarik 2007). During this study it was observed that teachers in the Jigsaw treatment group always exchanged concept ideas in mind maps with team members when participating in the selected expert group. It was also observed that members of the expert group really supported and exchanged each other's ideas regarding the structuring of different mind maps. On the other hand, the control group members were less interested in each other's concept mapping and sharing of ideas.

The present study appears to support Johnson and Johnson's (2009) findings that achievement and attitudes in the cooperative learning context are strongly correlated. Specifically, the Jigsaw cooperative learning method spurred teachers to greater levels of achievement, which in turn had a positive impact on their attitudes to teaching. The results of this study concur with previous studies that show that teachers' ability to share their work instantaneously with other teachers in the group is motivating because it allows them to receive almost instant feedback on their work (Norris and Soloway 2004).

V CONCLUSION

Results indicated that there are significant differences between the pretest-posttest scores of the treatment group as compared to the control group in all three data collection instruments.

This implies that teachers exposed to the Jigsaw pedagogy as a teaching technique performed better in economic literacy compared to teachers who were not.

The Jigsaw pedagogy used in this study impacted significantly on treatment group teachers' learning in economics education. Moreover, classroom observations showed that economics teachers in the treatment group were more engaged, sharing ideas, receiving immediate feedback on their presentations and were highly motivated in the learning activities.

It was observed that teachers in the Jigsaw treatment group always used mind maps to exchange concept ideas with team members during the selected expert group. It was further observed that the expert group was supportive of the exchange of ideas in different mind maps. On the other hand, members of the control groups were less interested in each other's concept mapping and sharing of ideas.

VI RECOMMENDATIONS FOR FURTHER RESEARCH

The findings of the present study indicate the positive effects of cooperative learning on economics teachers' attitudes toward their own learning, as well as towards the instructional method of cooperative learning. However, it is difficult to demonstrate a generalisable effect on teacher attitudes from a single experiment of short duration, such as that reported in this research study. In addition, attitudes are both abstract and subjective, and it is therefore difficult to measure changes in attitude over a short time.

A more prolonged and extensive treatment may be needed to confirm that using the Jigsaw method brings about radical changes in teachers' attitudes. To achieve more conclusive findings, the attitudes of teachers toward cooperative learning should be studied not only by means of questionnaires but also by undertaking observations and interviews. It is therefore recommended that further research studies should be conducted during which groups are rotated and members' group membership changed following each lesson. A series of further studies on cooperative learning at the secondary levels (grades 10 to 12) of economics education should therefore be undertaken.

Positive results were measured but several shortcomings are identified:

- The SAFEFE programme co-ordinator needs to be more selective in choosing or screening candidates' applications for the Training of Trainers programme. Some of the participants lacked adequate knowledge and skills in economic literacy, which hindered their full participation in the seminars. The examples and economic data used in the ToT-training manual also need to be representative of participating countries.

- ToT programme facilitators should consider fewer sessions per training seminar. The session overload per seminar compromises the quality and delivery of the training presented by the ToT- training staff.
- Examples and economic data used in the ToT training manuals need to be representative of South African participation, and aligned with the new Economics CAPS curriculum. The applicability and relevance of learning material needs to be carefully adapted to the South African economic and school curricular context.

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