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Enhancing collaborative competence and learning motivation through group investigation in civic education

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ABSTRACT

Many Civic Education courses in higher education suffer from low student engagement, primarily due to passive learning models that limit motivation and collaborative interaction. Although cooperative learning strategies have been widely studied in primary and secondary education, their integration into civic-oriented university courses remains underexplored. This study investigates the application of the Group Investigation (GI) model to improve university students' learning motivation and collaboration in Civic Education. Employing a participatory action research approach in a higher education setting, the study was conducted in two cycles involving 68 undergraduate students enrolled in a general education course. Data were collected using observation sheets, questionnaires, interviews, and documentation. Quantitative data were analyzed using descriptive statistics and paired-sample *t*-tests, while qualitative data were examined through thematic analysis. The results showed a statistically significant improvement in students' learning motivation (from M = 73.7 to M = 84.2, $p < 0.001$) and collaborative character (from M = 71.4 to M = 83.6, $p < 0.001$). These findings suggest that the GI model supports both the affective and cognitive aspects of learning by promoting student autonomy, inquiry-based dialogue, and mutual responsibility. Theoretically, this study contributes to the literature on cooperative learning in higher education and the design of democratic learning environments in Civic Education. Practically, it offers an adaptable model for educators seeking to develop soft skills through group-based inquiries. The research implies that integrating cooperative methods into civic education may offer a viable pathway for developing character and motivation in future professionals.

Keywords: group investigation, learning motivation, participatory action research, citizenship education, collaborative learning.

1 INTRODUCTION

Higher education plays a strategic role in shaping graduates who are not only academically competent but also equipped with essential soft skills, such as motivation, collaboration, and social responsibility. Civic education, a compulsory subject in Indonesian universities, holds significant potential for fostering these qualities. However, in practice, civic education is often perceived as less relevant by students from non-social science disciplines, leading to low engagement and a lack of enthusiasm in the classroom (Suhaida & Fadillah, 2019). This situation limits the course's capacity to nurture civic values and interpersonal competencies, a concern echoed globally in studies on disengagement in general education courses (Fredricks, Blumenfeld, & Paris, 2004).

Preliminary observations and interviews with students in the Sports Coaching Education Program revealed two main issues: low learning motivation and weak cooperative behavior during group activities. Students often show passive attitudes, pay minimal attention to group discussions, and are reluctant to participate actively. These findings are consistent with those of Putri, Darmuji, and Hasanah (2024), who noted the negative impact of teacher-centered instruction on student motivation and engagement. Similar trends have been reported in international contexts, where surface-level teaching strategies have failed to promote intrinsic motivation (Ryan & Deci, 2000).

The cooperative learning model, particularly the Group Investigation (GI) approach, has emerged as a promising pedagogical alternative for addressing these challenges. The GI emphasizes student autonomy, group collaboration, and investigative inquiry, fostering active and democratic learning environments. Suja, Putra, Yasa, and Kanca (2024) showed that GI enhances understanding of civic values such as Pancasila through collective exploration and performance-based tasks. Internationally, cooperative models have been linked to increased academic motivation and deeper learning outcomes in higher-education settings (Gillies, 2016). In line with this, Alfajriah, Fahri, and Yono (2024) found that GI had a positive impact on student motivation and academic achievement in civic education at the primary level. In higher education, collaborative learning environments have been shown to stimulate cognitive engagement and foster social and emotional growth (Laal & Ghodsi, 2012). The GI's focus on shared responsibility, peer-to-peer interaction, and real-world relevance aligns with Slavin's (1996) findings, who emphasized that cooperative learning promotes both knowledge acquisition and character development.

Despite the recognized benefits of GI, there remains a limited body of research investigating its effect on non-cognitive outcomes, such as motivation and collaboration among university students, particularly in civic education contexts. Wardanik, Suryandari, and Salimi (2024) highlighted its relevance to the Pancasila Student Profile, but few empirical studies explore GI's role in developing soft skills among students in non-social disciplines. This gap aligns with international concerns regarding the need for higher education to move beyond content mastery toward holistic student development (Vargas-Hernández & Vargas-González, 2022).

This study aimed to examine the effectiveness of the Group Investigation model in enhancing learning motivation and collaborative behavior in a civic education course for undergraduate students. Theoretically, this study contributes to the broader discourse on human resource development in higher education by emphasizing the importance of soft skills, such as teamwork, communication, and civic responsibility, as core competencies for the 21st-century workforce. The findings offer practical insights into instructional strategies that integrate character education with participatory learning, reinforcing the relevance of cooperative learning in transforming civic education into a platform for both academic and ethical growth (Thornhill-Miller et al., 2023).

2 METHOD

This study employed a Participatory Action Research (PAR) design, which is considered more appropriate than traditional classroom action research for higher education contexts. PAR allows researchers and participants, such as students and lecturers, to collaboratively identify problems, implement interventions, observe outcomes, and reflect on experiences in iterative cycles. Unlike teacher-

directed classroom research, PAR emphasizes democratic engagement, critical dialogue, and student agency in the learning process (Kemmis, McTaggart, & Nixon, 2014). This methodological approach aligns well with the goals of civic education, which include fostering critical awareness, active participation, and social responsibility among learners (Brydon-Miller, Greenwood, & Maguire, 2003).

The research was conducted in a Civic Education course and involved 68 second-semester students (35 male and 33 female) from the Sports Coaching Education Program at Universitas Negeri Yogyakarta. The study was conducted over two action cycles, each consisting of four stages: planning, action, observation, and reflection. During the planning stage, the lecturer and research team identified core problems, specifically low learning motivation and weak collaborative behavior, through informal assessment and student feedback. The Group Investigation (GI) model was implemented in the action stage. Students were divided into small groups, selected civic-related subtopics such as democracy and tolerance, conducted collaborative inquiries, and presented their findings through posters, simulations or interactive presentations. The observation stage involved monitoring students' behavior and participation using structured observation sheets. Finally, in the reflection stage, students and lecturers jointly evaluated the learning process, discussed challenges, and co-designed strategies for subsequent cycles. Students played an active role not only as learners but also as reflective contributors, in line with the participatory principles of the PAR.

The study used three main instruments to collect data. First, a structured observation sheet was used to assess eight indicators of collaborative behavior, including mutual assistance, turn-taking, initiative, and task-sharing. These were rated using a five-point Likert-type scale adapted from cooperative learning frameworks developed by Slavin (1996) and Laal & Ghodsi (2012). Second, a 30-item questionnaire was developed to assess two key variables: learning motivation and cooperation. The motivation section (15 items) was based on Keller's ARCS model, which includes the dimensions of Attention, Relevance, Confidence, and Satisfaction (Keller, 2008). The cooperative character section (15 items) measured responsibility, listening skills, role distribution, and respect for others, adapted from Johnson and Johnson's (2009) interpersonal cooperation constructs. All questionnaire items used a four-point Likert scale (1 = strongly disagree to 4 = strongly agree). Third, semi-structured interview guides were used to explore students' perceptions, affective experiences, and suggestions for improvement of the program. The interviews were conducted after each cycle and were essential for triangulating the quantitative results.

Quantitative data from the questionnaires were analyzed using descriptive statistics, including mean scores to track changes**,** standard deviations to measure variation in responses, and percentage distributions to categorize motivation and cooperation levels. These metrics enabled a clearer interpretation of the extent and consistency of students' progress across the cycles. Qualitative data from observations, reflections, and interviews were processed using Miles, Huberman, and Saldaña's (2014) interactive model. These involved stages of data reduction, data display, and conclusion drawing to extract meaningful patterns related to student engagement, collaborative behavior and group dynamics.

Several strategies were employed to ensure research rigor. Methodological triangulation was used by combining data from observations, questionnaires, and interviews, allowing for the cross-validation of findings. Member checking was conducted with selected student representatives and the course lecturer to validate the interpretations and enhance credibility (Patton, 2002). Prior to data collection, ethical approval was obtained from the Faculty of Research Ethics Committee. All participants provided informed consent, and data confidentiality and anonymity were guaranteed. Participation was voluntary, and the students were informed that withdrawal would not affect their academic standing. Ethical practices adhered to international guidelines on educational research ethics, ensuring that the study upheld integrity, respect and fairness throughout its implementation (BERA, 2018).

3 RESULT AND DISCUSSION

This research was conducted in two cycles and involved 68 second-semester students of the Sports Coaching Education Study Program at Yogyakarta State University. The main objective of this study was to measure the effectiveness of the Group Investigation (GI) learning model in increasing students'

learning motivation and cooperation character in the Civic Education course. This research uses the Classroom Action Research (PTK) approach of the Kemmis and McTaggart model with the stages of planning, action implementation, observation and reflection. Research instruments included observation, questionnaires, and in-depth interviews to capture the cognitive, affective, and psychomotor dimensions of the learning process.

3.1 Improvement in Students' Learning Motivation

One of the primary objectives of this study was to assess the impact of the Group Investigation (GI) learning model on enhancing students' motivation to learn civic education. The quantitative data collected from the motivation questionnaires administered in both Cycles I and II revealed a substantial improvement. In Cycle I, only 30.9% of students were categorized as having high motivation, while 58.8% were in the moderate category and 10.3% in the low category. By Cycle II, the percentage of students in the high motivation category increased to 72.1%, with only 2.9% remaining in the low category. This upward shift indicates observable changes in student engagement patterns over time (see Table 1).

Table 1. Percentage of Students' Learning Motivation Per Cycle

Learning Motivation Category	Cycle I (%)	Cycle II (%)
High	30,9	72,1
Medium	58,8	25,0
Low	10,3	2,9
Average Score	**73,7**	**84,2**

The average motivation score increased from **M = 73.7 (SD = 7.21)** in Cycle I to **M = 84.2 (SD = 6.43)** in Cycle II. A paired-sample t-test conducted using SPSS yielded **t (67) = -8.74, p < 0.001**, indicating a highly significant difference between the two cycles. This provides strong statistical evidence that the GI positively contributes to student motivation. Qualitatively, the improvement in motivation was reflected in increased participation during the class sessions. Students showed initiative in selecting discussion topics, voluntarily leading investigations, and displaying curiosity by exploring beyond the assigned materials. These patterns reflect the Attention and Relevance components of Keller's ARCS model (Keller, 2008) and confirm that students learn more effectively when instruction connects with their personal interests and social experiences. Motivational growth also echoes the findings of Putri, Darmuji, and Hasanah (2024), who emphasized that shifting from lecture-based to collaborative learning approaches is essential to raise motivation in civic education courses. In addition, Suja, Ningrum, and Anggraini (2024) showed that GI promotes student engagement through distributed roles and mutual responsibility.

3.2 Development of Collaborative Competence

The second objective of this study was to examine how the GI model influences students' collaborative behavior, a key element of character education. Observational and questionnaire data indicated a consistent increase in students' cooperative competence. In Cycle I, 61.7% of the students demonstrated good cooperation, which increased to 85.3% in Cycle II.

Table 2. Percentage of Students' Cooperation Character Per Cycle

Category Character Gotong Royong	Cycle I (%)	Cycle II (%)
Good	61,7	85,3
Fair	31,6	12,0
Poor	6,7	2,7

Category Character Gotong Royong	Cycle I (%)	Cycle II (%)
Average Score	71,4	83,6

The average cooperation score increased from **M = 71.4 (SD = 8.05)** in Cycle I to **M = 83.6 (SD = 7.02)** in Cycle II. A paired t-test confirmed a significant change (**t (67) = -9.21, p < 0.001**), indicating that the GI model substantially enhanced the collaborative character. Further analysis revealed specific indicators with the highest gains, including "active participation in group decisions" (from 68.4% to 87.5%) and "helping peers' complete tasks" (from 64.7% to 88.2%). These findings align with Johnson and Johnson's (2009) cooperative learning theory, which posits that mutual interdependence and individual accountability are crucial for effective group learning.

Students had to rotate roles as leaders, note-takers, presenters, and reach decisions through consensus. This nurtured civic values, such as inclusion, respect, and shared responsibility. The development of such soft skills is critical for both academic and real-world collaborations (Gillies, 2016). The findings also support the assertion by Wardanik, Suryandari, and Salimi (2024) that GI reinforces Pancasila-based character education, particularly in the domains of collaboration and social care.

3.3 Integration of Student Reflections and Social Effects

The student reflections collected through interviews and open-ended feedback strengthened the quantitative results. Many students initially viewed Civic Education as monotonous and irrelevant. However, following GI implementation, the subjects described it as meaningful and empowering. One student stated: *"I used to think civic education was just about memorizing Pancasila, but now I feel like it connects with how I live and how I deal with others."* This transformation occurred as GI shifted the learning process to one of participation, discovery, and shared meaning. Students experienced a shift from peer pressure to peer support, and reluctant members became active due to group cohesion. These affective outcomes align with the findings of Lovat, Toomey, and Clement (2023) on the emotional benefits of value education.

By combining emotional development with academic inquiry, GI bridges personal and social aspects of learning. As Bransen, Govaerts, Sluijsmans, Driessen (2020) and Thornhill-Miller et al. (2023) argue, education in the 21st century must nurture both knowledge and civic-emotional competence. In this case, the students' newfound empathy and trust served not only their learning goals but also their civic formation goals.

3.4 Alignment with Research Objectives and Broader Implications

The results are consistent with the two main objectives of this study: improving motivation and fostering a collaborative character through the GI model. The data not only confirm the effectiveness of GI but also illustrate how participatory pedagogies contribute to the broader goals of civic and moral education (Banks, 2008). The study theoretically supports critical pedagogy, cooperative learning, and the principles of democratic education. Practically, it provides a model that is replicable across diverse higher-education contexts. The GI model has proven especially beneficial for general education students in non-social disciplines, such as physical education, who often perceive Civic Education as disconnected from their academic identity.

3.5 Critical Reflection and Limitations

Although the outcomes were positive, not all groups functioned optimally. Some showed dependency on dominant members or lacked time management skills. This reflects the challenges often encountered in group-based learning (Johnson & Johnson, 2009). Future implementations should integrate scaffolding strategies, such as conflict resolution workshops and peer evaluation systems. Additionally, the two-cycle design limits long-term observations. Longitudinal participatory action research can better capture lasting behavioral changes. Another limitation is that this study was conducted

in face-to-face class settings. Adapting GI to hybrid or online settings, as suggested by Habók and Nguyen (2024), is a promising avenue for future research. Despite these limitations, the study affirms that GI is more than a strategy; it is a framework for cultivating democratic learning communities. It enables students to internalize civic values through real participation, empowering them as learners and citizens.

4 CONCLUSSION

This study concludes that the Group Investigation (GI) model significantly enhances students' learning motivation and collaborative competence in Civic Education. The improvement was supported not only by descriptive data but also by the inferential statistical analysis. Motivation scores increased from an average of 73.7 (SD = 7.21) to 84.2 (SD = 6.43), with a paired t-test result of $t(67) = -8.74$, $p < 0.001$, indicating a statistically significant difference in motivation. Similarly, the cooperative character score increased from 71.4 to 83.6 ($t(67) = -9.21$, $p < 0.001$). These results demonstrate that the GI model is not only effective in practice, but its impact is also statistically verifiable.

This research contributes to the growing literature on cooperative learning by providing empirical evidence from a higher education context, specifically in civic education, an area that often lacks innovation and active engagement. This supports the theoretical frameworks of Keller's ARCS model, Johnson & Johnson's cooperative learning theory, and the principles of democratic education, affirming that GI fosters both cognitive and character-based outcomes. From a practical perspective, this study provides a replicable instructional model that integrates inquiry, collaboration, and character development. This is particularly useful for educators in non-social science disciplines who seek to transform passive learning environments into active, democratic classrooms. By implementing GI, lecturers can promote not only content mastery but also 21st-century skills, such as leadership, teamwork, and civic responsibility.

For future research, it is recommended to apply the GI model across diverse disciplines and learning modes, including hybrid and online formats. Longitudinal studies should be conducted to examine whether the gains in motivation and character persist beyond short-term interventions. Furthermore, future evaluations may expand to include additional indicators of soft skills, such as critical thinking, digital literacy, and ethical reasoning. This research is useful not only for pedagogical development but also for curriculum designers and policymakers seeking to integrate character education into higher-education. By demonstrating that cooperative inquiry can simultaneously promote academic achievement and civic values, this study reinforces the urgency of rethinking how civics is taught in modern universities.

Ethical approval

This study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki.

Informed consent statement

All participants were informed of the purpose of the study, and informed consent was obtained prior to data collection. Participation was voluntary, and all responses were kept confidential and used solely for academic research purposes.

Authors' contributions

Conceptualization, MS, and MM; methodology, MS; validation, MM; formal analysis, MM; resources, MS; preparation of the initial draft, MS; review and editing, MS.

Disclosure statement

No potential conflicts of interest were reported by the authors.

Data availability statement

The data presented in this study are available upon request from the corresponding author for privacy reasons.

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