The Influence of Student Diversity on Applying Cooperative Learning in Ethiopian Polytechnic Colleges

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Abstract: Cooperative learning is more effective in a well-managed classroom with diverse ethnic, linguistic, and religious backgrounds. To that end, this study examined the state of applications of cooperative learning and student diversity in polytechnic colleges in southwest Ethiopia. A qualitative research methodology, specifically grounded theory design was employed to achieve the research purpose. The empirical data was gathered from 20 educational officials through in-depth interviews at sample polytechnic colleges. Student diversity found to have a significant influence on how cooperative learning is implemented. It has also been found that the perception of department heads towards diversity has a significant influence on the application of cooperative learning. The study’s findings also showed that managing diversity among students and interacting with peers within groups and from other groups has a positive influence on cooperative learning. In conclusion, the application of cooperative learning is affected by perceptual and structural factors of student diversity. Thus, this research recommends further study to be conducted on the relationship between diversity management and cooperative learning.

Keywords: diversity; cross-group interaction; cooperative learning; grounded theory

1. Introduction

Diversity management is a field that uses applied behavioral science methodology, studies, and theory to manage institutional change and stability processes, supporting diversity in organizations and opposing discrimination based on ethnicity, language, religion, gender, culture, and other human differences. It promotes values of respect for human differences, social justice, and participation. The concept has been broadened beyond the US and Western experiences throughout the world [1,2].

Studies have shown that the development of educational and social relationships among students of different ethnic and linguistic groups reduces prejudice among school children. Student diversity management has a positive influence on students’ academic and intellectual skills development, but the direct relationship between the two is not universally accepted [3].

Ethnically diverse classrooms offer students cooperative learning and teachers in flexible teaching strategies to manage varied backgrounds and create an interactive and nurturing learning environment. Teachers can recognize the importance of students’ diversity in affecting cooperative learning (CL) by learning about their students’ ethnic, linguistic, and religious diversity and integrating CL methods and strategies into their teaching repertoire. Ordu [1] demonstrated that students’ diversity affect their performance positively when properly managed, but may cause alliances and affect students negatively when not managed well.

Adamu [4] states that the presence of a diverse student population is perceived as an advantage, as it provides an ideal opportunity to learn from each other’s culture, languages,
religions, and experiences. However, unless students’ diversity is effectively managed, it becomes a source of conflict among university students. This study aims to examine the relationship between classroom diversity and cooperative learning, its management and its in Polytechnic Colleges of Ethiopia.

1.1. Statement of the Problem

According to the World Education Statistics report [5] post-secondary education institutions, including Technical and Vocational Education and Training (TVET) Colleges in Ethiopia, face challenges in managing student diversity. Tertiary education in Ethiopia remains discriminatory, with participation rates primarily comprising men and urban dwellers. This results in a lack of access for non-majority ethnic groups to quality secondary education.

To address this issue, this study explores the degree of student diversity and its association with cooperative learning in TVET campuses in Ethiopia. Diversity in ethnic, linguistic, and religious dimensions provides learning opportunities through cross-ethnic relationships and interactions. However, if not managed effectively, diversity can hinder cooperative learning and contribute to individual, institutional, and societal benefits. In Ethiopia, ethnic conflicts have caused significant damage to educational institutions, leading to the closure of educational organizations. TVET institutions in Ethiopia embrace diverse student groups across various levels of classes, serving various target groups, including primary education completers, youths with average academic achievement, students from emerging areas, those with different learning capabilities, and unemployed individuals. The proportion of minority ethnic groups in TVET institutions of Ethiopia is increasing, as there is a greater number of minority ethnic groups in the region [6,7].

Ethiopian public universities have a diverse student body, with students from various regions. However Southwest Ethiopia’s TVET institutes have a unique diversity, with many minority ethnic groups having limited access to university study. This diversity is reflected in the classrooms of these institutions, which often have a mix of students in terms of ethnicity, language, and religion [4].

The challenges faced by instructors and students in diverse classrooms include ethnic identity conflicts and political disagreements. Tokenism from political representatives is a major factor hindering diversity in these institutions. Effective management of diverse workforces increases organizational effectiveness, but the link between diversity and cooperative learning implementation remains unclear. This study aims to investigate the association between diversity and cooperative learning in polytechnic colleges in Southwest Ethiopia [8].

A number of studies suggest that the effective management of a diverse work force increases the effectiveness of the given organization [9–11]. However, we were not certain about whether students’ diversity has an association with the implementation of cooperative learning. Thus, this study is aimed at investigating the association between students’ diversity and the application of cooperative learning.

Research questions: This study was guided by the following research questions.

1. What are the students’ and instructors’ perceptions on ethnic diversity in the polytechnic colleges of Ethiopia?
2. What are the major challenges and benefits of classroom diversity in the implementation of cooperative learning in the study area?
3. How do instructors at Technical and Vocational Education and Training (TVET) institutes manage students’ ethnic diversity?

1.2. Objectives of the Study

The main purpose of this study is to explore the state of diversity management in applying cooperative learning in the polytechnic colleges of Southwest Ethiopia. More specifically, the objectives of this study were:
1. To investigate students and instructors’ perceptions of ethnic diversity in the study area.
2. To explore the major challenges and benefits of classroom diversity and its management in applying cooperative learning in the TVET institutes of Southwest Ethiopia.
3. To examine the ways with which instructors at polytechnic colleges teachers manage students’ ethnic diversity.

1.3. Significance of the Study

This study makes the following academic and practical contributions to education policy and leadership. This study contributes to the current literature or body of research by presenting a theoretical model demonstrating inclusive learning environments that excel at cooperative learning. A basic practical contribution of the study in the student diversity management field of study is that its informative evidence about students’ diverse bodies can be used as an enriching factor for higher education institution student learning.

This study can also be used to create awareness among higher education institution instructors and leaders about student diversity management in an instructional setting. This study is particularly important to the officials (leaders) of higher education institutions because it informs them know about their students in a dynamic classroom and campus. It also educates the college students about their future careers and how to work cooperatively within a diverse community.

1.4. Limitations of the Study

This study was conducted with a number of limitations that could affect the results negatively. The major and overall limitations of the study include the following. In some of the research sites, students’ ethnic diversity is not more considerably associated with cooperative learning than learning background.

Another major limitation of this study was the unwillingness of participants to be interviewed. Furthermore, some participants were not positive about recording their interview audio transcriptions because they did not trust the confidentiality of the report. Despite the disadvantages, the researchers worked hard to find all possible ways to collect adequate data from the participants while adhering to the informed consent agreement.

2. Materials and Methods

In this study, to serve the purpose of the research, we employed qualitative research methodology. This qualitative approach provides us with a thematic understanding of the research problem. It also enables us to have a rich description of the research theme. In addition, it enables the researchers to present personal and participant data, thus consolidating the larger qualitative data collection and analysis, and incorporated this with researchers’ insights.

In particular, a grounded theory design was used to gather and evaluate data, after which a correlation between student ethnic diversity and applying cooperative learning was developed based on the information. Relevant concepts are recognized and given codes. Subsequently, this research design was selected based on the nature of the problem and research questions [12].

Data were collected from twenty department heads at four sample polytechnic colleges. The participants were selected by employing the purposive sampling technique because they were deemed to be both classroom instructors and instructional leaders who are knowledgeable about what is going on in diverse classrooms during cooperative learning.

As part of the data analysis process, labels are assigned and data are organised using grounded theory at progressively higher analytical levels. During ongoing transcription and coding of interview data, the researchers narrow the interview focus and continue to collect and analyze data as the theoretical model is developed.
2.1. Instrumentation

We employed in-depth interviews with subjects to gather adequate information about the state of student diversity while applying cooperative learning. In-depth interviews are often known as “semi-structured interviews because the researchers retain some control over the predetermined questions but leave them open-ended”. The researchers developed interview guides before conducting the interview sessions. During the conversational interview, the participants are free to extrapolate their feelings or take the interview in new but related directions. However, this does not mean that the researchers are blocked from eliciting further information [13]. The researchers selected the semi-structured interview as a tool for data collection for its following advantages: the semi-structured interview is qualitative interviewing where a schedule is prepared, but it is sufficiently open-ended to enable the contents to be re-ordered, digressions and expansions to be made, new avenues to be included, and further probing to be undertaken [14].

In the semi-structured interview, initially the researcher described the major themes (topics) of the interview by anticipating probing questions associated with the topic under investigation. Nevertheless, the following major themes were considered as a guideline and, the probing questions posed after the informed consent was agreed. The first leading question for interviews was “How do students and teachers perceive about ethnic, linguistic and religious diversity at Polytechnic College of Southwest Ethiopia?” The second research question, “What are the major challenges and benefits of classroom diversity and its management in applying cooperative learning?” was examined by using in-depth interviews. Questions which branch from the research questions may include “How are the cooperative groups organized?” “Are the groups made consider students ethnic, linguistic and religious diversity?” The third research question was “What strategies do teachers and other instructional leaders follow to effectively conduct cooperative learning among diverse student groups?”

The interview sessions were conducted in the Amharic language and later translated to English. Since the interview recordings were taken in the Amharic language, they were directly translated to English during transcription; the entire transcripts of all interviewees were documented. Then, the transcripts of semi-structured interviews were carefully and repeatedly read.

The data were coded by considering the sub-themes that emerged from the responses to the main interview questions and probing questions. Both initial and axial coding procedures were intensively carried out to rearrange the emerging themes. The themes and sub-themes were coded and prearranged pseudonyms were allocated to the participants. Giving pseudonyms to participants is necessitated to protect the confidentiality and well being of the participants. All the interview conversations were recorded and documented. The interviewer spent an average of an hour and a half with each interviewee.

2.2. Data Analysis

Grounded theory-based analysis was used to qualitatively analyze empirical data. Typically, researchers find recurring themes by carefully reading the data, coding the themes with words and phrases, organizing the codes into concepts in a hierarchical manner, and then categorizing the concepts based on relationships by using QSR N6 qualitative software.

3. Result

3.1. Perception of Participants towards Student Diversity in Applying Cooperative Learning

For a certain teaching-learning process to be effective, students’ and instructors’ positive perceptions are crucial. In this study, the perceptions of students and instructors were explored through in-depth interviews to determine what perceptions they have on the application of student ethnic diversity management while implementing cooperative learning.

According to the participants’ perspectives in the current study, cooperative learning and student diversity management work well together. As perceived by the research
participants, effective student diversity management has immense influence on the application of cooperative learning. Both students and instructors have significant and positive perceptions towards the nexus between the student diversity management and applying cooperative learning. Hence, the interaction between student diversity management and the adoption of cooperative learning should therefore be the subject of additional research. It is advisable to consider that, just as important as managing students’ diversity, students should come across opportunities to work in diverse groups.

(a) Lived life experiences of positive perceptions

According to the majority of department heads in the Table 1, student diversity management has a direct influence on the effectiveness of cooperative learning implementation in VET colleges. In today’s highly dynamic classroom, VET instructors believe it is critical to improve student diversity management while implementing cooperative learning.

(b) Access to shared experiences they gained from their ethnic community

Regarding experience sharing among students from different ethnic backgrounds, DH3 provided the following straightforward expression:

In my opinion, students’ pre-college experiences about ethnic diversity matter to effectively work cooperatively in the instructional activities. Students who come from around Mizan’Teferi, for instance, take it easy to lend a hand to other individuals inside and outside of the classrooms. When the students were growing up in diverse ethnic communities, they did not consider diversity a learning problem but rather an opportunity to maximize access to the source of knowledge. Frankly speaking, our department courses require more practical skills than soft skills, and students can train each other (Interview with DH3, 26 October 2022).

According to the majority of college department heads, students prefer friends of the same ethnicity to join in with their cooperative group work. Instructors extrapolate their opinions as to why students choose the same ethnic friends: to avoid social discrimination. On the other hand, instructors have the experience to mix up students by using different criteria that allow different ethnic students to participate in group discussions.

As a result of the diverse experiences of students from diverse ethnic backgrounds, the spectrum of various views broadens. Students recognize their cooperative learning group more than their social identity as a result of instructors’ diversity management skills.

(c) Tolerance for differences and respect

The majority of educational officials in sample TVET polytechnic colleges suggested that in applying cooperative learning, arranging cooperative group students from different ethnic backgrounds is not sufficient unless they are managed to tolerate and respect each other’s opinions, cultures, and beliefs. Regarding this view, DH12 shared the following with me.

To be honest, I think that managing students’ diversity in the classroom is an important part of creating a democratic culture, like openness to other worldviews, customs, and cultures, as well as to other faiths, tolerance for uncertainty, respect, civic consciousness, accountability, and self-efficacy (Interview with DH12, 12 October 2022).

During the interview sessions, some of the students indicated that their classrooms are able to provide equal learning opportunities to students of various ethnicities, languages, and religions. The respondents also have open and positive perceptions of the classroom’s diversity as a source of cooperative learning.

Moreover, students who are schooled in an ethnically mixed classroom receive more access to enhancement of acculturation, multiculturalism, and mutual respect for one another. TVET instructors who are training diverse student groups promote recognizing diversity and optimizing the learning outcomes [15].
Table 1. Transcription of key direct quotes from semi-structured interviews and emerging themes regarding the perceptions of diversity management in applying cooperative learning.

<table>
<thead>
<tr>
<th>Questions</th>
<th>DH2</th>
<th>DH6</th>
<th>DH9</th>
<th>DH12</th>
<th>DH13</th>
<th>DH16</th>
<th>DH17</th>
<th>DH20</th>
<th>Theme</th>
</tr>
</thead>
</table>
| How do you perceive student diversity management in applying cooperative learning at your Polytechnic College classroom? | Our college, in my opinion, manages student ethnic diversity well. There is no sign of ethnic-based discrimination in my classroom. (11 October 2022) | Southwest Ethiopian people, by nature, attract each other to live together even before providing ways of managing diversity. Likewise, their children in college mirror their parents' life experiences. (26 October 2022) | I view ethnic diversity as a good opportunity for education since it gives students better access to share what they learnt in the community to the group they belong to. (13 October 2022) | To be honest, I think that managing students’ diversity in the classroom is an important part of creating a democratic culture like openness to other worldviews, customs, and cultures, as well as to other faiths, Tolerance for uncertainty, respect, civic consciousness, accountability, and self-efficacy. (12 October 2022) | Diversity management, in my opinion, helps students grasp how vast the social environment is and how to empathize with others. (20 October 2022) | I have a positive perspective on diversity in the application of cooperative learning in the training process because it offers a chance to learn from different local vocational skills. (18 October 2022) | I believe it fosters a learning environment in which students of diverse ethnic backgrounds feel safe and respected. (26 October 2022) | Students who are coming from diverse ethnic groups and taking courses in an inclusive classroom are expected to bring about equitable learning outcomes. Instructors from diverse ethnic backgrounds minimize microaggressions and serve the needs of diverse student groups. (25 October 2022). | - Good life experiences
- Access to share experiences they learnt from their ethnic community
- Tolerance for differences and respect
- Minimize micro aggressions. (14 October 2022) |
(d) Minimizing micro-aggressions in the classroom

It is assumed that microaggressions among students can be minimized in cooperative learning groups in the classroom, which include representative ethnic students. Regarding the reduction of microaggressions, one of the department heads (DH20) suggested the following about her experience in departmental leadership.

When instructors are assigned from diverse ethnic backgrounds to a heterogeneous classroom, it meets the demands of diverse ethnic student groups and also enables students not to perceive that favours are done for particular ethnic groups of students. I also believe the technique may reduce microaggressions and unintended microinsults among students (Interview with DH20, 25 October 2022).

Microaggressions in the classroom are unintentional or intentional verbal, behavioral, and friendship indignities that converse hostile, disparaging, or negative messages to peers because of their membership in marginalized ethnic groups. These messages have a negative psychological impact on the target individual or learning group in the long run.

3.2. Benefits of Students’ Ethnic Diversity in Applying Cooperative Learning

The vast majority of participants said that addressing ethnic diversity in the classroom has an important influence on how cooperative learning is implemented. Based on the excerpts from department heads of the sample polytechnic colleges presented in the Table 2, the following themes emerged from the multiple mouths of the participants regarding the benefits of student ethnic diversity management while applying cooperative learning. The next sub-sections do not contain all of the participant’s remarks due to the large volume of data that was gathered; nonetheless, the most frequently raised idea was taken from the participant’s excerpts.

Some of the major benefits of managing students diversity includes; reducing ethnic-based prejudice; mutual respect and acculturation; equal learning opportunity; augmentation of the intellectual and social environment; experience for future real life in serving diverse communities; minimizing extended lectures; and improving academic achievement.

i. Reduction of ethnic-based prejudice

In the interview transcript rubric, most of the answers from subjects reveal that managing student ethnic diversity plays a significant role in mitigating the classroom prejudice against non-majority ethnic group of students. Regarding this issue DH6 had the following to say, “I think conducting cooperative learning by managing student diversity inspire the instructors to reduce ethnic based prejudices in classroom” (Interview with DH6, 26 October 2022).

According to Davies [16], cooperation-based teaching and learning reduces ethnic prejudice among students. Promoting interdependence and avoiding prejudice and exclusionary practices are fundamental principles of cooperative learning. Department heads indicated in the current study that instructors are aware of encouraging students to perceive they have equal status roles within the classroom and access to being equally served by all stakeholders at each hierarchical level of the college.

As a result, VET college students are more or less aware of learning in a diverse classroom and actively combat any sign of prejudice toward their peers in a cooperative learning environment. The majority of participants also explained that increasing intergroup contact reduces ethnic prejudices in students. Vervaet et al. [17] support this finding by demonstrating that when diverse ethnic students are assigned to diverse ethnic students, instructor ethnic-based student discrimination decreases.

When asked about the benefits of managing students’ ethnic diversity in cooperative learning, the participants agreed that managing student diversity has a significant benefit in cooperative learning by providing safe and fair college learning environments for diverse ethnic groups of students learning together. Prior research findings by Davies [16] indicate that cooperative learning pedagogy generally reduces prejudice practices among students.
Table 2. Transcription, key direct quotes from semi-structured interviews and emerging themes regarding the benefits student diversity in apply.

<table>
<thead>
<tr>
<th>Questions</th>
<th>DH1</th>
<th>DH5</th>
<th>DH8</th>
<th>DH11</th>
<th>DH14</th>
<th>DH16</th>
<th>DH18</th>
<th>DH20</th>
<th>Themes</th>
</tr>
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<tbody>
<tr>
<td>What are the benefits of students' ethnic diversity management in applying cooperative learning at your Polytechnic College (classroom)?</td>
<td>According to my observations, effective student diversity management practices at our polytechnic college enable instructors to reduce stereotyping among diverse student groups. (17 October 2022)</td>
<td>I consider that students learn how to collaborate and live together in a diversity of future life experiences. (21 October 2022)</td>
<td>Classroom diversity management allows students to learn from one another’s experiences as well as the diverse skills they acquired as a result of their ethnic backgrounds. Different groups of students learn good lessons from others’ culture. (21 October 2022)</td>
<td>In my opinion, managing student diversity drives the instructors to make changes in their mindset to be fair to diverse student groups.</td>
<td>In my opinion, diversity accommodations enable students to feel neither superior nor inferior to their other peers. On top of this, it enables students to respect others’ and their own culture. (19 October 2022)</td>
<td>I consider that students learn how to collaborate and live together in a diversity of future life experiences. (21 October 2022)</td>
<td>In my opinion, diversity accommodations enable students to feel neither superior nor inferior to their other peers. On top of this, it enables students to respect others’ and their own culture. (19 October 2022)</td>
<td>Reduce ethnic based prejudice.</td>
<td>Reduce ethnic based prejudice.</td>
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<tr>
<td>DH4</td>
<td>Cooperative learning in an ethnically diverse classroom allows students to learn about and respect one another’s cultures. In applying cooperative learning in a highly ethnically diverse classroom, the ethnic minority students feel freer, safer, have less loneliness, and experience less group victimization because students by default consider diversity to be normal. (17 October 2022)</td>
<td>DH6</td>
<td>Students who interact informally and formally with diverse ethnic groups of students gain more academic and vocational skills than students who study in a more homogeneous classroom. (12 October 2022)</td>
<td>DH7</td>
<td>Students from marginalized ethnicities get communication opportunities from intergroup interaction within the cooperative classroom. (26 October 2022)</td>
<td>DH8</td>
<td>Students from underrepresented groups are especially vulnerable to negative peer interactions. The majority ethnic group of students may have more say over the outcomes of small-group discussions than the minority ethnic group. (26 October 2022)</td>
<td>DH9</td>
<td>Students from underrepresented groups are especially vulnerable to negative peer interactions. The majority ethnic group of students may have more say over the outcomes of small-group discussions than the minority ethnic group. (26 October 2022)</td>
</tr>
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<td>DH10</td>
<td>Well-managed classroom diversity gives equal learning and all-rounded development opportunities. Furthermore, diversity in the classroom prepares students for a more diverse community. (20 October 2022)</td>
<td>DH11</td>
<td>Students who interact informally and formally with diverse ethnic groups of students gain more academic and vocational skills than students who study in a more homogeneous classroom. (12 October 2022)</td>
<td>DH12</td>
<td>Students from marginalized ethnicities get communication opportunities from intergroup interaction within the cooperative classroom. (26 October 2022)</td>
<td>DH13</td>
<td>Students from underrepresented groups are especially vulnerable to negative peer interactions. The majority ethnic group of students may have more say over the outcomes of small-group discussions than the minority ethnic group. (26 October 2022)</td>
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</tr>
<tr>
<td>DH15</td>
<td>That is an excellent question! Cooperative learning in a diverse classroom, in my opinion, helps students minimize lengthy lectures and improve academic achievement. (21 October 2022)</td>
<td>DH16</td>
<td>Classroom diversity management allows students to learn from one another’s experiences as well as the diverse skills they acquired as a result of their ethnic backgrounds. Different groups of students learn good lessons from others’ culture. (21 October 2022)</td>
<td>DH17</td>
<td>Students from marginalized ethnicities get communication opportunities from intergroup interaction within the cooperative classroom. (26 October 2022)</td>
<td>DH18</td>
<td>Students from underrepresented groups are especially vulnerable to negative peer interactions. The majority ethnic group of students may have more say over the outcomes of small-group discussions than the minority ethnic group. (26 October 2022)</td>
<td>DH19</td>
<td>Students from underrepresented groups are especially vulnerable to negative peer interactions. The majority ethnic group of students may have more say over the outcomes of small-group discussions than the minority ethnic group. (26 October 2022)</td>
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<td>DH20</td>
<td>In my view, on culture day, students from various ethnic backgrounds at our college have the opportunity to celebrate their culture. Additionally, it provides students increasing intellectual and social environment. (16 October 2022)</td>
<td>DH21</td>
<td>In my opinion, diversity accommodations enable students to feel neither superior nor inferior to their other peers. On top of this, it enables students to respect others’ and their own culture. (19 October 2022)</td>
<td>DH22</td>
<td>Students from marginalized ethnicities get communication opportunities from intergroup interaction within the cooperative classroom. (26 October 2022)</td>
<td>DH23</td>
<td>Students from underrepresented groups are especially vulnerable to negative peer interactions. The majority ethnic group of students may have more say over the outcomes of small-group discussions than the minority ethnic group. (26 October 2022)</td>
<td>DH24</td>
<td>Students from underrepresented groups are especially vulnerable to negative peer interactions. The majority ethnic group of students may have more say over the outcomes of small-group discussions than the minority ethnic group. (26 October 2022)</td>
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<td>DH25</td>
<td>Okay, I believe that practicing and accepting diversity helps to reduce discrimination and foster inclusion. It is also obvious that when ethnically diverse students trust that our college is welcoming all students, they feel a sense of belonging. (25 October 2022)</td>
<td>DH26</td>
<td>In my opinion, diversity accommodations enable students to feel neither superior nor inferior to their other peers. On top of this, it enables students to respect others’ and their own culture. (19 October 2022)</td>
<td>DH27</td>
<td>Students from marginalized ethnicities get communication opportunities from intergroup interaction within the cooperative classroom. (26 October 2022)</td>
<td>DH28</td>
<td>Students from underrepresented groups are especially vulnerable to negative peer interactions. The majority ethnic group of students may have more say over the outcomes of small-group discussions than the minority ethnic group. (26 October 2022)</td>
<td>DH29</td>
<td>Students from underrepresented groups are especially vulnerable to negative peer interactions. The majority ethnic group of students may have more say over the outcomes of small-group discussions than the minority ethnic group. (26 October 2022)</td>
</tr>
<tr>
<td>DH30</td>
<td>In my opinion, diversity accommodations enable students to feel neither superior nor inferior to their other peers. On top of this, it enables students to respect others’ and their own culture. (19 October 2022)</td>
<td>DH31</td>
<td>Students from marginalized ethnicities get communication opportunities from intergroup interaction within the cooperative classroom. (26 October 2022)</td>
<td>DH32</td>
<td>Students from underrepresented groups are especially vulnerable to negative peer interactions. The majority ethnic group of students may have more say over the outcomes of small-group discussions than the minority ethnic group. (26 October 2022)</td>
<td>DH33</td>
<td>Students from underrepresented groups are especially vulnerable to negative peer interactions. The majority ethnic group of students may have more say over the outcomes of small-group discussions than the minority ethnic group. (26 October 2022)</td>
<td>DH34</td>
<td>Students from underrepresented groups are especially vulnerable to negative peer interactions. The majority ethnic group of students may have more say over the outcomes of small-group discussions than the minority ethnic group. (26 October 2022)</td>
</tr>
</tbody>
</table>

- Reduce ethnic based prejudice.
- Mutual respect and acculturation.
- Augmentation of intellectual and social development.
- Experience for future real life for serving diverse community.
- Enhance extended lecture and improve academic achievement.
ii. Mutual respect

In all cases the informants reported that recognizing the ethnicity and culture of others fosters mutual respect. The majority of participants stated that any student who wishes to have his or her ethnicity, religion, and/or language respected would do the same thing for a peer. Instructors should encourage students to make friends with students from different ethnic backgrounds. The participants on the whole demonstrated that their college experiences prepare the students to engage in mutual respect and tolerance. For example, DH4 testified that the practice of student diversity management creates a better and safer learning environment for minority ethnic students in cooperative learning activities.

Cooperative learning in an ethnically diverse classroom allows students to learn about and respect one another’s cultures. In applying cooperative learning in a highly ethnically diverse classroom, the ethnic minority students feel freer, safer, have less loneliness, and experience less group victimization because students by default consider diversity to be normal (Interview with DH4, 17 October 2022).

In line with this issue, Miller and Sessions [15] state that teaching tolerance, respect and acceptance of the diversity is critical to ensure the effectiveness of cooperative learning and create a positive learning environment. However, in the present study, many department heads extrapolated that mutual respect should not be taught as a doctrine or canonized as rigid, but should be based on mutual love, respect, and acceptance of one other’s humanity. Mutual respect and acceptance, in turn, creates a welcoming learning environment for student diversity.

iii. Equal learning opportunities

The majority of participants agreed with the statement that cooperative learning strategies that encourage students of different ethnicities to participate are likely to provide equal access to learning. One interviewee stated that: “instructors and instructors should ensure that all ethnic students are equally motivated, inspired, and praised during their classroom participation”.

iv. Promoting intellectual development and social inclusion

A closer look at the Table 2 reveals some suggestions that managing student diversity has a positive and direct relationship with the development of students’ intellectual and social skills. Regarding the importance of managing student diversity in putting cooperative learning in place, DH8 explained the following:

In my view, on culture day, students from various ethnic backgrounds at our college have the opportunity to celebrate their culture. Additionally, it provides students increasing intellectual and social environment. Honestly speaking, I appreciate those instructors who have not been accused of ethnocentrism and exclusion of out-group students who differ from their ethnicity (Interview with DH8, 16 October 2022).

Managing the interactions of diverse ethnic peer groups also results in inclusive classroom for applying cooperative learning. The term inclusive classroom refers to a welcoming learning environment for students of various ethnicities that is characterized by social acceptance of peer groups, positive peer relationships, intergroup harmony, and having caring friends. Here, peer groups are small, self-selected groups of like-minded affiliates who interact with one another on a regular basis. It has been suggested that students who learn in ethnically diverse classrooms have fertile ground for learning new languages and developing intellectually. According to a small number of those interviewed in polytechnic colleges, well-managed student diversity is a positive environment for intellectual and social development.

The majority of participants agreed with the statement that “student diversity management is the practice of developing social skills in students through cooperative learning processes.” In support of this finding, Juvonen, et al. [18], showed that, though social
inclusion does not guarantee that students perform better academically, experiences of exclusion can undermine diverse students’ engagement and performance.

v. Experience for future real life in serving a diverse community

The participants on the whole demonstrated that the practices of instructors to effectively accommodate and serve diverse ethnic students in cooperative learning can help students be ready for their future career-based service to diverse communities. Some felt that the application of cooperative learning to diverse ethnic students helped students practice working in diverse teams, while others considered that ethnic diversity in the instructional setting has an adverse effect on the future careers of the students because they return to their communities with some bad habits they learned from peers. As is known in cooperative learning implementation, every student is responsible for his/her own and his/her peers’ learning. Students also discover that everyone is accountable for maintaining others’ peace and security in a diverse society.

Relating to the development of soft skills by students to serve a diverse community after graduating in the future, DH11 suggested that: “I think, students who are studying in ethnically diverse classrooms are learning how to collaborate and live together in the future ethnically diverse communities that they are going to serve” (Interview DH11, 21 October 2022)

Much of the information gathered through interviews shows that students are learning how to treat and serve diverse ethnic customers (clients), employees, and subordinates fairly in their future working positions. In an inclusive classroom, students collaborate and make an effort to build the cooperative skills that they can use to treat diverse ethnic customers (clients), employees, and subordinates fairly in their future working positions. In an inclusive classroom, students collaborate and make an effort to build the cooperative skills that they can use in the future. Students learn how to involve community members in their organization or instructional activities in a similar way they perform while implementing cooperative learning in a diverse ethnic group of students.

While a few respondents contend that the current mindset has no predictive power regarding interviewees’ future lives of community service, others agreed that pupils who practice prejudice against ethnic minority students are teaching themselves to be biased and narrow-minded in their future work lives.

In line with previous studies by Gross and Maloney [19], students learn better in a diverse educational setting. Encountering new concepts, values, and behaviors leads to thinking in deeper, more complex, and more creative ways, rather than furthering past ideas and attitudes. Experiencing diversity on campus is beneficial for all students. Students have more fulfilling social relationships and report more satisfaction and involvement with their college experience.

Furthermore, students experiencing diversity at TVET college prepare themselves for the diversity they will encounter for the rest of their lives. Cooperative learning in diverse ethnic groups for recognizing and accepting people different from themselves is very important in their world.

According to prior studies, pupils perform better in a diversified learning environment. Instead of strengthening preexisting beliefs and attitudes, learning new ideas, values, and behaviors encourages deeper, more intricate, and more fair thinking. All students benefit from seeing diversity on campus. Students report more satisfying social interactions and higher levels of engagement and satisfaction with their college experience.

Furthermore, the diversity that TVET college students encounter helps them prepare for the diversity they will experience throughout their future life. It is essential for students to learn and work together in diverse students’ ethnic groups to respect and accept each others’ backgrounds.

vi. Improvement of academic achievement

Some participants reported that using cooperative learning in an ethnically diverse student group reduces the achievement gap between students. DH15, for instance, forwarded
the following in plain words, “That is an excellent question! Cooperative learning in a diverse classroom, in my opinion, helps students minimize lengthy lectures and improve academic achievement” (DH15 interview, 21 October 2022).

The majority of key respondents of the interviews reported that managing student ethnic diversity in the classroom had a significant influence on students’ academic achievement.

A similar pattern of results was obtained in the Williams and Hamm [20] study, which showed that students who learn with diverse peers perform better as compared with those who learn in homogeneous groups.

3.3. Major Challenges of Students’ Diversity Management in Applying Cooperative Learning

The following major challenges are identified from the empirical data.

i. Out group superiority of majority ethnic group students

Instructors are expected to fairly manage student diversity and emotional intelligence in classrooms that are becoming more diverse. As shown in Table 3 some VET instructors claimed that they struggle to encourage ethnic diversity in their cooperative learning contexts because a small number of students who identify as members of a minority ethnic group claim that members of the dominant ethnic group ignore their presence in the group.

A category or group that students do not socially interact with in the classroom is referred to as an out-group. The fact that groups convey their identities through their distinctive languages and religions is one of the main characteristics of the in-out-group split in Southwest Ethiopian polytechnic colleges. Thus, for the time being, we consider language and religion act as fundamental barriers for the creation of social groups. Among the major challenges of managing student diversity in arranging cooperative learning groups of diverse ethnic backgrounds is the broad difference in pre-college academic performances. Regarding this matter, one of the department heads, DH2, at Teppi Polytechnic College shared the following with me:

I heard about and realized that most students who come from South Omo can’t easily interact in course work because of their poor learning competence. Hence, instructors intentionally or unintentionally insult and belittle their ethnicity and birthplace by asking discouraging questions like, “Are you Menit? Where are you from? (Interview with DH2, 11 October 2022).

Attending courses in such an irritating learning environment, where the rights of minority students are not respected, makes it difficult for minority ethnic peers to endure the ideas of such classmates. There were also some unfavorable remarks about the prejudice of a few instructors towards students who belong to other ethnic groups. Additionally, students of minority ethnicities are denigrated by their majority ethnic counterparts for participating in cooperative learning groups.

ii. Peer victimization

The majority of participants agreed with the statement that peer discrimination is one of the major challenges of managing student ethnic diversity during cooperative learning. Another interviewee alluded to the notion of this action and explained that it is mainly undertaken against ethnic minority students in cooperative group activities.

DH16 and DH17 forwarded that the students’ origin (residential background) and ethnicity serve as tools for peer victimization in the classroom. DH17 provided a short answer to “What are the major challenges of students’ diversity management in applying cooperative learning at your Polytechnic College classroom?” “Sometimes aggressive behavior and discrimination against the minority ethnic group of students in team work (Interview with DH17, 26 October 2022). DH16 also suggested the following in his own words.
### Table 3. Transcriptions of key direct quotes from semi-structured interviews and coding emerging themes regarding the major challenges of diversity in applying cooperative learning.

<table>
<thead>
<tr>
<th>Questions</th>
<th>DH1</th>
<th>DH3</th>
<th>DH7</th>
<th>DH8</th>
<th>DH11</th>
<th>DH14</th>
<th>DH16</th>
<th>Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>In your opinion, what are the major challenges of students' diversity in applying cooperative learning at your Polytechnic College classroom?</td>
<td>It is hard for me to please all students from diverse ethnic groups because, when I speak in my mother tongue with the student from my ethnic background, others consider me to be favoring or privileging him. (24 October 2022)</td>
<td>The democratic freedom granted to students poses a challenge for instructors in managing their diversity. Another challenge is the selection of a student representative because most ethnic groups want their own representative. (17 October 2022)</td>
<td>In my experience with my students I learned that there are some students attracted to the speaker of similar mother tongue. Some students in compositionally diverse classrooms those come from specific parts of the region and are generally labeled as lazy as a result of inequitable elementary and secondary schooling. (23 October 2022)</td>
<td>Students from urban areas and major ethnic groups have a higher social status, which may result in better academic performance. (18 October 2022)</td>
<td>Students diversity management in the classroom creates a welcoming and inclusive learning environment (12 October 2022)</td>
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<td>Student diversity management in the classroom creates a welcoming and inclusive learning environment (12 October 2022)</td>
<td>Students from urban areas and major ethnic groups have a higher social status, which may result in better academic performance. (18 October 2022)</td>
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<tr>
<td>DH2 I heard about and realized that students who come from South Omo can’t easily interact in course work because of their poor learning competence. Hence, instructors intentionally or unintentionally insult and/or belittle their ethnicity and birthplace. (11 October 2022)</td>
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<td>Out group superiority of majority ethnic group students</td>
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<td>DH4 My fear is that some reluctant instructors who do not acknowledge and recognize linguistic diversity may ignore its influence on their learning. Another challenge is students’ poor language proficiency. (17 October 2022)</td>
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<td></td>
<td>- Peer victimization</td>
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<tr>
<td>DH6 The attitudes of students toward out-group ethnic backgrounds in diverse learning group are a big challenge. Most instructors state that off-campus ethnic-based federalism has a negative impact on students' learning cooperation because they have already internalized differences rather than unity and cooperation. (26 October 2022)</td>
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<td></td>
<td>Homophily</td>
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<td>DH8 In a few cases, some students insulted other ethnic groups by referring to their feeding, hygiene, and traditional beliefs.</td>
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<td>DH10 In some cases, students from marginalized ethnic groups are offended in the classroom due to poor hygiene, resulting in a hostile classroom environment. On top of that, some disrespectful students write graffiti on toilets and classroom walls, creating a hostile learning environment. (22 October 2022)</td>
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<td>DH11 In my teaching experience, I’ve heard students from various ethnic groups disparage the ethnic identities of others. (21 October 2022)</td>
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<td>DH12 One of the major challenges in applying cooperative learning in a diverse ethnic classroom is forming friendships based on similar ethnicity. (12 October 2022)</td>
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<td>DH13 Lack of institutional support for student diversity management in instruction (20 October 2022)</td>
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<td>DH15 I believe that attempting to manage student ethnic diversity in a large, diverse classroom may have a negative impact on cooperative learning because, while not visible in the big picture, there is evidence of ethnocentrism among a few students. (21 October 2022)</td>
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<td>DH17 Sometimes aggressive behavior and discrimination against the minority ethnic group of students in team work. (26 October 2022)</td>
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</table>
Students from urban areas and a majority ethnic background are assumed to have a higher social status, which may result in better academic performance which in turn wrongly directs them to discriminate their peers who come from deep, inner rural shires and from minority ethnic groups (interview with DH16 18 October 2022).

There have been some concerns that the academic success of the discriminated against ethnic minority students was also negatively impacted by state peer victimization. We have confirmed from various interview sessions that the current study yields results consistent with those of D’hondt, Maene, Vervaet, Houtte, and Stevens [21], who found out that students of minority ethnic descent are more likely to report racial discrimination by peers if the school adopts a more multicultural policy or if there is a high concentration of students from non-minority ethnic backgrounds.

iii. Homophily

The tendency of students to take part in cooperative group activities with student of similar ethnicity, religion, or language is one of the major challenges of student diversity management. In the present study, the practices of homophilic group formation are not consistent across research sites and sample classrooms.

Most department heads agree that ethnic-based federalism created off-campus through political means has a detrimental effect on students’ ability to learn collaboration since they have already internalized divisions rather than unity and cooperation.

A few of the interviewees suggested that some students form friendships and share seats with students of similar ethnicities. Language was the reason for friend selection in the classroom seating arrangements for a small number of participants. One individual stated that “Students want to join a similar ethnic group because they feel insecure and want to flee discrimination.” In support of this idea, another participant commented that “students also prefer peers from the same ethnicity to obtain psychosocial benefits because some unethical students segregate students from different ethnicities after identity exploration.”

Homophily of diverse ethnic students in general means the instructors display vigorous in-group favoritism—that is, they prefer the ethnic group(s) they belong to more than any other.

3.4. Ways of Managing Students’ Diversity in Applying Cooperative Learning

The qualitative results also found evidence for ways to manage students’ diversity in applying cooperative learning at polytechnic colleges by suggesting diagnosing the social and educational needs of students of diverse ethnicities; creating an inclusive learning environment; making our classroom more interactive; reducing competitive learning among ethnic student groups; teaching about the unity of diverse ethnic groups; students of diverse ethnicities should be mixed together in the group; combating ethnocentrism in the college; and diversifying the instructional roles for students from various ethnic backgrounds.

i. Diagnose the needs of students of diverse ethnicities

The instructors attempting to manage student ethnic diversity while implementing cooperative learning should keep in mind the needs of the students associated with their cultural backgrounds. Accordingly, students who come from different ethnic backgrounds to the TVET colleges have different social and educational needs.

The need to be equally recognized, acknowledged, and respected by their classmates and teachers is included in the social needs of students. Williams and Hamm [20] claim that ethnic minorities in particular require diversity in the social network to be included. Regarding the social needs of various pupils, one responder said that when cooperative learning is used in a classroom with a variety of ethnic backgrounds, the instructors are expected to evaluate each group member’s progress.

Access to educational resources for kids from various ethnic backgrounds is an issue of their educational needs. According to several respondents, educational facilities—including textbooks, libraries, playgrounds, project areas, and ICT rooms—should fairly serve the pupils. In-depth interview findings typically showed two things (See Table 4):
Table 4. Transcriptions of key direct quotes from semi-structured interviews and coding emerging themes about the ways of managing diversity.

<table>
<thead>
<tr>
<th>Questions</th>
<th>DH2</th>
<th>DH3</th>
<th>DH6</th>
<th>DH9</th>
<th>DH10</th>
<th>DH13</th>
<th>DH19</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>How do you manage students’ diversity in applying cooperative learning at your Polytechnic College (TVET)?</td>
<td>During the group discussion, to stimulate the intergroup contact and interaction, I create an interactive classroom even for cross-ethnic based small group discussions. (24 October 2022)</td>
<td>Before suggesting ways to help student ethnic diversity, I first identify the needs of diverse student groups, and then I treat cooperative group students in accordance with their expectations. As a result, I am able to serve students without engaging in ethnocentrism. (11 October 2022)</td>
<td>DH5</td>
<td>The application of cooperative learning in ethnically diverse classroom presents a range of challenges for instructors. So, the VET instructors should first be trained on how fairly serve all of ethnic group of learners. (26 October 2022)</td>
<td>I think the ethnic divisions have been politically and constitutionally designed and constructed over the last three decades, but before that time, Ethiopian people did not distinguish who was from which ethnicity, and neither do the students. As a result, we as instructors must work to remove the propaganda of ethnic differences from students’ minds. (13 October 2022)</td>
<td>First and foremost, instructors must be open-minded and free of ethnocentrism in order to find a way forward for the inclusion of all ethnic students, particularly in cooperative learning processes, such as encouraging them to answer oral questions, present group discussion results, and enable them to actively participate in practical projects without prejudice. (21 October 2022)</td>
<td>A single way to manage diversity and their competing demands may not be sufficient to handle them, so instructors should flexibly use alternative approaches for each group of students. During the small group learning, the instructor should mix up the students as much as possible. (20 October 2022)</td>
<td>Ø Determine the needs of students of diverse ethnicities; social and educational Ø Create an inclusive learning environment Ø Make your classroom more interactive Ø Reduce competitive learning among ethnic student groups Ø Teach about the unity of diverse ethnic groups Ø Students of diverse ethnicities should be mixed together in the groups Ø Combat ethnocentrism in the College Ø Devise instructional roles for students from various ethnic backgrounds</td>
</tr>
</tbody>
</table>
First, some officials propose that the instructors assess the needs of minority ethnic pupils in order to properly and equally accommodate each student due to the complicated level of ethnic variety in the classrooms of Southwest Ethiopian educational institutions. Children from ethnic minorities experienced significant obstacles in their pre-college education (i.e., primary and secondary education), and as a result, they performed poorly in college due to their weak academic backgrounds. It must be noted that when comparing our findings to those of earlier studies [22], ethnic minority students should be provided special support in TVET colleges.

Second, informants reported that some ethnic minority students want to maintain their respect for their identity in some cases. The current findings are directly in line with previous findings [16] that explain how out group bias has a negative influence on cooperative learning outcomes when implemented among diverse ethnic students (See Table 4).

ii. Create an inclusive learning environment

The majority of participants agreed that today’s education system is a highly demanding inclusive environment for ethnically diverse instructors because it improves social and psychological adjustments for classroom cooperation. Furthermore, Nishina, et al. [23] shows that ethnic composition in the classroom is an indicator of a welcoming learning environment. As a result, the greater the ethnic diversity in the classroom, the more inclusive the learning environment for cooperative learning. This also encourages social interactions among students.

According to Table 4, some interviewees believe that inclusive classrooms reduce discrimination against ethnic minority students by peers and teachers, while others advocate for inclusive strategies to mix students of different ethnic backgrounds. It was also suggested that instructors use inclusive language on a regular basis so that all ethnic students can understand every message conveyed in and out of the classroom.

iii. Interactive Classroom

What is intriguing about the data in Table 4 is that interviewees stated unequivocally that cross-ethnic group interaction is a fundamental component of cooperative learning in a diverse ethnic group. Students from various ethnic backgrounds can interact and share ideas in cooperative learning groups in interactive classrooms.

Overall, these findings are consistent with those reported by Loes et al. [24], who found interactional diversity of students to be a mediating variable between collaborative learning implementation and student diversity openness (student diversity management). The study’s findings revealed that students’ access to collaborative learning provided them with the opportunity to interact with peers from other ethnic groups.

More broadly, these basic findings are consistent with research showing that implementing cooperative learning in an active, heterogeneous, and interactive group is more effective. One of the advantages of implementing cooperative learning in ethnically diverse classrooms is that extensive lectures are reduced and, at best, replaced by interactive lectures. As a result, students are advised to create cooperative group activities that facilitate interaction among diverse ethnic students while implementing cooperative learning.

iv. Reducing competitive learning among students of different ethnic backgrounds

The application of cooperative learning, in its nature, requires cooperation rather than competition and individualistic learning. Only a small number of respondents indicated that there are some students who want to be more competitive than cooperative in learning and assessment modes. The majority of participants agreed with the statement that most students are interested in cooperative learning rather than competitive learning. When asked about why few students prefer to learn individually and do not want to help their peers, the participants were unanimous in their view that competitive learning consumes less time to perform and enables few students to achieve high marks.
Several studies depict that cooperative learning is more effective in interdependent and heterogeneous groups than in individualistic and competitive groups [18,25]. These studies also depict that neither competitive nor individualistic learning are convenient for student ethnic diversity management and social inclusion in the education system.

v. Students of diverse ethnicities should be mixed together in the group

When asked about the efficacy of cooperative learning among diverse-ethnicity students, one interviewee stated:

*When I assign a mixed-ethnicity team a group discussion or project, they complete it together without regard for their ethnic backgrounds. However, when we give students the freedom to choose a team based on their interests, they join and are drawn to the same ethnic group of students. As a result, the group becomes homogeneous, and the group workout results are most likely deficient. However, in order to work cooperatively, all students must develop mutual trust, respect, and acceptance. Another interviewee argued that our students should accept pluralism and work together not only for the sake of accomplishing their classroom activities and projects, but, also they should practice to cooperatively solve the problem they encounter throughout their lives. Based on both quantitative results and interviewees’ expressions, we can conclude that student diversity management is a major element of the application of cooperative learning. (Interview with DH20, 25 October 2022).*

It is possible to create a diverse ethnic student mix by encouraging cross-ethnic friendships among students [18]. Previous research also shows that students’ interest in working with diverse ethnic students leads to them liking the college they join and performing better [26]. According to Williams and Hamm [20], the use of cooperative learning in an environment that effectively manages students’ ethnic backgrounds leads to social and cognitive development.

vi. Overcoming ethnocentrism in the colleges

Managing stereotyping and encouraging the disregarding of differences and superiority of one’s ethnicity in the classroom is a very demanding responsibility of a cooperative learning instructor. In some cases, students choose their classmates based on their ethnicity, which leads to stereotyping of others. According to a small number of those interviewed, students in some classrooms want to interact with and form groups with their homogeneous ethnic peers. Only a few respondents extrapolated that, in addition to peer discrimination, there is evidence of ethnic discrimination by instructors. However, the majority of participants reject the explanation that the instructors engage in ethnic discrimination.

The importance of tolerance and diversity management is highlighted because some students show disrespect and intolerance towards ethnic groups other than their own. When asked how ethnocentrism can be reduced in ethnic plural classrooms, participants agreed that cross-ethnic interaction among students is a good solution in cooperative learning. According to Adamu [27], ethnic and religious student stereotyping decreases as students live together longer and interact in instructional activities. As a result, as ethnocentrism increases and group interaction decreases, this has a negative impact on the use of cooperative learning in ethnically diverse classrooms. Instructors must be aware of the negative effects of student ethnocentrism. According to Nishina, Lewis, Bellmore, and Witkow [23], the application of cooperative learning in well managed ethnically diverse classroom has been promoted as ‘21st century skills’ in which the practice of ethnocentrism will be controlled in diverse ethnic classroom.

When we asked about the state of managing ethnocentrism while using cooperative learning in TVET colleges, the majority of respondents said that educated people practice ethnocentrism more than less educated people. However, previous research has produced two propositions on this subject. The first proposition describes how more educated individuals and seniors in college will be less ethnocentric in their interactions with diverse ethnic students [24].
The second viewpoint, on the other hand, supports the responses of the current study participants, namely that more educated people and senior students are more ethnocentric than less educated and fresh college students. According to one of the participating department heads (DH7):

In most cases in our country, both in higher education organisations and in the political arena, educated people are fighting for a given ethnicity not because they want to sacrifice for that ethnicity in order to liberate and alleviate the problems of that ethnic group, but because they first calculate their personal benefits, and then they begin to fight for that ethnicity in the name of an activist or national politician. TVET College administrators must manage ethnocentrism because some instructors and students consider themselves political activists, which can permeate the instructional processes. You know, nowadays, the ordinary community is not as disruptive to the lives of others. (Interviewee with DH7, 23 October 2022).

DH14 also expressed in plain words that since there is an indicator of ethnocentrism in their college instructional processes, the instructors should curiously control cross-ethnic interactions.

Two factors, in my opinion, cause students to become ethnocentric during cooperative learning processes. The first is a homogeneous neighbourhood where they grow up. When students grow up in an ethnically homogeneous community, they may not realise that there are other cultures and languages besides their own. And their worldview becomes more limited. Similarly, some students read books that primarily proclaim the superiority of their ethnicity and want to listen to and discuss their ethnicity patriotic history. (Interviewee with DH14, 12 October 2022).

These findings are more consistent with local research findings, which explain how university and college students and graduates engage in ethnocentrism, which disrupts cooperative learning in ethnically diverse classrooms [28–30]. As a result, in order to achieve effective learning outcomes through the use of cooperative learning, instructors must effectively manage ethnic diversity without disparaging one another’s ethnic background. (i.e., acceptance, respect and recognition).

vii. Diversifying student cooperative learning activities

It is critical to share instructional roles with members of a diverse group. On the one hand, students gain a strong sense of belonging. They, on the other hand, practice interdependence in order to achieve cooperative teamwork. One respondent shared his personal experience while assigning cooperative group work in the following manner:

I select a mature group member to be the team leader and facilitate sharing diverse roles with each member of the group to perform on the entire activity and present the groups common understandings. In general, I believe that the use of cooperative learning in shared instructional roles among an ethnically diverse group of students results in active participation and mutual understanding of the learning material. As a result, ethnic minority students exercise their academic participation rights because a more competitive classroom jeopardizes the rights of ethnically diverse students. (Interviewee with DH17, 26 October 2022).

The majority of participants agreed with the statement that sharing activities among diverse ethnic classrooms reduces ethnic discrimination and increases positive learning outcomes such as test scores and enjoyment of college life. Furthermore, jigsaw cooperative learning groups are recommended because they are simple to learn, easy to work with for teachers, and can be combined with other training strategies. A similar pattern of results was obtained in the Gorgonio, Silva, Vale, and Silva [31] study, which looked at a diverse group of students in terms of gender and ethnicity and discovered that they performed better academically and were more creative and innovative.
3.5. The Prospects of Classroom Diversity in the Implementation of Cooperative Learning

From the short review of qualitative results, the following key findings also emerged. The qualitative results supported the theoretical literatures regarding department heads’ perspectives of student diversity management when cooperative learning is used in polytechnic college classrooms, indicating that most of them have positive opinions of it. These were identified by the expressions highlighting positive life experiences, the ability to discuss lessons gained from one’s ethnicity, appreciation for diversity, and reducing microaggressions.

Together, these findings also support the following as major advantages of managing students’ ethnic diversity in cooperative learning: lowering ethnic-based prejudice, fostering mutual respect and acculturation, equal learning opportunities, enhancing intellectual and social development, providing experience for future real-life serving diverse communities, reducing extended lectures, and raising academic achievement.

4. Conclusions

Student diversity management in applying cooperative learning in a socially and culturally diverse educational setting has multiple benefits for the instructional processes of technical and vocational colleges. The teaching and learning processes at technical and vocational institutions were found to be cooperative in a way that enables different students to maximize learning outcomes, enhance academic accomplishment, and develop the interpersonal communication skills necessary for teamwork.

Both students and instructors had good and practical perceptions on how students’ ethnic diversity is managed in the application of cooperative learning. Accordingly, cooperative learning has been found to work better in diverse classrooms from an ethno-structural, ethno-cultural, and ethno-categorical perspective than it does in monolithic groupings.

Students and trainers of the TVET colleges have more positive perceptions than negative perspectives towards student ethnic diversity management during the implementation of cooperative learning. Overall, our results demonstrate a strong effect of managing student ethnic diversity on the effectiveness of cooperative learning. This is an important finding in our understanding that classroom diversity is more of an opportunity for cooperative learning than being a challenge.

However, even better results are achieved when using our algorithm on the opportunities of student diversity management to apply cooperative learning major challenges such as the group superiority of majority ethnic group students, peer victimization, and homophily.

The instructors delivering instructions in a diversified classrooms use the following major techniques to implement cooperative learning in well managed classroom diversity; diagnose the needs of students of diverse ethnicities, create an inclusive learning environment, interactive classroom, reduce competitive learning among students of different ethnic backgrounds, overcome ethnocentrism in the college and diversify student cooperative learning activities.

Thus, the present study recommends that educational researchers conduct future investigations on the nexus between student diversity and the application of cooperative learning by employing quantitative research designs.

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