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INTEGRATING SOCIOMETRIC TECHNIQUES IN ASSESSING THE AFFECTIVE DOMAIN IN HIGHER EDUCATION

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Keywords: **Abstract:** Studies have shown that educational assessment emphasizes more the Sociometry, cognitive domain of learning. Educational experience has also shown that test Sociometric instruments are mainly used in the educational system for assessment of learning than the use of non-test techniques which emphasize the affective domain of learning. Techniques, Sociogram, The affective domain is an aspect of the educational taxonomy that focuses on attitudes, emotions, and values. The measurement or assessment of the affective Assessment, Affective domain is oftentimes relegated to the background. Attention is not so much given to Domain, how students emotionally engage with content and how they relate to their peers, teachers and learning environment. Or how the affective domain helps the students to collaborate with others, show kindness and engage in respectful interactions. In higher institutions, there are deteriorating values of relationships, sometimes arising from lack of character formation, misconstrued notion of social relationships and negative societal influence which may affect students behaviour and academic performance. A test instrument such as an achievement test cannot be used to address these problems associated with the affective domain, but rather, a non-test instrument such as sociometric techniques. Sociometric techniques are a powerful tool for examining peer relationship and social interaction within a classroom. This paper, therefore, explored the integration of sociometric techniques in assessing the affective domain, highlighting their potential to improve students' interactions, promote integration and reinforce relationships among students. It recommended among others, that teachers should adopt sociometric techniques to help support students' emotional needs and encourage a more convivial and nurturing learning environment.

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Introduction

effectively То assess students' learning outcomes, it is important to have valid measures in place. For a valid assessment, teachers should not assess only students' knowledge and skills but also their affective behaviours, such as their interests, abilities, traits, and personalities. Some teachers believe schools exist primarily to develop students' intellectual abilities, often neglecting their emotional social and development. Students differ in their personalities, some are outgoing and friendly (extroverted), while other are moody and introverted. Some are driven by achievement, while others are more easy-going, unassertive and non-competitive (Oji, 2003). Some students isolate themselves from their peers and may be going through emotional challenges. That is why assessment of the affective domain should be given attention like the cognitive domain of learning.

In every classroom, there are always students who like to bond, form small groups, while there are others who isolate themselves or keep a distance from their peers. Some students are engaging and easily gets along with others, while some may not be liked by anyone. This natural of students' interaction, friendship, way relationship another (social with one relationships) is central in shaping all aspects of their personal and academic growth. It is important that teachers understand the hidden social connections that exist among the students.

Using sociometric techniques, teachers can observe, measure or assess the relationship patterns that exist among them. The techniques help identify students who are engaging, always preferred, popular, collaborative, team spirited, and those who may feel excluded. In mapping out these dynamics, the teacher can better support students' emotional needs and promote a more inclusive, nurturing, and conducive learning environment.

In education, assessment includes the cognitive, affective and psychomotor domains of learning. According to Cohen, Manion and Morrison (2018), assessment is the reflective process of gathering and understanding information to make meaningful decisions about students, programmes, or schools. Assessment is not limited to testing of facts or scores, but it is also concerned about how students think (cognitive), how they feel (affective), and how they

relate with others (social). Good and Brophy (2008) stated that assessment goes beyond simply assessing academic performance. It also understanding students' includes social behaviour and the dynamics of their relationships in the learning environment. Similarly, research has shown that students' emotional well-being and social relationships play a big role in how well they do academically. That is why it is important to study and understand students' emotional traits (whether they feel belonged or alienated in class) because these emotions influence their eagerness to



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learn, their willingness to participate, and their performance (Cohen, Manion and Morrison 2018). When teachers assess students' emotional behaviour, it enables them support students' emotional development and spotting some behaviours that might have gone unnoticed (McMillan, 2018).

The affective domain is concerned about students' feelings, interests and values, shaping who they are and what they care about. These aspects of the affective domain are essential for building positive attitudes and values that support lifelong learning (Bloom, 1956). Therefore, when teachers assess students' emotional and social traits, they can create classrooms where kindness and teamwork thrive thereby making learning space more supportive, collaborative and conducive for everyone (Good & Brophy, 2008). To make this possible, teachers need to use sociometric techniques.

Sociometric techniques help teachers learn about students' social choices and friendships, understanding how they interrelate with their classmates and shaping the whole feeling of the classroom (Fraenkel, Wallen, & Hyun 2019). Every classroom teacher needs sociometric techniques to guide students' behaviour and create a positive, supportive social atmosphere in the classroom.

This paper will explore the integration of sociometric techniques in assessing the affective domain in higher education by examining the affective domain: sociometric techniques, methods and uses for assessing the affective domain; reasons for integrating sociometric techniques in assessing the affective domain in higher education; examples on how to integrate sociometric techniques into classroom assessment, challenges, as well as conclusions and recommendations.

Affective Domain of Learning

This section discusses the affective domain of learning according to the Krathwohl's (1964) taxonomy of educational objectives. In the Affective Domain. the concept of "internalization" was used as the key guiding principle. This allowed objectives to be organized in a structured way, based on how deeply a learner (student) has internalized attitudes, values, or emotional responses. Internalization is commonly understood as the process of transferring something from an external state or location to an internal one. This inherently creates a distinction between the "outer" and "inner" aspects. This concept is clearly relevant in the affective domain, where the internalization of attitudes, values, and emotions plays a key role (Mors head. 1964). When discussing internalization as growth, the authors of the Affective Domain suggest that control gradually shifts from external or environmental factors to internal factors. In the process of developing affective responses, this means that external influences decrease over time, while internal control and influence grow stronger. They explain that values are gradually internalized by

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the learner (student). As this process progresses, the values become more deeply integrated into the individual's internal framework for understanding the world. At the beginning, these values simply catch the student's attention, but by the end, they are fully accepted and become part of the student's interconnected view of the world (Mors head, 1964).

Affective domain has five levels as propounded by Krathwohl (1964) as shown in the diagram below:



Receiving: The first level is receiving. It is about the students' readiness and willingness to notice and pay attention to certain things to learning in class. It means, students focusing attention on what is going on in class and around the learning environment. This is the most basic level of learning in the affective domain. For example, in a Civic Education class, a student listens quietly and attentively as the teacher explains the importance of community service and good citizenship. At this level, the students only show interest in learning about it.

Responding: The second level is responding. Here, students go beyond paying attention to getting involved. They show their interest by reacting to what they saw or heard. At this level, students show real interest and enthusiasm, and they do not just wait for instructions but actively seek out learning opportunities. For example, after listening attentively to the lesson on Civic Education, students engage in a class discussion on civic responsibilities and afterwards helps clean up the school compound.

Valuing: In this third level, students place importance on a particular idea, object or behaviour.

At this level, students have moved from simple engagement like teamwork, to making a deeper commitment to make sure that the team succeeds. This level shows that students have internalized certain values which can be seen through their actions. Using the same example of Civic Education, the students organize a community awareness event to demonstrate their citizenship.

Organization: The fourth level is organization. It is about how students bring together the values that are different from theirs, begin to compare them, find out their similarities and differences, sort out any conflict between them, and start to build a personal consistent set of values. At this level, students begin to develop their own philosophy. Using the same practical example, a student creates a personal action plan that balances studying for exams with volunteering at a community cleanup. This shows that the student has integrated community service (civic responsibility) with academic goals.

Characterization by a value or Value Set: At this fifth level, the internalized values have

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naturally become part of students' lives and who they are. These values will always be reflected in their behaviour and a clear life pattern begins to form especially on how they think, feel, behave in personal, social, and emotional situations. For example, over time, a student becomes known for their commitment to community service – leading civic activities, encouraging others to participate, and exemplifying the values of civic responsibility in and outside the classroom.

Sociometric Techniques, Methods and Uses for Assessing the Affective Domain

Jacob L. Moreno (1960) developed sociometry as a method for scientifically studying social relationships within groups. It examines how groups and societies are structured. Sociometry helps teachers clearly understand how students interact; who is more popular, who are mutually connected, and where each student fits within the social fabric of the class (Cohen, Manion & Morrison, 2018).

Sociometric techniques are a means of presenting simply and graphically the structure of social relations, lines of communication and the patterns of friendship, attractions and rejection that exist at a given time among members of a group. These techniques are used to assess the social acceptance of individual students. They are grounded on individual student's choices of friendship for some group situations or activity. In these techniques one can know which student would be congenial for a working group or companions for certain work (Kashyap, 2020). Sociometric techniques help teachers see which students interact well with and who they prefer to spend time with.

The key features of sociometric techniques can be summarized as follows: (1) It is simple and graphical presentation of data about the group (2) It presents the structure of social relationship that exist among the members of the group (3) It indicates the friendship pattern among group members (4) It indicates the line of attraction and rejection among group members (5) It has always a time reference (6) It indicates at the person most chosen as the leader and the person not chosen at all or the isolate (Kashvap 2020). Sociometric techniques are, therefore, useful for assessing the affective side of learning, including acceptance, rejection, social and group dynamics, which play a key role in emotional growth and the classroom environment (Cohen, Marion & Morrison. 2018). Sociometric techniques help teachers understand students' positive and negative emotions in relation to their relationships and studies. Students affective domain can be assessed using the following methods:

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Sociogram

Before creating a sociogram, the teacher must first determine the purpose of the sociometry. The preliminary step involves constructing a **sociometric matrix** by asking each group member to name the individuals they would most like to work

An example of Sociometric Matrices (Numerical Representation): The names of a group of eighteen students in a class are used here for illustration:

A (Austin), M (Mary), Ma (Marcel), Y (Yusufu), D (Davina), Da (David), J (Joanna), E (Emeka), F (Femi), Ju (Juliana), K (Kayode), T (Tola), R (Ramsey), N (Ngozi), Jt (Justus), Fl (Flora), H (Hubert), Ab (Abel).

-| *Fig 1.2.* **1** indicates a choice. **0** indicates no choice.

The data in the sociometric matrices will then be plotted into a sociogram for further analysis and interpretation. Sociogram, therefore, shows the visual representation of the social relationships within

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the group. According to Fraenkel, Wallen, & Hyun (2019), sociograms visually map group choices, identifying leaders, isolates, and



subgroups to inform classroom management and group planning. *Fig 1.3*.

In this sociogram, the larger arrows connect all the parts together, showing how the entire group is socially linked. Cliques connect to mutual pairs, mutual pairs and chains flow into the larger social network, and isolates sit outside the main social activity but are visually connected to the group, showing they exist within the system, even if they are not actively participating. The names in different colours indicate the type of relationship within the group as follows:

Cliques and Mutual Choices: Austin, Mary, Marcel, Davina, Yusufu form a strong clique. They have multiple arrows going back and forth which shows friendship, connection, and mutual influence. Femi ↔ Juliana is a mutual pair. Both chose each other, and this shows a balanced, mutual friendship.

Chain/LinearConnections(Rejectees): David \rightarrow Joanna \rightarrow Emeka: This
a linear chain with one-way choices, indicating
weaker or unreciprocated ties. Kayode \rightarrow Tola,
Ramsey \rightarrow Kayode, Ngozi \rightarrow Justus, Flora \rightarrow
Justus: These are one-way choices, suggesting
cleavages and rejectees. These are students who
are chosen but they may not reciprocate.

Isolates (Disconnected students): Hubert and Abel are isolates, they stand alone, with no arrows connecting them to others. It means they are left out or are not actively participating in the social network.

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With the aid of a sociogram, as in the example given, the teacher should be able to understand who the key stars are (Austin and Davina) that are popular and influential, those who have strong mutual bond (Femi and Juliana), the cleavages and rejectees, and the isolates (Hubert and Abel) who might need support and inclusion strategies. For example, after creating a sociogram in a classroom, the teacher notices that Austin, is frequently chosen by classmates as prefect, while Abel, is rarely or never chosen, the teacher will form group activities where Austin works with Abel to encourage inclusion and support Abel's social skills.

Peer Rating Technique

Peer ratings refers to the process where a student's behaviour is assessed the bv classmates in а learning environment (American Psychological Association, 2024). It is a sociometric technique where students are asked to rate each other based on specific traits like collaboration, kindliness, leadership, etc. Peer rating is used to measure social status, popularity, or acceptance within a group. It is quantitative and the ratings are done on a numerical scale. The scores can be analyzed using charts.

For example, here is a bar chart that shows peer rating:



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Fig 1.4.

Students with high ratings (4-5).

Students with moderate ratings (2-3).

Students with low ratings (0-1).

The bar chart above, represents the peer ratings of students in group, based on how many times they were chosen by others. The horizontal bars represent each student's peer rating score. Long bars or high ratings show those who are more chosen by peers, while the shorter bars or lower ratings indicate the less chosen.

The outcome of the peer ratings indicate that Femi and Juliana have the highest ratings (5) which means they are popular in the group. Austin and Davina follow closely with ratings of 4, meaning they also are highly chosen. Mary, Marcel, and Yusufu have moderate ratings (2-3) which shows they are to some extent connected. The rest, including David, Joanna, and others have low ratings (0-1), indicating they are less chosen by peers, and therefore, may need support to build social bonds or relationships. Hubert and Abel have zero ratings, classifying them as isolates in the group.

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Mehrens and Lehmann in Oji (2003) identified three teacher-made sociometric techniques – peer appraisal method, "Guess who" and nominating technique.

Peer Appraisal Method

The peer appraisal is used to assess students' leadership skill, popularity and behaviour. In this technique, students are provided with a simplified rating scale created by the teacher, who also outlines the traits to be rated. The student giving the ratings is requested to be anonymous and is assured that the information given is confidential. Even if a student is unfairly labelled in a particular role, the appraisal could still reflect the impression of the classmates (Oji, 2003).

The teacher creates an appraisal table, listing each student, who appraised them, and the feedback given. For example,

StudentFeedback fromFeedback givenAustinDavinaExcellent leadershipAustinMaryVery helpful and friendlyFemiJulianaSupportive and collaborativeFig. 1.5.

"Guess Who" Technique

In this technique, a student is given a list of traits descriptions and is asked to identify classmates who best match each description. Then the teacher will score a positive role 1.0 point and a negative role -1.0. the sum of positive and negative is the student's score (Oji, 2003). The teacher asks questions like:

1. Who is always friendly?

- 2. Who shows leadership skills?
- 3. Who is very helpful?
- 4. Who is quiet and reserved?
- 5. Who is least selected by others?
- 6. Who enjoys group work?
- 7. Who is a creative thinker?
- 8. Who is punctual and organized?



Fig. 1.6.

This graph diagram shows those who are nominated for each trait as follows: Friendly (Austin and Davina), Leadership (Femi and Juliana), helpful (Austin and Davina), Quiet/Reserved (Mary and Yusufu), least selected (Hubert and Abel), enjoys group work (Femi, Juliana and Davina), creative thinker (Flora), punctual and organized (Joanna). From this "Guess Who" sociometric technique, the

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teacher can identify students' social strength (seen in those who are helpful, friendly, and can be leaders), social gaps (those who are less chosen or isolated), and potential groupings (those who can thrive in group work).

Nominating Technique

The nominating technique is like the guess-who technique, but with a key difference. In the nominating technique, the teacher is interested in both the student making the nomination and the student being nominated. In contrast, the guess-who technique focuses only on the student nominated for specific traits. The nominating technique involves asking students to identify classmates they would prefer to sit by, work or play with (Oji, 2003). The teacher can ask students questions like:

- 1. Who would you like to sit by?
- 2. Who would you like to work with?
- 3. Who would you like to play with?

This diagram illustrates the nominating technique where the teacher is the facilitator who asks the questions. The nominators names are in bracket showing who made the nomination, and each question branches out to students who were nominated.



Fig. 1.7.

In this diagram, for example, Austin was nominated by Davina. and Davina was nominated by Austin showing mutual choice. Femi was nominated by Juliana, and Juliana was nominated by Femi. With the aid of the nominating technique, the teacher will be able to identify patterns of mutual choice (e.g. Femi and Juliana, Mary and Yusufu), popular students who were nominated multiple times (e.g. Austin, Davina, Femi), students who need support (e.g. those with fewer or no nominations). social dynamics/group interactions. The nomination process diagram helps the teacher plan groupings, identify potential leaders and assist isolated students. The nomination technique will help teachers identify and visualize who is choosing whom, how relationships form in the group, valuable insights for classroom management and group planning.

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Reasons for Integrating Sociometric Techniques in Assessing the Affective Domain in Higher Education.

Using sociometric techniques to assess students' affective domain naturally lead to the question: Why assess the affective domain using sociometric techniques? Sociometric techniques are valuable to both teachers and students, especially in classroom teaching and learning. The reasons for the use of sociometric techniques are articulated from the works of Fraenkel, Wallen, and Hyun (2019), Good and Brophy (2008), McMillan (2018), Cohen, Marion, and Morrison (2018).

- 1. To help identify social isolates and atrisk students: Sociometric techniques offers insights to teachers on how students' social connections shape their self-worth, motivation, and emotional well-being. A student with a sound mind and emotional balance is more likely to perform well academically and achieve successful learning outcomes.
- 2. It helps to promote positive classroom climate: Understanding students' affective relationships or emotional connections can help teachers create a classroom environment that encourages teamwork, minimizes conflicts, and promotes positive social interactions. With sociometry, teachers can create a more inclusive and emotionally supportive learning environment.

3. **To** help teachers understand emotional and social aspect of learning: Sociometric techniques give teachers valuable insights into students' emotional and social behaviours which are often overlooked in cognitive assessments but are needed for academic success. Students' emotions, how they feel and what they value can influence or shape how they learn. Social interactions such friendship, peer acceptance, and rejection also influence learning and academic achievement. Therefore, positive emotions can enhance learning while negative emotions may inhibit it.

Examples on How to Integrate Sociometric Techniques into Classroom Assessment

Classroom example of a sociogram: The teacher notices that some students are often left out during group activities. To understand the social dynamics, the teacher asks the class to write down the names of two classmates they would like to work with on a research project. The teacher then creates a sociogram using their responses. Students like Austin and Davina are stars, meaning they are highly chosen and are natural group leaders. Femi and Juliana have fewer choices, and they might be feeling isolated. Using this sociogram, the teacher assesses the students' academic collaboration and social well-being. In the teacher's next plan for group project, he/she will carefully mix the



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students by pairing strong leaders with quieter classmates with the aim to fostering a more inclusive and supportive learning environment, for a better socio and learning achievement.

Classroom example of a peer rating technique: Assuming a teacher wants to assess how students perceive each other's contribution to group work, he/she will give each student a rating sheet with all their classmates names and ask them to rate each classmate from 1 (rarely cooperative) to 5 (highly cooperative) based on their experiences of the last group work. At the end of the exercise, the teacher analyzes the ratings to identify those who are consistently rated high, those who may need support in developing teamwork skills, and how students interact.

of peer Classroom example appraisal technique: After students have completed a group presentation in class, the teacher asks each student to anonymously write a few about their group members, sentences highlighting their strengths and areas for improvement. The teacher then reviews the appraisals to gain insight into how students perceive each other's contributions and provides feedback on their collaborative skills.

Classroom example of nominating technique: For an upcoming class activity, the teacher asks students to write down the names of two preferred classmates they would like to pair up with. The teacher then uses these nominations to create a sociogram, identifying students' preferred partners and those who may be isolated. This helps guide decisions for future group activities.

Classroom example of "Guess Who" technique: A teacher wants to assess students' views about their peers. He/she provides a list of descriptive questions, such as, who is friendly? Who is always helpful to others? Who often leads group discussions? Students anonymously write down names that match each description. The teacher then uses these responses to build a profile of classroom dynamics, helping him/her identify natural leaders, helpers, and those who may need additional support.

Challenges

The challenges found with sociometric techniques is that

- 1. Sociometric techniques are subjective because they depend on the teacher's personal perception and judgement. Therefore, it is important that the teacher minimize bias and be objective in analyzing the sociometric process.
- 2. Environment and change in behaviour can affect the response of students.
- 3. The teacher must have a balanced personality because managing students' affective domain effectively requires a lot of patience.

Conclusion

In education, sociometry is important for assessing students' affective domain in their learning process, relationship with their peers



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and academic environment. While cognitive instruments are used to measure students' knowledge and reasoning abilities, affective instruments are also necessary to assess the affective domain, which is essential for achieving learning outcomes. Sociometric techniques are effective tools for assessing social relationships among students in the classroom. They help teachers' study and understand students' behaviour toward one another. Using sociometric techniques, the teacher can examine the affective side of learning and identify students' emotional and social traits including friendship, mutual acceptance, rejection, and isolation. This, in turn, helps create a positive and supportive classroom atmosphere that fosters effective learning achievement.

Recommendations

Drawing from this paper, the following recommendations are made:

- 1.Sociometric techniques are effective methods for assessing relationships between students and their peers to enhance collaborative learning.
- 2. Teachers should use sociometric techniques to enhance students affective behaviours, such as their interests, attitudes, abilities, and personalities, to help in shaping them academically.
- 3. Teachers should adopt sociometric techniques in their classrooms, to help identify patterns of friendship, social acceptance, and



exclusion. This will enable them to intervene and address issues more effectively.

4. Teachers need sociometric techniques to help support students' emotional needs and promote a more inclusive and nurturing learning environment.

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