Feedback in Linear Programming: Students' Perceptions at AYO Secondary School of Nkeyema District in the Western Part of Zambia: A Hermeneutic Tactic

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Abstract: The foundation of teaching strategies in school environments is feedback. Nonetheless, it needs to be communicated clearly because it is frequently misinterpreted. Due to the negative comments, they gained through their actual internships, students lacked confidence and felt unable to practice their talents. They also felt that receiving comments made it difficult for them to finish their useful exercises. In the western Zambian region of Nkeyema, AYO Secondary School was the site of this investigation. An interpretivist approach was used in an exploratory qualitative design. Eleven (11) secondary school pupils in total and each student was questioned separately. With the participants' consent, all interviews were audio recorded using a digital voice recorder and then verbatim transcriptions were made. After that, qualitative content analysis was used to analyse the data thematically.

The study's main themes included how participants perceived the feedback they received in the classroom, the implication of feedback and strategies for improving feedback in the classroom. Despite the difficulties with group feedback and the strong emotions it evoked, students valued the input they received in linear programming. Pupils ought to be ready to receive the feedback with greater openness.

Keywords: Education, linear programming, teaching, feedback

I. Introduction

Feedback is essential for enhancing learners' performance in linear programming (LP) because it offers timely, precise, and useful information that aids in understanding errors, reinforcing proper processes, and fostering the development of problem-solving abilities. Feedback is the process by which students analyse remarks made about the value of their work in order to enhance future performance or learning strategies (Carless 2019).

It is one of the essential elements of teaching strategies that should be applied throughout the educational process. Important people in each unit assist students in identifying learning opportunities so they can acquire new skills. According to González-García et al. (2020), education is therefore seen as essential to students' acquisition of abilities during their learning, where competences are noted.

Students grow in capability, competence, and compassion as a result (Dasila et al. 2016). Students gain knowledge by applying concepts, thinking back on their experiences, and receiving feedback. Feedback enables students to analyze the discrepancy between their actual and predicted performance and devise strategies for improving it. More significantly, it promotes experiential learning and reflective thinking by getting students to think back on their thoughts, emotions, and encounters (Hardavella et al. 2017). Even though it is well acknowledged that feedback is an essential part of education, teachers still find it difficult to give it (Weinstein, 2015).

II. Background

Feedback helps learners identify and correct misunderstandings and mistakes. By receiving specific feedback on errors in formulating constraints or objective functions, learners can better grasp linear programming concepts and avoid repeating the same. Education frequently uses its curricula; where knowledge is imparted by gradually building upon one another. Typically, the theoretical portion is taught in a classroom setting or online through learning management systems.

Dobrowolska et al. (2015) assert that education is a multifaceted, complicated environment. The teaching environment and the supervisory relationships between students and teachers make up dyadic approach to learning in education (Rajeswaran, 2017). The most crucial element of student assessment and learning facilitation is feedback, which is provided by the school foundation that supports the educational system. This suggests that one of the systems of support in place to help facilitate students' proficient growth is feedback.

There are various types of feedback that are given to and received by students in linear programming. These include written, oral, and informal feedback. Students also receive feedback that is directional, facilitative, and constructive.

The latter is typically administered during the midterm exams. When feedback informs a pupil about necessary changes, it's considered directive. Comments or recommendations that encourage students to make their own revisions and changes are helpful.

When feedback is given in a suitable interpersonal setting and is comprehensive, thorough, and well-planned, it is considered constructive. In addition, the recipient must expect it to be based on first-hand information on students' performance rather than generalizations. During revisions, teachers could encourage students to express their commitment, empathy, courtesy, civility regarding others, and discernment (Houghton, 2016).

Peer feedback is commonly employed in educational contexts, especially following peer observations, despite students' reluctance to offer criticism on their peers' behaviors and their difficulty balancing critical and positive input (Pedram et al. 2020). Thus, it is clear that peers are involved in providing feedback in schools in addition to teachers.

Remarks ought to be pertinent and precise. Feedback givers should reply as soon as they can after offering comprehensive and relevant comments. Furthermore, pupils are exposed to undesirable feedback techniques such as student comparisons and non-standard, irrelevant comments, claim Alfehaid et al. (2018). Effective use of feedback allows teachers to modify their lesson plans and student assignments to better suit their needs (Mcfadzien, 2015).

Problem statement

In linear programming, learners frequently struggle to get sufficient feedback, which can impede their progress and comprehension of the material. According to Gibbs & Simpson (2004), high student-to-teacher ratios or the teachers' limited availability may prevent students from having individualized feedback from them.

Even though teachers should seldom do, and when they do, the students are not satisfied with what they receive. The main grievance expressed was that they did not receive sufficient feedback. Similar to this, several students in the Nkeyema District felt uneasy about the feedback they got in class, which prevented them from learning the necessary skills during their review. This was brought to the attention of students at student, which provides forums for frequent student meetings to address concerns pertaining to their study.

In addition, casual discussions with students in the district revealed that they felt the comments they got prevented them from finishing their coursework. Because the criticism was overly generic, ignored their strong performances, and lost focus on the issue at hand, it did not aid in their improvement.

Aim

Article's goal was to explore how secondary school pupils view the feedback they get from their teachers.

Research design

This study employed an exploratory, qualitative research approach from an interpretivist standpoint. The primary phenomenon under investigation was effectively explored and understood with exploratory qualitative approach (Creswell 2014). In order to comprehend feedback through the interpretation that research participants ascribed to their academic achievement.

Data collection methods

In-depth one-on-one interviews were the method of data collection employed in this investigation. This was created by conducting in-person, one-on-one interviews with participants to get their opinions on feedback in educational contexts (Creswell 2014b). A personal contact was made with some of the potential participants. The researcher provided the students with consent form and participant information sheet in addition to explaining the goal of the study. A follow-up was done to see if the pupils had agreed.

To find out what they thought of the feedback, including its benefits and drawbacks, questions were also asked. The one-on-one interviews ended after all topics were discussed and neither the participant nor the researcher had anything further to add. Written permission to record audio and transcribe was secured prior to the start of each interview. Rather than focusing solely on the researcher's notes, this made verbatim transcriptions possible, which is a crucial part of data processing.

Data analysis

A thematic analysis was conducted on the study's data. The investigator reviewed the transcriptions to look for any gaps. The data that was gathered was analysed using qualitative content analysis (Maree, 2016). Following the categorization of codes, themes were produced by combining related categories. "Open coding" refers to the kind of coding that is employed during data processing. The researchers used open coding to thoroughly analyze the data for trends and variations (Maree 2016). The study's emerging themes were taken into consideration. After debriefing, the researcher came to a consensus over the emergent themes.

Theoretical Framework

The research utilized the techniques developed by Whitter more & associates. IDAS is a methodology for integrated data analysis and synthesis that is mostly used in qualitative research when integrating qualitative data from multiple studies. It uses a variety of methods and approaches to extract complex, in-depth data sets. The main prerequisites are integrity, criticality, authenticity, and trustworthiness.

These characteristics are essential for every qualitative study. Credibility establishes constant observation and data gathering till saturation and addresses how closely the results reflect reality (Maree 2016).

All interviews were verbatim transcribed, and the report was written such that readers would comprehend how students felt about comments in learning situations. In order to ensure criticality, the research process was examined, input from clinical settings was evaluated, and critical thinking was deeply applied when making study-related decisions. Integrity, in the words of Shaw & Satalkar (2018), is being open, truthful, and impartial. In general, it discussed how crucial it is to remain true to the study topic and steer clear of prejudice while interpreting the findings.

Ethical considerations

Ethics, according to Mhiliwa (2015), is the set of customs that researchers follow as fundamental values. As a result, consideration was given to ethical concerns that affect all participants, including the researcher. Additionally, prior consent was sought in writing and verbally. All of the participants were also given pseudonyms, and the researcher gave them the assurance that the information collected would be handled with the utmost confidentiality and anonymity and would only be utilized for academic research. Every item that was utilized in the data generation process was stored securely. All participants' identities were concealed and this information was provided to them beforehand to protect their identity and confidentiality as well as those of the study sites. Therefore, a contract was created with participants in this regard because the researcher's compliance with confidentiality and respect is paramount (Winner & Dominick, 1994).

III. Findings and Discussions

Students understood feedback they got in learning environments, its ramifications, and ways to make it better. Students believed that feedback is an integral element of the educational environments. They also believed that feedback in educational contexts has ramifications. The study involved eleven participants. Of the eleven students, seven were girls and four were boys.

The participants stated that getting feedback helps to enhance instruction and learning. Another way that feedback is viewed is as a teaching tool.

Students' perception on feedback

The significance of feedback lies in its direct influence on students' academic performance and learning. Generally, students value feedback that is timely, clear, constructive, and actionable. Students prefer feedback that is delivered promptly, as it allows them to understand their mistakes and correct them before they become ingrained habits. Timely feedback is relevant and useful.

Students valued feedback that was provided promptly, enabling them to make timely corrections and improvements (Orsmond & Merry, 2011). Clear and specific feedback helps students understand exactly what they need to improve. Feedback that is effective must be precise and unambiguous because students may find it difficult to understand vague remarks (Hattie & Timperley, 2007). Feedback should be constructive and focused on improvement rather than merely highlighting errors. Positive feedback can also motivate students. Constructive feedback that highlights strengths and areas for improvement helps students to enhance their performance" (Gibbs & Simpson, 2004).

Feedback should provide specific suggestions on how students can improve their work. Students appreciate feedback that guides them on what steps to take next. Giving pupils constructive criticism makes learning easier and helps them develop more (Shute, 2008). Students are more likely to engage with feedback if they perceive it as fair and relevant to their learning goals. According to Carless, (2006) students are more engaged with learning goals when feedback is fair and aligned. Students prefer formative feedback over summative feedback, which only assesses their performance. Formative feedback is essential for guiding students through their learning journey and fostering a growth mind-set.

While teacher feedback is highly valued, students also find peer feedback beneficial, as it provides diverse perspectives and fosters collaborative learning. Peer feedback is an invaluable addition to teacher feedback since it fosters creative thinking and provides additional viewpoints. Feedback can have a significant emotional impact on students. Constructive and supportive feedback can boost confidence, while overly critical feedback can be discouraging. Feedback affects students' motivation and self-esteem (Rowe, 2011). Students appreciate constructive criticism into the learning process.

Student 1 said that,

"I view feedback as a teaching and learning process that takes place in educational environments to direct and assist me in identifying my mistakes and making the necessary improvements" (S1, 12.06.2024).

Shute's (2008) claim that feedbacks need to be precise, unambiguous, and closely tied. Students benefit from knowing exactly what has to be fixed and why. Students can pinpoint their areas of weakness or potential for improvement with the help of feedback. The learning process begins with this identification since it makes clear what has to be fixed. Feedback that is effective is targeted at specific areas of the student's work and allows them to pinpoint their mistakes.

After errors are found, feedback offers direction on how to get better. This can be methods, tools, or actions and abilities. Effective feedback points out mistakes but also makes helpful recommendations for advancement. This direction may come in the shape of indications, clues, or explicit commands. Furthermore, a study carried out in the UK found that students believed feedback continuously aided performance improvement (Deeley et al. 2019). Feedback help students recognize their errors and make the required corrections, resulting in a more productive and interesting learning environment.

Student 2 said that:

"Responses to my questions increase my learning and help me acquire the knowledge and abilities I need to pass examinations" (S2, 11.06, 2024).

Clear expectations, feedback enable students to connect their efforts with the learning objectives. Good feedback identifies the areas in which students need to improve and recognizes their strengths. Acknowledging one's strengths might motivate students to stick with productive habits. Students must identify their areas of weakness in order to focus their attention on when preparing for exams (Shute, 2008).

Students evaluate if their information is accurate, up to the necessary levels of performance in their skills through the feedback process. Education conforms to standards for several processes. As a result, these protocols operate as a manual for regular tasks and ensure that procedures are followed when students are learning new material.

Student 8 mentioned that:

"My knowledge and abilities in the field of education are enhanced by feedback, particularly with regard to errors and providing accurate answers in general. It assists you in correcting errors" (S 8, 11.06.2024).

An emphasis on effort and progress in feedback encourages a growth mind-set. A growth mind-set helps learners persevere through failures and learn from them, which improves learning outcomes and test scores.

Student mistakes and misunderstandings can be recognized and corrected through feedback. By giving specific comments on mistakes made when constructing restrictions or goal functions, educators can help students comprehend the fundamentals of linear programming and avoid making the same mistakes. To put it mildly, receiving feedback can aid students in learning more efficiently and provide information necessary to ace their exams.

Students 3 stated that:

"Some teachers let you share your thoughts about the material you have studied. At times, they request your opinions, after which you collaborate to find a solution" (S3 10.06.2024)

According to Goetz et al. (2018), students view feedback as a teaching strategy used in classrooms. This suggests that teachers take use of the chance to instruct during feedback time by demonstrating rapid tactical abilities or instructing pupils the right procedures to follow.

Student 9 reflected:

"For instance, if I answer a question incorrectly, the teacher would demonstrate the optimal approach and expertise during the feedback session and show me how to answer the question correctly" (S9, 10.06.2024).

Student-teacher interactions and feedback are interrelated. Students' responses to criticism are also influenced by their perceptions. A teacher can exhibit the best strategy and level of knowledge during a feedback session by employing a methodical and thorough approach (Guskey, 2018). It describes each step's reasoning and underlines the parts needed to provide a functional illustration of a solution for the problem. Use analogies or relevant examples to clarify concepts. This facilitates understanding of more difficult concepts. Showcase a range of acceptable techniques, provide instances of multiple approaches to the topic, and go over the benefits and drawbacks of each (Smith, 2020).

Additionally, it was felt that there were problems with communication and that the feedback was inconsistent. The participants reported that following processes in educational environments, they were given favorable feedback. Furthermore, the participants reported that the teachers provide them with insightful, thorough, critical, and helpful feedback regarding how they perform was taken to be encouraging comments.

The implication of feedback

In many disciplines, including psychology, business, and education, and communication, feedback is essential. When feedback is applied well, it can have a large beneficial impact and lead to improvements.

1. Enhanced Learning and Performance

Receiving feedback is crucial to learning and enhancing performance. It gives people insight into their existing performance level and offers guidance. Feedback should be clear, powerful influences on students' development, meaningful, purposeful, and congruent with their prior knowledge.

2. Increased Motivation and Engagement

Clear and achievable goals are a key component of effective feedback, which raises motivation and engagement levels. Positive and constructive criticism can increase self-efficacy and intrinsic motivation, which increases task engagement. The Self-Determination Theory by Deci and Ryan (2000) emphasizes the value of feedback in fostering competence and autonomy, two essential elements of motivation.

3. Behavioural Change and Development

It's critical to provide feedback. It helps people find opportunities for growth and encourages behavioural modification. Kluger and DeNisi (1996) found that feedback interventions can effectively improve performance, even if their efficacy depends on how the feedback is delivered and received.

Receiving feedback encourages responsibility and work ownership. People learn more about their obligations and the consequences of their acts when they receive criticism.

Sufficient feedback systems improve individual performance and promote a culture of ongoing learning and development.

Student 10 said:

"As corrections are made, I get encouraged and cultivate a good mind-set. Corrections, criticisms, and insightful information about what might have been done incorrectly or omitted are provided so that mistakes are not made again. I should also mention that we truly receive insightful and thorough feedback" (S10, 11.06.2024).

Instead of focusing only on the procedural aspects of learning psychology, constructive feedback helps students consider how they think and grasp the fundamental ideas. To solve complicated Linear Programming problems, a deeper comprehension is essential (Nicol, & Macfarlane-Dick, 2006). When feedback is delivered to groups of students, the feedback givers call on everyone to congregate in one location before providing information.

Student 5 said that:

"My ability to correctly recognize vital signs was aided by feedback. Since I was unsure, the response was very helpful because I found the difficult concepts to be simple" (S 5, 11.06.2024).

When they get feedback, students are urged to take protocol into consideration. Through critical examination, students acquire knowledge. Thinking introspectively like this promotes mental processes. Effective feedback boosts pupils' self-esteem and motivation, two essential elements of effective learning. Students perform better on exams when they are self-assured, genuinely connect with the subject matter, and overcome hurdles. For example, they can pinpoint the kinds of problems they find difficult and tailor their practice accordingly (Butler & Winne, 1995). Furthermore, feedback was only acknowledged as knowledge that teachers gave to students regarding their work. Learners felt that there were similarities in the type and style of feedback that they received.

Participants noted that one prevalent practice in educational settings is for the feedback provider to control procession. Participants reported feeling uninvited to participate and fearing that the feedback giver might not assist them in the future if they questioned or shared their personal ideas.

This was expressed by Student 4:

"Once they've watched you carry out a procedure, they tell you how you did and solicit your opinion. Occasionally, you want to ask questions but are unable to do so because you're not allowed to comment" (S4, 11.06.2024).

According to Carless (2019) feedback should assist students perform better or develop better learning strategies. Future performance development necessitates the creation of an action plan outlining the necessary modifications, which calls for follow-up work. Giving feedback involves a series of cyclical acts rather than being a one-time event. This is due to their perception that after feedback is provided, there is never any follow-up to find out what has changed. It also became evident that feedback was sent through nonverbal cues that showed performance had matched expectations.

Student 2 observed that:

"They rarely use words to express how well you're doing; instead, it sometimes shows up as trust. If they see that you can carry out a task without help, they will always assign it to you" (S2, 11.06.2024).

According to Carless (2019), motivated, proactive students who have a strong desire to learn are usually the ones who show feedback-seeking behaviors. Students only stated that they would receive feedback from their teachers, despite evidence demonstrating that students in learning contexts receive input (Houghton, 2016). Since peer teaching, evaluation, and observation are not used in schools, peer feedback might not be given. When the assessment form is given to the students for delivery and review, they can open it and look it over. Participants recognized the learning environments in a classroom even when they were directed towards them.

Student 1 Indicated that:

"We assess our response strategies when the topic is revised, and the teacher provides us with performance evaluations and advice on how to respond effectively" (S1, 11.06.2024.)

Evaluation and feedback do, in fact, overlap. Moreover, evaluation produces cumulative performance reports, while feedback may serve as aid.

Participants said that within their secondary school context, they alternated between various settings. They observed variations in the form and style of feedback provided in educational environments, and individual feedback providers also noted these variations. The participants also thought that the dearth of uniformity was due to the absence of guidelines or standards to follow when providing comments. It seems that feedback providers provided input without adhering to any set protocol on the frequency, time, or procedures of providing feedback. Rather, the criticism was grounded in their own values.

A student 7 expressed that:

"Teachers seem to be more rigorous during revision and provide more in-depth comments since they want us to avoid making the same mistakes on the test. Since everyone provides feedback in a different way, they provide us with guidelines to follow" (S7, 11.06.2024).

According to Mandane et al. (2015), feedback includes sharing information and receiving comments on that sharing. Feedback was thought to have relational implications in educational situations since it is performance-based and entails communication between the giver and the recipient. According to participant reports, self-evaluation and self-development are linked to feedback. Feedback was seen to support students' self-reflection and further enhance traits including self-assurance.

Student 10 said that:

"I can think more clearly about my mistakes and how to avoid making the same ones when I get feedback. Because it boosts students' self-esteem, self-motivation, confidence, and sense of personal fulfilment, feedback is crucial" (S 10, 11.06.2024).

Consequently, Mcfadzien (2015) contends that students ought to accept and have faith in the providers. While feedback is helpful for learning, students must utilize it carefully. Nevertheless, the results demonstrated the important function that feedback plays since it gives students' abilities by allowing them to make corrections when necessary. Feedback-seeking behavior was also identified as an authentication mechanism by the study's findings. Via a two-way conversation feedback motivates students. According to participants, students go to their peers for criticism when they don't receive it from teachers in an educational environment.

Student 11 acknowledged that:

"We are kept occupied by feedback since it allows us to discuss performance improvement and pose queries. But not all educators see it that way; some tell you they're taking a break" (S11. 11, 06.2024).

Students receive specific, helpful criticism, important feedback in and positive feedback that is apparent in favorable comments. These results refute early issues noted, specifically too general feedback given to students. Furthermore, consistent with those of Dawson et al. (2019), who found that comments provided on students' work were encouraging, constructive, supporting, and favorable. This is in contrast to Carless (2019), who found that student responses were task-specific, constrained, and dismissive.

In educational settings, having strong interpersonal skills among students and between them and peers/mentors is crucial since it promotes learning. The participants stated that in learning environments, feedback promoted the growth of close relationships between them and their teachers

Participants Students 3 said that:

"I was able to talk to my teacher and ask for help because we had a strong relationship. Feedback helps teachers and students have positive working relationships." (S3, 11.06.2024).

Positive reinforcement of effectively implemented techniques and solutions strengthens successful tactics and increases self-assurance. Students remember these techniques when they are validated for correctly utilizing the simplex method steps or graphical solutions (Shute, 2008). Both students who receive it and instructors or other educators who provide ijt find it to be equally important (Mcfadzien 2015). It thereby improves their teaching strategies (AITSL, 2024). In order to optimize student learning, educators are urged to use feedback mechanisms.

The way students responded suggested that the feedback elicited emotional responses. Some feedback providers exploited the opportunity throughout the feedback process, which resulted in harsh feedback that the participants experienced. This was another emotional reaction.

Student 8 mentioned that:

"Even though some teachers are really impolite, we can't argue with them. Sometimes pupils need to maintain their composure" (S8, 11, 06.2024).

Participants offered recommendations about how to better feedback during the interviews. The recommendations advocated for a cooperative strategy that included feedback providers, district management, and educational institutions. The two components that make up this theme are rules and techniques for providing feedback, and instruction for student coordination.

Students 2 suggested that:

"I am suggesting that teacher should follow up on students to see if they're improving based on their feedback or they can delegate another person to follow up" (S2, 11.06.2024).

Subsequent Activity eliminates any confusion, as this is essential to repairing errors and misconceptions (Shute, 2008). It facilitates students' deeper engagement with their work, understanding of their errors, and gradual performance improvement. Effective feedback, according to Nicol & Macfarlane-Dick (2006), aids the learner's capacity for self-regulation.

This activity provides students with reinforcement and helps them through application and repetition. Students that have good follow-up edit their work based on feedback they receive through repetition and application; this exercise reinforces their learning while also assisting students in making corrections (Sadler, 1989). It is suffice to mention that, feedback follow-up is essential since it clears up misunderstandings, encourages introspection, boosts confidence, offers practice chances, and reaffirms learning goals.

Student 4 supports this view:

"We can't hold them accountable for the input they occasionally provide us because it's possible that they weren't instructed or taught in this area. They are excellent teachers, but they don't appear to know their students. I'm asking subject matter experts to draft standard operating procedures that should be adhered to" (S4, 11.06.2024)

The study's participants hinted that they receive comments in an unfavorable manner. This encompasses impolite behaviors paired with hurtful and disparaging remarks. Furthermore, one positive interpretation of the students' behavior is that, in spite of receiving unfavorable criticism, they maintained composure and approached the issue with optimism. When a student receives feedback in an encouraging manner, they will interpret it well and experience happiness. Students who interpret comments as criticism will react with denial, rage, and finger-pointing. It is urged that feedback providers refrain from providing distress in order to avoid these kinds of reactions (Qureshi, 2017).

Student 5 mentioned that:

"I could get comments from friends, who could articulate things clearly, in addition to my teacher. It was also really helpful to me in my academics" (S5, 11.06.2024).

Teacher feedback can offer techniques to tackling linear programming problems in collaborative learning contexts. Better performance and a deeper knowledge may result from this (Gielen, et al., 2010). Peer feedback for learning" shows how structured peer feedback can enhance learning outcomes by offering a variety of viewpoints and chances for cooperative problem-solving. As a result, less time is spent with the kids and more emphasis is placed on performance. According to Hardavella et al. (2017), group feedback was interpreted by students as a critique that could damage relationships, hence feedback be personalized and offered to specific individuals. Furthermore, feedback from groups undermines students' feelings.

Enhancing feedback, particularly in educational and professional settings, can significantly improve learning and performance. Incorporating credibility, provide additional context, and facilitate deeper understanding. Encourage self-assessment and reflection by referencing reflective practices or questions. Collaboration and peer review Promote peer evaluations and offer instructions on how to do so successfully.

Assist with continuous feedback and references to monitor development over time. Cite prior feedback and demonstrate the enhancements that have been implemented. Provide sources for ongoing education, such as periodicals, trade shows, or associations for professionals. A solid introduction gives a comprehensive summary of the subject, especially when addressing the applicability of Smith's 2020 study on consumer behavior. However, using a mixed-methods approach could improve the methodology section.

It is adequate to say that feedback plays a significant role in determining how well pupils learn and perform during learning processes. Student growth and the closing of the achievement disconnect among desired and actual results can both be facilitated by feedback. In addition, protocols and rules for providing feedback ought to facilitate both the coordination of tasks and comprehending the idea. This offers a perceptive and beneficial response.

IV. Recommendations

The study's conclusions led to the following recommendations being made:

1. Rather than just giving general observations, teachers should ensure that their feedback is targeted, focused on the student's achievement in those areas, and detailed. It is the goal of educators to give prompt, constructive, and actionable feedback. This entails pointing out the student's methods for addressing linear programming issues, both in their strong points and their areas for development.
2. Teachers should offer feedback as quickly as practical. Prompt feedback aids in strengthening the retention rate. Instead of waiting weeks to provide feedback, they ought to do so immediately following a task or evaluation (Shute, 2008).
3. Encouragement, compliments, and ideas for development are given to pupils to keep them motivated and from being overtaken by criticism. Prior to addressing areas that require work, they must to begin with anything the learner performed well.
4. Motivate students to consider the input they are given. This promotes independent learning and helps them develop their capacity for critical thought. Guided reflection exercises or follow-up assignments that require students to apply the remarks can be helpful in this regard. Students should be asked to list the benefits and drawbacks of their work before receiving an evaluation (Andrade & Valtcheva, 2009).
5. The feedback ought to be process-oriented. The instructor should place more emphasis on the effort and learning process than just the outcome or grades. This promotes a growth-oriented mind-set. Placing more emphasis on the work and advancements accomplished than just the final grade (Dweck, 2006).

V. Conclusion

Effective feedback application includes being detailed, timely, balanced, promoting self-evaluation, employing a variety of techniques, keeping the learning process front and center, and offering on-going support. Best practices and educational research that highlight learning and fostering student development back up these tactics. By implementing these recommendations, teachers can foster and facilitate students' perspectives and continuous growth. Effective feedback mechanisms improve student performance in linear programming courses by fixing errors, reiterating proper techniques, fostering deeper knowledge, promoting self-regulation, increasing motivation, and facilitating collaborative learning.

Since feedback reduces the performance gap between intended and actual fundamental components of teaching procedures used in educational contexts. Additionally, feedback on linear programming should be given to students. The opinions of feedback providers are appropriately utilized in educational settings.

Acknowledgements

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