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## Contemporary Pedagogical Strategies and Learners' Academic Achievement in National Teachers' Colleges (NTCs) in Uganda

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**Keywords:**

*Problem-Based Learning, Learning Contracts, Academic Achievement, National Teachers' Colleges, Learner Engagement.*

The study examined the effect of contemporary pedagogical strategies, specifically problem-based learning and learning contracts, in National Teachers' Colleges (NTCs) in Uganda. The objectives of the study were to: i) examine the effects of problem-based learning on academic achievement of learners in NTCs in Uganda & ii) analyse the effect of learning contracts on academic achievement of learners in NTCs in Uganda. The study adopted a cross-sectional design and was underpinned by pragmatist philosophy with an explanatory sequential type of mixed methods. Data was collected from 681 respondents with the help of questionnaires, Key informant interviews, and document review. Quantitative data was analysed using SPSS version 29 for statistical data, while qualitative data was analysed in themes to draw conclusions for the study. The results revealed that there was a strong positive relationship between learning contracts and completion rate, with a correlation of 0.71 at a p-value of <0.01. Learners in NTCs gained skills and values to enhance their ability to teach and learn in lower secondary schools (pedagogical skills). Further, there was a strong positive relationship between problem-based learning and academic achievement of 0.31 with a p-value of < 0.01 on skills. It was concluded that Problem-based learning increased learner engagement and aided them to score better grades, while Learning contracts motivated learners in NTCs to do their coursework, project work, and research. The study recommended continuous professional development and support supervision to teacher trainers so as to enhance their skills in the implementation of contemporary pedagogical techniques, specifically problem-based techniques.

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## INTRODUCTION

Like learning contracts, Problem-Based Learning (PrBL) is one of the contemporary pedagogical strategies used in academic institutions in which students learn through solving complex and real-world problems (Nick et al., 2012). Students are presented with problems that are relevant and applicable to real-life situations, which helps them to see the practical application of their knowledge, think critically and find possible solutions. PBL shifts the focus from teacher-led instruction to student-centred learning through research and peer support (Nick et al., 2012).

On the other hand, Learning contracts are agreements between learners and educators that outline the responsibilities, goals, and processes involved in the learning journey (Ydesen & Andersen, 2020). These contracts can play a significant role in enhancing learners' academic achievement through self-reflection and critical thinking (Ydesen & Andersen, 2020). In developed economies like Singapore, a learning contract, also called a goals contract, is used by one to set transparent expectations for students (Kim, 2023). Learning contracts specify behaviours and habits for success and can promote student reflection on how they learn and apply skills from learning (Yeo, 2024). A learning contract is an agreement, written collaboratively between a learner and a teacher, that details what is to be learned, how it will be learnt, and how that learning will be verified to ensure academic achievement in terms of skills and better grades (Pho et al., 2021). It sometimes involves the learner's parent.

Problem-based learning and learning contracts have become dominant pedagogical strategies for learner-centred instruction in academic institutions across the globe, aimed at nurturing soft skills in students at different academic levels. For example, in Belgium, collaborative learning is a core component of PrBL to aid teamwork and better communication skills (Ydesen & Andersen, 2020). Students engage in self-directed research and inquiry to gather information, analyse data, and develop solutions to the problem (Krain et al., 2015). PrBL emphasises the development of critical thinking and problem-solving skills as students analyse complex problems and identify solutions (Evans & Acosta, 2020). Problems often require knowledge from various disciplines, encouraging students to integrate and apply information from different subject areas.

Learning contracts allow learners to decide what they wish to strive for, which activities they will engage in, and how they will demonstrate that they have satisfactorily completed their studies (Yeo, 2024). Learning contracts are personalised agreements that define the expectations and responsibilities of both the learner and the educator (Pho et al., 2021). Learning contracts usually include the following; Learning objectives that are clear, measurable goals that the learner aims to achieve, resources and strategies such as materials, tools, and methods the learner will use to reach the objectives, timeline with specific deadlines and milestones to track progress, assessment criteria especially on how the learner's progress and performance will be evaluated, and responsibilities, roles and duties of both the learner and the educator in the learning process (Kim, 2023).

In Africa, where there are large classes, the contract holds learners accountable for their progress, encouraging consistent effort and engagement for better class work (Boaduo et al., 2011). Learners develop important skills such as time management, goal setting, and self-assessment (Boaduo et al., 2011). Learning contracts can increase motivation by making learning more relevant and personalised. Engaged learners are more likely to put in the effort required to achieve their goals and have better grades (Boaduo et al., 2011). On the other hand, while implementing PrBL in institutions of higher learning, like in Ethiopia, teachers act as facilitators or guides rather than traditional instructors to support students in their learning process, providing guidance and resources as needed (Krain et al., 2015). Students retain information and score good grades because they have to apply their knowledge to solve real problems.

In East African education systems, Problem-Based Learning and learning contracts are becoming widely used in various educational settings, including K-12 schools, universities, and professional training programs, due to their effectiveness in fostering deep learning and practical skill development, like communication, problem solving, and technology (Algolaylat et al., 2023).

Some institutions of higher learning in Uganda, such as NTCs and PTCs, are beginning to adopt learning contracts and PrBL methodologies, often as part of project-based learning initiatives (Abugre & Kpinpuo, 2017). These institutions focus on engaging students with real-world problems that require collaborative and critical thinking skills to solve assessment tasks (Abugre & Kpinpuo, 2017). PrBL has, in some institutions, helped students understand and retain information better than traditional lecture-based methods (Abugre & Kpinpuo, 2017). It has been observed that many educational institutions in Uganda face some challenges in implementing PrBL, such as significant resource constraints, including limited access to learning materials, technology, and funding (Buluma, 2019). There is a need for

comprehensive teacher training programs to equip educators with the skills and knowledge required to facilitate PrBL effectively (Buluma, 2019).

The previous curriculum in many Ugandan academic institutions was rigid and exam-oriented, making it challenging to integrate flexible and interdisciplinary approaches like learning contracts and PrBL that aim at enhancing critical thinking, better communication, and quality classwork (Vincent & Sophia, 2024). Traditional pedagogical strategies are deeply ingrained, and shifting to a more student-centred approach like learning contracts and PrBL requires a cultural change among educators and students, for better learners' grades and pedagogical skills for the world of work (Mugo et al., 2015). The implementation of PrBL in the College of Health Sciences at Makerere University showed positive outcomes in training competent and resourceful health professionals who have gained technological, guidance, counselling, and communication skills (Mugo et al., 2015). The program's success is encouraging other faculties and institutions to consider adopting contemporary pedagogical strategies like learning contracts and PrB for students' successful projects (Mugo et al., 2015). Some universities have initiated innovative projects that use PrBL and learning contracts to address local community issues, such as health campaigns, environmental conservation projects, and entrepreneurial ventures, and learners to solve problems, produce quality classwork and better grades (Vincent & Sophia, 2024).

While substantial evidence demonstrates learning contracts and PrBL's cognitive and non-cognitive achievements among learners, gaps remain in understanding optimal implementation. More research is needed on which pedagogical strategies have the greatest efficacy for specific learning objectives and contexts (Aryan and Saman, 2024). For example, Prince (2004) found that collaborative learning positively impacts academic achievement, but effects vary across disciplines, course levels, and types of collaborative activities. Comparing the effectiveness of distinct techniques can guide

pedagogical choices. As hybrid courses proliferate in Uganda's education system, examining the performance of how different contemporary pedagogical strategies are faring across different disciplines in teacher training institutions is crucial. This is because knowing how each pedagogical strategy works is important in guiding stakeholders about which one needs more investment as compared to the rest, and hence optimise teaching and learning strategies and expand their benefits across educational settings, right from NTCs and spiral to secondary schools. The current study, therefore, sought to study the effect of contemporary pedagogical strategies on the academic achievement of learners in NTCs in Uganda by specifically examining the effects of learning contracts on the academic achievement of learners in NTCs in Uganda and analysing the effect of problem-based learning on the academic achievement of learners in NTCs in Uganda.

## MATERIALS AND METHODS

### Study Area

The study was carried out in five NTCs of Muni, Unyama, Mubende, Kabale, and Kaliro. The five NTCs were selected because they were the centres of training for lower secondary school teachers. For the last 10 years, the five NTCs through the TTE project and the Ministry of Education and Sports provided them with interventions to promote contemporary pedagogies for better academic achievement. As all NTCs transit to degree awarding, it is important to establish their readiness in terms of methodology for better academic achievement through the use of learning contracts and project-based learning.

### Research Design, Study Population, and Sampling

The study adopted a cross-sectional research design to suit the pragmatist philosophy (Bogdan, 1975). The explanatory sequential mixed method approach was adopted, whereby the quantitative data were collected first, followed by qualitative data (Gogo & Musonda, 2022). The choice of such an approach was informed by the fact that

there was a need to first objectively analyse the quantitative data from the questionnaire and then use the obtained evidence in the effective moderation of the qualitative interviews (Schoonenboom & Johnson, 2017).

The study targeted a population of respondents who included MoES officials from the special needs department, Enabel staff who supported ATL implementation in NTCs, NTCs' principals as accounting officers, heads of departments, registrars, and all who were purposively selected, whereas principal lecturers, lecturers, and students were simply randomly sampled. These categories were believed to have information on ATL methodologies, and others were beneficiaries of ATL methodology trainings by the Teacher Training and Education (TTE) project of Enabel through MoES.

## Methods of Data Collection

### Interview

Data was collected using interviews, questionnaire method and documentary review methods.

Open-ended questions were administered during the interview with institution heads (principals), HoDs, the Academic registrar, and the MoES using an interview guide (Taherdoost 2018). Interviews were used to collect valid and diverse qualitative information about contemporary pedagogies and the academic achievement of learners within a short period of time, with in-depth information.

### Questionnaire Method

The questionnaire method was used to collect data for both qualitative and quantitative information. While using a questionnaire for lecturers and students, open-ended questions were used at the end of every set of questions. Closed-ended questions were used to collect quantitative data from staff and student leaders (Canals, 2017). The method was used because it was easy and also cheap to collect a large amount of data in a short period of time. The questionnaire was constructed using the Kobo Collect tool (Skutil et al., 2018).

The link was sent to the IT managers, who also shared it with students and lecturers in each college. Printed copies of the questionnaires were also used for some respondents who had no internet access.

### ***Documentary Review***

This involved a review of NTC documents, especially meeting minutes for award, graduation books, and Quarterly review reports, and enrolment data to get quantities about students, grades, completion rates, and quality of class work. This information was in the office of the academic registrar, per the college.

### **Data Collection Instruments.**

The study used different instruments to collect data from the respondents.

The questionnaire of a five-point Likert scale, a Likert scale of 1-5, where 1=Strongly Agree (SA), 2=Agree (A), 3=Neutral, 4=Disagree (D), 5=Strongly Disagree (SD) with constructs of ATL methodology effects on learners' academic achievement was designed. The questionnaire had open-ended questions at the end.

The researcher used questionnaires designed on the Kobo Collect tool. The link was sent to IT managers for sharing with staff and learners, and printed copies were also distributed. The aim was to collect both qualitative and quantitative data within the shortest period of time, but also to save the environment through an e-questionnaire.

An interview guide was used for qualitative data in various ways, with engaging the participants over the phone and scheduled Zoom meetings were also used, especially for the MoES, Enabel staff, Principals, who were always very busy and off station for official duty, but also to reduce the cost of research and save the environment. Face-to-face interviews were conducted especially for Enabel staff and MoES staff.

Documentary analysis for contemporary pedagogies involved reviewing and interpreting documents to understand policies, practices, and frameworks that promoted or hindered academic

achievement (Corbin & Strauss, 2008). The documents included college quarterly reports, students' performance reports, and award meetings for both quantitative and qualitative data, and the graduation list. Students' projects, research reports, and lecturers' portfolios were also analysed to track students' grades and skills.

### **Data Collection Procedure**

The researcher sought approval for the research proposal. After approval of the data collection instruments, questionnaires, interview guides, and documentary review checklist were digitalised and others printed in preparation to collect cross-sectional data from the five NTCs. The respondents (lecturers and students) were given the link to the questionnaire shared through the IT managers of NTCs, and others were given hard copies. Interviews for principals and MoES were conducted both face-to-face and online through Zoom sessions for those who could not be reached easily. The researcher sought approval from the Uganda National Council for Science and Technology (UNCST). For data collection to be easy with maximum returns and authentic, the researcher sought an authentication letter from UCU through the Research and Ethics Committee, allowing the researcher to collect data.

### **Data Analysis.**

#### ***Quantitative Data Analysis***

The researcher used an interpretive strategy to analyse data derived from questionnaires for lecturers and students. For this research, therefore, the process of data analysis involved coding, tabulation, and interpretation. The data was further analysed, tabulated, and represented graphically using a statistical computer package called SPSS version 29. These packages helped to generate faster and accurate results during data analysis, especially in correlating variables of inclusive education strategy like PrBL, Learning contracts, and academic achievement of learners. Statistics generated included percentages, mean, from the tables, pie charts, and Spearman's rank Correlation for the study variables (Canals, 2017).

Inferential statistics involving correlations and multiple linear regression were generated during the analysis (Cohen et al., 2007).

### Qualitative Analysis

For qualitative data, themes were created from the developing categories. Further cross-case comparison analyses were conducted under each theme in the presentation of findings, utilising some noteworthy quotes from participants. Participants' quotes or excerpts were used in this study for data analysis and interpretation in order to preserve their voices, reflections, and subjective viewpoints as proof of the emerging similarities and differences in their answers to

particular questions, as well as to confirm and show the interpretive rigour and the credibility of such emerging research findings and the conclusions made. Mapping to establish a relationship was also well done. (Creswell, 2013).

## RESULTS

### Questionnaire Return Rate

For this study, 681 questionnaires were distributed to different categories of respondents, and 505 were returned, while 176 were not returned. The response rate is illustrated in Table 1.

**Table 1: Questionnaire Response Rate of Study Participants**

Response	Frequency	Percent
Returned	505	74.2%
Un returned	176	25.8%
<b>Total</b>	<b>681</b>	<b>100%</b>

Source: Primary data 2024

The response rate of 74.2% was good enough to provide reliable and valid data for the study. Despite the fact that NTCs were in transition to degree-awarding institutions, there were learners and staff to respond to the questionnaires.

### Demographic Information.

To better present the results of the objectives aforementioned in the preceding paragraph,

preliminary descriptions of the socio-demographic characteristics from where the data came were presented. These included gender for participants in terms of males and females, years one had been at a given college, the position of the respondent, special needs category, and the specific NTC the respondent was from. The information was summarised in Table 2.

**Table 2: Socio-Demographic Characteristics of Respondents**

Gender	Frequency	Percentage
Male	209	51.9%
Female	194	48.1%
<b>Total</b>	<b>403</b>	<b>100%</b>
<b>Years at college</b>		
Above 20	38	9.4%
11-20	21	5.2%
6-10	19	4.7%
2-5	233	57.8%
Below 2 years	92	22.8%
<b>Total</b>	<b>403</b>	<b>100%</b>
<b>Current position</b>		
Principal	5	1.2%
Principal lecturer	6	1.5%
Lecturer	101	24.9%
Student leader	21	5.2%
Student	271	67.2%

Gender	Frequency	Percentage
<b>Total</b>	<b>403</b>	<b>100%</b>
<b>Special needs</b>	406	
Yes	24	6%
No	379	94%
<b>Total</b>	<b>403</b>	<b>100%</b>

Source: Primary data 2024

Data revealed that there were 209 (51.9%) males and 194 (48.1%) females, meaning that, for this study, more males responded than females. Generally, the population of males in NTCs was found to be more than that of females.

Most of the respondents were students, 271(67.2%), who had been at NTC between 2 and 5 years. This was because some students were pursuing a diploma course in primary education, which lasted for 3years. Lecturers were 101 (24.9%), representing the second largest number of respondents. Although the principals were only 5 (1.2%), each college has only one principal, and they all responded.

There were only 24 (6%) of the respondents who had special needs, and this indicates the need for inclusivity, whereas 379 (94%) of the respondents had no special needs.

**Effect of Problem-based Learning on Academic Achievement of Learners in NTCs in Uganda.**

From the five Likert questionnaires, results about the effect of problem-based learning and academic achievement of learners were presented in Table 3.

**Table 3: Effect of Problem-based Learning on Academic Achievement of Learners in NTCs in Uganda**

Problem-based learning and academic achievement of learners	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree	Mean	SD
Learners identify problems and think critically	30.8% (124)	54.1% (218)	8.9% (36)	3.2% (13)	3.0% (12)	4.06	0.78
Learners are able to develop quality content	34.2% (138)	47.1% (190)	10.7% (43)	6.0% (24)	2.0% (8)	4.05	0.78
Learners solve problems for learning and for the world of work	32.3% (130)	51.6% (208)	9.9% (40)	3.5% (14)	2.7% (11)	4.07	0.79
Learners perform tasks and complete coursework	32.8% (132)	51.1% (206)	10.9% (44)	2.5% (10)	2.7% (11)	4.08	0.79
Reflection on scores and problem-solving	30.8% (124)	54.1% (218)	8.9% (36)	3.2% (13)	3.0% (12)	4.06	0.77

Source: Primary data 2024

Many of the respondents, 124 (30.8%), strongly agreed that learners were able to identify problems and think critically. The majority, 215 (53.3%) of respondents agreed that learners are able to identify problems and think critically. Some respondents, 44 (10.9%), were uncertain, but a minority of the respondents, 5% disagreed and strongly disagreed. These expressed that problem-based learning did not encourage critical thinking.

From interviews;

*“Students are very good at identifying problems, but not at finding possible solutions to the problems. There are no practical solutions that could exhibit innovations from the education sector directly, especially from students”. Anabel staff 6*

This meant that students still required to be supported with techniques for ideation,

prototyping, and critical thinking if they were to acquire better skills and good grades.

The total majority, 84.9% of respondents, agreed that learners were able to develop quality content, 130(32.3%, 208(51.6%) strongly agreed, and agreed respectively. Whereas a few 40 (9.9% )± were uncertain, and a total of 27 (6.2%) disagreed and strongly disagreed. Using problem-based learning, learners can develop quality content.

Open-ended questions revealed that *some learners develop very high-quality content with the support of the teacher through problem-based learning.*

The majority, 308 (76.4%) of the respondents, agreed and strongly agreed that learners solve problems for learning and the world of work, 59 (14.6%) were not certain, and 36 (8.9% ) disagreed and strongly disagreed. Results from interviews indicated that, whereas the method is called problem-based learning, not all learners and teachers understand the concept of problem solving concretely. From open-ended questions in the questionnaire, it was reported that “Problem solving was common in mathematics.

The total majority, 338 (83.9%) of the respondents, strongly agreed and agreed that learners were able to perform their classroom tasks and complete their tasks and coursework. Also, 44 (10.9%) were uncertain, and a total of 21(5.2%) disagreed and strongly disagreed. Through interviews, it was revealed that this was the biggest task that learners and teachers focused on during problem-based learning. Most of the

coursework was done through the problem-based learning method.

The majority, 341 (84.9%) of the respondents agreed that learners are able to reflect on their scores and be able to learn and solve problems. Only 36 (8.9%) were uncertain, whereas a total of 25 (6.2% ) strongly disagreed and disagreed.

From interviews:

*“... Problem-based learning focused more on problem identification, problem solving, and critical thinking for better results. In each lesson, there are different problems to solve and find a solution. The lessons were hinged on the problems, learners found solutions with the guidance of the teacher. From solving problems, learners were able to create content for their learning. As learners solved problems, they progressively learnt through the solutions. This led to better academic achievement in terms of good grades from coursework, project work, classwork, and exams. Skills in terms of communication, problem solving, critical thinking, and pedagogical skills were enhanced”. Principal 2*

This meant that Learners in NTCs gained skills and values to enhance their ability to teach and learn in lower secondary schools (pedagogical skills).

To express the relationship between problem-based learning and the academic achievement of learners, a correlation coefficient was run, and the results were presented in Table 4.

**Table 4: Correlation between Problem-based Learning and Academic Achievement of Learners in NTCs in Uganda.**

Contemporary pedagogical strategy	Pearson correlations with different academic achievements		
	Grades	Skills	Completion rates
Problem-based learning	0.53	0.35	0.63

P<0.01 sign\*\*

At p<0.01 with 2 2-tailed significance level, there was a moderate positive relationship of 0.53 between problem-based learning and learners’

grades, and there was a stronger positive correlation of 0.63 between problem-based learning and learners’ completion rate. There was a weak positive relationship between problem-based learning and learners’ skills.

**Effect of Learning Contracts on the Academic Achievement of Learners in NTCs in Uganda**

Results about learning contracts were studied from the questionnaire, and the results were presented in Table 5.

**Table 5: Results about the Effect of Learning Contracts on the Academic Achievement of Learners in NTCs in Uganda**

Learning contracts							
I have ever signed a contract	25.1% (101)	52.6% (212)	11.2% (45)	7.4% (30)	3.7% (15)	3.88	0.93
Contracts had clear objectives	22.1% (89)	56.8% (229)	13.9% (56)	4.0% (16)	3.2% (13)	3.91	0.75
Contract had activities to aid improved learning	25.3% (102)	53.8 % (217)	13.2% (53)	4.5% (18)	3.2% (13)	3.93	0.77
Signing contract and graduation	18.1% (73)	39.2% (158)	17.1% (69)	16.1% (65)	9.4 (38)	3.41	0.97
Contracts and good grades	18.4% (74)	43.9% (177)	17.6 % (71)	12.4 % (50)	7.7 % (31)	3.53	1.11

Source: Primary data 2024

The total majority of the respondents, 313 (77.7% ), agreed, 25.1% strongly agreed, and 52.6% agreed that learners had ever signed a learning contract. 45 (11.2%) were not certain, and a total of 45 (11.1%) of the respondents disagreed (7.4%) and strongly disagreed (3.7%), meaning they had never signed a learning contract.

From an open-ended question in the questionnaire, it was reported that contracts were always oral between teachers and learners, and nothing much was documented.

The total majority, 318 (79.7 %) of respondents agreed that contracts had clear objectives 22.1% strongly agreed, 56.8% agreed, whereas 56 (13.9%) were not certain. 4.0% of the respondents disagreed, and 3.2% strongly disagreed. Documentary analysis did not show evidence of any learning contract or the objectives set. From open-ended questions in the questionnaire, it was revealed that some learners had never seen a learning contract.

The total majority of the respondents, 102 (25.3%), strongly agreed, and 217 (53.8%) agreed that contracts had activities that aided improved learning. Whereas 53 (13.2%) of the respondents were uncertain, and this could have been due to the fact that they had never signed the contract, whereas 31 (4.5%) of the respondents disagreed, and 13(3.2%) strongly disagreed.

Interviews also revealed that no one was sure of the activities in the contracts since it was very difficult to get the evidence of a contract. Documentary analysis did not show evidence of any contract, and so the activities.

The total majority of the respondents (18.1%) strongly agreed and (39.2%) agreed that they had ever signed a contract and they graduated, whereas 103 (25.5%) of the respondents disagreed and strongly disagreed, while 69 (17.2%) were not certain. This could be indicative of the fact that there was no great relationship between the number of learning contracts signed and the graduation of students.

From interviews, some respondents were referring to admission forms they signed as the learning contracts.

Interviews also indicated that.

*“..learning contracts were not a common method used for teaching and learning in NTCs in Uganda” Enabel 2*

This meant that there was a need for lecturers to draft a learning contract to draw an example and specify the skills to attain, such as problem-solving, critical thinking, or communication skills.

The total majority of the respondents, 248 (62.3%), agreed and strongly agreed that there was a relationship between learning contracts and

good grades. A total of 81(20.1%) of the respondents disagreed, whereas 71 (17.6%) of the respondents were not certain. There was evidence of good grades for students in NTCs from the graduation lists, but it could not be attributed to the performance or implementation of the contracts.

The respondents generally agreed that they had signed a learning contract, with a mean score of 3.88, suggesting a positive inclination towards participation. However, the standard deviation of 0.93 indicated a moderate variation in responses, suggesting that while many had signed contracts, a notable portion were uncertain or disagreed.

Contracts had clear objectives  $3.91 \pm 0.75$  (Mean: 3.91, SD: 0.75), with a mean of 3.91; most respondents perceived that the learning contracts had clear objectives. The relatively low standard deviation (0.75) suggests consistency in this perception, indicating that respondents are largely in agreement that the goals of the contracts were well-defined.

Contract had activities to aid improved learning (Mean: 3.93, SD: 0.77). Here too, the mean score of 3.93 indicates that respondents feel positively about the inclusion of learning activities in their contracts. The slightly low standard deviation (0.77) reflected a strong consensus that these activities were beneficial for enhancing learning outcomes.

Signing contract and graduation (Mean: 3.41, SD: 0.97). The mean score of 3.41 suggests a lower level of agreement regarding the relationship between signing a contract and graduation. This item received the lowest mean score among the group, which could imply that respondents are less convinced that learning contracts directly influence graduation rates. The higher standard deviation (0.97) indicates significant disagreement or uncertainty among respondents regarding this relationship.

Contracts and good grades (Mean: 3.53, SD: 1.11), with a mean score of 3.53, respondents showed a moderate level of agreement that learning contracts are associated with achieving

good grades. The highest standard deviation (1.11) suggests significant variance in opinions, indicating that some respondents strongly believe in the positive impact of contracts on grades, while others were sceptical or neutral about this assertion.

Overall, the data reflected a generally positive reception of learning contracts among respondents, with means above the neutral midpoint (3.0) for most items.

The lower mean scores for items related to graduation and grades signalled potential concerns or misconceptions regarding the tangible benefits of learning contracts on academic performance in terms of skills and grades.

The relatively lower standard deviations in several items reflected a general consensus among respondents regarding the clarity and effectiveness of learning contracts, indicating alignment in the perceptions of their roles in educational practice.

From open-ended questions in the questionnaire, Learning contracts were used as agreements between the learner and teacher geared to improving skills and grades for learners. Learning contracts were signed between the teacher and individual students or a group of students.

From interviews;

*“..The intention of learning contracts was to improve students’ grades from different assessment modalities. These grades were to be documented before any contract was closed. In the case of those who signed a learning contract, there was an intention to establish whether the contracts signed had activities well stipulated to aid learners’ improved learning outcomes in terms of good grades from classwork, coursework, project work, and exams. Skills such as pedagogical, communication, problem-solving, and critical thinking were evaluated in the contract. The contract had timelines that helped to track contract activities, but also measure the*

*completion rate of the learner as the contract was at termination.”*

Learners who signed learning contracts scored better grades either through formative or summative assessments as evidence of improved learning.

To explain the extent of the relationship between the learning contract and the academic achievement of learners, a correlation was run, and the results were presented in Table 6.

**Table 6: Correlation Coefficient between Learning Contracts and Academic Achievement of Learners**

Contemporary pedagogical strategy	Pearson correlation with different academic achievements		
	Grades	Skills	Completion rates
Learning contract	0.62	0.41	0.71

P<0.01 \*\* sig

There was a moderate positive relationship between learning contract and learners’ grades, a weak positive relationship of 0.41 with skills for learners and a strong positive correlation of 0.71 with learners’ completion rates. There was a moderate 0.62 positive relationship between meaningful contracts and grades scored by learners.

**DISCUSSION**

Problem-based learning increased learner engagement and helped them to score better grades. According to Abugre & Kpinpuo (2017), Problem-Based Learning in Africa had the potential to transform education by engaging learners to achieve higher. Ydesen & Andersen (2020) agree with the findings of the study when they stated that collaborative learning was a core component of PrBL to aid better grades.

In this study, Learning contracts motivated learners in NTCs to do their coursework, project work, and research. This is in line with Boaduo et al. (2011), who emphasised that learning contracts can increase motivation by making learning more relevant and personalised. Engaged learners are more likely to put in the effort required to achieve their goals and have better grades.

**CONCLUSION AND RECOMMENDATION**

**Conclusion**

Quality classwork produced better competencies, such as communication, cooperation, problem-

solving, and creativity, which helped to produce 21st-century learners who have better grades and skills needed in the market. This is because the time learners took doing tasks at each learning contract helped to support openness in knowledge creation to promote learning, critical thinking, and problem solving. Whereas the learning contracts were appreciated for promoting peer support, they consumed time, and they required a lot of technical support from the teacher to learners. For very large classes, learners sometimes became so confused, and commotion developed at different stations. Teachers for large classes where the classroom spaces were small could not use learning contracts as the method was not effective, whereas in small classes, the method was found to be very effective.

Problem-based learning increased learner engagement and helped them to score better grades. According to Abugre & Kpinpuo (2017), Problem-Based Learning in Africa had the potential to transform education by engaging learners to achieve higher. Ydesen & Andersen (2020) agree with the findings of the study when they stated that collaborative learning was a core component of PrBL to aid better grades.

**Recommendations**

- Since in this study, ATL promoted quality content, better pedagogical skills, problem-solving, and communication skills, teachers in NTCs should be aware that children are not

born on *Tabularrassa*. They can contribute to their own learning content, skills, and values to shape the teaching profession and prepare them for the world of work.

- NTCs started implementing active teaching and learning methodologies that were aligned to the competence-based curriculum implemented in lower secondary schools in Uganda. These methodologies should be strengthened and transferred to the new teachers who might not have received the knowledge and skills, so that the transition to the Uganda National Institute of Teacher Education (UNITE) to award degree programmes in secondary education can find a strong foundation methodology for teacher trainees. This may earn UNITE programmes of teacher training better values compared to teacher training programmes in other institutions in Uganda.

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